

Examine.com

# PLUS DATABASE

Supplements - Health Outcomes



# Medical Disclaimer

This *Examine Plus Database* is a general-health document for adults over 18. Its aim is strictly educational. It does not constitute medical advice. Please consult a medical or health professional before you begin any exercise-, nutrition-, or supplementation-related program, or if you have questions about your health.

This book references scientific studies, but study outcomes are never homogeneous: individual results do vary. If you engage in any activity or take any supplement mentioned herein, you do so of your own free will, and you knowingly and voluntarily accept the risks.

Supplements are not regulated as strictly as pharmaceuticals, and a product may not contain the exact compounds and amounts listed on its label. Before you decide whether to take a product, investigate it and its manufacturer. Keep in mind that, more than isolated compounds, herbs are prone to batch-to-batch variability, which can alter their efficacy and safety.

Any supplement can interact with other supplements, as well as with foods and pharmaceuticals. We mention the major known interactions in our [supplement pages](#) and [Supplement Guides](#), but the number of possible interactions is virtually infinite and can affect different people differently. You may want to avoid combining too many supplements.

The safest way to add supplements to your daily routine is one at a time, at least a couple of weeks apart, to better assess the effects (and side effects) of each new addition. Start at half the regular dose for a week, then slowly increase to the regular dose if you are not experiencing the desired effects.

Any supplement that can affect the brain, especially supplements with a stimulatory or sedative effect, should first be taken in a controlled situation. Do not take a dose, least of all your first dose, before events such as driving or operating heavy machinery, when impaired cognition may be a risk for your safety and the safety of others.

Finally, since [minerals](#) and [vitamins](#) (especially the fat-soluble vitamins: [A](#), [D](#), [E](#), and [K](#)) can accumulate in the body, it is best to consider supplementation only after a dietary evaluation. Track what you eat for a week; if, on average, you are getting less than 80% of your Recommended Dietary Allowance (RDA) or Adequate Intake (AI), supplementation becomes an option, though first you should try eating more foods rich in the desired vitamin or mineral.

# Table of Contents

[Medical Disclaimer](#)

[Is This Book for You?](#)

- [This Is a Reference, Not a Guide](#)

[Two Ways You Can Use This Book](#)

- [Supplement → Health Outcomes](#)
- [Health Outcomes → Supplements](#)

[Understanding the Tables](#)

- [Level of Evidence](#)
- [Outcome / Supplement](#)
- [Change](#)
- [Magnitude of Effect](#)
- [Consistency of Research Results](#)
- [Notes](#)

[How Research Is Performed and Data Is Accrued](#)

[List of Supplements](#)

[List of Health Outcomes](#)

# Is This Book for You?

“What supplements should I buy?” is the most common question we receive, but alas, there is no simple, one-size-fits-all answer. *Your* ideal supplementation strategy will depend on *your* attributes (young, old, athletic, sedentary ...), *your* health issues (stress, arthritis, diabetes ...), *your* health goals (muscle gain, fat loss, pain relief ...), and other factors only *you* know about.

**That is why this book exists — to provide you with the information you need to design your own evidence-based supplementation strategy.**

As you’ll discover below, [there are two ways to use this book](#): you can look for either [a health outcome](#) (and see which supplements might help you affect it) or [a supplement](#) (and see which health outcomes it might help you affect).

There is something important you must keep in mind, however:

## **This Is a Reference, Not a Guide**

As its name implies, **this book is a reference** on human research (in vitro studies excluded, for reasons stated [here](#)). It is a powerful tool for those of you who already know a bit about nutrition and supplementation and simply need a summary of the current evidence.

Despite its practical aims and ease of use, however, **this book is not a guide**. If what you seek are simple, clear, step-by-step directions (on what to take, when, and in what doses) to reach a certain health goal, then you’ll probably find our [Supplement Guides](#) more useful.

Of course, many of you will find both useful: the Supplement Guides to get specific instructions on supplementing for the most common health goals, and this *Examine Plus Database* to learn more about the studies backing the guides’ recommendations — maybe with the idea of tweaking those recommendations to better fit your specific needs.

We just wanted to be up-front about this — about what this book is, and about what it isn’t. If you have any questions, please don’t hesitate to contact us; you can use our [contact form](#) or email us at [support@examine.com](mailto:support@examine.com).

# Two Ways You Can Use This Book

## Supplement → Health Outcomes

This book lets you quickly and easily scan [supplements](#) and see what they can do for you.

**For instance**, let's say you've heard that [vitamin D](#) is good for you. Maybe you've read that supplementing with it can help your mood, your libido, and your ability to shoot a three-pointer. At that point, you've probably been scratching your head, wondering: *Which of those claims are supported by the evidence, and which by far-fetched associations?*

Looking at the [table](#) for vitamin D, you'll quickly see which effects are backed by human studies. You'll discover at a glance that vitamin D can affect blood pressure (high level of evidence for a minor decrease), LDL-C levels (moderate level of evidence for a minor increase), and so forth.

## Health Outcomes → Supplements

This is where this book really shines: it lets you find the supplements you should consider taking based on the [health outcome](#) you wish to improve.

**For instance**, if you're diabetic, you've probably heard of many supplements supposed to lower [blood glucose](#). Your mother knows one; each of your friends knows one; and this website you've just visited listed a dozen or more. Taking them all, however, would be time-consuming, expensive, and maybe not altogether safe, leaving you wondering: *Which of those supplements are actually backed by the evidence?*

Looking at the [table](#) for blood glucose, you'll quickly see which supplements are backed by human studies. You'll discover at a glance that your blood glucose can be affected by berberine (high level of evidence for a strong decrease), caffeine (high level of evidence for a minor increase), and so forth. So if your blood glucose is too high, maybe you'll want to try berberine — and reduce your caffeine intake.

With almost 200 different health outcomes listed, you can quickly see which supplements can help you, which are a probable waste of money, and which can hinder your efforts.

# Understanding the Tables

Each [supplement](#) entry comprises three elements: a blue box introduces the supplement, another blue box provides some indications on how the supplement can be taken, and a reference table presents the human research on the supplement.





Likewise, each [health-outcome](#) entry comprises two elements: a blue box introduces a health outcome, and a reference table presents the supplement-related human research on this health outcome.

Reference tables of both types summarize vast amounts of human research (in vitro studies excluded, for reasons stated [here](#)), and we want to take a moment to explain how to read them.

## Level of Evidence

Not all studies are equal; they differ by their size, duration, methods, and overall quality. And of course, for each supplement, they vary in number. Some supplements, such as [creatine](#), have been heavily researched (and the research is often replicated), whereas what we know of more esoteric supplements, such as [Pueraria mirifica](#), might stem entirely from a handful of small studies.

Our level of confidence in the evidence — what we call the **level of evidence** — depends on both the quantity of studies and their quality, and is represented in the tables by pyramids:

GRADE	LEVEL OF EVIDENCE
	<b>Very high</b> - robust research with repeated double-blind trials
	<b>High</b> - multiple studies, including at least two double-blind trials
	<b>Moderate</b> - one double-blind trial or multiple cohort studies
	<b>Low</b> - uncontrolled or observational studies only

Roughly speaking, the level of evidence represented by the two higher pyramids is pretty solid, whereas the level of evidence represented by the two lower pyramids is still preliminary.

## Outcome / Supplement

In [supplement](#) tables, you'll find an **outcome** column. In it are listed the health outcomes for which the supplement has been studied.

In [health-outcome](#) tables, you'll find a **supplement** column. In it are listed the supplements that have been studied in relation to the health outcome.




## Change

Does the evidence suggest that a given supplement increases (↑), decreases (↓), or doesn't affect (—) a given health metric? In other words, what is the “direction” of the health outcome? You'll find your answer in the **change** column.

For example, a quick look at the table for [blood pressure](#) will tell you that this health metric is affected by caffeine (↑) and fish oil (↓), but not by creatine (—). As for cocoa, it has the potential to both raise and lower your blood pressure (↑↓): as explained in the [notes](#) column, cocoa can lower the blood pressure of mildly hypertensive people, but it may also cause a mild and transient increase in blood pressure in some subjects.

## Magnitude of Effect

While the [change](#) column shows the *direction* of a given effect (a given health outcome), the **magnitude of effect** column shows the *strength* of the effect. And just as the pyramids in the [level of evidence](#) column have four levels, the **magnitude of effect** column will display one of four values:

 Strong	The supplement has an effect as strong as that of some pharmaceuticals. This is quite rare.
 Notable	The supplement has an effect you can measure and often notice.
 Minor	The supplement has an effect, but too small to be noticed and maybe even to be measured with any degree of certainty (e.g., an increase in testosterone so small that it falls within the range of daily variations).
—	The supplement has no effect.

## Consistency of Research Results

As we saw, the pyramids in the [level of evidence](#) column represent the combined quantity and quality of the studies that link a certain supplement to a certain health outcome. But what if the studies don't agree?

Like the [level of evidence](#) and [magnitude of effect](#) columns, the **consistency of research results** column will display one of four values: very high, high, moderate, or low. Those values are based on three criteria:

1. How many studies report one type of [change](#), and how many another?
2. What is the overall quality of the studies that report one type of [change](#), and what is the overall quality of the studies that report another?
3. How similar were the studies? One of the most powerful tools science can use is called *study replication*: one group of researchers will replicate the protocol of a previous study led by another group of researchers, so that the results of both studies can be compared more accurately (“apples for apples”). Replicated results are especially trustworthy.

Under the **consistency of research results** value, you will also find the number of studies taken into consideration. For example, the effect of fish oil on blood pressure has “very high” consistency among eight studies. And if you click on the “See all 8 studies” link, a browser window will open with details on each of the studies, such as the effect reported, the length of the trial, and the number of participants.

## Notes

Last but not least, this column serves to clarify, nuance, and otherwise comment on the information provided in the other columns. This is where, for instance, you’ll find an explanation for the puzzling “↑↓” you’ll see in the **change** column if you look for cocoa’s effect on blood pressure (cocoa can lower the blood pressure of mildly hypertensive people, but it may also cause a mild and transient increase in blood pressure in some subjects).



# How Research Is Performed and Data Is Accrued

Let's consider how scientific research unfolds.

(What follows is a simplified picture of the actual process, meant to clarify important issues.)

As a rule, studies in humans come last, after animal studies and in vitro studies.

The subjects of **animal studies** are from non-human species. Depending on what's being researched, and the stage of the research, different species can be used, from fruit flies to chimpanzees. Most common are rodents, and especially rats.

As research animals, rats have many advantages. They're mammals, like us humans. Unlike us humans, they're small, easy to control, and cheap to buy and catter for. You can buy rats bred to be genetically very close, so that interindividual variables won't taint the results of your study. You can even buy rats bred for specific types of study (the spontaneously hypertensive rat, for instance). Rats reproduce quickly and don't live long, which makes it easier to test the effects of an intervention on aging or successive generations. And if a rat dies during an experiment, this event isn't likely to make the headlines of any newspaper.

The "subjects" of in **vitro studies** are cells, human or animal, isolated from the living organism. For instance, researchers will extract cells from the muscle of a human volunteer, place them in a Petri dish, and test on them a supplement.

Finally, if the research in cells and animals suggests that a supplement is safe and effective, **human studies** can take place. Alas, it is not uncommon for a supplement to show promise in animal or in vitro studies yet fail to perform in humans.

Research animals serve as *models* for humans, but there are many differences, some more obvious than others. We humans have neither fur nor tails, and we're genetically more diverse than purpose-bred rats. We're also bigger and longer-lived. Some of the differences between humans and rats are obvious; others less so; and some matter more than others, depending on what is being studied. For instance, female rodents go through *estrous* cycles, not *menstrual* cycles; this difference reduces the applicability to women of rodent studies on female fertility. Such differences are the reason why, for risky but important treatments, other animals are used after rodents before human subjects come into the picture.

Of course, in vitro studies, even on human cells, have their own drawbacks. For instance, in vitro studies showed glutamine to be a great muscle-builder; but when ingested by a healthy adult, this amino acid gets taken up by the small intestine, and very little reaches the muscles. It is therefore unsurprising that, in a study of healthy youth doing resistance training, glutamine failed to increase lean mass more than did placebo.

**All this to explain why, though we do factor animal and in vitro studies when we research a given topic, we don't include them in our *Examine Plus Database*. All the studies referenced in this book**

– more than 3,000 to date – are human studies.

# List of Supplements

---

- [1,3-Dimethylamylamine](#)
- [2,4-Dinitrophenol](#)
- [5-HTP](#)
- [7,8-Dihydroxyflavone](#)
- [7-Keto DHEA](#)
- [Acorus calamus](#)
- [Adrafinil](#)
- [Aframomum melegueta](#)
- [Agmatine](#)
- [Alanine](#)
- [Alanylglutamine](#)
- [Alcohol](#)
- [Aloe vera](#)
- [Alpha-GPC](#)
- [Alpha-Lipoic Acid](#)
- [Amaranth](#)
- [Anacyclus pyrethrum](#)
- [Anatabine](#)
- [Andrographis paniculata](#)
- [Anethum graveolens](#)
- [Angelica gigas](#)
- [Aniracetam](#)
- [Apigenin](#)
- [Apocynum venetum](#)
- [Apple Cider Vinegar](#)
- [Arachidonic acid](#)
- [Arginine](#)
- [Aronia melanocarpa](#)
- [Artemisia iwayomogi](#)
- [Artichoke Extract](#)
- [Ascophyllum nodosum](#)
- [Ashwagandha](#)
- [Asparagus racemosus](#)
- [Astaxanthin](#)
- [Asteracantha longifolia](#)
- [Astragalus membranaceus](#)
- [BPC-157](#)
- [Bacopa monnieri](#)
- [Banaba Leaf](#)
- [Basella alba](#)
- [Beet Root](#)
- [Benfotiamine](#)
- [Berberine](#)
- [Beta-Alanine](#)
- [Betalains](#)
- [Biotin](#)
- [Black Cohosh](#)
- [Black Pepper](#)
- [Bladderwrack](#)
- [Blueberry](#)
- [Boerhaavia diffusa](#)
- [Boron](#)
- [Boswellia serrata](#)
- [Branched Chain Amino Acids](#)
- [Brassaiopsis glomerulata](#)
- [Brassica vegetables](#)

- [Brassinosteroids](#)
- [Bromelain](#)
- [Bryonia laciniosa](#)
- [Bulbine natalensis](#)
- [Butea monosperma](#)
- [Butea superba](#)
- [CBD](#)
- [CDP-choline](#)
- [Caesalpinia benthamiana](#)
- [Caffeine](#)
- [Calcium](#)
- [Calcium-D-Glucarate](#)
- [Capsaicin](#)
- [Capsicum Carotenoids](#)
- [Caralluma fimbriata](#)
- [Casein Protein](#)
- [Celastrus paniculatus](#)
- [Celery seed extract](#)
- [Centella asiatica](#)
- [Centrophoxine](#)
- [Chlorella](#)
- [Chlorogenic Acid](#)
- [Chlorophytum borivilianum](#)
- [Choline](#)
- [Chondroitin](#)
- [Chromium](#)
- [Chrysin](#)
- [Cinnamon](#)
- [Cissus quadrangularis](#)
- [Citric Acid](#)
- [Citrulline](#)
- [Citrullus colocynthis](#)
- [Clenbuterol](#)
- [Clitoria ternatea](#)
- [Clubmoss](#)
- [Cnidium monnieri](#)
- [Cocoa Extract](#)
- [Coconut Oil](#)
- [Codonopsis pilosula](#)
- [Coenzyme Q10](#)
- [Coffee](#)
- [Cold Exposure](#)
- [Coleus forskohlii](#)
- [Colostrum](#)
- [Coluracetam](#)
- [Conjugated Linoleic Acid](#)
- [Convolvulus pluricaulis](#)
- [Copper](#)
- [Cordyceps](#)
- [Crataegus pinnatifida](#)
- [Creatine](#)
- [Creatinol O-Phosphate](#)
- [Cucurbita pepo](#)
- [Curcumin](#)
- [Cyanidin](#)
- [D-Aspartic Acid](#)

- [D-Ribose](#)
- [D-Serine](#)
- [DMAE](#)
- [Dactylorhiza hatagirea](#)
- [Damiana Leaf](#)
- [Dark Therapy](#)
- [Dehydroepiandrosterone](#)
- [Dendrobium](#)
- [Diindolylmethane](#)
- [Dimocarpus longan](#)
- [Dioscorea villosa](#)
- [ECA](#)
- [Ecdysteroids](#)
- [Echinacea](#)
- [Ecklonia cava](#)
- [Eclipta alba](#)
- [Eggs](#)
- [Eleutherococcus senticosus](#)
- [Emblica officinalis](#)
- [Energy Drinks](#)
- [Ephedrine](#)
- [Eriobotrya japonica](#)
- [Eschscholzia californica](#)
- [Eucommia ulmoides](#)
- [Euonymus alatus](#)
- [Eurycoma Longifolia Jack](#)
- [Evodia rutaecarpa](#)
- [Evolvulus alsinoides](#)
- [Fadogia agrestis](#)
- [Fennel Essential Oil](#)
- [Fenugreek](#)
- [Ferula asafoetida](#)
- [Feverfew](#)
- [Fish Oil](#)
- [Folic Acid](#)
- [Fucoxanthin](#)
- [GABA](#)
- [Gamma Oryzanol](#)
- [Ganoderma lucidum](#)
- [Garcinia cambogia](#)
- [Garlic](#)
- [Ginger](#)
- [Ginkgo biloba](#)
- [Glucosamine](#)
- [Glucuronolactone](#)
- [Glutamine](#)
- [Glutathione](#)
- [Gluten](#)
- [Glycine](#)
- [Grape Seed Extract](#)
- [Grapefruit](#)
- [Green Coffee Extract](#)
- [Green Tea Catechins](#)
- [Griffonia simplicifolia](#)
- [Guggul](#)
- [Gynostemma pentaphyllum](#)

- [HMB](#)
- [Harpagophytum procumbens](#)
- [Hederagenin](#)
- [Hemp Protein](#)
- [Hesperidin](#)
- [Hibiscus macranthus](#)
- [Hibiscus rosasinensis](#)
- [Hibiscus sabdariffa](#)
- [Higenamine](#)
- [Holy Basil](#)
- [Hoodia gordonii](#)
- [Hordenine](#)
- [Horny Goat Weed](#)
- [Horse Chestnut](#)
- [Hovenia dulcis](#)
- [Huperzine-A](#)
- [Hypericum perforatum](#)
- [Idebenone](#)
- [Inositol](#)
- [Iodine](#)
- [Iron](#)
- [Irvingia gabonensis](#)
- [Isoleucine](#)
- [Japanese Knotweed](#)
- [Juniperus chinensis](#)
- [Kaempferia parviflora](#)
- [Kaempferol](#)
- [Kava](#)
- [Ketogenic diet](#)
- [King Oyster](#)
- [Kombucha](#)
- [Krill Oil](#)
- [L-Carnitine](#)
- [L-DOPA](#)
- [L-Threonate](#)
- [L-Tyrosine](#)
- [Lactobacillus casei](#)
- [Lactobacillus reuteri](#)
- [Lavender](#)
- [Leucic Acid](#)
- [Leucine](#)
- [Licorice](#)
- [Light Therapy](#)
- [Limonene](#)
- [Lutein](#)
- [Lysine](#)
- [Maca](#)
- [Magnesium](#)
- [Magnolia officinalis](#)
- [Manganese](#)
- [Mangifera indica](#)
- [Marijuana](#)
- [Massularia acuminata](#)
- [Medium-chain triglycerides](#)
- [Melatonin](#)
- [Melissa officinalis](#)

- [Methylsulfonylmethane](#)
- [Microlactin](#)
- [Milk Protein](#)
- [Milk Thistle](#)
- [Minoxidil](#)
- [MitoQ](#)
- [Modafinil](#)
- [Molybdenum](#)
- [Moringa oleifera](#)
- [Morus alba](#)
- [Mucuna pruriens](#)
- [Muiru puama](#)
- [Music](#)
- [Myricetin](#)
- [N-Acetylcysteine](#)
- [Nardostachys jatamansi](#)
- [Nattokinase](#)
- [Nefiracetam](#)
- [Nelumbo nucifera](#)
- [Nicotine](#)
- [Nigella sativa](#)
- [Nitrate](#)
- [Noopept](#)
- [Nutmeg](#)
- [Octopamine](#)
- [Oleamide](#)
- [Oleoylethanolamide](#)
- [Olive Oil](#)
- [Olive leaf extract](#)
- [Ophiopogon japonicus](#)
- [Origanum vulgare](#)
- [Ornithine](#)
- [Orthosiphon stamineus](#)
- [Oxaloacetate](#)
- [Oxiracetam](#)
- [Oxytropis falcate](#)
- [PRL-8-53](#)
- [Paederia foetida](#)
- [Palmatine](#)
- [Panax ginseng](#)
- [Patchouli](#)
- [Paullinia cupana](#)
- [Pedalium murex](#)
- [Pelargonidin](#)
- [Pelargonium sidoides](#)
- [Peppermint](#)
- [Perilla Oil](#)
- [Phellodendron amurense](#)
- [Phenylethylamine](#)
- [Phenylpiracetam](#)
- [Phosphatidylcholine](#)
- [Phosphatidylserine](#)
- [Piceatannol](#)
- [Picrorhiza kurroa](#)
- [Pine Pollen](#)
- [Piracetam](#)

- [Policosanol](#)
- [Polygala tenuifolia](#)
- [Polypodium leucotomos](#)
- [Pomegranate](#)
- [Potassium](#)
- [Pramiracetam](#)
- [Prickly Pear Fruit](#)
- [Psoralea corylifolia](#)
- [Psyllium](#)
- [Pterostilbene](#)
- [Pueraria lobata](#)
- [Pueraria mirifica](#)
- [Punicalagins](#)
- [Punicic Acid](#)
- [Pycnogenol](#)
- [Pygeum](#)
- [Pyritinol](#)
- [Pyrroloquinoline quinone](#)
- [Pyruvate](#)
- [Quercetin](#)
- [Raspberry Ketone](#)
- [Rauwolscine](#)
- [Red Clover Extract](#)
- [Red Yeast Rice](#)
- [Resveratrol](#)
- [Rhamnus nakaharai](#)
- [Rhaponticum carthamoides](#)
- [Rhodiola Rosea](#)
- [Rooibos](#)
- [Rose Essential Oil](#)
- [Rose Hip](#)
- [Rosmarinic Acid](#)
- [Royal Jelly](#)
- [Rubus coreanus](#)
- [Rubus suavissimus](#)
- [Ruscus aculeatus](#)
- [S-Adenosyl Methionine](#)
- [Safflower Oil](#)
- [Saffron](#)
- [Salacia reticulata](#)
- [Salvia hispanica](#)
- [Salvia miltiorrhiza](#)
- [Salvia sclarea](#)
- [Sarcosine](#)
- [Saw Palmetto](#)
- [Sceletium tortuosum](#)
- [Schisandra chinensis](#)
- [Schizonepeta tenuifolia](#)
- [Scutellaria baicalensis](#)
- [Sea Buckthorn](#)
- [Selenium](#)
- [Senna alexandrina](#)
- [Serrapeptase](#)
- [Sesamin](#)
- [Shilajit](#)
- [Silica](#)



- [Silk Amino Acids](#)
- [Simmondsia chinensis](#)
- [Sodium Bicarbonate](#)
- [Sophora flavescens](#)
- [Soy Isoflavones](#)
- [Soy lecithin](#)
- [Sphaeranthus indicus](#)
- [Spilanthes acmella](#)
- [Spirulina](#)
- [Squalene](#)
- [Stephania tetrandra](#)
- [Stevia](#)
- [Stinging Nettle](#)
- [Sulbutiamine](#)
- [Sulforaphane](#)
- [Sunifiram](#)
- [Synephrine](#)
- [Syzygium aromaticum](#)
- [T3](#)
- [Taraxacum officinale](#)
- [Taurine](#)
- [Tauroursodeoxycholic Acid](#)
- [Tea \(Camellia Sinensis\)](#)
- [Terminalia arjuna](#)
- [Tetradecyl Thioacetic Acid](#)
- [Theacrine](#)
- [Theaflavins](#)
- [Theanine](#)
- [Tinospora cordifolia](#)
- [Trametes versicolor](#)
- [Trehalose](#)
- [Tribulus terrestris](#)
- [Trichopus zeylanicus](#)
- [Trimethylglycine](#)
- [Tripterygium wilfordii](#)
- [Tulbaghia violacea](#)
- [Turmeric](#)
- [Type-II Collagen](#)
- [Uncaria rhynchophylla](#)
- [Uncaria tomentosa](#)
- [Uridine](#)
- [Ursolic Acid](#)
- [Uva ursi](#)
- [Valeriana officinalis](#)
- [Valine](#)
- [Vanadium](#)
- [Velvet Antler](#)
- [Vinpocetine](#)
- [Vitamin A](#)
- [Vitamin B1](#)
- [Vitamin B2](#)
- [Vitamin B3 \(Niacin\)](#)
- [Vitamin B5](#)
- [Vitamin B6](#)
- [Vitamin B<sub>12</sub>](#)
- [Vitamin C](#)

- [Vitamin D](#)
- [Vitamin E](#)
- [Vitamin K](#)
- [Vitex agnus castus](#)
- [Watercress](#)
- [Whey Protein](#)
- [White Kidney Bean Extract](#)
- [Wine](#)
- [Yacon](#)
- [Yamabushitake](#)
- [Yerba mate](#)
- [Yohimbine](#)
- [ZMA](#)
- [Zeaxanthin](#)
- [Zinc](#)
- [Ziziphus jujuba](#)

[Back to top](#)

---

# 1,3-Dimethylamylamine

Also known as:

4-methylhexan-2-amine, DMAA, Dimethylamylamine, 1,3-DMAA, Geranamine, Methylhexaneamine, 3-Dimethylpentylamine, For




Other uses:

1,3-DMAA (1,3-Dimethylamylamine) is a neural stimulant with a structure similar to ephedrine and adrenaline that has been used as a pre-workout stimulant. Not much information is available on 1,3-DMAA supplementation, and is no longer commonly sold as a supplement.

See [1,3-Dimethylamylamine on Examine.com](#)

## How to Take

A typical starting dose of 1,3-DMAA is in the 10-20mg range and eventually reaching up to 40-60mg a day, there is no actual evidence to support this dosage range but it seems to be the standard dosages range for supplemental 1,3-DMAA on the market. 1,3-DMAA is known to be banned by various sports organizations due to its amphetamine-like nature, and should not be used by tested athletes.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Notable	- <a href="#">See study</a>	The increase in blood pressure with 1,3-DMAA was fairly notable and of concern, with 75mg paired with caffeine (common in preworkout supplements) increasing systolic by up to 20%.
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant effect on heart rate noted with DMAA supplementation despite the increase in blood pressure.

Back to: [Supplements](#) | [Health Outcomes](#)

# 2,4-Dinitrophenol

Also known as: *Dinitrophenol, DNP, 2,4-DNP, Dinitro, Dinosan, Dnoc, Nitrophen, Chemox, Aldifen, Mitcal*

A highly toxic yet effective fat burning compound; DNP works via increasing heat production in cells via a process known as uncoupling (making cells less efficient with energy) and small overdoses have been known to result in death.

See [2,4-Dinitrophenol on Examine.com](#)

## How to Take

Standard online protocols advice for titrating up towards a dose of 200-400 mg daily with cessation after 2 weeks of usage. (NOTE: This dosing information is anecdotal in nature and is based on past human trials that were not conducted in a controlled fashion. No information exists in the scientific literature for the best dosages for weight loss.)

Back to: [Supplements](#) | [Health Outcomes](#)

# 5-HTP

Also known as: 5-hydroxytryptophan, serotonin precursor









Other uses:

5-HTP is the precursor to serotonin, the neurotransmitter sometimes touted to be responsible for happiness. 5-HTP is a simple way to increase brain serotonin levels by bypassing the rate-limiting step, and users reap either the rewards or the hazards of increased brain serotonin.

See [5-HTP on Examine.com](#)

## How to Take

A typical dose of 5-HTP is in the range of 300-500 mg, taken either once daily or in divided doses. Lower doses may also be effective, although usually when paired with other substances. For the purpose of reducing food intake, 5-HTP should be taken with a meal as it increases satiety from food intake (rather than reducing appetite/hunger). 5-HTP should not be taken with any neurological drug that has been prescribed for antidepressant or other cognitive purposes unless cleared by a medical doctor. This is most important for SSRI usage, wherein the combination with 5-HTP is potentially lethal.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Appetite</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	There does appear to be a fairly effective suppression in appetite noted with 5-HTP supplementation in the higher dosage range, which tends to reduce food intake.
	<a href="#">Weight</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	The reduction in weight appears to be mostly secondary to a reduction in food intake, and is not too remarkable in magnitude
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	At least one study has noted increased in salivary cortisol following acute ingestion of 5-HTP supplementation.
	<a href="#">Sleep Terrors</a>	 Minor	- <a href="#">See study</a>	At least one trial suggesting reductions in sleep terrors.

# 7,8-Dihydroxyflavone

Also known as: 7,8-DHF

7,8-DHF is a synthetic flavonoid which can reach the brain and activate a receptor (TrkB) that promotes neuronal growth. Some animal evidence suggests that 7,8-DHF may have some cognitive and motor benefits and may be nootropic, but no human evidence for these claims exists to date.

See [7,8-Dihydroxyflavone on Examine.com](#)

## How to Take

There are currently no human studies on 7,8-DHF to take human doses from, with all estimates being mathematically approximated from rodent research. The majority of rodent research does use intravenous injections however, with limited studies using oral ingestion. Oral ingestion does appear to have effects, with rat studies noting: 5mg/kg being effective in the cognitively unwell mouse (chronic usage) 10mg/kg being effective in the cognitively well rat (subchronic use) 30mg/kg in the mouse being acutely effective This is approximately 1mg/kg for subchronic or chronic usage in humans, with the acute dose correlating to approximately 2.5mg/kg.

Back to: [Supplements](#) | [Health Outcomes](#)

# 7-Keto DHEA

Also known as:










7-ketodehydroepiandrosterone, 7-oxodehydroepiandrosterone, 7-ketoDHEA, 7-oxoDHEA, 7-oxo, 7-keto







7-Keto DHEA is a metabolite of DHEA that is nonhormonal, and it appears to be a fat loss agent as it may increase the metabolic rate. Studies in humans show promise for helping during a fat loss diet, but currently are of questionable quality due to potential conflicts of interest.

See [7-Keto DHEA on Examine.com](#)

## How to Take

A typical supplemental dosage of 7-keto is 200-400mg daily in two divided doses (100-200mg), some limited evidence suggests that lower doses of 50-100mg may be effective for neural purposes. The optimal dosing schedule and overall dose of 7-keto is not yet known, and the above dosages are just based on what is known to have efficacy.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Metabolic Rate</a>	 Notable	- <a href="#">See study</a>	Somewhat notable as the decrease seen with dieting was effectively abolished and reversed with 7-keto supplementation over 7 days of low caloric intake, but more evidence is required to establish the reliability of this and how strong it actually is.
	<a href="#">Fat Mass</a>	 Minor	- <a href="#">See study</a>	The amount of fat lost appears to be more with 7-keto than with placebo when either of them are paired with a low calories weight loss regimen.
	<a href="#">Serum T3</a>	 Minor	- <a href="#">See study</a>	There appears to be an increase in circulating T3 hormone levels (active thyroid hormone) when 7-keto is paired with a caloric restriction and exercise (relative to placebo with the same regimen)
	<a href="#">Weight</a>	 Minor	- <a href="#">See study</a>	A weight loss of 2.88kg (1.8% body fat) was seen with 7-keto over placebo (0.97 kg loss with 0.28% bodyfat) which is significant but not overly notable, since the study used obese persons and exercise
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in blood glucose

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in blood pressure following 7-keto supplementation.
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	Insufficient evidence to claim changes in estrogen following 7-keto supplementation.
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in fatigue and energy following 7-keto supplementation.
	<a href="#">Parathyroid Hormone</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in parathyroid hormone from 7-keto supplementation.
	<a href="#">Serum T4</a>	-	- <a href="#">See study</a>	Insufficient evidence to support alterations in T4, with no changes detected when it is measured
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in testosterone following 7-keto supplementation.

Back to: [Supplements](#) | [Health Outcomes](#)



# Acorus calamus

Also known as: *Sweet Flag, Golomi, Uragandha, Vacha, Vekhanda, Bach, Calamus Oil*

Acorus calamus is a plant used in traditional medicine. Due to its  $\beta$ -asarone content, it has been deemed unfit for human consumption.

See [Acorus calamus on Examine.com](#)

## How to Take

Before supplementing Acorus calamus, please review the toxicology information on this page. Acorus calamus is unfit for human consumption because of its  $\beta$ -asarone content.  $\beta$ -asarone is toxic and a known carcinogen. Some studies have used an ethyl acetate extraction of Acorus calamus, which is supposed to be free of  $\beta$ -asarone. This extraction appears to be effective in the range of 100-200mg per kilogram of bodyweight. This translates to an approximate human dose of: • 1,100-2,200 mg for a 150lb person • 1,500-2,900 mg for a 200lb person • 1,800-3,600 mg for a 250lb person It is not guaranteed that any extract is completely free of  $\beta$ -asarone. Acorus calamus supplementation is not recommended.

Back to: [Supplements](#) | [Health Outcomes](#)

# Adrafinil

Also known as: *Olmifon, CRL-40028*

Other uses:

Adrafinil is a precursor drug to modafinil, which means adrafinil is metabolized in the body to produce modafinil. Both are stimulants with no amphetamine-like effects.

See [Adrafinil on Examine.com](#)

## How to Take

The standard dosage for adrafinil is reported to be 600-1,200mg, which for the purpose of treating narcolepsy was either 600mg twice daily (morning and midday) or 600-900mg taken once daily upon waking. Adrafinil is no longer used for this purpose due to modafinil being a more suitable pharmaceutical, and these doses reflect the recommendations for the prescription drug Olmifon when it was available. Adrafinil should not be taken in the afternoon and evening, since supplementation would impair sleep. Adrafinil tends to be taken three times a week, for no longer than five months.

Back to: [Supplements](#) | [Health Outcomes](#)

# Aframomum melegueta



Also known as: *Grains of Paradise*, *melegueta pepper*, *alligator pepper*, *Guinea pepper*, *Guinea grain*

Aframomum melegueta (Grains of Paradise) is a spice with a similar composition as Ginger that belongs to the same Zingiberaceae family. It shows some promise in fat-mass control at doses possibly consumable via food products.

See [Aframomum melegueta on Examine.com](#)

## How to Take

The only current human study used a 95%-ethanolic extract of Aframomum melegueta at 10 mg daily. There is no evidence to suggest whether this is the optimal dose, but it appears to be a low enough dose that the spice itself can be used on top of food.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Metabolic Rate</a>	 Minor	- <a href="#">See study</a>	Requires more evidence, and the increase in metabolic rate was wholly conditional on cold therapy also being used (where supplementation with aframomum melegueta increased cold therapy's efficacy rather than <i>per se</i> increasing metabolic rate)

Back to: [Supplements](#) | [Health Outcomes](#)

# Agmatine





Also known as: *Clonidine-displacing substance, 4-(aminobutyl)guanidine, Decarboxylated arginine*

Agmatine is a metabolite of L-Arginine. It shows promise for alleviating neuropathic pain and drug addiction and shows some potential in protecting against strokes and benefitting cognitive health.

See [Agmatine on Examine.com](#)

## How to Take

There are no standard dosages for agmatine because of the lack of human evidence for its effects. However, a single human study used 1,300-2,670mg of agmatine, daily for the treatment of neuropathic pain. The estimated human dose for improving cognition is 1.6-6.4mg/kg of agmatine, taken orally. This is based off of the 10-40mg/kg dosage range for rats, and is equivalent to 109-435mg for a 150lb person. Supplementation should not exceed 6.4mg/kg of bodyweight. Studies on agmatine use a daily dosing protocol. Agmatine is not absorbed well when taken with dietary protein, because it uses the same transporters as arginine. Further research is needed to determine if oral agmatine supplementation provides the same benefits as were observed in animal studies.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pain</a>	 Notable	- <a href="#">See study</a>	In the trial on lumbar disc-associated radiculopathy, the degree of pain alleviation was fairly notable relative to placebo and persisted for two months after supplementation was ceased. No reference drug comparisons, unfortunately
	<a href="#">Depression</a>	 Strong	- <a href="#">See study</a>	One very preliminary study exists, but remission was achieved in all three subjects with 2-3g agmatine.

Back to: [Supplements](#) | [Health Outcomes](#)

# Alanine

---

Alanine is a non-essential amino acid used in protein synthesis and the regeneration of glucose within the liver via the glucose–alanine cycle.

See [Alanine on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Alanylglutamine











Also known as: L-Alanyl-L-Glutamine, Alanyl-Glutamine, Sustamine (brand name)

L-Alanyl-L-Glutamine, also known by the brand name Sustamine, is a dipeptide molecule of glutamine and alanine, which makes it more stable and water-soluble than glutamine by itself. Current evidence does not support L-alanyl-L-glutamine's use as a performance-enhancing supplement.








See [Alanylglutamine on Examine.com](#)

## How to Take

Current studies on L-alanyl-L-glutamine use a dose of 1-3g a day. More research is needed to determine the optimal dose. L-Alanyl-L-Glutamine supplementation may be similar to glutamine supplementation, in terms of dose, timing, and purpose.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fatigue</a>	 Minor	- <a href="#">See study</a>	A possible minor antifatigue effect has been noted with higher doses of alanylglutamine in sports lasting an hour in length
	<a href="#">Intestinal Permeability</a>	 Minor	- <a href="#">See study</a>	In subjects with HIV who reported diarrhea in the last two weeks, supplementation of alanylglutamine was more effective than placebo (glycine) in reducing intestinal permeability
	<a href="#">Plasma Glutamine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Higher doses (0.09-0.2g/kg) of oral alanylglutamine appear to increase plasma glutamine, and when compared to glutamine itself this dipeptide is more bioavailable
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See study</a>	A low dose, yet not the higher antifatigue dose, has once been noted to improve reaction time and shooting accuracy following an hour long basketball game
	<a href="#">Adrenocorticotrophic Hormone</a>	-	- <a href="#">See study</a>	ACTH does not appear to be differentially affected by alanylglutamine compared to water
	<a href="#">Aldosterone</a>	-	- <a href="#">See study</a>	Aldosterone during exercise does not appear to be significantly influenced with alanylglutamine relative to water (both used in rehydration protocols)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	In a 75% VO2 max cycle until fatigue, rehydration with alanylglutamine failed to outperform water rehydration in overall time until exhaustion
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose relative to control.
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant interaction with blood pressure during exercise has been noted with acute supplementation of alanylglutamine
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	C-reactive protein does not appear to be influenced by alanylglutamine
	<a href="#">CD4 Lymphocytes</a>	-	- <a href="#">See study</a>	CD4+ Lymphocyte counts in subjects with HIV are not affected by alanylglutamine supplementation.
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	Cortisol is not influenced by alanylglutamine relative to water during and after an exercise trial.
	<a href="#">Growth Hormone</a>	-	- <a href="#">See study</a>	The kinetics of growth hormone release from exercise are not influenced by alanylglutamine relative to water.
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of alanylglutamine on heart rate during exercise relative to water
	<a href="#">Hydration (Total Body Water)</a>	-	- <a href="#">See study</a>	Parameters of hydration including water retention do not appear to be modified with alanylglutamine when compared to the free amino acids or water.
	<a href="#">Interleukin 6</a>	-	- <a href="#">See study</a>	Interleukin-6 does not appear to be influenced during exercise when alanylglutamine is increased prior as rehydration (relative to water)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactate Production</a>	-	- <a href="#">See study</a>	Lactate production and serum levels during a cycle to fatigue do not appear to differ between alanylglutamine and water
	<a href="#">Lipid Peroxidation</a>	-	- <a href="#">See study</a>	Alanylglutamine does not appear to have any influence on lipid peroxidation (MDA) concentrations during exercise relative to glutamine or water control.
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	When tested after exercise, alanylglutamine is no different than water in jump performance in athletes
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	Secretion of testosterone the day surrounding an exercise trial are not influenced by alanylglutamine any differently than water.
	<a href="#">Vasopressin</a>	-	- <a href="#">See study</a>	Water and alanylglutamine rehydration protocols appear equal in influencing vasopressin kinetics during exercise.
	<a href="#">Viral Load</a>	-	- <a href="#">See study</a>	When a high dose is given to subjects with HIV, their viral loads do not appear to be modified.
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	10 days supplementation of alanylglutamine in subjects with HIV does not modify overall bodyweight.

Back to: [Supplements](#) | [Health Outcomes](#)



# Alcohol








Also known as: *Ethanol, Drinking alcohol, Beer, Gin, Vodka, Wine, Jager*








Alcohol is one of the world's favorite intoxicants. It is frequently found at social gatherings because it provides an anxiety-reducing effect. Consuming too much alcohol will result in alcohol poisoning, which can be fatal.

See [Alcohol on Examine.com](#)

## How to Take

Abstinence from drinking is defined as having no ethanol intake whatsoever. "Moderate" drinking in the literature is dependent on gender and not ultimately defined, but an upper limit can be placed at 9 units per week for women and 12-14 units a week for men, with no single event exceeding 4 units. A unit is typically 12 oz (355 mL) of 5% beer, 5 oz (150 mL) 12.5% wine, or 1.5 oz (45 mL) of drinks with a higher (40%) alcohol content.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Testosterone</a>	 Minor	- <a href="#">See all 9 studies</a>	There appears to be a time-dependent influence on testosterone, with acute doses of alcohol increasing testosterone secondary to creating energy influx in the liver (small enough of an increase to be 'somewhat' effective but may contribute to libido) whereas abuse is known to reduce testosterone levels more notably. The acute increase in testosterone is thought to be related to spikes in libido
	<a href="#">Power Output</a>	 Minor	- <a href="#">See study</a>	Acute ingestion of alcohol may be able to reduce subsequent power output
	<a href="#">Adrenaline</a>	-	- <a href="#">See study</a>	Serum adrenaline appears unaltered following alcohol ingestion
	<a href="#">Cortisol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in cortisol levels seen with alcohol ingestion in moderate levels
	<a href="#">Estrogen</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on fasting estrogen levels in males

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Luteinizing Hormone</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No significant influence of alcohol on luteinizing hormone levels when consumed moderately
	<a href="#">Follicle-Stimulating Hormone</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on FSH, but although null effects have been reported an increase may be possible
	<a href="#">Growth Hormone</a>	 Minor	- <a href="#">See study</a>	An acute suppression of growth hormone is noted with alcohol ingestion
	<a href="#">Prolactin</a>	 Minor	- <a href="#">See study</a>	An increase in prolactin has been noted following acute ingestion of alcohol

Back to: [Supplements](#) | [Health Outcomes](#)

# Aloe vera

Also known as: *Aloe Barbadensis*



Other uses:

Aloe vera is a common houseplant that has traditionally been used topically to alleviate burns and pain on the skin. Oral ingestion helps speed up intestinal motility (and has been used against constipation) and aloe vera contains a large amount of antioxidants.

See [Aloe vera on Examine.com](#)

## How to Take

The only human study on aloe vera used 300 mg twice daily. There is no evidence to suggest whether this is the best dose, but benefit was seen at this dosage.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Canker Sores</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be more effective than control, but less effective than the reference drug of 0.1% triamcinolone acetonide

Back to: [Supplements](#) | [Health Outcomes](#)

# Alpha-GPC

Also known as: *Alpha-glycerolphosphorylcholine, L-alpha-glycerophosphocholin, glycerophosphocholine, L-alpha-glyceryl-phosphorylcholine, Choline Alphoscerate*









Other uses:





Alpha-glycerophosphocholine (Alpha-GPC or  $\alpha$ -GPC) is a cholinergic compound that is used for its cognitive-promoting properties, and to enhance power output in athletes. It appears to also support cellular membranes, and may aid in preventing cognitive decline.

See [Alpha-GPC on Examine.com](#)

## How to Take

Alpha-GPC is approximately 40% choline by weight, and as such 1,000 mg alpha-GPC confers about 400 mg of dietary choline. A standard dosage of alpha-GPC is 300-600 mg, according to the most common label doses. This dose is in accordance with the study using alpha-GPC to enhance power output (600 mg) and the two studies noting an increase in growth hormone secretion, and is likely a good dose to take for athletes. For the usage of alpha-GPC in attenuating symptoms of cognitive decline, almost all studies use a dosage of 1,200 mg daily, divided into three doses of 400 mg. It is unsure how lower doses would benefit cognition, but the 1,200 mg appears to be consistently associated with benefit. Rat studies suggest that the effects of alpha-GPC oral ingestion peak at 300-600 mg/kg, which is an estimated human dose of 48-96 mg/kg (and for a 150lb human, 3,272-6,545 mg daily).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognitive Decline</a>	 Notable	- <a href="#">See study</a>	The rate of cognitive decline of either degenerative or vascular origin appears to be significantly reduced with Alpha-GPC supplementation
	<a href="#">Power Output</a>	 Notable	- <a href="#">See study</a>	The lone pilot study noted a 14% increase in power output as assessed by bench throws, requires replication but seems stronger than caffeine based on this study.
	<a href="#">Symptoms of Alzheimer's</a>	 Notable	- <a href="#">See study</a>	At least among nutraceuticals, Alpha-GPC appears to significantly improve cognition in persons with Alzheimer's disease at the dose of 1,200mg when taken as a daily supplement over a prolonged period of time.
	<a href="#">Fat Oxidation</a>	 Minor	- <a href="#">See study</a>	Some biomarkers of hepatic fat oxidation increased at rest, no indication as to the potency of this relative to reference drugs.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Growth Hormone</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Has noted an increase in circulating growth hormone, but measurements were acute (whole-day measurements of growth hormone are more reliable due to hourly fluctuations)
	<a href="#">Iron Absorption</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	It is possible that Alpha-GPC increases iron absorption from non-meat sources (nonheme iron), but the evidence is currently mixed and a very low dose of 46mg may be required (which would render supplementation irrelevant).

Back to: [Supplements](#) | [Health Outcomes](#)

# Alpha-Lipoic Acid

Also known as: ALA, thioctic acid, 1,2-dithiolane-3-pentanoic acid, ala, Tiolepta










Other uses:

Alpha-lipoic acid (ALA) is a mitochondrial compound involved in energy metabolism. It is commonly taken with L-Carnitine supplements, as they are related in mechanisms. ALA provides a short but potent reduction of oxidation by increasing anti-oxidant enzymes, and may decrease blood glucose acutely.









See [Alpha-Lipoic Acid on Examine.com](#)

## How to Take

Standard dosages of Alpha-Lipoic Acid (ALA) tend to be in the range of 300-600mg, with little differentiation based on whether the racemic mixture of ALA (S- and R- isomers) or Na-R-ALA results in higher blood levels. ALA appears to be absorbed via transporter-related means, and despite being inherently fat-soluble it does not require dietary fatty acids to be absorbed from the gut. ALA supplementation can be taken in a fasted state.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Diabetic Neuropathy</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Not yet compared to reference drugs, but it has been subject to a meta-analysis and appears to be more effective than other options for reducing nerve pain associated with diabetes. The lack of a reference comparison and some evidence suggesting no effect prevent a strong rating.
	<a href="#">General Oxidation</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	Appears to reduce biomarkers of oxidation
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	The majority of evidence using intravenous or oral supplements fail to find an influence, and the one study to suggest a reduction was also confounded with weight loss (known to reduce blood pressure). It can be assumed that ALA has no significant influence on blood pressure even in studies where blood flow is altered
	<a href="#">Symptoms of Intermittent Claudication</a>	 Notable	- <a href="#">See study</a>	The reduction of claudication symptoms appears to be fairly potent with ALA supplementation, although there is not a large body of evidence overall.
	<a href="#">Blood Flow</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May increase blood flow, although not to a remarkable degree. Possibly secondary to antioxidative effects

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HbA1c</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	There appears to be a slight reducing effect on HbA1c
	<a href="#">Inflammation</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects depending on what inflammatory biomarker or cytokine is measured; practical significance unknown
	<a href="#">Lipid Peroxidation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to reduce biomarkers of lipid peroxidation (MDA mostly)
	<a href="#">Nerve Repair</a>	 Minor	- <a href="#">See study</a>	May increase nerve regeneration rates and be of aid to nervous system injury
	<a href="#">Protein Carbonyl Content</a>	 Minor	- <a href="#">See study</a>	Appears to reduce protein carbonylation, which may be related to the antioxidative effects
	<a href="#">Weight</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	It is possible that high doses (1,800mg) may have a body weight reducing effect in obese persons, but this requires more evidence.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	-	- <a href="#">See 2 studies</a>	Mixed effects on antioxidant enzymes, with decreases in glutathione peroxidase and increases in catalase with no effect on SOD
	<a href="#">Blood Glucose</a>		- <a href="#">See study</a>	A small decrease in blood glucose is noted with oral supplementation of ALA, related to the glucose disposal properties
	<a href="#">C-Reactive Protein</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Although there may be a reduction of C-Reactive protein in some populations, for the most part ALA does not seem significantly effective in reducing this inflammatory biomarker of cardiovascular disease
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant interaction between ALA and heart rate has been noted

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No significant influence on insulin sensitivity has been noted
	<a href="#">Motion Sickness</a>	-	- <a href="#">See study</a>	Insufficient evidence to support a reduction in motion sickness with ALA supplementation
	<a href="#">Symptoms of Rheumatoid Arthritis</a>	-	- <a href="#">See study</a>	No significant interaction between ALA supplementation and symptoms of rheumatoid arthritis
	<a href="#">Treatment of Dementia</a>	-	- <a href="#">See study</a>	No significant rehabilitative effect of ALA on cognitive decline has been noted
	<a href="#">Muscle Creatine Content</a>	 Minor	- <a href="#">See study</a>	Has been associated with augmenting <a href="#">creatinine</a> uptake into muscle cells acutely; long term influence unknown
	<a href="#">Oxidation of LDL</a>	 Minor	- <a href="#">See study</a>	Appeared to increase oxidation of LDL according to one study, which was abolished by exercise but noted to be a concern during rest.
	<a href="#">Skin Quality</a>	 Minor	- <a href="#">See study</a>	May improve skin quality when topically applied
	<a href="#">Glycemic Control</a>	-	- <a href="#">See study</a>	No significant practical benefit on glycemic control noted

Back to: [Supplements](#) | [Health Outcomes](#)



# Amaranth

*Also known as: Amaranthus*

---

Back to: [Supplements](#) | [Health Outcomes](#)

# Anacyclus pyrethrum

Also known as: Akarkara, Vajikaran Rasayana, Pellitory Root, Spanish Chamomile, pyrethrin

Other uses:

Anacyclus pyrethrum (Akarkara) is an aphrodisiac herb in ayurveda that is said to enhance male vitality and virility in addition to being a brain tonic. Evidence is preliminary, but it seems to be a profertility agent and testosterone boosting herb with some neuroprotective effects.

See [Anacyclus pyrethrum on Examine.com](#)

## How to Take

Studies in rats use a range of 50-150 mg/kg bodyweight Anacyclus pyrethrum roots (DC) daily, with all tested extracts (ethanolic, petroleum ether, water) appearing to be effective. This results in an estimated human dosage range of: 550-1,600 mg daily for a 150 lb person 700-2,200 mg daily for a 200 lb person 900-2,700 mg daily for a 250 lb person These are just estimates as to the effective range of the root extract in humans, since there is currently no human evidence to base recommendations on.

Back to: [Supplements](#) | [Health Outcomes](#)

# Anatabine






Also known as: Anatabloc (Brand Name)

Anatabine is an alkaloid compound found in tobacco and plants in the nightshade family, which includes eggplant and peppers. Anatabine possesses anti-inflammatory properties but further research is needed to determine if supplementation is practical.

See [Anatabine on Examine.com](#)

## How to Take

Animal research on anatabine used an oral dose of 12.5 – 20mg/kg of bodyweight in mice, for the purpose of autoimmune diseases. This suggests a preliminary human dose of: • 70-110 mg for a 150lb person • 90-150 mg for a 200lb person • 110-180 mg for a 250lb person These dosages are based on preliminary animal evidence, not human studies. Anatabine supplementation cannot be recommended at this time due to a lack of human evidence for its effects.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	6-12mg anatabine does not appear to significantly influence blood pressure in otherwise healthy persons.
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	There is no significant influence on heart rate seen with 6-12mg anatabine in otherwise healthy persons
	<a href="#">Muscle Damage</a>	-	- <a href="#">See study</a>	The progression of recovery after a novel workout (when measured over three days) was unaffected by 6-12mg anatabine
	<a href="#">Muscle Soreness</a>	-	- <a href="#">See study</a>	Perceived muscle soreness and pain from a workout was unaffected by anatabine supplementation.
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	Strength recovery over the course of three days recovery was not significantly improved by 6-12mg anatabine

# Andrographis paniculata













Also known as: Chiretta, King of Bitters, Kalmegh, Creat, Chuanxinlian, Yijianxi, Lanhelian, Indian Echinacea





Andrographis paniculata is an herb frequently used in traditional medicines to treat the common cold.

See [Andrographis paniculata on Examine.com](#)

## How to Take

The standard dose of Andrographis paniculata basic root extract is 2,000 – 6,000 mg. Andrographis paniculata root extract tends to have 1-2% andrographolide content, by weight, though up to 4% has been reported. Concentrated root extracts can have an andrographolide content of up to 30%. The standard dose for a concentrated extract is 200mg.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Length of Sickness</a>	 Notable	- <a href="#">See study</a>	Seems to be one of the few compounds able to reduce the length of sickness when taken at the first signs of sickness. The lack of a reference drug to compare Andrographis limits the strength of the evidence
	<a href="#">Severity of Sickness</a>	 Notable	- <a href="#">See study</a>	Seems to have more efficacy against nasal, ear, and throat symptoms of sickness. Lack of evidence and comparisons to reference drugs limits strong evidence
	<a href="#">Symptoms of Pharyngotonsillitis</a>	 Notable	- <a href="#">See study</a>	Potency of andrographis in this regard was comparable to Tylenol, the reference drug.
	<a href="#">Symptoms of Ulcerative Colitis</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be quite effective based on preliminary evidence, with one study being comparable to sustained release mesalazine in potency.
	<a href="#">Symptoms of Rheumatoid Arthritis</a>	 Minor	- <a href="#">See study</a>	Reductions in joint pain and swelling were somewhat minimal in magnitude
	<a href="#">Upper Respiratory Tract Infection Risk</a>	 Minor	- <a href="#">See study</a>	Appears to be better than placebo, although it is difficult to assess potency.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	Study was in persons with HIV, although the magnitude was of concern it needs to be replicated.
	<a href="#">CD4 Lymphocytes</a>	-	- <a href="#">See 2 studies</a>	Unclear effects on CD4+ lymphocytes at this moment in time
	<a href="#">Early Virologic Response</a>	-	- <a href="#">See study</a>	Insufficient evidence to support antiviral effects in HIV

Back to: [Supplements](#) | [Health Outcomes](#)









# Anethum graveolens






Also known as: *Dill*, *Lao coriander*, *Pakchee Lao*

Other uses:

Anethum graveolens (Dill) is a vegetable whose fruits (not commonly eaten) have traditionally been used for intestinal and feminine health. Preliminary trials on triglycerides fail to show promise, and most therapeutic usages are still unexplored.

See [Anethum graveolens on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum Platelets</a>	 Minor	- <a href="#">See study</a>	12 week supplementation of dill, yet not 8 weeks for some reason, was able to reduce blood platelet concentrations in obese persons with metabolic syndrome (600mg dill)
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	
	<a href="#">HDL-C</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	
	<a href="#">LDL-C</a>	-	- <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Triglycerides</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	
	<a href="#">White Blood Cell Count</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Angelica gigas

Also known as: *Dang Gui*, *Korean Dang Gui*, *Cham-Dang-Gui*

---

Angelica gigas is an herb used in traditional Korean medicine, usually by women. It is being studied for its potential anti-cancer and immune-boosting properties.

See [Angelica gigas on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)



# Aniracetam

Also known as: 1-p-anisoyl-2-pyrrolidinone, Ro 13-5057, CAS 72432-10-1, 1(4-methoxybenzoyl)-2-pyrrolidinone

Other uses:

Aniracetam is a fat-soluble molecule in the racetams family, anecdotally touted to be more potent than Piracetam and more catered to creativity and holistic thinking as well as reducing anxiety and depression. Human studies are lacking.

See [Aniracetam on Examine.com](#)

## How to Take

Doses between 10 mg/kg bodyweight and 100 mg/kg bodyweight have been used in rats with efficacy in laboratory settings. Limited human evidence finds that oral doses in the 1,000-1,500 mg range (over the course of a day) tend to be effective. Doses as low as 400 mg have been reported to have some efficacy, and it is common to take the above 1,000-1,500 mg aniracetam in two divided doses of 500-750 mg twice daily with meals. Aniracetam powder has a highly bitter taste, so capsules may be a better purchase for those who wish to avoid that.

Back to: [Supplements](#) | [Health Outcomes](#)

# Apigenin

Also known as: 4',5,7,-trihydroxyflavone,biapigenin (a dimer found in nature)

Other uses:

One of the bioflavonoids, apigenin appears to be catered towards reducing anxiety and causing sedation. Found in chamomile tea, alcoholic beverages, and Bacopa Monnieri, apigenin is unstable by itself yet stable when consumed via foods and herbs.

See [Apigenin on Examine.com](#)

## How to Take

For general health and well-being, doses found in multiple servings of fruits and vegetables is adequate. For anxiolytic effects, doses in the range of 3-10 mg/kg bodyweight are effective without sedation, and higher doses induce sedation in addition to reductions in anxiety.

Back to: [Supplements](#) | [Health Outcomes](#)

# Apocynum venetum

Also known as: *Luobuma, Dogbane, Chinese Dogbane, Herbal for Relief of Famines, Rafuma*

Apocynum venetum is a plant that potentially reduces blood pressure and depression after supplementation, though more evidence is needed to confirm these effects.

See [Apocynum venetum on Examine.com](#)

## How to Take

Further research is needed to determine the optimal dose for Apocynum venetum. Most of the benefits associated with Apocynum venetum occur in the rat dosing range of 25-100 mg/kg of bodyweight. This can be translated to the following estimated human doses: • 270-1,100 mg for a 150lb person • 360-1,400 mg for a 200lb person • 450-1,800 mg for a 250lb person Apocynum venetum is supplemented through a water extract of the leaves, which is also called tea. Apocynum venetum is a food product, since the dosages listed above are ideal for making tea, meaning non-tea supplementation is unnecessary.

Back to: [Supplements](#) | [Health Outcomes](#)

# Apple Cider Vinegar

Also known as: ACV








Other uses:



Apple cider vinegar may provide some health benefits when taken with meals, such as reducing glucose spikes and suppressing appetite. That being said, the magnitude of the benefits is unclear, and excessive vinegar consumption may damage the gastrointestinal tract.





See [Apple Cider Vinegar on Examine.com](#)

## How to Take

30 ml daily, spread out between meals.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	There's an inconsistent effect on blood sugar after meals, with the most plausible explanation being the baseline insulin sensitivity of the participants. Those with notable insulin resistance are more likely to see a reduction than those with good glucose clearance. One study looked at fasting levels and noted a benefit in people with type 2 diabetes while another didn't find a notable effect, but fasting levels were normal so this is unsurprising.
	<a href="#">Insulin</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	While some studies suggest a reduction in insulin after meals, many others don't, and it's not apparent if differences in insulin sensitivity can explain the changes. One study looked at fasting insulin and found a comparable reduction in the apple cider vinegar group as compared with the placebo group in type 2 diabetes patients. Another study looked at fasting insulin and found a small reduction in the low dose (15 ml) group but not the high dose group (30 ml).
	<a href="#">Appetite</a>	 Minor	- <a href="#">See study</a>	Subject ratings of appetite according to the Simplified Nutritional Appetite Questionnaire were reduced somewhat more in an apple cider vinegar group than a placebo group in one study. More research is needed, though spontaneous reductions in caloric intake are common in other studies., lending support to the idea of apple cider vinegar as an appetite-suppressant.
	<a href="#">Body Fat</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	One study on obese participants found a small reduction over 4 weeks with doses of 15 and 30 ml, but not a placebo. The greater reduction was seen in the 30 ml group While both apple cider vinegar groups reported a greater reduction in energy intake than the placebo group, the low-dose group reported the greatest reduction. It's important to note that these records can be inaccurate.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	 Minor	- <a href="#">See study</a>	One study noted a very slight increase in the apple cider vinegar group and a decrease in the placebo group. It's unclear why this was the case, and more studies are needed to verify.
	<a href="#">Lean Mass</a>	 Minor	- <a href="#">See study</a>	One study found a reduction in the apple cider vinegar group, though it's possible that the effect is due to a reduction in caloric intake and overall weight loss.
	<a href="#">Neuropeptide Y</a>	 Minor	- <a href="#">See study</a>	Somewhat of an increase in one study. Needs replication.
	<a href="#">Triglycerides</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	One study found a notable reduction in both 15 ml and 30 ml groups, but not for placebo, while another found a small increase. More research is needed to determine what can be expected from apple cider vinegar.
	<a href="#">Weight</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	One study in overweight participants found a reduction in both 15 and 30 ml groups, and none in the placebo group. The low dose group saw a reduction of 1.2 kg while the high dose group saw a reduction of 1.9 kg over the course of 4 weeks. While both apple cider vinegar groups reported a greater reduction in energy intake than the placebo group, the low-dose group reported the greatest reduction. It's important to note that these records can be inaccurate.
	<a href="#">Blood Pressure</a>	-	- <a href="#">See 2 studies</a>	While one study found a modest reduction with 30 ml (which was more effective than 15), another study failed to find a greater reduction with 20 ml than a placebo. Much more research is needed before knowing if and when apple cider vinegar may have a reliable effect on blood pressure.
	<a href="#">General Oxidation</a>	-	- <a href="#">See study</a>	One study didn't find a notable difference in malondialdehyde with 20 ml per day over 4 weeks, though the placebo group saw a considerable increase. Thus, even there the difference was statistically significant it's unclear if this is a genuine effect of apple cider vinegar. More studies are needed.
	<a href="#">Glycemic Control / Insulin Sensitivity</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	One study found a modest improvement only in the 15 ml group and not the 30 ml group, while another didn't note an effect. Much more research is needed to assess the effects of apple cider vinegar, and particularly independently of weight loss.
	<a href="#">HDL-C</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Two studies have failed to note a clear effect.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HbA1c</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	One study noted a small but statistically significant reduction in non-diabetics, while another didn't find a difference compared with placebo. Much more research, particularly in type 2 diabetics, is needed.
	<a href="#">Homocysteine</a>	-	- <a href="#">See study</a>	One study found a small reduction in the apple cider vinegar group but an increase in the control group. It's unclear if the difference is a genuine effect of apple cider vinegar.
	<a href="#">LDL-C</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No apparent meaningful effect in two studies.
	<a href="#">Total Cholesterol</a>	-	<b>Low</b> <a href="#">See all 3 studies</a>	Slightly greater reduction with 15 ml and 30 ml as compared with placebo in one study, while there was a slight, inconsequential increase in another.

Back to: [Supplements](#) | [Health Outcomes](#)






# Arachidonic acid


Arachidonic acid (AA) is a fatty acid of the omega-6 class, and is the main fatty acid of interest when referring to an omega-3:6 ratio (relative to fish oil fatty acids). It is proinflammatory and immunosuppressive.

See [Arachidonic acid on Examine.com](#)

## How to Take

There is currently insufficient evidence to recommend an ideal dose of arachidonic acid supplementation, but anecdotally it is used at the dosage of around 2,000 mg taken 45 minutes before a workout. It is uncertain if this is an optimal dose or whether the timing is required. It should also be noted that for persons with chronic inflammatory disorders, such as rheumatoid arthritis or inflammatory bowel diseases, that the ideal dose of arachidonic acid may actually be a dietary restriction thereof. In instances of inflammatory diseases, arachidonic acid supplementation is likely contraindicated.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	
	<a href="#">Power Output</a>	-	- <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)



# Arginine

Also known as: L-Arginine

Other uses:

L-Arginine is a conditionally essential amino acid. It is important for blood flow and nitric oxide levels, but oral supplementation may not reliably improve blood flow in humans.

See [Arginine on Examine.com](#)








## How to Take

The standard pre-workout dose for L-arginine is 3-6g. To maintain elevated arginine levels throughout the day, arginine can be taken up to three times a day, with a combined dose total of 15-18g. Note: L-Citrulline supplementation is more effective at maintaining elevated arginine levels for long periods of time. Taking more than 10g of arginine at once can result in gastrointestinal distress and diarrhea.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Flow</a>	 Minor	<b>Low</b> <a href="#">See all 6 studies</a>	May increase blood flow secondary to activating nitric oxide, but due to the unreliability of increasing nitric oxide there is also unreliability in how arginine increases blood flow
	<a href="#">Blood Pressure</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Arginine has been implicated in reducing blood pressure, but the degree of reduction does not appear to be too remarkable and it is unreliable in doing so
	<a href="#">Growth Hormone</a>	 Minor	- <a href="#">See all 5 studies</a>	Arginine has been implicated in increasing growth hormone (at rest) and suppressing an exercise-induced increase in growth hormone; both of these are short in duration, and it is unsure if there are any long lasting effects of such short a spike.
	<a href="#">Nitric Oxide</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Has been implicated in increasing nitric oxide formation in the body, but this does not appear to be a reliably occurring phenomena (despite arginine being required to make nitric oxide, it is not a good inducer thereof)
	<a href="#">Plasma Arginine</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Supplemental L-Arginine increases plasma L-Arginine. The spike in plasma L-arginine concentrations may be slightly more than that seen with L-citrulline, but the latter lasts longer and is thus more effective

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Asymmetric dimethylarginine (aka ADMA)</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Although there is some evidence for an increase in ADMA (a negative regulator of NOS that is derived from L-arginine), it does not appear to occur most of the time
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No significant influence on heart rate seen with supplemental L-Arginine
	<a href="#">Adiponectin</a>	 Minor	- <a href="#">See study</a>	At least in persons with impaired glucose tolerance, an increase in adiponectin (and the adiponectin:leptin ratio) has been noted with supplemental L-arginine
	<a href="#">Anaerobic Running Capacity</a>	 Minor	- <a href="#">See study</a>	May be able to increase anaerobic physical performance, but this is unreliable due to arginine not reliably increasing nitric oxide concentrations.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	- <a href="#">See study</a>	At least in persons with impaired glucose tolerance and/or type II diabetes, L-arginine appears to have an indirect antioxidant role and increase superoxide dismutase concentrations
	<a href="#">Endothelial Function</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Unreliable improvements in endothelial function, notably in persons with impaired glucose tolerance/type II diabetes, associated with the supposed increase in nitric oxide
	<a href="#">Endothelin-1</a>	 Minor	- <a href="#">See study</a>	A decrease in concentrations of endothelin-1 has been noted with supplemental L-arginine
	<a href="#">Fat Mass</a>	 Minor	- <a href="#">See study</a>	A slight reduction in fat mass has been noted with long-term usage in persons with impaired glucose tolerance. No evidence supports the usage of arginine as a fat burner in otherwise healthy persons
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in oxidation has been noted in persons with impaired glucose tolerance, thought to be associated with the increase in superoxide dismutase activity
	<a href="#">Insulin Secretion</a>	 Minor	- <a href="#">See study</a>	An increase in insulin secretion has been noted with arginine supplementation. This is both due to arginine being a secretagogue (when used acutely), and prolonged usage in those with impaired glucose tolerance may regenerate pancreatic beta-cells

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	An increase in insulin sensitivity has been noted in persons with impaired glucose tolerance using arginine for long periods of time; this is thought to be secondary to increased pancreatic function
	<a href="#">Lean Mass</a>	 Minor	- <a href="#">See study</a>	An increase in lean mass has been noted in persons with impaired glucose tolerance using L-arginine over a long period of time, where placebo experienced a decrease. It is unsure how this applies to otherwise healthy persons
	<a href="#">Oxygenation Cost of Exercise</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	When nitric oxide is increased, the oxygenation cost of exercise appears to be decreased. This is unreliable with supplemental L-arginine as arginine is unreliable in increasing nitric oxide
	<a href="#">Symptoms of Intermittent Claudication</a>	 Minor	- <a href="#">See 2 studies</a>	Both an improvement and an impairment have been noted on walking distance in persons with intermitten claudication, and it is not exactly known why this occurs (may be related to time, with prolonged usage being impairing)
	<a href="#">Ammonia</a>	-	- <a href="#">See study</a>	Although it is plausible that arginine could decrease ammonia (secondary to ornithine), it does not appear to reliably occur
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fasting blood glucose concentrations even in persons with impaired glucose tolerance
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant influence on circulating cortisol concentrations
	<a href="#">Glucagon</a>	-	- <a href="#">See study</a>	Does not appear to significantly influence circulating glucagon concentrations
	<a href="#">HbA1c</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on HbA1c concentrations in persons with impaired glucose tolerance, even when endothelial function is improved
	<a href="#">Lactate Production</a>	-	- <a href="#">See study</a>	No significant influence on lactate production associated with L-arginine supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Plasma Nitrate</a>	-	- <a href="#">See study</a>	There does not appear to be a reliable increase in plasma nitrate seen with arginine supplementation
	<a href="#">Power Output</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on power output
	<a href="#">Subjective Well-Being</a>	-	- <a href="#">See study</a>	In persons with peripheral artery disease (intermittent claudication), despite improving symptoms as assessed by a treadmill walking test there does not appear to be an improvement in self-reported well being
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No significant influence on circulating testosterone concentrations
	<a href="#">Urea</a>	-	- <a href="#">See study</a>	Although it is theoretically plausible that arginine can increase urea concentrations (secondary to the actions of ornithine), it does not appear to reliably occur
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence on <i>fasting</i> insulin concentrations associated with arginine supplementation
	<a href="#">Somatomedin A</a>	-	- <a href="#">See study</a>	No significant effect of arginine on somatomedin A concentrations

Back to: [Supplements](#) | [Health Outcomes](#)

# Aronia melanocarpa













Also known as: Chokeberry, Black Apple Berry, RowanBerry (hybrids with Aronia), Aronox (Brand Name)

Aronia melanocarpa, commonly known as the black chokeberry, is a sour berry with a high anthocyanin and anti-oxidant content. It is being researched for its potential health benefits.

See [Aronia melanocarpa on Examine.com](#)

## How to Take

Approximately 200 mL of unsweetened black chokeberry juice or 300 mg of a black chokeberry extract have been shown to provide benefits following supplementation. The benefits of this dose and supplement is comparable to the effects associated with the recommended dosage of blueberry supplementation. Aronia melanocarpa should be supplemented daily.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">General Oxidation</a>	 Notable	- <a href="#">See study</a>	Requires more evidence, but it appears to reduce oxidative parameters more than other supplements.
	<a href="#">Lipid Peroxidation</a>	 Notable	- <a href="#">See study</a>	Definitely requires more evidence, but appears to be fairly effective at reducing lipid peroxidation and other oxidative parameters (lone study noting a 40% reduction with aronia)
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	Requires more studies before conclusions can be made, appears to simply be exerting anti-oxidant effects.
	<a href="#">HbA1c</a>	 Minor	- <a href="#">See study</a>	Requires more studies before conclusions can be made, appears to simply be exerting anti-oxidant effects.
	<a href="#">Total Cholesterol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Requires more studies before conclusions can be made, appears to simply be exerting anti-oxidant effects.
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	Requires more studies before conclusions can be made, appears to simply be exerting anti-oxidant effects.



# Artemisia iwayomogi

Also known as: *Haninjin*, *Mugwort* (refers to the family of *Artemisia*)

Artemisia iwayomogi (Haninjin) has limited traditional use, but as of late is being investigated for anti-cancer properties. At least one study suggests possible fat-burning effects, and immune-system interactions may be present.

See [Artemisia iwayomogi on Examine.com](#)

## How to Take

There is insufficient evidence for a recommended dose for human consumption of Artemisia iwayomogi, although rat studies have used 200 mg/kg of a 95% ethanolic extract for bioactivities. Assuming this dose, the estimated human doses are 32 mg/kg, or: 2,200 mg for a 150 lb person 2,900 mg for a 200 lb person 3,600 mg for a 250 lb person Optimal dosing times (once daily or multiple doses) or whether this herb needs to be taken with a meal or not is currently not known.

Back to: [Supplements](#) | [Health Outcomes](#)

# Artichoke Extract









Also known as: *Artichoke*

Artichoke Extract (*Cynara scolymus*) is an extract from the common bulb vegetable that appears to have the ability to stimulate bile secretion; this may underlie a weak reduction in cholesterol and improved fat digestion.






See [Artichoke Extract on Examine.com](#)

## How to Take

A few doses have been used in human studies, including 6,000 mg of the basic extract (no concentrations) and also a 25-35:1 concentrated extract dosed at 1,800 mg. Both of these doses showed bioactivity, but there is no clear indication of which is the optimal dosage. It is unclear whether artichoke extract needs to be taken alongside a meal or not.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Nothing remarkable about the reductions in LDL-C, seem to occur somewhat reliably and are minor in magnitude
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	More evidence is required to establish the potency of the hepatoprotective effects (with liver enzymes as a biomarker)
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Despite its traditional usage, the decreases in cholesterol are not remarkable and are quite small in magnitude.
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There is still a possibility that artichoke extract is able to aid the blood glucose of diabetics, but currently the best evidence does not support this conclusion
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	There does not appear to be an inherent effect of Artichoke on HDL-C, although the one study in diabetics suggest that HDL-C might increase when glucose is decreased.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	The two better controlled trials noted no change, whereas a decrease and increase has been noted otherwise. Unclear overall effects on triglycerides
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See study</a>	The increase in blood flow was relatively minor in magnitude, possibly related to antioxidant effects.
	<a href="#">Cell Adhesion Factors</a>	 Minor	- <a href="#">See study</a>	ICAM-1 and VCAM-1 decreased, not to a remarkable degree that would be indicative of immunosuppression.

Back to: [Supplements](#) | [Health Outcomes](#)

# Ascophyllum nodosum

Also known as: *Kelp (one of many species), Egg Wrack, Rockweed*




Other uses:

Ascophyllum nodosum is a species of seaweed. It is being investigated for its immunostimulatory properties and it may inhibit carbohydrate absorption after supplementation.

See [Ascophyllum nodosum on Examine.com](#)

## How to Take

Human studies investigating Ascophyllum nodosum use 4,600 mg of Ascophyllum nodosum extract added to a food product, taken once per day. More research is needed to determine if this is the optimal dose of Ascophyllum nodosum. Different extract concentrates have not been tested.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Food Intake</a>	 Minor	- <a href="#">See study</a>	The reduction in voluntary food intake noted was 16.4% of a test meal (which was 80kcal in this study) and is not likely to make significant effects during weight loss.
	<a href="#">Appetite</a>	-	- <a href="#">See study</a>	The noted reduction in food intake was not associated with decreased appetite.

Back to: [Supplements](#) | [Health Outcomes](#)

# Ashwagandha

Also known as: *Withania Somnifera*, Indian Ginseng, Smell of Horse, Winter Cherry, Dunal, Solanaceae











Other uses:

Ashwagandha has been called the king of Ayurvedic herbs. Limited research suggests that it works well for reducing stress and anxiety. It may also modestly enhance strength performance, improve glucose metabolism, and increase testosterone levels, but more research is needed to confirm this.



See [Ashwagandha on Examine.com](#)












## How to Take

Take 300–500 mg of a root extract with meals (with breakfast, if taken all at once). More research is needed to determine if higher doses can yield greater benefits. Lower doses (50–100 mg) have been shown to help in some instances, such as reducing stress-induced immunosuppression and enhancing the effect of other anxiolytic agents.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anxiety</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	Evidence suggests potent anxiolytic effects <i>in the context of</i> chronic stress and anxiety disorder, with lesser potency in standard forms of anxiety not related to stress. There may be more benefit to social anxiety as well with Ashwagandha relative to other anxiolytics. More high-quality studies are needed to get an accurate assessment of how effective it is and the optimal dose.
	<a href="#">Testosterone</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Testosterone may be increased in infertile men (who have a reduction in testosterone) and men undergoing strength training, but there is currently no evidence to suggest an inherent testosterone boosting effect in otherwise normal men.
	<a href="#">Cortisol</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	The decrease in cortisol noted in humans has reached 14.5-27.9% in otherwise healthy but stressed humans, which is significantly larger than many other supplements.
	<a href="#">Power Output</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Improvements in power output have been noted in trained persons subject to a sprint test and in sedentary persons who simply took the supplement as well as untrained people who began strength training.
	<a href="#">Stress</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Ashwagandha appears to significantly reduce the symptoms of stress and its comorbidities (fatigue, temporary cognitive impairment, etc.) as well as biomarkers such as cortisol.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	 Notable	<b>High</b> <a href="#">See all 4 studies</a>	There is a decrease in total cholesterol of around 10% when ashwagandha (water extract of the roots) is ingested. It is notable, however, since this appears to occur in all persons regardless of whether they have high cholesterol or not
	<a href="#">Anaerobic Running Capacity</a>	 Minor	- <a href="#">See study</a>	Supplementation of 500mg of the water extract has been noted to improve intermittent sprint performance in otherwise untrained persons then subject to a training protocol.
	<a href="#">Blood Glucose</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A small decrease in blood glucose has been noted with ashwagandha, but evidence for people with type 2 diabetes is lacking.
	<a href="#">Depression</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Antidepressive effects have been found with ashwagandha, although they are less notable than the anti-anxiety effects. They may be mediated by similar mechanisms.
	<a href="#">Fatigue</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Secondary to its adaptogenic effects, ashwagandha is able to reduce the perceptions of fatigue with prolonged daily usage.
	<a href="#">Follicle-Stimulating Hormone</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Not overly notable, but a decrease has reached statistical significance
	<a href="#">LDL-C</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	A slight decrease in LDL-C has been noted following ashwagandha supplementation.
	<a href="#">Luteinizing Hormone</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	An increase in luteinizing hormone has been detected with ashwagandha supplementation.
	<a href="#">Motivation</a>	 Minor	- <a href="#">See study</a>	An increase in motivation has been noted to occur in a study where anxiety was reduced; it is not sure if this is a <b>per se</b> effect of supplementation or due to reducing anxiety.
	<a href="#">Seminal Motility</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Alongside improvements in all seminal parameters, ashwagandha is able to increase seminal motility as well; both are thought to underlie pro-fertility effects.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Social Functioning</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Social dysfunction is reduced in anxious humans given ashwagandha, and animal studies suggest that this enhancement of socialization is a <b>per se</b> effect of supplementation.
	<a href="#">Sperm Quality</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Appears to enhance seminal quality (in a fairly general sense) but needs more studies against reference drugs to properly assess potency.
	<a href="#">Subjective Well-Being</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	An improvement in well being has been noted secondary to reducing anxiety symptoms.
	<a href="#">Triglycerides</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	The best evidence at this point in time suggests a slight decrease in triglycerides seen with Ashwagandha supplementation, although it does not appear to extend to persons with normal triglyceride levels but occurs in those with metabolic impairments.
	<a href="#">VO2 Max</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	A slight increase in VO2 max has been detected in otherwise untrained persons and in elite cyclists.
	<a href="#">Weight</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A decrease has been noted in one study where overweight persons with anxiety were being treated, and while the 1-2kg loss over 8 weeks was significant it is not sure if this applies to otherwise normal weight non-anxious persons.
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	A small decrease in systolic and diastolic blood pressure has been noted in one study, but the evidence is very inconsistent and limited to people without hypertension.
	<a href="#">Erections</a>	-	- <a href="#">See study</a>	Supplementation of 2,000mg of Ashwagandha thrice daily in men with psychogenic erectile dysfunction failed to exert any benefits more than placebo.
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	A fairly notable increase in HDL-C has been reported with ashwagandha supplementation (17.3% over 60 days), however, the evidence is inconsistent and inadequate overall.
	<a href="#">C-Reactive Protein</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Studies suggest a notable reduction that is probably dose-dependent. Note that research for this purpose currently is exclusively funded by industry.






LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dry Mouth</a>	 Notable	- <a href="#">See study</a>	A notable reduction in anxiety-associated dry mouth has been noted in one industry-funded study, which needs to be replicated.
	<a href="#">Heart Palpitations</a>	 Notable	- <a href="#">See study</a>	Possible reduction in anxiety-associated palpitations in one industry-funded study. Needs to be replicated.
	<a href="#">Irritability</a>	 Notable	- <a href="#">See study</a>	Reduction in one industry-funded study of chronically stressed people. Needs to be replicated.
	<a href="#">Serum T3</a>	 Notable	- <a href="#">See study</a>	There was a notable increase in people with subclinical hypothyroidism in one study that used 600 mg of a standardized extract (5% withanolides) for 8 weeks.
	<a href="#">Serum T4</a>	 Notable	- <a href="#">See study</a>	There was a notable increase in people with subclinical hypothyroidism in one study that used 600 mg of a standardized extract (5% withanolides) for 8 weeks.
	<a href="#">Sexual Function</a>	 Notable	- <a href="#">See study</a>	In one pilot study, ashwagandha supplementation improved ratings of pain, lubrication, orgasm, satisfaction, arousal, and the total score on the Female Sexual Function Index.
	<a href="#">Symptoms of OCD</a>	 Notable	- <a href="#">See study</a>	A reduction has been found in one study, which needs replication.
	<a href="#">Symptoms of Osteoarthritis</a>	 Notable	- <a href="#">See study</a>	In one study in people with knee joint pain, both 250 and 500 mg of a standardized extract (10% withanolide glycosides minimum) seemed to improve pain, physical function, stiffness, and swelling notably, with the 500 mg dose being more effective. Much more research is needed.
	<a href="#">Thyroid-Stimulating Hormone</a>	 Notable	- <a href="#">See study</a>	There was a notable reduction in one study where patients with subclinical hypothyroidism took 600 mg of a standardized extract (5% withanolides) for 8 weeks. More research is needed.
	<a href="#">Aerobic Exercise</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to increase time to exhaustion on a treadmill test when given to athletes; the increase in endurance is mild but present. It has also been observed to slightly improve performance in long-distance running in untrained but athletic subjects.








LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alertness</a>	 Minor	- <a href="#">See study</a>	One small study noted a possible effect with 1,00 mg of an ashwagandha daily for 14 days.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	- <a href="#">See study</a>	One study noted a modest increase in superoxide dismutase in healthy participants.
	<a href="#">Attention</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Studies suggest an improvement in people cognitive impairment or bipolar disorder with the use of ashwagandha root extract.
	<a href="#">Cognition</a>	 Minor	- <a href="#">See study</a>	Reaction time on various cognitive tests was improved in people taking 1,000 mg of an ashwagandha extract, but accuracy wasn't.
	<a href="#">Diuresis</a>	 Minor	- <a href="#">See study</a>	May have diuretic effects, although not to a remarkable degree.
	<a href="#">Executive Function</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Possible improvement in a couple of studies that administered cognitive tests, though not all studies found an effect.
	<a href="#">Exercise Capacity</a>	 Minor	- <a href="#">See study</a>	One study found an increase in the number of benchpress repetitions healthy subjects could do, but the placebo group saw a greater improvement in the number of weighted squats.
	<a href="#">Fat Mass</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There was a trend to reduce fat mass over 30 days when supplemented to otherwise healthy people, but this failed to reach statistical significance. In untrained persons doing strength training, it may improve fat loss, however.
	<a href="#">Heart Rate</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A slight reduction in pulse rate has been noted in otherwise healthy but anxious persons in one study, but not another.
	<a href="#">Immunity</a>	 Minor	- <a href="#">See study</a>	Minor T-cell activation following ingestion of Ashwagandha tinctures, needs to be replicated.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insomnia</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Self-reports of insomnia have been reduced with supplementation of ashwagandha in women undergoing chemotherapy, people with anxiety disorders, and chronically stressed people.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	One study noted a modest reduction in malondialdehyde levels in healthy people. More research is needed.
	<a href="#">Memory</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Multiple studies have noted an improvement on cognitive tests. Results are limited to people with cognitive impairment, anxiety, and bipolar disorder, and it's unclear if ashwagandha improves the memory of normal people.
	<a href="#">Motor Control</a>	 Minor	- <a href="#">See study</a>	Improvement in one study in healthy people. Needs to be replicated.
	<a href="#">Muscle Damage</a>	 Minor	- <a href="#">See study</a>	Improved exercise-induced muscle damage/recovery in untrained people as measured by plasma creatine kinase levels
	<a href="#">Natural Killer Cell Activity</a>	 Minor	- <a href="#">See study</a>	A slight increase in natural killer cell activity has been noted with ashwagandha supplementation.
	<a href="#">Pain</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in pain has been noted with supplementation of ashwagandha root during chemotherapy and in osteoarthritis.
	<a href="#">Processing Speed</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Studies in healthy people and people with bipolar disorder have found increases, but not in accuracy.
	<a href="#">Quality of Life</a>	 Minor	- <a href="#">See study</a>	In one study in healthy, active adults, quality of life on the WHO-QOL scale was improved for physical function, psychological health, social relationships, and environmental factors.
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See study</a>	An improvement has been noted in a small study in healthy people. The results need replication.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum Albumin</a>	 Minor	- <a href="#">See study</a>	One study found a small, statistically reduction in healthy, active participants. More research is needed.
	<a href="#">Serum DHEA</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A slight increase has been detected in serum DHEA sulfate (13.2%) with 60 days of ashwagandha supplementation.
	<a href="#">Spatial Processing</a>	 Minor	- <a href="#">See study</a>	An improvement has been noted in one study in people with cognitive impairment.
	<a href="#">Sperm Count</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be an increase in sperm count in normozoospermic men with infertility consuming 5g ashwagandha daily, with more potency seen in men who self-identify as stressed. A high potency extract has also shown increases
	<a href="#">Symptoms of Bipolar Disorder</a>	 Minor	- <a href="#">See study</a>	A modest reduction compared with placebo has been noted in one study which needs to be replicated.
	<a href="#">Symptoms of Schizophrenia</a>	 Minor	- <a href="#">See study</a>	One study found an improvement but needs to be replicated.
	<a href="#">White Blood Cell Count</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	During toxicology testing in otherwise healthy persons, there was no significant alterations in white blood cell count seen with supplementation. However, another study found a statistically significant increase in healthy, active participants.
	<a href="#">Working Memory</a>	 Minor	- <a href="#">See study</a>	A possible small effect has been noted in one study in people with cognitive impairment but needs to be replicated.
		-	- <a href="#">See study</a>	
	<a href="#">Body Fat</a>	 Minor	- <a href="#">See study</a>	In one study, body fat percentage was reduced by 0.6% after 12 weeks in a mixed-weight group. The placebo group so no notable change. Weight loss wasn't the focus of the study and more studies are needed.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Body Temperature</a>	-	- <a href="#">See study</a>	No apparent effect in one 8-week study.
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	No apparent effect in one study of healthy participants.
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No apparent effect of ashwagandha on estradiol in aging, overweight men in one study.
	<a href="#">Fat Oxidation</a>	-	- <a href="#">See study</a>	Despite improvements seen in VO2 max and endurance capacities in this study, the respiratory exchange ratio (indicative of fat oxidation) was not significantly influenced.
	<a href="#">Hematocrit</a>	↓↓↓	- <a href="#">See study</a>	A possible small decrease in one study in healthy, active participants. More research is needed.
	<a href="#">Hemoglobin</a>	↑↑↑	<b>Moderate</b> <a href="#">See 2 studies</a>	A slight but significant 6.3% increase in hemoglobin has been detected in otherwise healthy persons given ashwagandha daily for a period of 60 days. However, another study found a slight decrease in healthy subjects after 12 weeks.
	<a href="#">Interleukin 6</a>	-	- <a href="#">See study</a>	No apparent effect in schizophrenia patients in one study.
	<a href="#">Lean Mass</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There was a slight trend to increase lean mass in otherwise sedentary persons over 30 days, but it failed to reach statistical significance.
	<a href="#">Liver Enzymes</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In otherwise healthy persons, there is no significant influence on liver enzymes seen with supplementation.
	<a href="#">Muscle Soreness</a>	-	- <a href="#">See study</a>	500 mg of a potent extract failed to reduce muscle soreness in healthy, recreationally active participants. These results can't be extrapolated to people with highly sore muscles or people undergoing intense physical exercise.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Processing Accuracy</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	One study in people with bipolar disorder failed to find an effect and so did one study in healthy people, despite an increase in processing speed.
	<a href="#">Pulse Rate</a>	-	- <a href="#">See study</a>	No apparent effect in people with schizophrenia.
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	Despite alterations in power output seen, the rate of perceived exertion in otherwise sedentary persons is not affected.
	<a href="#">Red Blood Cell Count</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Supplementation with the water extract of the roots for 30 days in otherwise healthy persons did not significantly influence red blood cell count. Another study found no change in the ashwagandha group but a slight increase in the placebo group when ashwagandha was given to healthy, active adults.
	<a href="#">Serum Platelets</a>	-	- <a href="#">See study</a>	There is no significant change in total platelet count seen with 30 days supplementation of the basic root extract in otherwise healthy persons
	<a href="#">Urea</a>	-	- <a href="#">See study</a>	No apparent effect in one study in healthy, active participants taking 500 mg of a potent extract.
	<a href="#">vLDL-C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	A reduction has been noted in one industry-funded study when 250 mg or 500 mg of an extract was used. Another study in healthy, active participants found no change.

Back to: [Supplements](#) | [Health Outcomes](#)

# Asparagus racemosus

Also known as: *Asparagus*, *Asparagus Extract*, *Shatavari*

Asparagus racemosus is an herb used in Ayurveda medicine. It is not the commonly consumed vegetable, but it is a related plant.

See [Asparagus racemosus on Examine.com](#)

## How to Take

Rat studies using the root of *Asparagus racemosus* (Note: this is not the vegetable commonly called asparagus) use doses in the 100-200mg/kg of bodyweight range. This translates to an estimated human dose of 16-32 mg/kg of bodyweight, or: • 1,100-2,200 mg for a 150lb person • 1,400-2,900 mg for a 200lb person • 1,800-3,600 mg for a 250lb person The dosage ranges above are based on rat studies. There have not been any human studies done on *Asparagus racemosus*, so the optimal human dosage is unknown.

Back to: [Supplements](#) | [Health Outcomes](#)

# Astaxanthin

Also known as: *Cardax (Disodium Disuccinate Astaxanthin), 3,3'-dihydroxy-b,b-carotene-4,4'-dione*






Other uses:

Astaxanthin is an aquatic carotenoid like fucoxanthin, but is the red pigment in salmon and krill; the most stable of all carotenoids and touted to aid in eye health and inflammation. Limited human evidence, but it appears to be a better carotenoid than the more researched lutein and zeaxanthin.

See [Astaxanthin on Examine.com](#)

## How to Take

Astaxanthin appears to be recommended in the dosage range of 6-8mg daily, which is low enough that an enriched salmon oil or krill oil supplement may contain adequate levels. Doses of up to 20-50mg astaxanthin have been tolerated, although the exact toxicity and upper limit is not known. Despite the above recommendations, the ideal dose of astaxanthin is currently not known. Due to being a carotenoid, and related to the metabolism of Vitamin A (a fat soluble vitamin) it would be prudent to take astaxanthin alongside a meal.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">General Oxidation</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">HDL-C</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">LDL-C</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Lipid Peroxidation</a>	-	- <a href="#">See all 4 studies</a>	



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">Triglycerides</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">Weight</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Adiponectin</a>	-	- <a href="#">See study</a>	
	<a href="#">Aerobic Exercise</a>	-	- <a href="#">See study</a>	
	<a href="#">Anti-Oxidant Enzyme Profile</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Apolipoprotein A</a>	-	- <a href="#">See study</a>	
	<a href="#">Apolipoprotein B</a>	-	- <a href="#">See study</a>	
	<a href="#">Bilirubin</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	
	<a href="#">Ejaculate Volume</a>	-	- <a href="#">See study</a>	
	<a href="#">Exercise-Induced Oxidation</a>	-	- <a href="#">See study</a>	
	<a href="#">Fat Oxidation</a>	-	- <a href="#">See study</a>	
	<a href="#">Fatigue Resistance</a>	-	- <a href="#">See study</a>	
	<a href="#">Fertility</a>	-	- <a href="#">See study</a>	
	<a href="#">Follicle-Stimulating Hormone</a>	-	- <a href="#">See study</a>	
	<a href="#">HbA1c</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hematocrit</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Inhibin B</a>	-	- <a href="#">See study</a>	
	<a href="#">Intraocular Pressure</a>	-	- <a href="#">See study</a>	
	<a href="#">Kidney Function</a>	-	- <a href="#">See study</a>	
	<a href="#">Lactate Production</a>	-	- <a href="#">See study</a>	
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Muscle Damage</a>	-	- <a href="#">See study</a>	
	<a href="#">Ocular Blood Flow</a>	-	- <a href="#">See study</a>	
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	
	<a href="#">Red Blood Cell Count</a>	-	- <a href="#">See study</a>	



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Seminal Motility</a>	-	- <a href="#">See study</a>	
	<a href="#">Serum Albumin</a>	-	- <a href="#">See study</a>	
	<a href="#">Serum Platelets</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Skin Elasticity</a>	-	- <a href="#">See study</a>	
	<a href="#">Skin Moisture</a>	-	- <a href="#">See study</a>	
	<a href="#">Skin Quality</a>	-	- <a href="#">See study</a>	
	<a href="#">Sperm Count</a>	-	- <a href="#">See study</a>	
	<a href="#">Sperm Quality</a>	-	- <a href="#">See study</a>	
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	
	<a href="#">Training Volume</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Urea</a>	-	- <a href="#">See study</a>	
	<a href="#">White Blood Cell Count</a>	-	- <a href="#">See 2 studies</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Asteracantha longifolia



Also known as: *Hygrophila longifolia*, *Barleria auriculata*, *Barleria spinosa*, *Ikshura*, *Ikshugandha*, *Hygrophila spinosa*, *Hygrophila auriculata*, *Kokilaaksha*, *Talimakhana*, *gokulakanta*, *marsh barbel*

Asteracantha longifolia (Kokilaaksha) is an ayurvedic aphrodisiac and liver protective agent. Currently, research on this plant is preliminary with limited information on both components of the plant and toxicology.

See [Asteracantha longifolia on Examine.com](#)

## How to Take

There is currently not enough information available at this moment in time to recommend an oral dose of any medicinal component of this herb.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	Appears to reduce the spike and overall exposure to glucose following an oral glucose tolerance test in both healthy and diabetic adults

Back to: [Supplements](#) | [Health Outcomes](#)

# Astragalus membranaceus

Also known as: *Astragalus*, *huangqi*, (A component of) *Danggui buxue tang* (DBT), *membranous milk-vetch root*, *ogi*, *Huang Qi*, TA-65, TAT2









Other uses:



Astragalus membranaceus is one of the fifty fundamental herbs in traditional Chinese medicine. It is used for a variety of purposes and supposedly increases lifespan. It has anti-inflammatory effects and is especially beneficial for the kidneys.

See [Astragalus membranaceus on Examine.com](#)

## How to Take

Astragalus membranaceus and Angelicae Sinensis are highly synergistic, meaning they are more powerful when taken together. This combination is traditionally called Dang-gui buxue tang. The starting point for the preparation of Dang-gui buxue tang in traditional Chinese medicine is 30g of Astragalus membranaceus root paired with 6g of Angelicae sinensis. This is a 5:1 ratio, which is ideal for extracting the bioactive ingredients of the plants. Astragalus membranaceus can also be supplemented via a root extract. Due to potential differences in the quality/efficiency of the extraction process among different commercial manufacturers, product label recommendations for dosage should be followed and you should consult with your pharmacist or personal physician before taking. The main bioactive compound in Astragalus membranaceus is astragaloside IV, which can be supplemented by itself. The standard dose for astragaloside IV is 5-10mg.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Immunity</a>	 Notable	- <a href="#">See study</a>	Appears to activate T-cells to a degree higher than the reference drug echinacea
	<a href="#">Diuresis</a>	 Minor	- <a href="#">See study</a>	Astragalus root appears to have diuretic properties with oral ingestion (0.3g/kg) in otherwise healthy persons.
	<a href="#">Nasal Congestion</a>	 Minor	- <a href="#">See study</a>	Not an overly potent reduction of nasal congestion and other rhinitis symptoms, but more than placebo.
	<a href="#">Stroke Recovery Rate</a>	 Minor	- <a href="#">See study</a>	Not remarkably effective, but does confer some protective and cognitive promoting effects following acute stroke.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Kidney Function</a>	 Notable	- <a href="#">See study</a>	Despite statistically weak evidence, case studies suggest <i>curative</i> effects. Potential of astragalus for aiding kidney function.

Back to: [Supplements](#) | [Health Outcomes](#)

# BPC-157

Also known as: PL 14736, PL-10, Bepecin

Other uses:

BPC-157 is a synthetic peptide that is being investigated for its regenerative effects. It shows high efficacy for rats suffering toxic or surgical trauma, but there is currently no evidence that it provides benefits for people.

See [BPC-157 on Examine.com](#)

## How to Take

The closest possible recommended dose is based on rat studies where oral administration showed benefit, as most studies administer the supplement via injection. The oral dose that was effective in rats, 10 µg/kg, is estimated to be equivalent to 1.6 µg/kg, or: 110 µg for a 150lb person 145 µg for a 200lb person 180 µg for a 250lb person There are currently no human pharmacokinetic studies to assess species differences.

Back to: [Supplements](#) | [Health Outcomes](#)

# Bacopa monnieri

Also known as: *Brahmi*, *Aindri*, *Lysimachia monnieri* L. Cent., *Graticola monnieri* L., *Herpestis monniera* L. Kunth., *Water hyssop*, *Thyme-leafed gratiola*, *Indian Pennywort*, *Jalabrahmi*










Other uses:



Bacopa monnieri is a nootropic herb that has been used in traditional medicine for longevity and cognitive enhancement. Supplementation can reduce anxiety and improve memory formation.

See [Bacopa monnieri on Examine.com](#)

## How to Take

The standard dose for Bacopa monnieri is 300mg, assuming that the total bacoside content (the active compound) is 55% of the extract, by weight. Bacopa monnieri can also be supplemented in a leaf or powder form. To achieve the ideal 10-20% of bacoside content requires a dose of 750-1,500mg of the leaf or powder. Historically, Bacopa monnieri was consumed with ghee, a clarified butter that originated in India. Since Bacopa monnieri is fat soluble and requires a lipid transporter to be absorbed, it should be supplemented alongside a meal.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Memory</a>	 Notable	<b>High</b> <a href="#">See all 8 studies</a>	Although general and requiring a long time to take effect (4-6 weeks), bacopa appears to reliably and effectively improve memory in both healthy persons and during cognitive decline
	<a href="#">Attention</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	There is unlikely to be an inherent effect of bacopa on attention, although at least one study noted improvements in attention in persons with attention deficit (ADD).
	<a href="#">Anxiety</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to prevent rises in anxiety, and does not appear to unilaterally reduce anxiety. May be more of a modulator than anything, but doesn't appear overly potent
	<a href="#">Depression</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An anti-depressive effect has been noted, but to a relatively small magnitude. Requires more context-based evidence
	<a href="#">Forgetting</a>	 Minor	- <a href="#">See study</a>	A small reduction of acute forgetting (just during a task, not outright amnesia) has been noted, which may contribute better to long term memory (ie. grasping concepts better)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure has been noted with chronic bacopa ingestion
	<a href="#">Cognition</a>	-	- <a href="#">See study</a>	No significant influences noted on acute cognitive performance with bacopa monnieri ingestion

Back to: [Supplements](#) | [Health Outcomes](#)



# Banaba Leaf



Also known as: *Crape Myrtle*, *Crepe Myrtle*, *Lagerstroemia*, *Banaba*

Lagerstroemia, also known as Banaba, is a plant whose leaves have been used for anti-diabetic purposes. It contains a variety of molecules such as corosolic acid which may confer benefit to glucose control.

See [Banaba Leaf on Examine.com](#)

## How to Take

An oral supplement of 3,000mg of the leaf extract from Banaba appears to be used with efficacy. Other Banaba supplements may have concentrated supplements which increase the corosolic acid content, in which a 2:1 extract of 1,500mg would be equivalent to the 3,000mg leaf extract. Although the above dose is currently recommended, it is not known if this is the optimal dose or not. Furthermore, it is not known whether or not this supplement needs to be taken with meals (although it is recommended out of prudence for the purposes of helping glucose tolerance to take it with meals).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Notable	- <a href="#">See study</a>	The reduction in blood glucose appeared to range from 20-30%, which is more than usually seen with dietary supplements.

Back to: [Supplements](#) | [Health Outcomes](#)

# Basella alba

*Also known as: Indian Spinach, Malabar spinach, Red vine spinach, Creeping Spinach*

*Other uses:*

---

Basella Alba is a herb used commonly alongside Hibiscus macranthus for the purpose of fertility. The combination has been found to increase testosterone in rats, and Basella appears to be more active in this regard.

See [Basella alba on Examine.com](#)

## How to Take

Currently, not enough information is available to estimate human doses of Basella Alba.

Back to: [Supplements](#) | [Health Outcomes](#)

# Beet Root

Also known as: *Beetroot juice, Beet, Beetroot, beetroot*

Other uses:

Beet root (usually as juice) is a supplement with a high nitrate content that is said to improve physical performance secondary to nitric oxide. It appears to have some evidence for this claim in healthy athletes.

See [Beet Root on Examine.com](#)

## How to Take

Beetroot tends to be dosed on the nitrate content, with around 0.1-0.2mmol/kg (6.4-12.8mg/kg) being the target for nitrate. This is about 436mg for a 150lb person, which is comparable to half a kilogram (500g) of the beetroots themselves (wet weight). Consumption of beetroots for the nitrate content can be either via a puree or smoothie, or the beets themselves can be baked in an oven into chips. The aforementioned cooking techniques do not appear to reduce the nitrate content.

Back to: [Supplements](#) | [Health Outcomes](#)

# Benfotiamine

Also known as: *S*-{(Z)-2-[(4-amino-2-methylpyrimidin-5-yl) methyl-formylamino]-5-phosphonooxypent-2-en-3-yl} benzenecarbothioate







Benfotiamine is a relative of the vitamin Thiamine (B1) that appears to have a therapeutic role in pain reduction and diabetic complications (neuropathies and nephropathies); confers bioavailable Vitamin B1 after oral ingestion.

See [Benfotiamine on Examine.com](#)

## How to Take

Benfotiamine is commonly taken at the oral dose of 300-600mg over the course of the day, usually in two divided doses with meals (150mg or 300mg twice daily).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Protection from Smoking</a>	 Minor	- <a href="#">See study</a>	There appears to be an attenuation in how much a cigarette constricts peripheral blood flow by about half, with other biomarkers not changed overly to an overly potent degree.
	<a href="#">Advanced Glycation End Products</a>	-	- <a href="#">See study</a>	No significant changes in urinary or serum AGEs observed at the moment
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant evidence to support alterations in blood pressure.
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on HDL-C observed.
	<a href="#">HbA1c</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Two studies in diabetics have failed to find an influence of benfotiamine on HbA1c
	<a href="#">Inflammation</a>	-	- <a href="#">See study</a>	Insufficient evidence with the preliminary evidence failing to any influence on circulating cytokines.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Kidney Function</a>	-	- <a href="#">See study</a>	Insufficient evidence to support enhanced kidney function.
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	Although not a primary research end-point, no significant influence on LDL-C is seen.
	<a href="#">Nerve Repair</a>	-	- <a href="#">See study</a>	Preliminary evidence has come back negative over 2 years in type 1 diabetics with diabetic neuropathy.
	<a href="#">Proteinuria</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No evidence to support a reduction in the amount of protein lost in the urine of persons with diabetic nephropathy (UAE between 15-300mg/24 hours). Whether there is a preventative effect or not, there does not appear to be a rehabilitative effect.
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant changes in total cholesterol
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides.

Back to: [Supplements](#) | [Health Outcomes](#)

# Berberine











Other uses:














Berberine is a alkaloid extracted from a variety of herbs. It is supplemented for its anti-diabetic effects, which rival the potency of some pharmaceuticals, though still require more research for a proper comparison.

See [Berberine on Examine.com](#)

## How to Take

The standard dose of berberine is 900-2,000mg a day, divided into three to four doses. Berberine should be taken with a meal, or shortly after, to take advantage of the blood glucose and lipid spike associated with eating. Too much berberine at once can result in stomach upset, cramping, and diarrhea.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Strong	<b>Very High</b> <a href="#">See all 4 studies</a>	The usage of berberine in reducing blood glucose, according to the most recent meta-analysis, is comparable to the oral hypoglycemic drugs Metformin or Glibenclamide; this suggests berberine is one of the more effective supplements for blood glucose reductions.
	<a href="#">HbA1c</a>	 Strong	<b>Very High</b> <a href="#">See all 3 studies</a>	The reduction of HbA1c associated with berberine, according to a meta-analysis of diabetics using 1,000-1,500mg berberine daily, was -0.72% (95% CI -0.97 to -0.47) more than placebo. This reduction appears to be one of the more significant reductions associated with dietary supplements.
	<a href="#">Total Cholesterol</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Total cholesterol appears to be decreased by around -0.58mmol/L (95% CI -1.02 to -0.14), which is not overly potent. The reduction is notable as if this mechanism is via PCSK9 inhibition then it would work very well with statin drugs.
	<a href="#">HDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Degree of improvement was 0.07mmol/L (95% CI 0.04 to 0.10) according to the meta-analysis, not remarkably effective
	<a href="#">Insulin</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Degree of reduction of fasting insulin according to meta-analysis was SMD -0.50mU/L (95% CI -0.96 to -0.03) which is not overly remarkable.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	The reduction of LDL-C when berberine was paired with lifestyle changes was $-0.58\text{mmol/L}$ (95% CI $-0.78$ to $-0.39$ ) in diabetics, suggesting a significant benefit but not remarkably potent. However, another study in people with nonalcoholic fatty liver disease showed no benefit over lifestyle changes alone.
	<a href="#">Triglycerides</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Degree of reduction according to meta-analysis was $-0.48\text{mmol/L}$ (95% CI $-0.57$ to $-0.39$ ) which was not overly remarkable.
	<a href="#">Canker Sores</a>	 Minor	- <a href="#">See study</a>	Was able to reduce canker sores when topically applied, but was not compared to a reference compound.
	<a href="#">Exercise Capacity (with Heart Conditions)</a>	 Minor	- <a href="#">See study</a>	A positive effect, but the potency thereof was not overly remarkable
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See all 3 studies</a>	One study in people with NAFLD has shown mild increases in HOMA-IR when berberine is added to lifestyle changes compared to lifestyle changes alone.
	<a href="#">Quality of Life</a>	 Minor	- <a href="#">See study</a>	Minor effect in persons with cardiomyopathy, but it is unsure if berberine has a per se benefit on quality of life.
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	One study showed a slight decrease in systolic blood pressure only in people with the metabolic syndrome who were given berberine 0.5g three times a day for three months.

Back to: [Supplements](#) | [Health Outcomes](#)

# Beta-Alanine

Also known as: *b-alanine*, *β-alanine*, *carnosine precursor*

Beta-alanine is the building block of carnosine, a molecule that helps buffer acid in muscles, increasing physical performance in the 60–240-second range. Beta-alanine can aid lean-mass gain. Carnosine appears to be an antioxidant and anti-aging compound.








See [Beta-Alanine on Examine.com](#)

## How to Take

Standard daily dose: 2–5 g. While beta-alanine is a popular ingredient in pre-workout stacks, supplementation is actually not timing-dependent. Large doses of beta-alanine may result in a tingling feeling called paresthesia. This harmless side effect can be avoided by using a time-release formulation or by taking smaller doses (0.8–1 g) several times a day.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscular Endurance</a>	 Minor	<b>Very High</b> <a href="#">See all 8 studies</a>	The lone meta-analysis suggests a small benefit: a median 2.85% increase in muscular endurance when exercising for 60-240 s (usually measured by time to exhaustion).
	<a href="#">Anaerobic Running Capacity</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	A mildly positive effect, possibly secondary to an increase in muscular endurance and to a reduction in fatigue, rather than being due to any cardiopulmonary interaction.
	<a href="#">Fatigue</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Somewhat effective at reducing fatigue and, secondary to that, at improving time to exhaustion.
	<a href="#">Power Output</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No significant effect on acute power output.
	<a href="#">VO2 Max</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	Effects on VO <sub>2</sub> max are highly unreliable and not currently thought significant.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Mass</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Some studies suggest a fat loss effect, possibly secondary to an increase in workout volume.
	<a href="#">Lean Mass</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Beta-alanine seems to have a hypertrophic effect, either inherently or through greater workload, but this effect does not appear overly potent.
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	
	<a href="#">Growth Hormone</a>	-	- <a href="#">See study</a>	
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Betalains

*Also known as: Beet pigments, Betalain, betanin, betanidin, phyllocactin, indicaxanthin, hylocerenin, 2',O-Apiosylphyllocactin,*

---

Betalains are a group of reddish pigments found in some fruits where the red anthocyanin compounds (such as pelargonidin) are replaced with betalains; a major component of beet root, it can dye the urine a reddish tint.

See [Betalains on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Biotin




Also known as: Vitamin B7, Vitamin H



Biotin is one of the essential B vitamins used by the body primarily as an enzymatic cofactor. While it is popular as a beauty supplement for hair, skin, and nails and very preliminary evidence suggests it may have a role in these uses, its role is not well supported. Potential interactions with diabetes are also not well understood.

See [Biotin on Examine.com](#)

## How to Take

The only known supplemental dose of biotin that has been tested orally in humans, for the purposes of enhancing the quality of brittle nails, is 2.5mg taken once daily over six months. This dose appears relatively safe although it is much higher than the recommended daily intake (RDI) of biotin which ranges from 25-30mcg (youth) upwards to 100mcg (adults). The biotin dose found in many multivitamins (30mcg or 0.03mg) seems more than sufficient.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	
	<a href="#">Triglycerides</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">vLDL-C</a>	-	- <a href="#">See study</a>	
	<a href="#">Nail Quality</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Black Cohosh






Also known as: *Cimicifuga racemosa*, Bugbane, Bugroot, Snakeroot, Rattleroot, Blackroot, Black Snake Root

Black Cohosh is the most popular supplement for menopause in North America, but the human studies are mixed. Pretty down the middle, and placebo effect seems to play a great deal in these studies. It holds some benefit for controlling hot flashes and night sweats, but does not appear very potent.






See [Black Cohosh on Examine.com](#)

## How to Take

If using an isopropanolic extract (usually sold under the brand name of Remifemin), 20-40mg daily is used in doses of 20mg; taking 20mg results in a once daily dosing, whereas taking 40mg is twice daily dosing of the 20mg. This dosage (20-40mg) confers 1-2mg of triterpenoid glycosides. If using an aqueous:ethanolic extract of black cohosh root (ie. not Remifemin) then doses range from 64-128mg daily which are usually taken in two divided doses. This contributed about the same amount of triterpenoid glycosides. It is not known whether or not black cohosh needs to be taken with food, although it is sometimes recommended to do so out of prudence.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Menopause</a>	 Minor	<b>Very High</b> <a href="#">See all 13 studies</a>	Although there appears to be some benefit over placebo, more recent studies note that the magnitude of benefit is much less than previously thought (in the past, a false positive occurred when unblinded studies noted remarkable benefits with black cohosh; the placebo effect appears to be quite potent in regards to menopause)
	<a href="#">Anxiety</a>	-	- <a href="#">See study</a>	The trial to measure anxiety related to menopausal symptoms failed to find a benefit associated with black cohosh
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose levels
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant alterations seen in C-RP with black cohosh

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	-	- <a href="#">See study</a>	No significant influences on cognition in menopausal women has been noted
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No significant influences on circulating estrogen levels or biomarkers of estrogenicity (vaginal cytology)
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant effects on LDL-C
	<a href="#">Memory</a>	-	- <a href="#">See study</a>	No significant effect on memory function
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant effect on triglyceride concentrations in serum
	<a href="#">Coronary Heart Disease Risk</a>	 Minor	- <a href="#">See study</a>	A slightly increased chance of heart disease was said to occur in one study pairing black cohosh with exercise, and an increased risk was also determined in control but not in black cohosh in isolation.
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	May increase well being in those with menopause if a reduction of symptoms occurs.
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	No significant influences on blood flow and vasodilation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure
	<a href="#">Bone Mineral Density</a>	-	- <a href="#">See study</a>	No significant influence on bone mineral density
	<a href="#">Breast Density</a>	-	- <a href="#">See study</a>	
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant influences on body weight

Back to: [Supplements](#) | [Health Outcomes](#)

# Black Pepper

Also known as: *Piper Nigrum*, *Piperaceae*, *Piperine*

---

Black Pepper is a source of piperine, a molecule that does not do much on its own but can inhibit enzymes that would attack other molecules. Due to this, it is ingested alongside some supplements to increase their absorption rates and is almost always consumed with curcumin.

See [Black Pepper on Examine.com](#)

## How to Take

The usage of black pepper extract for the purpose of enhancing the absorption of other supplements that are glucuronidated (for example, curcumin) tends to call for 20mg of the bioactive piperine.

Back to: [Supplements](#) | [Health Outcomes](#)



# Bladderwrack









Also known as: *Fucus Vesiculosus*

Bladderwrack is a species of seaweed known as *Fucus vesiculosus* that serves as a foodstuff and a source of Fucoxanthin, it is thought to increase the metabolism via the thyroid but that is due to fixing iodine deficiencies historically.

See [Bladderwrack on Examine.com](#)

## How to Take

Although there is not a large amount of evidence currently, the evidence in humans has noted that 500mg of bladderwrack (basic extract of the seaweed, not concentrated) appears to be bioactive. This is a lower dose than the 4,000mg used in studies on *Ascophyllum nodosum*, and due to their similar composition the ideal range may be somewhere in between these two doses (or above 4,000mg).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	Appears somewhat potent at acutely reducing blood glucose following a meal (possibly by inhibiting absorption) but no long term studies.
	<a href="#">Insulin</a>	 Minor	- <a href="#">See study</a>	Appears to reduce insulin AUC after a carbohydrate containing meal
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	Appears to be pretty effective at increasing insulin sensitivity acutely after a meal, which may be due to reduced insulin in serum.
	<a href="#">Skin Quality</a>	 Minor	- <a href="#">See study</a>	Limited evidence supports its efficacy, difficult to assess potency due to no reference drug.

# Blueberry

Also known as: *Blueberries, Blue berries*










Other uses:

Blueberries are a fruit that contain a lot of molecules called anthocyanins. These antioxidant compounds are often supplemented for their ability to improve cognition.

See [Blueberry on Examine.com](#)

## How to Take

Blueberries can be supplemented through a blueberry extract, isolated anthocyanins, or frozen or fresh blueberries. The optimal dose for blueberry extract is 5.5 – 11g, with the higher end of the dose being more effective. The optimal range for isolated anthocyanin supplementation is 500-1,000mg. The optimal dose for blueberry extract translates to approximately 60-120g of fresh berries. Blueberries should be eaten or supplemented daily. They are best stored in cold environments, like a refrigerator. Blanching blueberries is known to increase anthocyanin bioavailability, but excessive heat treatment or exposure will degrade the anthocyanin content.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">DNA Damage</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	DNA damage appears to be acutely decreased following consumption of blueberries or its extracts (375mg anthocyanins or more) and tends to be in the range of a 20% reduction.
	<a href="#">Blood Glucose</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	Although the leaf extract has once been associated with a reduction in blood glucose, the fruits do not appear to inhibit carbohydrate absorption nor reduce fasting glucose concentrations.
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See all 3 studies</a>	A decrease in blood pressure has been noted in persons at risk for cardiovascular disease (6% systolic and 4% diastolic), but this may be limited to high risk individuals only.
	<a href="#">Cognitive Decline</a>	 Minor	- <a href="#">See study</a>	Supplementation of blueberry extract does appear effective in elderly persons with general cognitive decline, able to improve cognition and memory.
	<a href="#">General Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Oral ingestion of berries or their extracts tends to reduce oxidative biomarkers and improve antioxidant status either acutely or with daily supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin</a>	 Minor	- <a href="#">See study</a>	Insulin has once been noted to be decreased in elderly persons with blueberry ingestion.
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An improvement of insulin sensitivity has been noted in persons with insulin resistance, but this may only affect high risk individuals.
	<a href="#">Memory</a>	 Minor	- <a href="#">See study</a>	Memory formation in elderly subjects can be improved with daily supplementation of blueberries or their extract
	<a href="#">Muscle Damage</a>	 Minor	- <a href="#">See study</a>	Appears to reduce biomarkers of muscle damage such as creatine kinase
	<a href="#">Oxidation of LDL</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a reduction in LDL oxidation, with the one chronic study suggesting a 27% reduction (the acute study noting less of a protective effect).
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	A slight improvement in subjective well being and happiness has been noted in elderly persons given blueberries over a few weeks as a daily supplement.
	<a href="#">Appetite</a>	-	- <a href="#">See study</a>	No significant influence on appetite or satiety
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	C-reactive protein does not appear to be influenced with blueberry supplementation.
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on HDL-C
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No known interactions with heart rate and blueberry supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Interleukin 6</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on IL-6 concentrations in serum
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant changes in LDL-C concentrations in serum with blueberries.
	<a href="#">Muscle Soreness</a>	-	- <a href="#">See study</a>	Despite the reduction in muscle damage and increased rate of recovery, there are no significant changes in subjective muscle soreness
	<a href="#">Nitric Oxide</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Blueberries do not appear to significantly influence nitric oxide metabolism
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	No significant changes in TNF-alpha concentrations
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on total cholesterol concentrations in the blood.
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No known interactions with serum triglycerides following supplementation of blueberries.
	<a href="#">Arterial Stiffness</a>	 Minor	- <a href="#">See study</a>	May affect brachial-ankle measures of stiffness, but does not affect carotid-femoral stiffness.
	<a href="#">Interleukin 10</a>	 Minor	- <a href="#">See study</a>	An increase in IL-10 following exercise has been noted.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	Alongside the reduction in serum oxidation comes a reduction in lipid peroxidation biomarkers such as MDA

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Natural Killer Cell Content</a>	 Minor	- <a href="#">See study</a>	An increase in natural killer cells has been noted in the range of 76-122% following physical exercise.
	<a href="#">Adiponectin</a>	-	- <a href="#">See study</a>	No significant influence on adiponectin concentrations in obese individuals
	<a href="#">Aerobic Exercise</a>	-	- <a href="#">See study</a>	Chronic loading of blueberries with an acute dose prior to prolonged exercise (2.5 hours) in trained men does not improve physical performance.
	<a href="#">Cell Adhesion Factors</a>	-	- <a href="#">See study</a>	No significant alterations in cell adhesion factors (sCAM-1 and vCAM-1)
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	Exercise-induced changes in cortisol are not influence by blueberry supplementation
	<a href="#">Exercise-Induced Immune Suppression</a>	-	- <a href="#">See study</a>	The alterations in most immune cells seen during exercise are wholly unaffected by blueberry supplementation.
	<a href="#">Exercise-Induced Oxidation</a>	-	- <a href="#">See study</a>	The lone study using a 2.5 hour running protocol at 72% VO2 max failed to find any significant differences between groups in oxidative status after exercise.
	<a href="#">HbA1c</a>	-	- <a href="#">See study</a>	Currently no studies noting changes in HbA1c, as it appears to be unaffected by supplementation.
	<a href="#">NF-kB Activity</a>	-	- <a href="#">See study</a>	The study to measure nF-kB binding activity in muscle tissue after exercise failed to find an influence of blueberry supplementation.
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on weight when taken as a daily supplement in obese individuals.



# Boerhaavia diffusa

Also known as: *Punarnava*

Other uses:

Boerhaavia diffusa is an herb with anti-cancer and anti-inflammatory properties.

See [Boerhaavia diffusa on Examine.com](#)

## How to Take

The standard Boerhaavia diffusa dose used in rat studies is in the range of 200-400mg/kg, with a maximally effective dose of 1000mg/kg. This translates to a human dosage of 32-64mg/kg, or: • 2,200-4,300mg for a 150lb person • 2,900-5,800mg for a 200lb person • 3,600-7,200mg for a 250lb person These are estimated doses based off of animal research. There have not been any human studies conducted on Boerhaavia diffusa.

Back to: [Supplements](#) | [Health Outcomes](#)

# Boron

Boron is a dietary mineral which is claimed to increase testosterone when supplemented at doses higher than from food.



See [Boron on Examine.com](#)

## How to Take

The lowest active dose of Boron supplementation appears to be 3mg, which is effective in supporting hormonal parameters in postmenopausal women. Studies on osteoarthritis have used 6mg of Boron while studies in youth investigating hormonal changes have used 10mg. The optimal dose is currently not known, but the above doses appear to be active for their aforementioned goals.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Estrogen</a>	 Minor	- <a href="#">See 2 studies</a>	Appears to influence estrogen, seems unreliable in its mechanisms and is likely context dependent. Both increases and decreases have been noted
	<a href="#">Free Testosterone</a>	 Minor	- <a href="#">See study</a>	Appears to be quite effective, but requires some more robust trials
	<a href="#">Inflammation</a>	 Minor	- <a href="#">See study</a>	Some influence on typically inflammatory cytokines, practical relevance of these changes unknown
	<a href="#">Kidney Stones</a>	 Minor	- <a href="#">See study</a>	Appears effective, but no comparison to a reference drug nor control group thus far
	<a href="#">Testosterone</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There appears to be an interaction with Boron and testosterone in both genders, but it is seemingly unreliable
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant effect on this inflammatory biomarker



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant effect on cortisol has been noted with supplemental boron
	<a href="#">DHT</a>	-	- <a href="#">See study</a>	No significant influences on serum DHT noted

Back to: [Supplements](#) | [Health Outcomes](#)

# Boswellia serrata

Also known as: Indian Frankincense, Salai, Salai Guggul, Gajabhakshya









Other uses:







An Ayurvedic herb also classified as a phytopharmaceutical (H15; Europe) which appears to be quite anti-inflammatory, helpful against osteoarthritis, and may help cerebral edema. *Boswellia serrata* appears to have preliminary evidence for anti-inflammatory joint disorders.

See [Boswellia serrata on Examine.com](#)

## How to Take

If using boswellia serrata resin itself, doses can increase up to 1,800mg taken thrice a day (5,400mg daily), but are usually in the range of 800-1,200mg taken thrice a day to total a daily dose of 2,400-2,600mg. Within this range benefits appear to be dose-dependent. Brand name products of boswellia serrata (ex. 5-Loxin<sup>TM</sup>, Aflapin<sup>TM</sup>, AprèsFLEX<sup>TM</sup>) tend to have higher concentrations of AKBA, and are usually once daily doses of 100-250mg taken with the first meal of the day. For all forms of boswellia serrata, start at the lower end of the dosage range for 2-3 months and afterwards increase the dose. If greater benefits are not seen with the higher dose (ie. the benefits are similar to the lower dose) then continue supplementation with the lower dose.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Osteoarthritis</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	The reduction observed with <i>Boswellia serrata</i> for pain and other symptoms of osteoarthritis are more profound than other supplements including that of glucosamine (reference), but study robustness is limited by industry influence.
	<a href="#">Asthma</a>	 Notable	- <a href="#">See study</a>	Preliminary evidence, but boswellia appeared to benefit much more people than did placebo in symptoms of asthma.
	<a href="#">Brain Tumor</a>	 Notable	- <a href="#">See study</a>	A lone case study of eliminating a brain tumor
	<a href="#">Leg Swelling</a>	 Minor	- <a href="#">See study</a>	Lack of reference drugs limits conclusions that can be made in regards to the potency

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Skin Elasticity</a>	 Minor	- <a href="#">See study</a>	Not enough evidence to evaluate potency, but an increase in skin elasticity has been noted with topical boswellia
	<a href="#">Skin Quality</a>	 Minor	- <a href="#">See study</a>	Somewhat effective, not enough evidence to fully evaluate potency.
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	Increase in well-being was likely secondary to reducing joint pain from osteoarthritis

Back to: [Supplements](#) | [Health Outcomes](#)

# Branched Chain Amino Acids

Also known as: BCAAs,BCAA

Branched Chain Amino Acids (BCAAs) are three amino acids that benefit muscle growth. They're not only found in supplements, but also in high levels in foods such as eggs or meat, rendering supplementation unnecessary for most people.







See [Branched Chain Amino Acids on Examine.com](#)

## How to Take

The standard dosage for isoleucine is 48-72mg per kilogram of bodyweight, assuming a non-obese person. The standard leucine dosage is between 2-10g. A combination dose is 20g of combined BCAAs, with a balanced ratio of leucine and isoleucine. Isoleucine is used for increasing glucose uptake into cells, while leucine is used to improve muscle protein synthesis. BCAA supplementation is not necessary if enough BCAAs are provided through the diet. Further research is needed to determine valine's optimal dosage and reason for supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Aerobic Exercise</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	An increase in time to exhaustion appears to exist in prolonged endurance exercise, but this benefit may only exist in untrained or lightly trained individuals. Several studies have noted that the anti-fatigue effects and increased time to exhaustion do not really occur in advanced athletes
	<a href="#">Fat Oxidation</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	In prolonged exercise and somewhat related to the antifatigue effects, an increase in fat oxidation is noted with BCAA supplementation; this is thought to be related to the glycogen preserving effects of BCAAs.
	<a href="#">Fatigue</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	A decrease in fatigue (mental fatigue when measured after the workout) results when BCAA supplementation is taken during exercise at a dose above 10g or so
	<a href="#">Lactate Production</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	There does not appear to be any reliable or significant changes in blood lactate concentrations following exercise with BCAA supplementation
	<a href="#">Ammonia</a>	 Minor	- <a href="#">See study</a>	Human studies suggest time-dependent influences on ammonia (increase after exercise up until 2 hours, a reduction the next day) while animal studies suggest that overdosing BCAAs can reverse a reduction into an increase

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Processing Accuracy</a>	 Minor	- <a href="#">See study</a>	The increased processing accuracy appears to be secondary to reducing exercise-related fatigue, and occurs when testing is after exercise.
	<a href="#">Rate of Perceived Exertion</a>	 Minor	- <a href="#">See study</a>	There is some evidence to support a reduction in the rate of perceived exertion during exercise under the influence of BCAA supplementation, but this appears to unreliably improve performance and is of low magnitude
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See study</a>	A (beneficial) decrease in reaction time has been noted during a stimulated soccer test, which was thought to be secondary to the antifatigue effects. Hypothesized to be useful for prolonged sports
	<a href="#">Weight Loss</a>	 Minor	- <a href="#">See study</a>	The weight loss that occurs during prolonged strenuous exercise (in these examples, skiing) are attenuated with BCAA supplementation relative to carbohydrate. This is likely indicative of lean mass and/or hydration, and is not necessarily an anti-fat loss effect
	<a href="#">Adrenaline</a>	-	- <a href="#">See study</a>	No significant influence on adrenaline concentrations
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	No significant performance enhancing effect on short-term cardiovascular exercise
	<a href="#">Blood Glucose</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	There does not appear to be a likely alteration in blood glucose concentrations <i>per se</i> with BCAA supplementation, but the increased fat oxidation may attenuate the decline in glucose seen during prolonged exercise (which would appear to be a relative increase at later time points)
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant interactions with BCAA supplementation and cortisol
	<a href="#">Dopamine</a>	-	- <a href="#">See study</a>	Similar to the other catecholamines (adrenaline and noradrenaline), serum dopamine does not appear to be altered with supplemental BCAAs.
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in heart rate noted with BCAA supplementation at rest or during exercise

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence of BCAA supplementation on fasting insulin levels
	<a href="#">Ketone Bodies</a>	-	- <a href="#">See study</a>	No significant alterations in formation of ketone bodies, which may be due to the ketogenic BCAA (leucine) being offset by the other two glucogenic ones
	<a href="#">Muscle Soreness</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant influence on muscle soreness when assessed 2-3 days after exercise that is preloaded with BCAA supplementation
	<a href="#">Noradrenaline</a>	-	- <a href="#">See study</a>	BCAA supplementation does not appear to significantly influence noradrenaline concentrations in serum
	<a href="#">Oxygen Uptake</a>	-	- <a href="#">See study</a>	Oxygen uptake during anaerobic cardiovascular exercise does not appear to be modified with BCAA supplementation
	<a href="#">Power Output</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on power output, but when it does occur it is not a <i>per se</i> increase in power output but secondary to reduced muscular soreness after repeated exercise. This may be more indicative of anti-fatigue effects than of genuine power output improvement

Back to: [Supplements](#) | [Health Outcomes](#)

# Brassaiopsis glomerulata

---

Brassaiopsis glomerulata is a tree growing in Vietnam that appears to have some compounds that may inhibit the aromatase enzyme; there is currently a lack of applied evidence for this plant in living systems.

See [Brassaiopsis glomerulata on Examine.com](#)

## How to Take

There is currently insufficient evidence to support an oral dose of Brassaiopsis glomerulata

Back to: [Supplements](#) | [Health Outcomes](#)

# Brassica vegetables

*Also known as: Broccoli, Cauliflower, Brussel Sprouts, Kale, etc.*

*Other uses:*

---

A group of vegetables that are commonly associated with each other and share some bioactives, such as Diindolylmethane or Sulforaphane. Broccoli, Cauliflower, Brussel Sprouts, and Mustard are Brassica veggies.

See [Brassica vegetables on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)



# Brassinosteroids

---

A bunch of 'plant steroid' molecules (like ecdysteroids are insect steroids) that are present in relatively high amounts in mustard; still nowhere near enough to get jacked off of mustard. Have not been shown to be effective in humans yet, remains an unexplored research field.

See [Brassinosteroids on Examine.com](#)

## How to Take

There is not enough information for a recommend dosage at this time.

Back to: [Supplements](#) | [Health Outcomes](#)

# Bromelain

Also known as: *Pineapple extract*

Other uses:



Bromelain is an enzyme extracted from pineapples. It can reduce heart burn and act as a nasal decongestant.

See [Bromelain on Examine.com](#)

## How to Take

The standard dose for bromelain depends on the goal of supplementation. If the goal is to aid digestion, the standard dose is between 200 – 2,000mg, taken with a meal. If the goal of supplementation is not digestion related, does range from 200 - 800mg. Bromelain is typically taken between meals to avoid potential degradation in the stomach. The large range for the standard dose is due to the variations in the enzymatic potential of bromelain, which is standardized by milk clotting units (MCU), or gelatin dissolving units (GDU).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscle Soreness</a>	 Minor	- <a href="#">See 2 studies</a>	It is possible bromelain might reduce muscle soreness, but currently the evidence does not support this claim (although the trial to note a failure of bromelain also noted a failure with Ibuprofen, a known active drug)
	<a href="#">Incidence of Type 1 Diabetes</a>	-	- <a href="#">See study</a>	
	<a href="#">Symptoms of Osteoarthritis</a>	-	- <a href="#">See study</a>	No significant influence on symptoms of osteoarthritis when tested
	<a href="#">Inflammation</a>	 Minor	- <a href="#">See study</a>	Requires more evidence, but at the moment appears somewhat effective
	<a href="#">Nasal Congestion</a>	 Minor	- <a href="#">See study</a>	The potency at this moment in time does not appear remarkable.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	Minor improvements in well being secondary to reducing joint pain

Back to: [Supplements](#) | [Health Outcomes](#)

# Bryonia laciniosa

Also known as: *Shivlingi*, *Diplocyclos Palmatus*, *Byrony Root*

---

An Ayurveda herb used traditionally as an aphrodisiac and pro-fertility compound, touted to increase masculinity and enhance youthfulness during aging. It belongs to the category of Vrishya rasayana alongside Anacyclus Pyrethrum.

See [Bryonia laciniosa on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Bulbine natalensis

Also known as: *ibhucu, rooiwortel, ingcelwane*



Other uses:

Bulbine Natalensis is a traditionally used aphrodisiac and Testosterone Booster in South and South-Eastern Africa; in rat studies, it appears to both be quite potent in increasing testosterone but also appears to damage organ function in a similar manner to a steroid cycle.

See [Bulbine natalensis on Examine.com](#)

## How to Take

Rat studies investigating how bulbine natalensis interacts with testosterone note that 50mg/kg (of a 10:1 extraction) appear to be the optimal dosage, and based on Body Surface Area Conversions,[1] this correlates into an estimated human dose of 8mg/kg or: 550mg for a 150lb person 730mg for a 200lb person 900mg for a 250lb person These doses are currently only estimates, but they are within the range seen in the only industry funded trial on bulbine natalensis at this moment in time (which used 650mg).[2] Doses would be 10-fold higher if the raw plant is used without any particular extraction.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Butea monosperma

Also known as: *Butea frondosa*, *Erythrina monosperma*, *Plaso monosperma*, *The Treasurer of the Gods and of Sacrifice*, *kimsuk*, *muriku*, *moduga*, *Bastard Teak*, *Dhak*, *Palash*, *Flame of the Forest*, *Palāśa*

Other uses:

Butea monosperma is a herb that contains a variety of methoxylated isoflavones, and some of these isoflavones (cajanin) and other bioactives such as medicarpin can preserve bone mass with a potency similar or greater than estrogen itself, although some are nonestrogenic.

See [Butea monosperma on Examine.com](#)

## How to Take

There is currently not enough evidence to suggest a recommended dose of this plant.

Back to: [Supplements](#) | [Health Outcomes](#)

# Butea superba

Also known as: Red Kwao Krua


Other uses:

Butea Superba (Red Kwao Krua) is a herb from Thai medicine sometimes thought to be the male equivalent of Pueraria Mirifica, a phytoestrogen known as White Kwao Krua; evidence for Butea Superba for these claims is lacking.

See [Butea superba on Examine.com](#)

## How to Take

There is not enough information to recommend supplementation of butea superba, but it appears to be traditionally used in the range of 100-250mg. The exact bioactives that underlie its effects are not known

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Erections</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Currently assumed to be ineffective for erections or erectile dysfunction due to the poor quality of the evidence in existence.

Back to: [Supplements](#) | [Health Outcomes](#)

# CBD

Also known as: *Cannabidiol, Epidiolex*







Other uses:

Why is CBD such a big deal? Two reasons. First, isolated CBD won't get you "high", unlike THC (the other main cannabinoid in cannabis). Second, isolated CBD has shown a ton of promise in animal research (anxiety, pain, inflammation, cancer, etc). Unfortunately, there are relatively few human trials as of 2019. And unregulated CBD often contains way lower or higher doses than the label states, sometimes even containing unlisted THC. Things are heating up though: in 2018, the FDA approved the first CBD pharmaceutical (Epidiolex®) for two rare types of epilepsy. Stay tuned to this page, as nearly 190 trials are ongoing!






See [CBD on Examine.com](#)

## How to Take

CBD dosage recommendations? That opens up a huge can of worms. CBD products, save for the pharmaceutical Epidiolex, are not regulated. So batches often vary in potency.[1] Not only that, but some products have pretty much only CBD in them, and others have various other cannabinoids (you'll see "whole plant extract" and "single compound extracts" on shelves). Yet others have more than the allowed percentage of THC included.[2] High-fat and high-calorie meals lead to much higher CBD concentrations,[3] which adds another wrinkle. Oh, and yet another wrinkle: CBD is vastly understudied at the moment, so different doses are rarely compared against each other and against a placebo. Long-term safety is essentially unstudied, and even several month long trials are rare.[4] So as far as recommendations go ... we're not giving any at the moment (we shall assess more evidence, and think it through in our typical thorough fashion), but always talk to your doctor before taking CBD, and start with as low of a dose as you can. Study dosages vary widely by clinical indication, from less than 5 mg/d to well over 100 mg/d. To repeat: talk to your doctor!

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Seizure Frequency</a>	 Strong	<b>Very High</b> <a href="#">See all 3 studies</a>	These studies only looked at disorders with severe epilepsy, including Dravet and Lennox-Gastaut Syndromes, and Tuberous sclerosis complex (TSC).
	<a href="#">Anxiety</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	No long term anxiety trials exist, and very few types of anxiety have been researched thus far.
	<a href="#">Pain</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Studies are very preliminary, with only one being randomized, and all being small with short treatment durations.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Schizophrenia</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	These trials don't look at impact on development of schizophrenia, but of symptom reduction in those with schizophrenia.
	<a href="#">Symptoms of Ulcerative Colitis</a>	 Minor	- <a href="#">See study</a>	Remission rates, however, were not impacted at all.
	<a href="#">Symptoms of Crohn's Disease</a>	-	- <a href="#">See study</a>	Used a relatively low dose of 10 mg, twice a day.

Back to: [Supplements](#) | [Health Outcomes](#)

# CDP-choline











Also known as: Citicholine, Cytidine Diphosphocholine








CDP-choline (citicoline) is a nootropic compound that converts to both choline and cytidine upon ingestion, the latter of which converts into uridine in the body. It appears to confer cognitive-promoting properties as a prodrug for these two compounds.

See [CDP-choline on Examine.com](#)

## How to Take

Standard dosing of CDP-choline is to take 500-2,000 mg in two divided doses (of 250-1,000 mg) usually separated by 8-12 hours, although a single daily dose is also sometimes used. A single dose of 4,000 mg does not appear to affect the blood any differently than 2,000 mg, and so it is not necessary to take such a high dose. There are some properties, such as attention-promotion or improving bioenergetics, that seem to respond exclusively or more strongly to the lower dosage range. Other properties like appetite are the opposite, and thus the ideal dosage depends somewhat on the goal.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cocaine Addiction</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	CDP-Choline appears to be weakly anti-addictive against cocaine addiction, although the one study undertaken in persons with no intention to minimize cocaine usage can back negative.
	<a href="#">Attention</a>	 Minor	- <a href="#">See study</a>	There appear to be attention promoting effects of CDP-Choline, with the one study in adult women noting that 250-500mg was effective but 250mg was more effective.
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	One study in older adults noted, as a side-effect, that systolic blood pressure was slightly reduced
	<a href="#">Cognitive Decline</a>	 Minor	- <a href="#">See study</a>	The rate of memory decline seen in older persons during the aging process appears to be attenuated with supplementation of CDP-Choline
	<a href="#">Memory</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to promote cognition in otherwise healthy older adults. Although animal studies suggest this may apply to youthful subjects as well, no human currently exists for youth

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Bipolar Disorder</a>	-	- <a href="#">See study</a>	The lone study in persons with bipolar disorder was one investigating addiction, and when measuring symptoms of bipolar disorder they failed to find any influence of supplementation on symptoms.
	<a href="#">Appetite</a>	 Minor	- <a href="#">See study</a>	There appear to be minor appetite suppressing effects at higher doses of oral CDP-choline ingestion (2,000mg daily), although on a 1-10 point Likert scale the reduction measured at 27% (6.8 to 5.92; 1 being the lowest possible ranking)
	<a href="#">Visual Acuity</a>	 Minor	- <a href="#">See study</a>	In persons with glaucoma, CDP-Choline ingestion appears to be somewhat protective of vision and has been noted to cause improvements in visual acuity
	<a href="#">Intraocular Pressure</a>	-	- <a href="#">See study</a>	Despite the improvements seen in visual acuity and eye health with supplementation of CDP-Choline, intraocular pressure does not appear to be affected.
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant effects of CDP-Choline on weight, despite the small appetite reducing effect

Back to: [Supplements](#) | [Health Outcomes](#)

# Caesalpinia benthamiana

Also known as: *Mezoneuron benthamianum*

---

Caesalpinia benthamiana is an African herb used for the treatment of erectile dysfunction. While research into this herb is beyond preliminary, it appears to be quite a potent aphrodisiac and may increase levels of nitric oxide production.

See [Caesalpinia benthamiana on Examine.com](#)

## How to Take

There is currently not enough information to recommend a supplemental dose of this herb.

Back to: [Supplements](#) | [Health Outcomes](#)

# Caffeine

Also known as: *Coffee extract, Tea extract, 1,3,7-Trimethylxanthine, Liquid crack*











Other uses:



















Caffeine is a stimulatory anti-sleep compound extracted from coffee beans. Habitual caffeine use leads to tolerance, which dulls several of caffeine's effects.



See [Caffeine on Examine.com](#)







## How to Take

Caffeine dosages should be tailored to individuals. If you are new to caffeine supplements, start with a 100mg dose. Typically, 200mg of caffeine is used for fat-burning supplementation, while acute strength increases occur at higher doses, 500mg and above. Researchers tend to use a dosage range of 4-6mg/kg bodyweight. Caffeine can be supplemented through popular beverages, like coffee, tea and energy drinks, but it can also be taken in a pill form. Many of caffeine's effects, including fat burning, strength benefits, and euphoria, are subject to tolerance, and may not occur in people used to caffeine, no matter how large the dose is.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anaerobic Running Capacity</a>	 Notable	<b>Moderate</b> <a href="#">See all 7 studies</a>	Appears to benefit anaerobic cardiovascular exercise, perhaps due to combination antifatigue effects and increasing power output
	<a href="#">Power Output</a>	 Notable	<b>Very High</b> <a href="#">See all 9 studies</a>	There appears to be a reliable and significant increase in power output (both weight lifting as well as cycle ergometer measurements) in both trained and sedentary persons with doses of caffeine exceeding 5mg/kg, assuming the subject is not caffeine tolerant. Tolerance, or lower doses of caffeine, are not as effective.
	<a href="#">Adrenaline</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Serum catecholamines (adrenaline, noradrenaline) are increased in naive users of caffeine following acute ingestion
	<a href="#">Aerobic Exercise</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	An increase in aerobic exercise capacity is noted with caffeine, possibly secondary to increased free fatty acids and adrenaline
	<a href="#">Blood Glucose</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There may be an acute increase in blood glucose when caffeine is paired with a carbohydrate containing meal, but long term ingestion of caffeine does not appear to adversely influence glucose (only acutely)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Tends to increase blood pressure more than it doesn't, which is in part due to caffeine tolerance (naive users experiencing increases in blood pressure at higher rates) or genetics; the increase in blood pressure tends to be transient and low in magnitude
	<a href="#">Cortisol</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	In general, cortisol appears to be increased at high doses of caffeine; lower doses may not have an effect.
	<a href="#">Fat Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	An increase in fat oxidation appears to be apparent (assessed via increased serum glycerol and free fatty acids) which is thought to be secondary to increases in adrenaline
	<a href="#">Heart Rate</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	An increase in heart rate is noted, but not wholly consistent. It appears to affect those with lower caffeine tolerance or high overdoses of caffeine
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	A decrease in insulin sensitivity is noted acutely when caffeine is taken alongside carbohydrates, thought to be secondary to reducing glucose deposition.
	<a href="#">Lactate Production</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Seems to increase lactate production during exercise when caffeine is acutely preloaded
	<a href="#">Rate of Perceived Exertion</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	Although the effects are somewhat unreliable, there appears to be a reduction in the rate of perceived exertion associated with caffeine ingestion
	<a href="#">Reaction Time</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Although the overall effect is unreliable and context dependent, caffeine appears to improve reaction time (possibly at the cost of accuracy)
	<a href="#">Testosterone</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	A very small (usually 12%) increase is noted in trained athletes consuming caffeine above 250mg prior to exercise, this may be dependent on exercise as studies without exercise fail to find alterations in testosterone. This increase is unlikely to lead to significant testosterone-like effects
	<a href="#">Training Volume</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be an increase in training volume (overall work performed during a workout) associated with caffeine ingestion relative to placebo, extending to both weightlifting and anaerobic cardiovascular exercise

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Memory</a>	-	<b>Low</b> <a href="#">See all 5 studies</a>	Overall, highly mixed effects effects of caffeine on memory. It appears to increase spatial/perceptual memory and reduce working memory (perhaps secondary to overstimulation)
	<a href="#">Wakefulness</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Caffeine is reliable and effective in increasing the state of wakefulness and suppressing sedation
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	It is possible for caffeine to be anxiogenic, but requires genetic susceptibility to it
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See study</a>	An increase in blood flow (Flow mediated vasodilation) has been noted with caffeine.
	<a href="#">Fatigue</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Decrease in fatigue have been noted during exercise and during low strenuous physical exercise
	<a href="#">Metabolic Rate</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on metabolic rate following acute doses of caffeine
	<a href="#">Oxygen Uptake</a>	 Minor	- <a href="#">See study</a>	Appears to be an increase in oxygen uptake with caffeine consumption, may be related to the increase in metabolic rate
	<a href="#">Subjective Well-Being</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May increase subjective well being and mood state, possibly secondary to reducing fatigue or from catecholamines
	<a href="#">Thermogenesis</a>	 Minor	- <a href="#">See study</a>	Increases in heat production following caffeine consumption have been noted
	<a href="#">Appetite</a>	-	- <a href="#">See study</a>	In men, there does not appear to be a significant suppressive effect of caffeine on appetite.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influences on HDL cholesterol noted
	<a href="#">Insulin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on fasting insulin (not postprandial) are noted with caffeine
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant influences on LDL cholesterol noted
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on triglyceride levels
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	No significant influence on VO2 max ratings
	<a href="#">Visual Acuity</a>	-	- <a href="#">See study</a>	No significant influence on visual acuity has been noted with caffeine on hand-eye or target-based visual tasks

Back to: [Supplements](#) | [Health Outcomes](#)



# Calcium








Also known as:  $Ca^{2+}$ , Ca, Coral Calcium








Calcium is a dietary macromineral found in high amounts in dairy products, and to a lesser extent in vegetables. Used primarily to support bone health, calcium also has a role in maternal and cardiovascular health.

See [Calcium on Examine.com](#)

## How to Take

Supplementing calcium should be done in accordance with your overall intake of calcium from the diet, in an attempt to get as close to the recommended daily intake (RDI) as possible. This intake is: 700 mg for those 1-3 years of age 1,000 mg for those 4-8 years of age, as well as for adults between the ages of 19-50 1,300 mg for those between the ages of 9 and 18 1,200 mg for adults over the age of 71 and for females above the age of 50 (males between the ages of 50-70 only require 1,000 mg) Calcium from all sources, including dairy-derived protein supplements such as whey protein or casein protein should be included and there is no specific timing of calcium supplements required. They can be taken at any point in the day, although preferably with a meal to aid in absorption.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pre-Eclampsia Risk</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Calcium supplementation appears to be quite potent in reducing the risk of pre-eclampsia when supplemented at 1,000mg a day, with more efficacy in those with lower dietary calcium intake.
	<a href="#">Symptoms of PMS</a>	 Minor	<b>Very High</b> <a href="#">See all 10 studies</a>	Studies are largely in agreement that calcium supplementation in high doses (500-1000 mg daily) can reduce the symptoms of PMS, largely when it comes to affective and pain-related outcomes.
	<a href="#">Fecal Bile Acids</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Fecal Cholesterol</a>	-	- <a href="#">See study</a>	
	<a href="#">Fecal Water Genotoxicity</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lipid Absorption</a>	-	- <a href="#">See study</a>	
	<a href="#">Anxiety</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	
	<a href="#">Bone Mineral Density</a>	-	- <a href="#">See study</a>	
	<a href="#">Depression</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Free Testosterone</a>	-	- <a href="#">See study</a>	
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Calcium-D-Glucarate

Also known as: *Calcium Glucarate, Saccharic acid, Calcium-D-Saccharate, Glucaric acid*

Calcium-D-Glucarate is a  $\beta$ -glucuronidase inhibitor that promotes the excretion of any molecule in a specific detoxification pathway. It has shown efficacy at very high (impractical) oral doses in reducing cancer induced by these compounds, but may also reduce all steroid hormones as well.

See [Calcium-D-Glucarate on Examine.com](#)

## How to Take

The recommended dosage range (from supplement providers) is in the range of 1,500-3,000mg daily. Based on animal research, this does appear to be quite low and a minimum of 200mg/kg may be needed to replicate the research (also based further on animal research, 200mg/kg is around the point where dose-dependent returns attenuate greatly and in rats is the 'ideal' dose, below this dosage is a linear drop in efficacy with 100mg/kg being half as effective) At this moment in time, it may be prudent to only use calcium-D-glucarate at a 100-200mg/kg dosage prior to known exposure to toxins that are glucuronidated; it may not be financially prudent to take it as a daily preventative supplement.

Back to: [Supplements](#) | [Health Outcomes](#)










# Capsaicin

Also known as: Chili extract, Hot pepper extract, trans-8-methyl-N-Vanilyl-6-nonenamide, Capsaicinoids

Other uses:

The exact molecule found in hot peppers that burns your face off, acts via adrenaline receptors and TRPV1 (like Evodia) to increase heat quickly. Can burn body fat with minimal potency, fight inflammation with decent potency, and prevent cancer with indeterminate potency.

See [Capsaicin on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	A possible reduction in blood glucose may occur secondary to pancreatic stimulation with high doses of capsaicin
	<a href="#">Insulin</a>	 Minor	- <a href="#">See study</a>	High doses of capsaicin may induce insulin release from the pancreas
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	
	<a href="#">Fat Oxidation</a>	-	- <a href="#">See study</a>	
	<a href="#">Food Intake</a>	-	- <a href="#">See study</a>	
	<a href="#">Heart Rate</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	



# Capsicum Carotenoids

Also known as: *Capsorubin, Capsanthin*

---

Carotenoids that are common to Capsicum foods like red peppers, and tend to co-exist alongside Capsaicin; not too bioactive, but appear to be potent P-glycoprotein inhibitors and may increase bioavailability of other supplements.

See [Capsicum Carotenoids on Examine.com](#)

## How to Take

Not enough information is available for a recommended dosage.

Back to: [Supplements](#) | [Health Outcomes](#)

# Caralluma fimbriata




Also known as: *Slimaluma* (Brand Name)

Caralluma Fimbriata is a certain species of the Caralluma genus that appears to have historical usage as a famine food, appetite suppressant, and thirst quencher when the vegetables are boiled and salted. Research is preliminary, but seems to validate these claims.

See [Caralluma fimbriata on Examine.com](#)

## How to Take

Currently, the only human study used 1,000mg of a 14:1 concentrated extract (equivalent to 14g of the plant in dry weight). This dose appeared to be effective somewhat, and is currently the only lead for what oral dosage of supplementation is needed. Caralluma fimbriata appears to require up to a month or so to work for appetite suppression.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Appetite</a>	 Minor	- <a href="#">See study</a>	Might be more effective as the one study noted a time-dependent suppression of appetite (but was terminated at 2 months); requires more research and perhaps some comparators.
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	Study was too short for the appetite suppressing effects to manifest as weight loss, and thus no evidence exists for weight reducing effects.

Back to: [Supplements](#) | [Health Outcomes](#)

# Casein Protein

*Also known as: Casein*

*Other uses:*

Out of the 'curds and the whey' of milk, Casein protein is the curds. A dietary protein source with gel-forming capabilities, it is touted to be slowly absorbed in part due to slowing intestinal motility and gel-forming like fiber; adding water makes pudding.

See [Casein Protein on Examine.com](#)

## How to Take

Like any protein supplement, casein protein supplements are dosed in relation to dietary protein goals and how much dietary protein is consumed via other sources. Protein goals vary from person to person, but a general guide is: If you are an athlete or highly active person currently attempting to lose body fat while preserving lean muscle mass, a daily intake of 1.5-2.2g/kg bodyweight (0.68-1g/lb bodyweight) would be a good target. If you are an athlete or highly active person, or you are attempting to lose body fat while preserving lean mass, then a daily intake of 1.0-1.5g/kg bodyweight (0.45-0.68g/lb bodyweight) would be a good target. If you are sedentary and not looking to change body composition, a daily target of 0.8g/kg bodyweight (0.36g/lb bodyweight) and upwards would be a good target. Supplementation of casein protein should be in the dose that is required to meet these ranges after dietary protein has been accounted for. If dietary protein has adequately reached these ranges, then protein supplementation is not required. Obese individuals (body fat over 20/30% for males and females or a BMI greater than 30 without significant levels of muscle mass) should not follow the above recommendations exactly as the state of obesity would overshoot requirements. In these instances, calculate your targets based upon what your weight would be assuming an overweight BMI.

Back to: [Supplements](#) | [Health Outcomes](#)



# Celastrus paniculatus

Also known as: *Jyothismati Oil*, *Celastrus Oil*, *Malkanguni Oil*, *The Elixir of Life*

Other uses:

Celastrus paniculatus is a plant, the seeds of which are used to improve cognition. Preliminary evidence suggests it is also a potent intestinal relaxant.

See [Celastrus paniculatus on Examine.com](#)

## How to Take

Traditional Celastrus paniculatus dosages start at 10 seeds, taken all at once. If no side effects occur, increase the dose to 15 and finally 20 seeds. Much more research is needed to determine the optimal dose of Celastrus paniculatus.

Back to: [Supplements](#) | [Health Outcomes](#)

# Celery seed extract

Also known as: *Apium graveolens*, Celery

---

Celery seed oil is a supplement containing a high amount of volatile compounds known as phthalides. These compounds as well as the major component Sedanolide appear to have general antioxidative properties and have traditionally been used as a diuretic.

See [Celery seed extract on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Centella asiatica

Also known as: Gotu kola, Indian Pennywort, Jal Brahmi and Mandookaparni, Brahmi, Tsubokusa









Other uses:

Centella asiatica (Gotu Kola) is a traditional medicine mainly renowned for its cognitive enhancing properties (usually alongside bacopa monnieri) and its ability to regenerate wound healing. It appears effective on both parameters in preclinical evidence, and may also be anti-rheumatic.





See [Centella asiatica on Examine.com](#)

## How to Take

Most of the human studies (on Chronic Venous Insufficiency) on this herb have used a centella asiatica supplement two to three times a day, and at each dose the total saponin dose (asiatic acid, madecassic acid, asiaticoside, and madecassoside) has totalled 30-60 mg given a total daily range of 60-180 mg total saponins. While there are currently no human studies on cognitive enhancement, rat studies have noted success with 200-300 mg per kilogram of the overall plant extract (since the saponins may not be the only active ingredient for cognition); this suggests a human dose of 32-48 mg/kg and thus: 2,100-3,300 mg for a 150lb person 2,900-4,400 mg for a 200lb person 3,600-5,500 mg for a 250lb person The above dosages ranges are but estimates for cognitive enhancement. Currently, 500mg of centella asiatica twice daily has shown anxiety reducing effects in humans and 750mg of a 5% asiaticoside extract has enhanced mood state; while these doses are active on the cognition, it is not yet demonstrated if they are the dose needed to boost learning.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chronic Venous Insufficiency</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	Symptoms of chronic venous insufficiency extending to poor circulation, venous reactivity, and adverse side-effects such as edema and leg pain are all reliably reduced with oral ingestion of centella asiatica
	<a href="#">Microcirculation</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	There appears to be a notable improvement in microcirculation associated with oral ingestion of <i>centella asiatica</i> in the treatment of chronic venous insufficiency; this may extend to otherwise healthy persons, albeit at a lesser magnitude
	<a href="#">Blood Flow</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Blood flow appears to be increased alongside improvements in microcirculation seen in persons with impaired venous insufficiency being treated with <i>centella asiatica</i>
	<a href="#">Edema</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	There appears to be a decrease in edema associated with chronic venous insufficiency (CVI), associated with the treatment of CVI by <i>centella asiatica</i>

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Leg Swelling</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	The leg swelling associated with chronic venous insufficiency appears to be significantly reduced secondary to treating the state of chronic venous insufficiency.
	<a href="#">Alertness</a>	 Minor	- <a href="#">See study</a>	An increase in the self-rated sensation of alertness is noted in older healthy adults supplementing with <i>centella asiatica</i>
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	There appears to be a reduction in anxiety symptoms that build up over time (reaching a quarter reduction after two months) associated with twice daily ingestion of 500mg of the plant extract
	<a href="#">Attention</a>	 Minor	- <a href="#">See study</a>	An increase in attention has been noted which may be secondary to the treatment of anxiety (or the reductions in stress and depression that also occurred due to treating anxiety).
	<a href="#">Calmness</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction in fear and anxiety responses to an acute startle response (indicative of less responsiveness to alerting stimuli and more calmness) has been noted with this plant extract
	<a href="#">Contentment</a>	 Minor	- <a href="#">See study</a>	An increase in self-rated perceptions of contentment is seen in otherwise healthy adults given <i>centella asiatica</i>
	<a href="#">Depression</a>	 Minor	- <a href="#">See study</a>	A reduction in depressive effects may be secondary to the treatment of anxiety.
	<a href="#">Reaction Time</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There are decreases in reaction time when otherwise healthy older adults take this supplement (youth not tested) which span to choice recognition, and spatial memory reaction time but <i>not</i> digit vigilance and simple reaction time.
	<a href="#">Stress</a>	 Minor	- <a href="#">See study</a>	There appears to be stress reducing properties associated with supplementation of this herb at 1g daily, although they may be secondary to anxiety reduction.
	<a href="#">Wound Healing</a>	 Minor	- <a href="#">See 2 studies</a>	An increase in wound contraction rate has been noted with oral supplementation of <i>centella asiatica</i> yet an impairment in wound granulation (formation of connective tissue).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure in otherwise healthy persons given an acute dosage.
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influence on heart rate with acute ingestion of the herb in healthy persons.
	<a href="#">Processing Accuracy</a>	-	- <a href="#">See study</a>	No significant influence on processing accuracy is seen with <i>centella asiatica</i> supplementation
	<a href="#">Subjective Well-Being</a>	-	- <a href="#">See study</a>	Acute ingestion of this herb in otherwise healthy individuals does not appear to alter subjective mood parameters.

Back to: [Supplements](#) | [Health Outcomes](#)

# Centrophenoxine

Also known as: *Centro, Lucidril (Brand Name)*

---

Centrophenoxine is to DMAE like Alpha-GPC is to Choline, an option that is better absorbed since the active molecule is bound to an absorption enhancer. Centrophenoxine carries the benefits of DMAE, and may boost cognition in the elderly.

See [Centrophenoxine on Examine.com](#)

## How to Take

For therapeutic usage in reducing lipofuscin (for the aged) 3-6 doses of 250mg centrophenoxine is generally touted. For younger individuals seeking neurological enhancement and neuronal protection, 1-3 doses of 250mg suffices.

Back to: [Supplements](#) | [Health Outcomes](#)

# Chlorella










Also known as: *Chlorella pyrenoidosa*











Chlorella is a freshwater algae that is commonly supplemented by vegan populations (similar to Spirulina). Chlorella appears to be a bioavailable source of both Iron and Vitamin B12, and may have other benefits.

See [Chlorella on Examine.com](#)

## How to Take

Supplementation of chlorella appears to be in the range of 6-10g daily. It is unsure why this dose is chosen, but it appears to be somewhat effective. Higher doses have not been sufficiently tested and the optimal dose of supplemental chlorella is not known.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	- <a href="#">See study</a>	No remarkable effects following oral ingestion of chlorella, although some may be present
	<a href="#">Blood Pressure</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Might reduce blood pressure in some instances but does not appear remarkably potent.
	<a href="#">Immunity</a>	 Minor	- <a href="#">See study</a>	Increase in salivary IgA suggests an immune enhancing effect; no comparison to an active control.
	<a href="#">DNA Damage</a>	-	- <a href="#">See study</a>	Has once failed to modify the DNA damage observed in male smokers
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	No significant effects on fat mass
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influence on heart rate has been detected

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vaccine Augmentation</a>	-	- <a href="#">See study</a>	Has once failed to act effectively as a vaccine adjuvant
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant effects on body weight
	<a href="#">Leg Swelling</a>	 Minor	- <a href="#">See study</a>	Study in pregnant women, it did have efficacy but more studies are required to assess chlorella overall.
	<a href="#">Proteinuria</a>	 Minor	- <a href="#">See study</a>	Reduced proteinuria in pregnant women (possibly indicative of kidney protective effects); more studies would be prudent as to include comparators or use in other contexts.
	<a href="#">Risk of Anemia</a>	 Minor	- <a href="#">See study</a>	May be secondary to the Iron content, somewhat effective in pregnant women. Requires more evidence, especially in anemics
	<a href="#">Symptoms of Fibromyalgia</a>	 Minor	- <a href="#">See study</a>	May have efficacy in reducing pain associated with fibromyalgia, but requires more evidence

Back to: [Supplements](#) | [Health Outcomes](#)



# Chlorogenic Acid

Also known as: Coffee bean extract, 5-O-caffeoylquinic acid, 3-O-caffeoylquinic acid Green coffee extract

Other uses:





Chlorogenic acid is found in coffee mostly and a lot of plant compounds; it holds promise in many aspects of health and cognition similar to bioflavonoids and shares some effects similar to caffeine but less potent. May decrease the absorption of dietary carbohydrate.

See [Chlorogenic Acid on Examine.com](#)

## How to Take

Supplemental chlorogenic acid appears to have benefit in the range of 120-300mg oral intake, with higher doses still possibly beneficial (not really tested sufficiently). These doses appear to benefit blood pressure and circulation mostly. This dose seems to be low enough that moderate to high doses of plants with a rich chlorogenic acid content may confer the benefits listed on this page, this most notably includes green coffee extract.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Notable	- <a href="#">See study</a>	The decrease in systolic blood pressure with chlorogenic acid has reached 15 points systolic in hypertensives (150mmHg systolic initially) and appears to maintain at that level until supplement cessation.
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	Not overly remarkable reductions in blood glucose
	<a href="#">Glycemic Control</a>	 Minor	- <a href="#">See study</a>	Slight increase in glycemic control possibly secondary to reducing carbohydrate absorption
	<a href="#">Homocysteine</a>	 Minor	- <a href="#">See study</a>	Somewhat high acute spike of homocysteine, which is normally a negative thing. Practical significance of this unknown
	<a href="#">Insulin</a>	 Minor	- <a href="#">See study</a>	Spike in insulin was attenuated a bit, secondary to attenuating the rate of glucose absorption. Not overly remarkable

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	Chlorogenic acid may have a mood enhancing effect independent of caffeine
	<a href="#">Weight</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although the reductions seen with chlorogenic acid seem remarkable, the studies conducted at this moment in time are somewhat industry influenced

Back to: [Supplements](#) | [Health Outcomes](#)

# Chlorophytum borivianum

Also known as: *Safed Musli*, *Safed Moosli*

Chlorophytum borivianum (Safed Musli) is a Rasayana herb from Indian Medicine supposedly used as an aphrodisiac and adaptogen. Mostly rat studies currently, but it appears to be an effective erectogenic agent and aphrodisiac.

See [Chlorophytum borivianum on Examine.com](#)

## How to Take

No human studies have been conducted to properly assess how much Safed Musli to use for the effects listed above. Given rat studies using the range of 100-200mg/kg, this converts to a preliminary dosage of 16-32mg/kg bodyweight in humans; a 1.1-2.2g dosage for humans weighing 150lbs.

Back to: [Supplements](#) | [Health Outcomes](#)

# Choline

Also known as: *Trimethylethanolamine, Choline Bitartrate*






Other uses:




Choline is a molecule mostly used for either its cognitive boosting properties (turning into acetylcholine, the learning neurotransmitter) or as a liver health agent, able to reduce fatty liver buildup. Found in high amounts in eggs, the yolks in particular.

See [Choline on Examine.com](#)

## How to Take

Doses for choline vary significantly. Typically a dose of 250mg to 500mg is used for general health purposes once daily. For mechanisms through acetylcholine, the choline should be pulsed in high doses acutely as higher doses are partitioned to the brain to a greater extent. 1-2g is typically used. Doses should be titrated to suit the individual, as too high of a dose at any given time may give the user a headache. It is suggested that doses start out at 50-100mg daily and that users adjust upwards in accordance with their tolerance.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anaerobic Running Capacity</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on anaerobic cardiovascular capacity independent of choline depletion
	<a href="#">Cognition</a>	-	- <a href="#">See study</a>	Acute ingestion of choline does not appear to per se influence cognitive capacity
	<a href="#">Fatigue</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fatigue in exercise that is not associated with choline depletion (such as loaded carries) or in trained athletes, which do not appear to be depleted in choline
	<a href="#">Memory</a>	-	- <a href="#">See study</a>	No acute effect on spatial memory formation
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	No significant alterations in the rate of perceived exertion during loaded carrying exercises

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Reaction Time</a>	-	- <a href="#">See study</a>	No significant alterations in reaction time noted with choline
	<a href="#">Training Volume</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant improvements in training volume independent of choline depletion
	<a href="#">Working Memory</a>	-	- <a href="#">See study</a>	No significant improvement in working memory

Back to: [Supplements](#) | [Health Outcomes](#)

# Chondroitin

Also known as: *Condrosulf (Brand Name)*

---

Chondroitin is a supplement frequently paired with Glucosamine as a combination therapy to help with joint pain and stiffness, and other symptoms of osteoarthritis.

See [Chondroitin on Examine.com](#)

## How to Take

A standard dose of chondroitin, if chosen to supplement with, is in the range of 1000-1200mg a day in either one dose or two to three divided doses taken with food.

Back to: [Supplements](#) | [Health Outcomes](#)








# Chromium

Chromium is an essential mineral. It regulates glucose metabolism and insulin sensitivity. Supplementing more chromium than the body needs does not produce reliable results, but it may be associated with minor benefits to diabetics.

See [Chromium on Examine.com](#)

## How to Take














Chromium supplementation typically consists of 1,000 mcg of chromium picolinate, taken in at least two doses throughout the day. Chromium should be supplemented alongside a carbohydrate containing meal, due to its supposed interactions with glucose metabolism. Anyone wishing to supplement chromium should be aware that chromium supplementation is not associated with any reliable benefits on markers of glucose metabolism.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	<b>Very High</b> <a href="#">See all 29 studies</a>	In looking at the entirety of the data on type II diabetic persons, there does appear to be a mild reduction in fasting blood glucose despite no apparent changes in insulin sensitivity or HbA1c. No significant or reliable effect in non-diabetic persons.
	<a href="#">Fat Mass</a>	-	<b>Very High</b> <a href="#">See all 11 studies</a>	There doesn't appear to be a significant nor reliable reduction in fat mass even in diabetics given chromium supplementation according to the literature.
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 17 studies</a>	Although an increase in insulin sensitivity in diabetics should increase HDL cholesterol, the best evidence to date does not support a role for chromium supplementation in improving HDL cholesterol in diabetics.
	<a href="#">HbA1c</a>	-	<b>Very High</b> <a href="#">See all 18 studies</a>	Although sporadic evidence suggest improvements in HbA1c in diabetics, the entirety of the evidence does not support a reliable and significant improvement in diabetic persons.
	<a href="#">Insulin</a>	-	<b>Moderate</b> <a href="#">See all 19 studies</a>	Somewhat similar to the influence on insulin sensitivity, the reductions in fasting insulin concentrations in diabetics appear to exist in some studies but are highly unreliable.
	<a href="#">Insulin Sensitivity</a>	-	<b>Moderate</b> <a href="#">See all 17 studies</a>	There appears to be highly unreliable evidence for this property for unknown reasons, but chromium <i>may</i> have a role in increasing insulin sensitivity in diabetic persons to a mild degree despite the majority of evidence showing no effects.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See all 14 studies</a>	The best evidence to date does not support a role for chromium in the reduction of LDL cholesterol, even when assessing type II diabetic individuals.
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See all 18 studies</a>	Similar to its actions on LDL and HDL individually, chromium does not appear to have a significant role in improving total cholesterol levels in type II diabetic subjects.
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 17 studies</a>	Chromium does not appear to have a role in reducing triglyceride concentrations in the serum of subjects, including diabetic subjects given chromium supplementation.
	<a href="#">Weight</a>	-	<b>Moderate</b> <a href="#">See all 33 studies</a>	There is no significant influence of chromium on weight in either healthy persons or those with diabetes, and although a possible interaction may occur in some instances of better glucose control or reduced appetite they are not frequent enough to establish a solid relationship to chromium.
	<a href="#">Appetite</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There may be a role in reducing appetite specifically in persons who self-report inappropriate eating patterns and carbohydrate cravings, with no known effect in persons who do not report such.
	<a href="#">Depression</a>	 Minor	<b>Low</b> <a href="#">See all 5 studies</a>	There is limited preliminary evidence for chromium having an adjuvant role in aiding depressive symptoms (better overall outcomes when paired with a more effective 'reference' therapy), although the limited evidence for chromium in isolation is unconvincing.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See all 5 studies</a>	While minor, increases in lipid peroxidation have been noted in nondiabetic controls while decreases have occurred in those with a high baseline HbA1c. A possible modulatory effect exists.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	A lone study noted an increase in glutathione peroxidase, but the majority of the evidence finds no significant influence on antioxidant enzymes in the body (glutathione, SOD, or catalase).
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	The majority of evidence does not support a role for chromium in reducing blood pressure any more than placebo.
	<a href="#">Creatinine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No known influence on creatinine, a biomarker for kidney health.







LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Food Intake</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	No significant influence on food intake in standard diabetics, although limited evidence suggest a possible role specifically in persons who self-report elevated carbohydrate cravings and inappropriate eating patterns due to urges.
	<a href="#">Lean Mass</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	Studies in trained and untrained persons, with or without physical exercise, have failed to find an increase in the rate of lean mass accrual relative to placebo.
	<a href="#">Liver Enzymes</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No known influence on liver enzymes or other markers of hepatic health.
	<a href="#">Power Output</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No interaction between chromium and strength gain in naive nor trained athletes.
	<a href="#">vLDL-C</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No significant influence on vLDL cholesterol seen in diabetics supplementing chromium.
	<a href="#">Binge-eating</a>	 Minor	- <a href="#">See study</a>	Although chromium showed an ability to reduce binge eating symptoms in persons with the disorder, this failed to reach statistical significance.
	<a href="#">Fructosamine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Both studies assessing fructosamine have found a mild decrease.
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See all 3 studies</a>	Mixed evidence leaning towards no effect, although a possible antioxidative effect remains possible in persons with high baseline HbA1c or polycystic ovarian syndrome and a prooxidative effect in persons with normal HbA1c.
	<a href="#">Immunity</a>	 Minor	- <a href="#">See study</a>	At least one study has noted an increase rate of lymphocyte proliferation when they were stimulated with a mitogen (proliferation inducing factor) with chromium supplementation relative to placebo.
	<a href="#">Insulin Secretion</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, but it is possible that chromium causes an increased insulin response to dietary glucose (leading to a greater release of insulin acutely, possibly preceding a reduction in blood glucose).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactate Production</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, but at least one study has noted that lactate production during exercise was greater with 600mcg chromium than it was with placebo; no known mechanism for this observation.
	<a href="#">Libido</a>	 Minor	- <a href="#">See study</a>	Perhaps secondary to causing an antidepressive effect, supplementation of chromium was able to alleviate a suppressed libido resulting in an increase relative to control; no studies in nondepressed persons.
	<a href="#">QTc Intervals</a>	 Minor	- <a href="#">See study</a>	One study in diabetic persons found shortened QTc intervals, suggestive of a cardioprotective effect.
	<a href="#">Adiponectin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on adiponectin concentrations in the blood relative to placebo.
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	No apparent influence of chromium supplementation on anaerobic cardiovascular exercise performance relative to placebo.
	<a href="#">Apolipoprotein A</a>	-	- <a href="#">See study</a>	No known interactions with Apolipoprotein A.
	<a href="#">Apolipoprotein B</a>	-	- <a href="#">See study</a>	No known interactions with Apolipoprotein B.
	<a href="#">Bilirubin</a>	-	- <a href="#">See study</a>	No significant interactions with bilirubin concentrations in serum.
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	In persons at risk for type II diabetics, chromium supplementation failed to improve blood flow relative to placebo.
	<a href="#">C-Peptide</a>	-	- <a href="#">See study</a>	No significant influence on C-peptide, a biomarker of insulin secretion status.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on C-reactive protein, a biomarker for inflammation. One study did find a beneficial effect in women with PCOS, however.
	<a href="#">Cell Adhesion Factors</a>	-	- <a href="#">See study</a>	Cell adhesion factors (ICAM-1 and VCAM-1) are unaffected with chromium supplementation in nondiabetic obese adults.
	<a href="#">Eosinophil count</a>	-	- <a href="#">See study</a>	No significant influence on baseline eosinophil count with supplementation of chromium relative to placebo in otherwise healthy women.
	<a href="#">Fat Oxidation</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Fat oxidation (percent of energy derived from fatty acids relative to glucose) does not appear to be influenced following supplementation of chromium.
	<a href="#">Follicle-Stimulating Hormone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of chromium supplementation on follicle stimulating hormone (FSH) in women with PCOS relative to placebo.
	<a href="#">Free Testosterone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of chromium supplementation on free testosterone concentrations in women with PCOS.
	<a href="#">Glycogen Content</a>	-	- <a href="#">See study</a>	Similar to the failure in increasing glycogen replenishment rate, the overall glycogen content increased by carbohydrate is not altered by supplementation of chromium.
	<a href="#">Glycogen Resynthesis</a>	-	- <a href="#">See study</a>	When testing the addition of chromium to a glycogen repletion protocol (after exercise), chromium failed to augment the replenishment from carbohydrates any more than placebo.
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on heart rate is known with chromium supplementation.
	<a href="#">Hepatic Glucose Production</a>	-	- <a href="#">See study</a>	The lone study failed to find a significant influence on hepatic glucose production rates relative to placebo.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Kidney Function</a>	-	- <a href="#">See study</a>	No apparent influence on kidney function (negative nor positive) with chromium supplementation in older sedentary adults.
	<a href="#">Luteinizing Hormone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of chromium supplementation on luteinizing hormone (LH) in women with PCOS relative to placebo.
	<a href="#">Lymphocyte Count</a>	-	- <a href="#">See study</a>	No significant alterations in baseline lymphocyte count with chromium supplementation relative to placebo.
	<a href="#">Memory</a>	-	- <a href="#">See study</a>	No evidence for chromium reducing memory decline seen with aging.
	<a href="#">Muscular Endurance</a>	-	- <a href="#">See study</a>	Low dose chromium supplementation failed to promote muscular endurance in trained athletes relative to placebo.
	<a href="#">Neutrophil Count</a>	-	- <a href="#">See study</a>	No significant influence of chromium supplementation relative to placebo on neutrophil count.
	<a href="#">Oxidation of LDL</a>	-	- <a href="#">See study</a>	No significant influence on the rates of LDL oxidation when compared to placebo supplementation.
	<a href="#">Proteinuria</a>	-	- <a href="#">See study</a>	Chromium supplementation does not appear to cause proteinuria (protein losses in the urine) suggesting no kidney toxicity, as proteinuria is a biomarker of such damage.
	<a href="#">Resistin</a>	-	- <a href="#">See study</a>	The adipokine known as resistin is not affected by supplementation of chromium relative to placebo.
	<a href="#">Serum DHEA</a>	-	- <a href="#">See study</a>	Chromium supplementation does not appear to alter serum concentrations of DHEA or sulfated DHEA.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sex Hormone Binding Globulin</a>	-	- <a href="#">See study</a>	In women with PCOS, chromium supplementation does not alter SHBG concentrations in serum.
	<a href="#">Symptoms of Schizophrenia</a>	-	- <a href="#">See study</a>	The addition of low dose chromium to antipsychotic therapy in schizophrenic persons failed to augment the efficacy of treatment.
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	Testosterone is not affected by chromium in women with PCOS. Currently no evidence in otherwise healthy men.
	<a href="#">Urea</a>	-	- <a href="#">See study</a>	The lone study assessing urea failed to find a significant interaction between it and supplementation of chromium.
	<a href="#">Acne</a>	↓ ↓ ↓ Minor	- <a href="#">See study</a>	Decreased acne symptoms in women with PCOS.
	<a href="#">Symptoms of Bipolar Disorder</a>	↓ ↓ ↓ Minor	- <a href="#">See study</a>	In persons with bipolar disorder given supplementation of chromium, benefits were only noted against depressive symptoms and while significant (statistically) were mild; manic symptoms were not affected.
	<a href="#">Symptoms of Hirsutism</a>	↓ ↓ ↓ Minor	- <a href="#">See study</a>	Decreased symptoms of hirsutism in women with PCOS.
	<a href="#">CD4 Lymphocytes</a>	-	- <a href="#">See study</a>	No known immunomodulatory actions at the level of CD4+ lymphocytes
	<a href="#">DNA Damage</a>	-	- <a href="#">See study</a>	One study assessing DNA damage following ingestion of chromium supplementation failed to find any harmful nor beneficial interactions.
	<a href="#">Metabolic Rate</a>	-	- <a href="#">See study</a>	Six months supplementation of chromium has failed to alter the metabolic rate relative to baseline.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Progesterone</a>	-	- <a href="#">See study</a>	No effect on progesterone in women with PCOS.
	<a href="#">Prolactin</a>	-	- <a href="#">See study</a>	No effect on prolactin levels in women with PCOS.
	<a href="#">Symptoms of PMS</a>	-	- <a href="#">See study</a>	One study found ambiguous results and didn't provide meaningful evidence to evaluate chromium's efficacy.
	<a href="#">Viral Load</a>	-	- <a href="#">See study</a>	In persons with HIV, supplementation of chromium did not alter the levels of the virus in their body despite showing actions on glucose disposal rates.

Back to: [Supplements](#) | [Health Outcomes](#)

# Chrysin


Also known as: *Propolis*, *Honey extract*, *Passiflora caerulea* Linn

A flavonoid compound found in bee pollen and propolis. Can boost testosterone when injected into testicles; otherwise isn't absorbed at all. Unless better absorption arises, chrysin remains a pretty interesting colon cancer preventative agent that does not boost testosterone.

See [Chrysin on Examine.com](#)

## How to Take

Due to the poor bioavailability, the standard supplemental doses of chrysin (400-3,000mg) appear to be pretty much ineffective. Although enhancing absorption can theoretically aid in chrysin's effects, this has not yet been demonstrated and thus supplementation of chrysin cannot be recommended for systemic purposes. A supplemental dose of 400mg chrysin should be sufficient for intestinal related issues.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	Has failed to increase testosterone levels in one study.

Back to: [Supplements](#) | [Health Outcomes](#)

# Cinnamon

Also known as: *Chinese (Saigon) cinnamon, Cassia Cinnamon, Indonesian (Ceylon/True) Cinnamon*

---

Cinnamon is a blend of nutrients commonly used a spice. It can help regulate glucose metabolism in diabetic people, but may also possess some toxic components.

See [Cinnamon on Examine.com](#)

## How to Take

The standard dose for anti-diabetic purposes is 1-6g of cinnamon daily, taken with carbohydrate containing meals. Ceylon cinnamon is always a better supplemental option than cassia cinnamon, due to the lower coumarin content.

Back to: [Supplements](#) | [Health Outcomes](#)



# Cissus quadrangularis

Also known as: Harjor, Asthi Shrinkhala, Bone Setter











Other uses:

Cissus quadrangularis is a traditional medicine for joint and bone health (as well as various feminine disorders and menopause), and shows promise in promoting bone growth rates. It is popular as a joint aid for athletes, with preliminary evidence supporting this property of cissus.

See [Cissus quadrangularis on Examine.com](#)

## How to Take

The one study to note benefit with oral supplementation in humans (for the purpose of reducing joint pain) has used 3,200mg of cissus quadrangularis as a daily supplement, which is also in the range for what animal studies suggest sedative and pain killing effects should occur with the water extract. Elsewhere, 300-600mg of a cissus quadrangularis extract standardized to 2.5% ketosteroids has shown biological activity in humans. Either of the two aforementioned doses should work (former probably more relevant for athletes), but the optimal dose is not known as this moment in time.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Plasma Serotonin</a>	 Notable	- <a href="#">See study</a>	Increase in plasma serotonin was significant (30-39%) and fairly noteworthy, deserves more research.
	<a href="#">Creatinine</a>	 Minor	- <a href="#">See study</a>	An increase in creatinine has been noted alongside weight loss; practical significance of this information is not known.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A minor reduction in lipid peroxidation has been seen in serum associated with weight loss; uncertain significance.
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	Reductions in total cholesterol not overly remarkable relative to placebo and confounded with weight loss which occurred with cissus
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	Reduction in triglycerides is not overly potent and occurred alongside weight loss, which was likely a confounding factor.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	 Minor	- <a href="#">See study</a>	There may be a small weight loss associated with 300mg cissus (2.5% ketosteroids) which was seen alongside a reduction in appetite in obese persons; no known direct fat burning properties.
	<a href="#">Hemorrhoids</a>	-	- <a href="#">See study</a>	Although some traditional usage of the herb suggests otherwise, limited (accessible) human data does not support a role for cissus in the treatment of hemorrhoids
	<a href="#">Functionality in Elderly or Injured</a>	 Notable	- <a href="#">See study</a>	An increase in the function of the joint appears to occur alongside reductions in perceived pain and soreness when cissus treats athletic joint pain; one of the few options that sees to benefit athletes.
	<a href="#">Pain</a>	 Notable	- <a href="#">See study</a>	Joint pain appears to be reduced following supplementation of cissus, and while the magnitude is not remarkable (respectable, but comparable to other supplements) it seems to be one of the few validated in athletes with nonpathological joint pain.
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	In otherwise healthy athletic men, there is no significant influence of supplementation over eight weeks on blood pressure.
	<a href="#">Bone Healing Rate</a>	-	- <a href="#">See study</a>	More evidence is required, as the one study noting that cissus was ineffective in isolation noted that combination therapy with cissus and calcium was quite effective. There may be a role of Cissus, but it currently is not demonstrated
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influence on heart rate when taken over the course of eight weeks.

Back to: [Supplements](#) | [Health Outcomes](#)

# Citric Acid

*Also known as: Citrate*

---

Citric Acid is an intermediate in the Krebs Cycle, and technically crucial for cellular functioning and energy production. Its usage in supplements includes useful things like being bound to minerals (such as Calcium Citrate or Magnesium Citrate) to increase water solubility.

See [Citric Acid on Examine.com](#)

## How to Take

Alkalinizing effects of Citric acid supplementation have been shown in high doses of 0.1g/kg bodyweight, which is 8.2g a day for a 180lb person.

Back to: [Supplements](#) | [Health Outcomes](#)

# Citrulline

Also known as: L-Citrulline, Stimol (Brand Name), Watermelon extract









Other uses:

L-Citrulline is an amino acid. It is turned into L-arginine in the kidneys after supplementation, which means L-citrulline supplementation is a more effective method of increasing L-arginine levels in the body than L-arginine supplementation.

See [Citrulline on Examine.com](#)











## How to Take

To supplement L-citrulline for circulatory health or to alleviate erectile dysfunction, take 1,000 mg of citrulline, three times a day with meals, for a total daily dose of 3,000 mg. L-citrulline does not need to be taken with meals, however. To supplement for circulatory health with a citrulline malate supplement, take 1.76 g of citrulline malate for every 1 gram of citrulline you would normally take. To supplement L-citrulline to enhance sports performance, take 6,000 – 8,000 mg of citrulline malate about an hour before exercise.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	There do not appear to be any significant influences of supplemental citrulline on blood glucose concentrations
	<a href="#">Insulin</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Most studies note that there is no significant change in insulin concentrations, although a lone study (not replicated) suggested that the exercise-induced increase in insulin was suppressed with citrulline. As this study also noted performance degradation, it may be a flaw
	<a href="#">Fatigue</a>	 Notable	<b>Moderate</b> <a href="#">See all 3 studies</a>	The decrease in fatigue during exercise is thought to underlie most of the benefit seen with training capacity (work volume), although in men who self-report fatigue issues supplemental citrulline appears to help with that as well (independent of exercise)
	<a href="#">Muscle Soreness</a>	 Notable	- <a href="#">See study</a>	The lone study using citrulline acutely pre-workout noted a 40% reduction in muscle soreness the following two days after the workout.
	<a href="#">Nitric Oxide</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Nitric oxide derivatives (nitrate and urinary cGMP, since nitric oxide itself is hard to measure these biomarkers are indicative of nitric oxide production) appear to be reliably increased following oral consumption of citrulline supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Plasma Arginine</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Citrulline can increase plasma arginine concentrations, and due to acting as a reservoir of arginine it is actually more effective overall at increasing plasma arginine than arginine itself (acute peaks are still observed to a higher level with arginine supplementation).
	<a href="#">Training Volume</a>	 Notable	- <a href="#">See study</a>	The increase in work capacity seen with citrulline supplementation appears to be time dependent. While there are no inherent and immediate effect, the reduction of fatigue later in a weight lifting workout causes a relative increase that has at least one doubled reps conducted (on set 8 of exhaustive exercise)
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See study</a>	An increase in blood flow is noted with citrulline supplementation in persons with impaired blood flow
	<a href="#">Blood Pressure</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	A decrease in blood pressure is noted secondary to increasing plasma arginine (and thus increasing nitric oxide), but this blood pressure reduction may only occur in those with hypertension or prehypertension
	<a href="#">Creatinine</a>	 Minor	- <a href="#">See study</a>	A slight increase in creatinine has been noted with citrulline supplementation, practical relevance unknown.
	<a href="#">Growth Hormone</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in growth hormone has been noted with exercise, but not at rest. Practical significance of this information is unknown, since Arginine supplementation has unreliable effects itself
	<a href="#">Immunity</a>	 Minor	- <a href="#">See study</a>	Neutrophil oxidative burst post-workout appears to be enhanced when the exercise is preloaded with citrulline supplementation
	<a href="#">Plasma Glutamine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although acute usage does not appear to influence plasma glutamine, a week of high dose supplementation (0.18g/kg) has been noted to reduce glutamine concentrations slightly.
	<a href="#">Plasma Nitrate</a>	 Minor	- <a href="#">See study</a>	An increase in plasma nitrate has been noted with citrulline supplementation, but not to the degree of supplemental <a href="#">nitrate</a> itself
	<a href="#">Urea</a>	 Minor	- <a href="#">See study</a>	An increase in urea is seen with citrulline supplementation (possibly due to increased serum <a href="#">ornithine</a> sequestering ammonia)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Aerobic Exercise</a>	-	- <a href="#">See study</a>	No significant influence on a treadmill test to exhaustion nor oxygen kinetics during this test
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant influence on C-reactive protein concentrations
	<a href="#">DNA Damage</a>	-	- <a href="#">See study</a>	No significant influence of citrulline on DNA damage
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C concentrations
	<a href="#">Heart Rate</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant influence on heart rate seems likely, although at least one study noted a random but significant reduction post-exercise
	<a href="#">IGF-1</a>	-	- <a href="#">See study</a>	No demonstrated effects on IGF-1 concentrations following the usage of citrulline supplementation
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant influence on LDL-C concentrations in serum following citrulline supplementation
	<a href="#">Lactate Production</a>	-	- <a href="#">See study</a>	No significant influence on lactate production seen with citrulline supplementation before exercise
	<a href="#">Lipid Peroxidation</a>	-	- <a href="#">See study</a>	No significant influence of citrulline on lipid peroxidation has been noted
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	Plasma concentrations of LDH are unaffected following citrulline supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscle Protein Synthesis</a>	-	- <a href="#">See study</a>	Currently no human evidence to support a practically significant increase in muscle protein synthesis at rest with citrulline supplementation
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol concentrations
	<a href="#">Erections</a>	 Minor	- <a href="#">See study</a>	Hardness of erections in persons with mild erectile dysfunction appears to be increased following supplementation of citrulline supplementation.
	<a href="#">Exercise Capacity (with Heart Conditions)</a>	 Minor	- <a href="#">See study</a>	Citrulline has been noted to increase physical exercise capacity in persons with heart failure.
	<a href="#">Muscle Oxygenation</a>	 Minor	- <a href="#">See study</a>	An increase in muscle ATP production via aerobic means was noted in men given 6g citrulline daily, but this appeared to be attenuated with time.
	<a href="#">Right Ventricular Ejection Fraction</a>	 Minor	- <a href="#">See study</a>	In persons with heart failure with normal ejection fractions, right ventricular ejection fraction during exercise appears to be increased relative to control.

Back to: [Supplements](#) | [Health Outcomes](#)

# Citrullus colocynthis










Also known as: Bitter apple, desert gourd, bitter cucumber

Citrullus colocynthis, also known as bitter cucumber, is a fruit-bearing plant. Low doses of its seeds and fruit can reduce blood glucose levels. Higher doses are associated with side-effects like colonic inflammation and rectal bleeding.







See [Citrullus colocynthis on Examine.com](#)

## How to Take

Limited human evidence suggests that 100mg of the seed or dry pulp extract, taken three times a day for a total daily dose of 300mg, is associated with reducing blood glucose and improving lipid levels. The traditional 'recommended' dose for Citrullus colocynthis is 300-800mg. This dosage range is associated with severe intestinal inflammation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	May decrease blood glucose in diabetics at low doses, but the evidence at this moment in time is limited (due to differences between groups at the start of the study)
	<a href="#">HbA1c</a>	 Minor	- <a href="#">See study</a>	May be able to mildly decrease HbA1c, although the research supporting this claim is very preliminary at this time.
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There may be a reduction in total cholesterol in those with high cholesterol, but it has a large degree of variability.
	<a href="#">Triglycerides</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	The decrease seen in triglycerides in one study was statistically significance, but the average reduction in hyperlipidemics (16%) has a very large range
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure with up to 300mg of the fruit extract daily over two months



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	No significant influence on creatinine concentrations with the lowest active dose of the supplement (300mg)
	<a href="#">HDL-C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible benefit in hyperlipidemics only has failed to reach statistical significance.
	<a href="#">LDL-C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reduction seen in persons with high blood triglycerides and cholesterol failed to reach statistical significance due to large variance.
	<a href="#">Liver Enzymes</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Both studies using 300mg of either the fruit or seed extract have failed to find alterations in liver enzymes associated with supplementation.
	<a href="#">Urea</a>	-	- <a href="#">See study</a>	No significant alterations in serum urea, suggesting no renal toxicity with the low doses (300mg) of this supplement
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	In assessing the influence of the fruit extract on blood glucose, there was no significant influence on weight

Back to: [Supplements](#) | [Health Outcomes](#)

# Clenbuterol

Also known as: *Clen*, 4-amino- $\alpha$ -(*t*-butyl-amino)methyl-3,5-dichlorobenzyl alcohol









Other uses:

Clenbuterol is an illegal beta-adrenergic agonist used to beef up livestock (before a metabolite was found to be toxic). It is like ephedrine, except much more potent and stays in your body for a day rather than just 4 hours. It is a potent fat loss and muscle preservation agent with side effects.

See [Clenbuterol on Examine.com](#)

## How to Take

Clenbuterol should be started at a dose of 20mcg. Higher doses can be used after tolerance is assessed but caution is warranted at higher doses due to the potency of the drug. Under no circumstance should one consume more than 120mcg a day. Most clenbuterol should be taken in the AM hours, to allow some metabolism before sleep at night (although it will still be disturbed)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Mass</a>	 Notable	- <a href="#">See study</a>	The reduction in fat mass under the influence of clenbuterol is greater than that observed with other fat burners such as <a href="#">ephedrine</a> or <a href="#">yohimbine</a>
	<a href="#">Hypertrophy</a>	 Minor	- <a href="#">See study</a>	Appears to increase muscle protein synthesis
	<a href="#">Power Output</a>	 Minor	- <a href="#">See study</a>	An increase in power output is noted with clenbuterol usage
	<a href="#">Skeletal Muscle Atrophy</a>	 Minor	- <a href="#">See study</a>	The rate of muscle protein breakdown is decreased with clenbuterol usage

# Clitoria ternatea

Also known as: Shankapushi, Shankapushpi, Butterfly Pea

A subtle brain boosting herb from Ayurveda known as Shanka Pushpi that has mechanisms and traditional usage similar to Bacopa Monnieri but, unlike Bacopa, does not currently have any human interventions to test its efficacy.

See [Clitoria ternatea on Examine.com](#)

## How to Take

Due to lack of human interventions, an accurate or best human dose is hard to estimate. Currently, usage of a blend called Perment uses Clitoria Ternatea at 125mg but in conjunction with other herbals. If using Clitoria, doses may fluctuate around this dosage range and perhaps up to 250mg in isolation.

Back to: [Supplements](#) | [Health Outcomes](#)

# Clubmoss

Also known as: *Lycopodium clavatum*, Devil's Ash, Devil's Claw, Ground Pine, Toothed Clubmoss

---

Clubmoss (common word to refer to the Lycopodium/Huperzeria genera of plants) is a collection of plants with traditional usage in promoting memory formation, and appears to have a large collection of unique alkaloids. Its main bioactive is Huperzine-A.

See [Clubmoss on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Cnidium monnieri

Also known as: *Shechuangzi*, *Osthole*, *Jashoshi*, *Cnidii Fructus* (Fruits of *Cnidium*)

---

A pro-erectile herb from traditional Chinese medicine, *Cnidium monnieri* and its main bioactive known as osthole appear to have mechanisms similar to Viagra in penile tissue and the hippocampus; the influence of *Cnidium monnieri* on testosterone and cognition remains unexplored.

See [Cnidium monnieri on Examine.com](#)

## How to Take

Since there is no information on Osthole consumption in isolation, the best lead currently is the dose of *Cnidium* fruits or seeds used in Traditional Medicine; which is 6-15g of either fruit or seed

Back to: [Supplements](#) | [Health Outcomes](#)

# Cocoa Extract

Also known as: *Chocolate polyphenols, Cocoa polyphenols, Cacao polyphenols, Cacao extract, Chocamine*








Other uses:




Cocoa extract is a bitter mixture with a chocolate taste, made up of xanthine molecules (theobromine and caffeine) and procyanidins. Supplementing cocoa extract may provide cardiovascular and cognitive benefits through improved blood flow and antioxidant effects.


















See [Cocoa Extract on Examine.com](#)

## How to Take

Studies show that 5-26g of dark chocolate contains 65-1,095mg of flavanols. The standard dose for cocoa flavanols is 500 – 1,000mg a day, taken with meals. Supplementing cocoa extract can be replaced by dark chocolate consumption. The recommended amount is 25 – 40 g of dark chocolate, containing at least 85% cocoa. This is about 200 calories of dark chocolate. Milk and white chocolate do not contain enough cocoa to replace supplementation. More research is needed to determine the optimal dose of cocoa extract.











LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Flow</a>	 Notable	<b>Very High</b> <a href="#">See all 20 studies</a>	Blood flow appears to be increased in the body very reliably as assessed by <i>flow-mediated vasodilation</i> (FMD) by around 2%, affecting both healthy and unhealthy people. There may also be an increase in arterial blood flow which is less reliable.
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See all 23 studies</a>	While not affecting everybody, there appears to be a decrease in blood pressure when assessing mildly hypertensive people; the increase in blood flow seen in healthy people is not accompanied by a decrease in blood pressure, while the xanthine (caffeine) content of chocolate products may cause a mild and transient increase in blood pressure in some subjects.
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 15 studies</a>	Cocoa products appear to be able to reduce LDL cholesterol due to their flavonoid component, with the reduction in LDL-C being mild.
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 15 studies</a>	While an increase of HDL-C may occur, it is both mild and infrequent so large studies and meta-analyses fail to find reliable evidence for cocoa.











LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See all 14 studies</a>	Although LDL-C may be decreased mildly, alterations in total cholesterol did not appear to occur; this may be due to unreliable but mild increases in HDL-C balancing out the numbers.
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 16 studies</a>	The vast majority of studies assessing either dark chocolate products or isolated polyphenolics from cocoa fail to find any influence on triglycerides relative to placebos or control chocolates.
	<a href="#">8-isoPGF2a</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	This biomarker of inflammation has been noted to be reduced in two studies where the subjects were prooxidative at rest (PAD and smokers), with no influence in other studies of otherwise healthy subjects.
	<a href="#">General Oxidation</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	A potential yet unreliable decrease in biomarkers of oxidation in serum following ingestion.
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>Moderate</b> <a href="#">See all 9 studies</a>	Many studies have noted a minor benefit to insulin sensitivity in both healthy subjects and diabetics, likely due to a transient increase of glucose uptake into tissue (a more 'bandaid' effect rather than a curative one).
	<a href="#">Attention</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	In assessing the effects of cocoa on mood states, attention does not appear to be significantly altered when compared to placebo.
	<a href="#">Blood Glucose</a>	-	<b>High</b> <a href="#">See all 10 studies</a>	It is possible that the improvement in insulin sensitivity could beneficially influence blood glucose, but most studies assessing diabetic or healthy subjects find no difference in fasting glucose concentrations. The increase in serum glucose in response to an oral glucose tolerance test may be attenuated somewhat.
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	Most studies assessing cocoa flavanols do not find reliable reductions in C-reactive protein when compared to placebo or control treatments.
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	Cocoa and the main constituent (-)-epicatechin do not appear to have an appreciable effect on heart rate at rest or during exercise when compared to placebo.
	<a href="#">Insulin</a>	-	<b>High</b> <a href="#">See all 9 studies</a>	Despite improvements in insulin sensitivity, only one study has noted a reduction in fasting insulin in diabetics while other studies (in diabetics and healthy subjects) do not notice any significant alterations in insulin concentrations.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Noradrenaline</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Peripheral concentrations of noradrenaline do not appear to be influenced by supplementation of cocoa.
	<a href="#">Oxidation of LDL</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	The majority of evidence does not find a significant alteration in the rate of LDL oxidation with cocoa or its isolated flavanols relative to placebo.
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	Beyond one study suggesting benefits, the majority of studies including cocoa flavanols in the diet have failed to note significant weight loss compared to isocaloric controls.
	<a href="#">Photoprotection</a>	 Notable	- <a href="#">See all 3 studies</a>	Mixed results reported. Two randomized, controlled trials report significant protection from UV-induced skin damage with 320-326mg/day cocoa flavanols over 6-24 week time periods. In contrast, another study using high flavanol chocolate (600mg flavanols) over a period of weeks failed to note any increase in the resistance of the skin towards reddening in response to light.
	<a href="#">Platelet Aggregation</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	Both acute and prolonged ingestion of reasonable levels of cocoa flavonoids (500mg or more) appear to reduce the aggregation of platelets, although the potency is lesser than that of a baby aspirin (81 mg).
	<a href="#">Adrenaline</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence as to whether serum adrenaline can be reduced in serum following cocoa ingestion prior to an acute stressor.
	<a href="#">Arterial Stiffness</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Mixed evidence as to whether cocoa flavanols can decrease arterial stiffness in otherwise healthy adults, with the one study coming back positive being conducted in overweight adults
	<a href="#">Blood Viscosity</a>	 Minor	- <a href="#">See study</a>	One study measuring blood viscosity has noted a decrease associated with cocoa flavanols, likely associated with the reduction in platelet aggregation.
	<a href="#">Calmness</a>	 Minor	- <a href="#">See study</a>	One study using relatively high doses of cocoa flavanols (500mg) found an increased rate of calmness and well being when compared to placebo in otherwise healthy subjects.
	<a href="#">Cerebral Blood Flow</a>	 Minor	- <a href="#">See study</a>	Cerebral blood flow during cognitive testing in youth can be increased from 170mg cocoa flavanols, although may not coexist with increases in cognition.






LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cerebral Oxygenation</a>	 Minor	- <a href="#">See study</a>	The rate of cerebral oxygenation in youth subject to a cognitive task appeared to be increased alongside increased cerebral blood flow, despite no acute benefits to cognition.
	<a href="#">Hepatic Venous Pressure Gradient</a>	 Minor	- <a href="#">See study</a>	An improvement in the HPVG has been noted in subjects with liver cirrhosis given cocoa flavanols.
	<a href="#">Insulin Secretion</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence as to whether cocoa flavanols can increase insulin secretion, with the positive result coming from a very high dose (1,000mg flavanols) in hyperglycemic subjects.
	<a href="#">Lipid Peroxidation</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Decreases in lipid peroxidation (assessed by serum MDA) have been noted in oxidative states such as exercise, but have not been noted in resting states after cocoa flavanol ingestion.
	<a href="#">Nitric Oxide</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	There is mixed evidence in both smokers and subjects with peripheral vascular disease (two states of high endothelial oxidation) as to whether the inclusion of dark chocolate can increase nitric oxide levels, which would underlie improvements in blood flow.
	<a href="#">Skin Elasticity</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A slight increase in skin elasticity has been noted with oral flavanol supplementation in women, noted in the temple but not arm.
	<a href="#">Symptoms of Peripheral Vascular Disease</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There is mixed evidence as to suggest benefits to peripheral vascular disease when cocoa (40-50g dark chocolate) is ingested acutely before walking tests.
	<a href="#">Acne</a>	-	- <a href="#">See study</a>	One study assessing the blinded intake of chocolate in subjects who reported to be acne prone found an increase in acne when chocolate was given relative to placebo.
	<a href="#">Adiponectin</a>	-	- <a href="#">See study</a>	No significant influence on circulating adiponectin concentrations when compared to control.
	<a href="#">Adrenocorticotrophic Hormone</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Serum ACTH concentrations do not appear to be influenced by supplementation of cocoa.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Aerobic Exercise</a>	-	- <a href="#">See study</a>	The performance of soccer players is unaltered in response to cocoa flavanol ingestion.
	<a href="#">Cell Adhesion Factors</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	As a general statement, supplementation of cocoa flavanols does not appear to appreciably reduce cellular adhesion factors (ex. ICAM-1 or VCAM-1) when compared to placebos with low cocoa flavanol content.
	<a href="#">Cognition</a>	-	- <a href="#">See study</a>	General cognition does not appear to be acutely affected by supplementation of cocoa flavanols.
	<a href="#">Cortisol</a>	-	- <a href="#">See all 3 studies</a>	The increase in cortisol has been buffered in one study where stress was introduced, but otherwise cocoa does not appear to influence resting cortisol concentrations.
	<a href="#">Creatinine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Serum creatinine does not appear altered from supplementation of flavanols from cocoa.
	<a href="#">Fat Oxidation</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	The rate of fat oxidation relative to carbohydrates does not appear to be altered in response to supplementation of cocoa flavanols.
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	Fatigue during cognitive testing in otherwise healthy youth is not affected by supplementation of cocoa flavanols.
	<a href="#">HbA1c</a>	-	- <a href="#">See study</a>	HbA1c does not appear to be altered in response to cocoa flavanol ingestion.
	<a href="#">Homocysteine</a>	-	- <a href="#">See study</a>	Homocysteine has been found to be unaltered in response to cocoa ingestion compared to control.
	<a href="#">Interleukin 6</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Serum interleukin six (IL-6), a biomarker of inflammation, does not appear to be altered in response to supplementation of cocoa.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Intraocular Pressure</a>	-	- <a href="#">See study</a>	Cocoa does not appear to reduce intraocular pressure when given to subjects with glaucoma.
	<a href="#">Leptin</a>	-	- <a href="#">See study</a>	No significant influence on circulating leptin concentrations when compared to control.
	<a href="#">Memory</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In subjects with otherwise healthy cognition, the addition of cocoa flavanols to the diet does not appear to significantly increase memory retention when compared to placebo.
	<a href="#">Plasma Vitamin E</a>	-	- <a href="#">See study</a>	An increase in plasma vitamin E concentrations have been noted in soccer players alongside an increase in other antioxidative biomarkers, suggesting an antioxidant effect in this study.
	<a href="#">Portal Hypertension</a>	-	- <a href="#">See study</a>	While cocoa flavanol showed benefit to subjects with liver cirrhosis, it was unrelated to reductions in portal (liver) hypertension.
	<a href="#">Skin Moisture</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Oral supplementation of cocoa flavanols does not appear to significantly influence skin hydration when compared to placebo.
	<a href="#">Subjective Well-Being</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	While one study using high dose flavanols (250-500mg) found increased well being in subjects during cognitive testing, other studies using dark chocolate have failed to notice any benefit to self-reported well being compared to placebo.
	<a href="#">TNF-Alpha</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	The circulating biomarker of inflammation TNF-alpha does not appear to be altered in response to supplementation from cocoa flavanols.
	<a href="#">Urea</a>	-	- <a href="#">See study</a>	Urea is not altered in the blood when compared to control.
	<a href="#">Uric Acid</a>	-	- <a href="#">See study</a>	Serum uric acid/urate seems unaltered in response to cocoa flavanol supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Working Memory</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In otherwise cognitively well subjects, working memory does not appear to be increased in response to cocoa flavanol ingestion.
	<a href="#">vLDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	vLDL-C concentrations in serum do not appear to be altered in response to supplementation of cocoa flavanols.
	<a href="#">Cutaneous Blood Flow</a>	 Notable	- <a href="#">See study</a>	One study has found longer-term high-flavanol cocoa improves cutaneous blood flow in women.
	<a href="#">Exercise-Induced Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The increase in oxygenation during exercise can be attenuated by supplementation of cocoa flavanols taken prior to exercise.
	<a href="#">IL-1Ra</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence as to whether the receptor for IL-1a is reduced in amount following cocoa ingestion.
	<a href="#">Kidney Oxygenation</a>	 Minor	- <a href="#">See study</a>	An increase in oxygenation of renal (kidney) tissue has been noted with supplementation of cocoa flavanols in otherwise healthy subjects
	<a href="#">Mitochondrial Protection</a>	 Minor	- <a href="#">See study</a>	In subjects with diabetes-associated heart failure, low dose epicatechin (100mg) appeared to improve mitochondrial function and structure
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	Anaerobic exercise does not appear to be beneficially influenced by pre-exercise supplementation of cocoa flavanols in otherwise healthy subjects.
	<a href="#">Fat Mass</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Fat mass does not appear to be influenced with supplementation of cocoa flavanols
	<a href="#">Fibrinogen</a>	-	- <a href="#">See study</a>	Fibrinogen concentrations do not appear altered when 100g chocolate is ingested in otherwise healthy subjects

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Food Intake</a>	-	- <a href="#">See study</a>	The inclusion of cocoa flavanols via dark chocolate does not appear to alter whole-day food intake when compared to low flavanol chocolate.
	<a href="#">Glucagon</a>	-	- <a href="#">See study</a>	Serum glucagon does not appear to be influenced by ingestion of cocoa flavanols.
	<a href="#">Interleukin 1-alpha</a>	-	- <a href="#">See study</a>	IL-1a has been found to be unaffected by supplementation of chocolate in otherwise healthy subjects
	<a href="#">Interleukin 1-beta</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Interleukin-1B does not appear to be influenced by supplementation of cocoa flavanols
	<a href="#">Interleukin 10</a>	-	- <a href="#">See study</a>	Serum interleukin-10 does not appear to be influenced with supplementation of cocoa flavanols
	<a href="#">Lactate Production</a>	-	- <a href="#">See study</a>	The rate of lactate accumulation and production during exercise does not appear to be significantly influenced by pre-exercise supplementation of cocoa flavanols
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	Lean mass does not appear to be increased in response to supplementation of cocoa flavanols
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	Liver enzymes do not appear to be altered with supplementation of cocoa flavanols
	<a href="#">Neutrophil Activity</a>	-	- <a href="#">See study</a>	Neutrophil activity does not appear to be altered in response to cocoa flavanol supplementation
	<a href="#">Neutrophil Count</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The overall amount of neutrophils in serum do not appear to be altered in response to cocoa flavanols

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rate of Perceived Exertion</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The rate of perceived exertion during exercise does not appear to be altered when cocoa flavanols are ingested prior to exercise.

Back to: [Supplements](#) | [Health Outcomes](#)

# Coconut Oil

Also known as: *Cocos nucifera*, Coconut, Medium Chain Triglycerides (partially synonymous but commonly touted as such)









Other uses:

Coconut oil is a highly saturated oil derived from coconuts, made up primarily of lauric acid and other medium-chain triglycerides, which are responsible for many of its metabolic effects. It is also a popular cosmetic.

See [Coconut Oil on Examine.com](#)

## How to Take

Coconut oil is most effective when about 5- 10g of medium chain triglycerides are included in the diet. This is approximately 7.7 – 15g of coconut oil. Coconut oil can be used in cooking, as long as cooking is done below the smoke point of the oil (350°F/175°C). Replacing other dietary fatty acids with coconut oil may negate any potential fat loss effects if the caloric content of coconut oil is greater than the previously consumed fatty acids.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Skin Dryness</a>	 Notable	- <a href="#">See study</a>	Appears to be comparable to mineral oil, which is usually the active control in these studies.
	<a href="#">Skin Moisture</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be comparable to mineral oil, the active control
	<a href="#">Processing Speed</a>	 Minor	- <a href="#">See study</a>	Study was unable to properly assess coconut oil as it was used as an active control; some benefit appears apparent relative to fish oil.
	<a href="#">Working Memory</a>	-	- <a href="#">See study</a>	Insufficient evidence to support an increase in working memory
	<a href="#">Infant Growth</a>	-	- <a href="#">See study</a>	





# Codonopsis pilosula

Also known as: Dangshen, Dang Shen

---

Codonopsis Pilosula (Dangshen) is a herb that has historically been used as a cheap replacement for Panax Ginseng which was costly. Dangshen may have cognitive boosting capacities on its own, but is quite understudied.

See [Codonopsis pilosula on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Coenzyme Q10

Also known as: CoQ10, Ubiquinone, Ubiquinol, trans 2,3-dimethoxy-5-methyl-6-decaprenyl-1,4-benzoquinone









Other uses:




















Coenzyme Q10 is a molecule found in mitochondria that has a critical role in producing energy for the body. It also plays an important role in the endogenous antioxidant system.

See [Coenzyme Q10 on Examine.com](#)

## How to Take











The standard dose for CoQ10 is generally 90mg for a low dose and 200mg for the higher dose, taken once daily with a meal due to its reliance on food for absorption. Dose-dependence is not commonly observed with CoQ10 supplementation and 90mg tends to be the best cost-effective dose. There generally isn't too much of a therapeutic effect of CoQ10 supplementation (mostly taken with the 'just in case' mentality that pervades multivitamin supplementation), although for people who have previously experience a heart attack or damage to cardiac tissue as well as for people on statin therapy supplementation becomes much more important. CoQ10 supplements can be either the oxidized form (ubiquinone) or reduced form (ubiquinol) as both forms seem pretty equally potent in increasing circulating levels of total CoQ10 in the body. 'Total CoQ10' refers to the sum of both forms, since CoQ10 can readily swap between forms as it acts in the body.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lipid Peroxidation</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Appears to reduce biomarkers of lipid peroxidation. CoQ10 tends to be a reference drug for lipid peroxidation, and although it is more potent than other nutraceuticals it is not astounding.
	<a href="#">Blood Flow</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Appears to increase blood flow in metabolic conditions characterized by both insufficient blood flow and an excess of oxidative stress.
	<a href="#">Blood Pressure</a>	 Minor	<b>Low</b> <a href="#">See all 6 studies</a>	There appears to be an interaction between CoQ10 and blood pressure, but it is not wholly reliable and uncertain whether this is at the level of the cardiac tissue or at the level of the endothelium (both plausible). Magnitude of reductions don't appear too remarkable.
	<a href="#">Endothelial Function</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	The effective size does not appear to be overly large, but CoQ10 is associated with a protective effect on blood flow and endothelial function in persons with otherwise impaired function.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Exercise Capacity (with Heart Conditions)</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Appears to aid exercise capacity in persons after myocardial infarction
	<a href="#">Exercise-Induced Oxidation</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Mixed effects on exercise-induced oxidation, but there appears to be some potential for CoQ10 supplementation to reduce oxidation.
	<a href="#">Fatigue</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There may be an anti-fatigue effect of CoQ10 during exercise that may not extend to general fatigue.
	<a href="#">General Oxidation</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	Appears to generally reduce pro-oxidative biomarkers in the body
	<a href="#">HbA1c</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	There may be an effect on HbA1c, but it appears unreliable and not overly potent.
	<a href="#">Inflammation</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Classical inflammatory cytokines do not appear to be altered much following CoQ10 supplementation, although there may still be a minor antiinflammatory effect
	<a href="#">Symptoms of Fibromyalgia</a>	 Strong	<b>Very High</b> <a href="#">See all 5 studies</a>	CoQ10 appears to be quite strongly effective for reducing symptoms of fibromyalgia (strong rating may be retracted at a later time when other reference drugs arise)
	<a href="#">Symptoms of Peyronie's Disease</a>	 Notable	- <a href="#">See study</a>	Notable reduction in the progression of Peyronie's disease state (and secondary to that, improvements in erectile properties) as CoQ10 may be one of the only oral treatments of this condition
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase levels of antioxidant enzymes, does not appear to be reliable
	<a href="#">Erections</a>	 Minor	- <a href="#">See study</a>	Increased erectile function has been noted with CoQ10, but this may be secondary to reductions in symptoms of Peyronie's Disease

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Follicle-Stimulating Hormone</a>	 Minor	- <a href="#">See study</a>	A decrease in follicle stimulating hormone has been detected
	<a href="#">Luteinizing Hormone</a>	 Minor	- <a href="#">See study</a>	A decrease in luteinizing hormone has been detected with CoQ10 supplementation
	<a href="#">Migraine</a>	 Minor	- <a href="#">See study</a>	Degree of improvement is not overly remarkable, with portions of the trial not outperforming placebo.
	<a href="#">Muscle Damage</a>	 Minor	- <a href="#">See study</a>	A slight decrease in biomarkers of muscle damage has been noted with CoQ10 supplementation.
	<a href="#">Pre-Eclampsia Risk</a>	 Minor	- <a href="#">See study</a>	A reduction in risk has been noted, but not to an overly amazing degree
	<a href="#">Quality of Life</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	An increase in QOL has been noted in persons who either have heart ailments or are at risk for them, but this may not be a universal increase (perhaps dependent on reducing disease state symptoms)
	<a href="#">Rate of Perceived Exertion</a>	 Minor	- <a href="#">See study</a>	A decrease in the rate of perceived exertion has been noted with CoQ10 supplementation
	<a href="#">Seminal Motility</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Requires more evidence to assess potency, but it does appear to reliably increase seminal motility
	<a href="#">Sperm Quality</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	There may be some beneficial influences on the sperm quality, but they have not been reliably reported
	<a href="#">Symptoms of Parkinson's Disease</a>	 Minor	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Testosterone</a>	 Minor	- <a href="#">See study</a>	Not the largest increase, and was in infertile men; may not apply to fertile men.
	<a href="#">VO2 Max</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in VO2 max of untrained persons has been noted following CoQ10 supplementation.
	<a href="#">Adiponectin</a>	-	- <a href="#">See study</a>	No detectable interaction of CoQ10 and adiponectin
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	No significant influence on anaerobic cardiovascular exercise has been detected with CoQ10 (although an anti-fatigue effect has been noted)
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Insufficient evidence to support changes in blood glucose with CoQ10 supplementation
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on levels of C-reactive protein
	<a href="#">Exercise Capacity</a>	-	- <a href="#">See study</a>	No significant detectable effect on exercise capacity when preloaded
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in insulin associated with CoQ10 supplementation.
	<a href="#">Oxygen Uptake</a>	-	- <a href="#">See study</a>	No detectable influence on oxygen uptake during exercise
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant or consistent effects on total cholesterol levels noted with CoQ10

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Prader Willi Syndrome</a>	 Notable	- <a href="#">See study</a>	Notable due to the aid to psychocognitive capabilities being comparable to the growth hormone active control (although not as effective in regards to physical development). Study in infants, not enough evidence in adults
	<a href="#">Cardiac Mass</a>	 Minor	- <a href="#">See study</a>	A decrease in cardiac mass has been noted with CoQ10 supplementation
	<a href="#">Fertility</a>	 Minor	- <a href="#">See study</a>	Insufficient evidence to support whether the increase in fertility is large or not, but preliminary evidence suggests that it exists.
	<a href="#">Left Ventricular Ejection Fraction</a>	 Minor	- <a href="#">See study</a>	Has been noted to increase LVEF in persons with myocardial impairment
	<a href="#">UV Damage</a>	 Minor	- <a href="#">See study</a>	A decrease in UV damage has been detected with supplemental CoQ10

Back to: [Supplements](#) | [Health Outcomes](#)










# Coffee

Also known as: *Liquid gold*

Other uses:

Sometimes referred to as liquid gold, coffee is the most popular source of caffeine in North America (and behind only teas worldwide). Also a source of tons of nutrients, and most recently touted as a source of chlorogenic acid and ferulic acid.

See [Coffee on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Adiponectin</a>	 Minor	- <a href="#">See study</a>	An increase in adiponectin has been associated with coffee consumption
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	An increase in HDL-C is noted with coffee ingestion
	<a href="#">Inflammation</a>	 Minor	- <a href="#">See study</a>	A decrease in some inflammatory cytokines has been noted with coffee ingestion
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	An increase in cholesterol has been noted in one study which attributed most of the increase to HDL
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No significant influences on insulin sensitivity with caffeinated coffee

Back to: [Supplements](#) | [Health Outcomes](#)

# Cold Exposure

*Also known as: Non-shivering thermogenesis, Shivering*

---

The act of exposing yourself to the cold and feeling the cold and, gritting your teeth through the discomfort. It actually does appear to burn fat in an attempt to warm the body, and may carry some health benefits.

See [Cold Exposure on Examine.com](#)

## How to Take

Benefits have been seen at 6°C degrees below comfort level, which is typically 16°C (60.8 °F). Greater metabolic losses are seen with greater intensities of cold exposure.

Back to: [Supplements](#) | [Health Outcomes](#)



# Coleus forskohlii

Also known as: Forskolin, Coleonol, 7beta-acetoxy-1alpha,6beta,9alpha-trihydroxy-8,13-epoxy-labd-14-en-11-one

Other uses:








Coleus forskohlii is an herb used in traditional medicine that may boost testosterone and induce fat loss, particularly in men.

See [Coleus forskohlii on Examine.com](#)

## How to Take

To supplement Coleus forskohlii, take 250 mg of a supplement that contains 10% forskolin, twice a day, for a 500 mg total daily dose. Further research is needed to determine the optimal Coleus forskohlii dose.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Asthma</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Although more evidence is required, it appears to be more effective at suppressing asthmatic symptoms than other nutraceuticals. Mechanisms may be related to beta-adrenergic compounds (due to increasing cAMP and inducing bronchiol dilation)
	<a href="#">Bone Mineral Density</a>	 Notable	- <a href="#">See study</a>	Definitely requires more evidence, but a DXA confirmed increase in bone mass in men over 12 weeks makes this notable (rather than an increase in bone mass in osteoporotic women over 2 years)
	<a href="#">Fat Mass</a>	 Minor	- <a href="#">See study</a>	Somewhat effective in reducing fat mass in obese and overweight persons.
	<a href="#">Fatigue</a>	 Minor	- <a href="#">See study</a>	Less fatigue reported as a side-effect, no comparator or ability to assess potency.
	<a href="#">Intraocular Pressure</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Eyedrops containing forskolin seem effective in reducing intraocular pressure (IOP), and while it seems effective orally those studies are currently confounded with the inclusion of other nutrients (and thus omitted from the HEM).
	<a href="#">Lean Mass</a>	 Minor	- <a href="#">See study</a>	Somewhat effective (2lbs over 12 weeks relative to placebo) although somewhat confounded with the increase in bone mass, as lean mass is inclusive of bone and skeletal muscle.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Testosterone</a>	 Minor	- <a href="#">See study</a>	Increase of testosterone observed in men not overly potent and is highly variable.
	<a href="#">Weight</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Mixed effects on overall weight, may be more effective in men rather than women. Overall, it requires more evidence to see if it has a role in weight loss regimens.
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on blood pressure was noted with coleus supplementation
	<a href="#">HDL-C</a>	 Notable	- <a href="#">See study</a>	Needs to be replicated in larger trials, but the degree of increase was quite remarkable.

Back to: [Supplements](#) | [Health Outcomes](#)

# Colostrum

Also known as: First Milk, Bovine colostrum




Other uses:

Colostrum, also known as first milk, is a mammary secretion produced by cows and related animals. The results of supplementation are similar to supplementing whey protein, though colostrum may offer some unique benefits for the immune and digestive systems.

See [Colostrum on Examine.com](#)

## How to Take









The standard colostrum dose intended as a protein supplemented or intestinal health agent is between 20-60g. This dose contains 2-4g (10-20%) of immunoglobulin. Colostrum is supplemented through a powder form. A colostrum dose intended to reduce the risk of E. coli-induced diarrhea should contain between 400-3,500mg of immunoglobulins. It should be taken shortly after a meal. Colostrum intended to reduce the risk of diseases related to E. coli must come from a cow (or similar animal) that has been immunized against E. coli.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	-	<b>High</b> <a href="#">See all 13 studies</a>	The majority of studies fail to find any significant influence of colostrum on body weight that is atypical of protein sources, although as it confers protein and calories it remains possible to gain weight from colostrum.
	<a href="#">Diarrhea</a>	 Notable	<b>High</b> <a href="#">See all 8 studies</a>	Diarrhea can be potently reduced with colostrum under two conditions, either it is being used in persons with HIV-induced diarrhea from <i>cryptosporidium parvum</i> or when using colostrum (from cows immunized to E.coli) in response to food carrying E.coli (usually seen with traveler's diarrhea); despite being highly effective in those two scenarios it seems ineffective in other cases of diarrhea.
	<a href="#">CD4 Lymphocytes</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	While there does not appear to be any influence in healthy controls or with low dose colostrum, higher doses of colostrum in persons with HIV (reduced CD4+ lymphocyte counts) may mildly increase CD4+ counts when compared to whey protein as control.
	<a href="#">Intestinal Permeability</a>	 Minor	- <a href="#">See all 3 studies</a>	Evidence is preliminary, and there are studies suggesting both an increase in permeability and a decrease seen with endurance exercise (increase) or with high heat stress exercise or NSAID coingestion (decrease).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lean Mass</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Colostrum, inherently due to being a dietary protein, appears to promote lean mass accrual. This is comparable to a similar dose of whey protein as the growth factors in colostrum do not appear to provide an additional benefit.
	<a href="#">Aerobic Exercise</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	For the most part colostrum influenced aerobic exercise similar to whey protein (ie. not much benefit) although in specific instances of high endurance stressors in elite cyclists there may be a small ergogenic benefit thought to be due to reducing the rate of immunosuppression.
	<a href="#">Anaerobic Running Capacity</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	There does not appear to be any benefit of dietary colostrum, relative to whey protein, in improving cardiovascular performance in anaerobic instances such as Wingate testing, resisted treadmill tests, or rowing.
	<a href="#">Fat Mass</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Supplementation of colostrum has failed to increase fat mass in subjects relative to baseline, similar to the same doses of whey protein which usually also fail to influence fat mass.
	<a href="#">Fat Oxidation</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Colostrum does not influence fat oxidation rates or glucose expenditure during exercise any differently than other protein sources such as whey.
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Heart rate during exercise, either submaximal or at lactate threshold, is not modified with dietary supplementation of colostrum.
	<a href="#">IGF-1</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	While any protein sources has the potential to increase IGF-1 when included in the diet, colostrum is no different than whey protein at doing so. The IGF-1 that is present in colostrum naturally appears to be fully digested in the intestinal tract and does not reach the blood.
	<a href="#">Immunoglobulin A</a>	-	<b>Moderate</b> <a href="#">See all 8 studies</a>	IgA concentrations in saliva and serum do not appear to be reliably increased although a few studies have noted spikes, which do not appear to be consistent in their magnitude nor incidence. The only incidence where IgA appears to be reliably increased is when it is taken as a vaccine adjuvant.
	<a href="#">Immunoglobulin G</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	IgG has been noted to be increased once when colostrum was used as a vaccine adjuvant (relative to skim milk with whey as control), but in general there is no influence without coadministered vaccination.
	<a href="#">Immunoglobulin M</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	IgM does not appear to <i>per se</i> be modified in serum relative to control protein, and unlike the other immunoglobulins there is no augmentation of a vaccine-induced IgM spike.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactate Production</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Lactate production during physical exercise does not appear to be any different with dietary colostrum when compared to whey protein.
	<a href="#">Length of Sickness</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Despite tenuous evidence suggesting a reduction in the frequency of sickness with colostrum, when sickness does occur there is no benefit of colostrum in reducing how long it occurs for.
	<a href="#">Power Output</a>	-	<b>Very High</b> <a href="#">See all 9 studies</a>	For the most part and aside from one pilot study, there is no consistent or remarkable increase in power output seen with colostrum that is not replicated by whey. Protein, inherently, may increase power output when combined in the diet over longer periods though.
	<a href="#">VO2 Max</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	All studies assessing the effects of colostrum in athletes subject to cardiovascular training have failed to find any difference between colostrum and whey protein (control) for influencing VO <sub>2</sub> max.
	<a href="#">Fatigue</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Both studies on fatigue assessed persons with HIV-related diarrhea, but when diarrhea was successfully (and greatly) benefited with colostrum containing porridge fatigue was reduced by over 80% of baseline values. It is uncertain if this anti-fatigue effect influences other persons.
	<a href="#">Symptoms of Ulcerative Colitis</a>	 Notable	- <a href="#">See study</a>	One study using a solution of colostrum (as enema) in persons with distal colitis noted a large suppression of symptoms and inflammation relative to placebo. No studies available on oral supplementation of colostrum for inflammatory bowel diseases.
	<a href="#">Abdominal Pain</a>	 Minor	- <a href="#">See study</a>	One study noted a reduction in abdominal pain associated with the successful treatment of diarrhea.
	<a href="#">CD8 Lymphocytes</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	At baseline CD8+ lymphocytes do not appear to be altered, although one study noted that the expected decrease in these lymphocytes during exercise was attenuated with colostrum (resulting in a relative increase to whey control).
	<a href="#">Glucagon-like Peptide 1</a>	 Minor	- <a href="#">See study</a>	An exercise increase in GLP-1 seen in placebo was attenuated with colostrum administration, thought to be related to the reduction in gut permeability seen with colostrum.
	<a href="#">Insulin Secretion</a>	 Minor	- <a href="#">See study</a>	Insulin is secreted in response to colostrum intake due to it being a dietary protein, but this response does not seem to be different from whey protein in magnitude.






LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Macrophage Activity</a>	 Minor	- <a href="#">See study</a>	One study investigating acute usage of colostrum noted an increase in macrophage phagocytic activity, although as this study noted other immune variables were normalized after a day the long term implications of colostrum on this parameter are uncertain.
	<a href="#">Muscle Protein Synthesis</a>	 Minor	- <a href="#">See study</a>	There is an increase in protein synthesis with colostrum relative to maltodextrin due to colostrum being a dietary protein, but there is also an increase in protein breakdown seen; efficacy of colostrum relative to other protein sources in MPS is currently not well investigated.
	<a href="#">Upper Respiratory Tract Infection Risk</a>	 Minor	- <a href="#">See all 3 studies</a>	There may be a minor reduction in the incidence of upper respiratory tract infections (URTIs) seen with colostrum, although more evidence is needed to confirm this activity as current trials are usually underpowered.
	<a href="#">Vaccine Augmentation</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Tenuous evidence for an increase in vaccine efficacy, as while the one study assessing antibody titres failed to find any influence (suggesting no benefit) there does appear to be a reliable increase in the secretion of IgA and IgG in response to the vaccine.
	<a href="#">B-Cell Count</a>	-	- <a href="#">See study</a>	The overall count of B cells in response to supplementation does not differ between colostrum and whey protein, both seeming to be without any effect.
	<a href="#">Blood Acidity</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	While one study noted an increase in buffering capacity of the blood (reduction in acidity), this observation failed to be replicated in another study and both failed to find an ergogenic effect thought to occur after such an increase in buffer capacity.
	<a href="#">Body Temperature</a>	-	- <a href="#">See study</a>	In assessing the effects of colostrum on gut permeability during exercise (secondary to an increase in body heat), colostrum benefited permeability without modifying body heat.
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	C-reactive protein does not appear to be significantly influenced with supplementation of colostrum relative to control or baseline values.
	<a href="#">Cell Adhesion Factors</a>	-	- <a href="#">See study</a>	Cellular adhesion factors on immune cells do not appear to be modified with colostrum relative to whey protein.
	<a href="#">Cortisol</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	While one study noted an increase in morning cortisol during multiple day training in elite cyclists (a beneficial response), basal cortisol concentrations and those immediately after standard exercise do not appear to be influenced with colostrum supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Exercise-Induced Immune Suppression</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The limited studies assessing sickness in athletes during exercise have not found a significant reduction in sickness rates relative to control protein sources (whey).
	<a href="#">Ghrelin</a>	-	- <a href="#">See study</a>	Circulating ghrelin does not appear to be modified in response to colostrum supplementation.
	<a href="#">Glucagon-like Peptide 2</a>	-	- <a href="#">See study</a>	Circulating levels of GLP2 do not appear to be significantly influenced relative to control protein.
	<a href="#">Hemoglobin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There does not appear to be an <i>inherent</i> increase in hemoglobin with colostrum, although when it successfully treated HIV-associated diarrhea an increase in hemoglobin was noted once (thought to partially underlie the reduction in fatigue).
	<a href="#">Immunity</a>	-	- <a href="#">See study</a>	DTH responsiveness (indicative of T-cell mediated immunity) was not affected with colostrum in adults overall or in the elderly cohort which are normally more responsive to therapeutic interventions on DTH responsiveness.
	<a href="#">Immunoglobulin E</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	With exceptions to possible milk allergies (where an increase in IgE occurs with the allergic reaction), there is no influence of colostrum on baseline IgE concentrations.
	<a href="#">Interferon Gamma</a>	-	- <a href="#">See study</a>	IFN-γ does not appear to be influenced with supplementation of colostrum relative to control proteins (whey).
	<a href="#">Interleukin 1-alpha</a>	-	- <a href="#">See study</a>	Supplemental colostrum does not appear to influence circulating concentrations of IL-1α when compared to whey control.
	<a href="#">Interleukin 10</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	IL-10 does not appear to be significantly influenced with colostrum relative to baseline or other protein sources.
	<a href="#">Interleukin 6</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	IL-6 does not appear to be influenced with supplementation of colostrum.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Interleukin 8</a>	-	- <a href="#">See study</a>	IL-8 does not appear to be significantly influenced with supplementation of colostrum relative to placebo.
	<a href="#">Intestinal Parasites</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Even in cases where traveler's diarrhea (from E.coli) is successfully treated, the overall amount of bacteria found in the stool is not modified suggesting no actual antibacterial properties.
	<a href="#">Lactate Threshold</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Colostrum supplementation, relative to control proteins, does not appear to increase the lactate threshold (despite this being increased by training <i>per se</i> to a similar degree with or without colostrum).
	<a href="#">Lymphocyte Count</a>	-	- <a href="#">See study</a>	Overall lymphocyte count does not appear to be significantly influenced with supplementation of dietary colostrum.
	<a href="#">Monocyte Count</a>	-	- <a href="#">See study</a>	Monocytes do not appear to be influenced in their number with supplementation of colostrum.
	<a href="#">Muscular Endurance</a>	-	- <a href="#">See study</a>	Supplementation of colostrum, relative to whey protein, does not appear to promote greater increases in muscular endurance (as assessed by bench press repetitions) when taken alongside a training regimen.
	<a href="#">Natural Killer Cell Activity</a>	-	- <a href="#">See study</a>	The phagocytic activity of natural killer cells does not appear to be modified with supplementation of colostrum relative to whey control.
	<a href="#">Natural Killer Cell Content</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	There does not appear to be a sustained influence on NK cell content relative to controls, although one study noted very transient decreases (which were shortly normalized).
	<a href="#">Neutrophil Count</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The overall amount of neutrophils in serum does not appear to be modified with supplementation of colostrum relative to placebo.
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Severity of Sickness</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	While in children with IgA deficiency colostrum appeared to reduce the severity of sickness when supplemented at the onset of sickness, this same effect was not observed in adults with suspected upper respiratory viral infections.
	<a href="#">T Cell Count</a>	-	- <a href="#">See study</a>	In otherwise healthy individuals, colostrum does not alter overall levels of T cells relative to baseline or control proteins.
	<a href="#">TNF-Alpha</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	TNF-a is not affected by supplementation of colostrum.
	<a href="#">Testosterone</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	While one study noted a preservation of testosterone circadian rhythm during a five day cycling race (where testosterone tends to flatline), other studies have failed to find any influence on basal testosterone concentrations.
	<a href="#">Ventilatory Threshold</a>	-	- <a href="#">See study</a>	Ventilatory threshold does not appear to be significantly influenced with supplementation of colostrum relative to control proteins.
	<a href="#">Viral Load</a>	-	- <a href="#">See study</a>	Administration of colostrum to persons with HIV already on antiretroviral therapy does not further modify viral titres.
	<a href="#">White Blood Cell Count</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	White blood cell count does not appear to be chronically modified with colostrum supplementation, although a transient (one day) elevation was noted in one study.
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	Preliminary trial in type II diabetics noted a reduction in fasting glucose concentrations to 10-14% with four weeks of colostrum supplementation; no control was used for reference.
	<a href="#">Fecal Weight</a>	 Minor	- <a href="#">See study</a>	A decrease in fecal weight has been noted in a trial assessing diarrhea, which was thought to be a consequence of successfully treating diarrhea.
	<a href="#">Ketone Bodies</a>	 Minor	- <a href="#">See study</a>	A decrease in ketone bodies in type II diabetics was noted with supplementation of colostrum daily for four weeks; the decrease was mild, and there was no protein containing placebo for comparison.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	A mild decrease in total cholesterol has been noted with supplementation of colostrum in type II diabetics.
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	In type II diabetics, triglycerides in fasting conditions were noted to be reduced relative to baseline with colostrum ingestion.
	<a href="#">Growth Hormone</a>	-	- <a href="#">See study</a>	There does not appear to be a significant influence of colostrum supplementation on circulating GH following oral supplementation relative to other protein sources.

Back to: [Supplements](#) | [Health Outcomes](#)

# Coluracetam

Also known as: MKC-231, BCI-540, 2-(2-oxopyrrolidin-1-yl)-N-(2,3-dimethyl-5,6,7,8-tetrahydrofuro[2,3-b]quinolin-4-yl)acetamide

Coluracetam (MKC-231) is a racetam drug purported to be a cognitive enhancing drug. It is able to preserve choline uptake into neurons when they are otherwise impaired, but currently there is no evidence for inherent nootropic effects.

See [Coluracetam on Examine.com](#)

## How to Take

The animal research on coluracetam uses an oral dose of 300-3,000mcg/kg bodyweight, which is roughly translated into a human dose of 48-480mcg/kg or (for a 150lb person) 3.2-32.7mg overall. It appears to have very rapid kinetics, with a peak in blood at around 30 minutes and on the decline within 3 hours. Due to this, supplementation may be time-dependent in relation to activity.

Back to: [Supplements](#) | [Health Outcomes](#)

# Conjugated Linoleic Acid







Also known as: CLA, Rumenic Acid

CLA are fatty acids that acts on a system known as PPAR to induce fat loss. At least, that is what the theory says. CLA too weakly affects PPAR receptors to really induce fat loss in an appreciable amount. TTA appears more promising.







See [Conjugated Linoleic Acid on Examine.com](#)

## How to Take



Supplementation of conjugated linoleic acid (CLA) tends to be in the range of 3,200-6,400mg daily, taken with meals. This dosage assumes that approximately 70% of the product by weight is comprised of one of the two main active isomers, cis-9 trans-11 (c9t11) and trans-10 cis-12 (t10c12). Limited studies using higher doses than the aforementioned have failed to find additional benefit, and while this could simply be due to the unreliability of CLA supplements it also means that there is no evidence that doses higher than the above are more effective.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lean Mass</a>	 Minor	<b>Moderate</b> <a href="#">See all 13 studies</a>	Some evidence that CLA can preserve lean mass during fat loss in an obese cohort of patients, but even in this subgroup the results are highly unreliable.
	<a href="#">Fat Mass</a>	-	<b>Moderate</b> <a href="#">See all 20 studies</a>	Evidence is too unreliable to conclude an internet effect of CLA on fat mass. There may be a context-dependent reduction in body fat and explanation for the observed variability, but at this moment in time too much evidence concludes no effect
	<a href="#">HDL-C</a>	-	<b>Moderate</b> <a href="#">See all 16 studies</a>	Insufficient evidence to support significant influences on HDL-C
	<a href="#">Insulin Sensitivity</a>	-	<b>High</b> <a href="#">See all 12 studies</a>	For the most part, ineffective; too unreliable to reach any conclusions in regards to the efficacy of CLA. There appears to be some manner of interaction, but both sensitization and resistance has been noted
	<a href="#">Weight</a>	-	<b>High</b> <a href="#">See all 22 studies</a>	CLA is considered ineffective for weight loss to the high degree of unreliability in the results, with most evidence suggesting no effects and some sparse evidence to suggest both increases and decreases.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	May possible increase triglycerides, but is unreliable in doing so and not overly potent.
	<a href="#">Adiponectin</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No alterations in adiponectin has been noted with CLA supplementation
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See all 9 studies</a>	Insufficient evidence to support reliable increases in blood glucose
	<a href="#">C-Reactive Protein</a>	-	<b>High</b> <a href="#">See all 8 studies</a>	For the most part, CLA is seen as ineffective.
	<a href="#">HbA1c</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant reduction (or increase) in HbA1c levels following CLA supplementation
	<a href="#">Inflammation</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Insufficient evidence to support significant changes in inflammatory status.
	<a href="#">Insulin</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	No significant influence on fasting insulin levels
	<a href="#">LDL-C</a>	-	<b>High</b> <a href="#">See all 12 studies</a>	Insufficient evidence to support decreases of LDL-C and evidence to support no influence whatsoever.
	<a href="#">Liver Enzymes</a>	-	<b>Moderate</b> <a href="#">See all 8 studies</a>	Inconsistent and unreliable effects on liver enzymes, no significant influence is thought to exist.
	<a href="#">Metabolic Rate</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	Currently thought to be somewhat ineffective as the evidence supporting an increase are confounded with food intake whereas the evidence supporting no increase is more statistically robust.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">TNF-Alpha</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Insufficient evidence to support changes in TNFa, a biomarker of inflammation.
	<a href="#">8-isoPGF2a</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	8-isoPGF(2)a is normally a biomarker of lipid peroxidation, but CLA may be causing a false positive (as fatty acids are known to interact with the enzymes in question and other markers of lipid peroxidation are unchanged).
	<a href="#">Fat Oxidation</a>	 Minor	- <a href="#">See study</a>	May influence fat oxidation, but more evidence is required.
	<a href="#">Antioxidant Potential</a>	-	- <a href="#">See study</a>	Does not appear to influence oxidative status in the body.
	<a href="#">Appetite</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, and even the promising evidence noted that the degree of appetite suppression was insufficient to suppress food intake.
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in blood flow.
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No significant interaction between CLA and blood pressure
	<a href="#">Bone Mineral Density</a>	-	- <a href="#">See study</a>	No evidence to support a link between CLA and alterations in bone mineral density
	<a href="#">Cell Adhesion Factors (Youth)</a>	-	- <a href="#">See study</a>	No significant influence on cell adhesion factors
	<a href="#">DNA Damage</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Insufficient evidence to suggest alterations in the rate of DNA damage with CLA ingestion.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Leptin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Not enough evidence to support alterations in circulating leptin due to CLA ingestion.
	<a href="#">Oxidation of LDL</a>	-	- <a href="#">See study</a>	No significant protective or augmenting effects on the oxidation rates of LDL-C.
	<a href="#">Oxygen Uptake</a>	-	- <a href="#">See study</a>	
	<a href="#">Subjective Well-Being</a>	-	- <a href="#">See 2 studies</a>	Insufficient evidence to support an inherent contentment boosting effect, as the lone study was confounded with weight loss.
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	
	<a href="#">Asthma</a>	-	- <a href="#">See study</a>	No significant interaction between CLA supplementation and asthmatic symptoms
	<a href="#">Cell Adhesion Factors (Elderly)</a>	-	- <a href="#">See study</a>	No significant alterations in cellular adhesion factors (linked to atherosclerosis via the immune system)
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant interaction between heart rate and CLA supplementation
	<a href="#">Interleukin 2</a>	-	- <a href="#">See study</a>	
	<a href="#">Interleukin 6</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Kidney Function</a>	-	- <a href="#">See study</a>	No significant influence of CLA supplementation on renal functioning
	<a href="#">Symptoms of Crohn's Disease</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)



# Convolvulus pluricaulis

*Also known as: Shankhapushpi*

---

Convolvulus pluricaulis is one of four herbs referred to as Shankhapushpi in Ayurveda, and is traditionally used for its cognitive promoting and nootropic effects. It appears to have efficacy in animals.

See [Convolvulus pluricaulis on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Copper

---

Copper is an essential mineral for antioxidative enzymes in the human body. While vital, it appears to be sufficient in the human diet and water supply with little evidence concerning its usefulness as a supplement. Excess copper is involved in some cases of Alzheimer's.

See [Copper on Examine.com](#)

## How to Take

Supplementation of copper tends to be in the 1mg dosage, but at this moment in time there seems to be no major supplemental purpose of copper in any form. Doses of 1mg appear to be safe over the short term while higher doses should be avoided.

Back to: [Supplements](#) | [Health Outcomes](#)

# Cordyceps

Also known as: *Cordyceps Sinensis*, *Cordyceps Militaris*, *Caterpillar Fungus*, *Cetepiller Mushroom*, *Summer grass-winter worm*, *Totsu kasu*, *Yarchakunbu*, *Aweto*







Other uses:






Cordyceps is a mushroom used in Traditional Chinese Medicine that is touted to be anti-aging and pro-vitality; these quite vague claims have not yet been looked at in human interventions. It can regulate testicular testosterone production, but has complex mechanisms.

See [Cordyceps on Examine.com](#)

## How to Take

Cordyceps has been used in human trials in the dosage range of 1,000-3,000mg daily, either in one single dose or multiple doses with meals. There is no indication if this is the optimal dose or not, and it is uncertain if this dosage is even effective as some of the research has come back null.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactate Threshold</a>	 Minor	- <a href="#">See study</a>	Might increase lactate threshold, but requires more evidence.
	<a href="#">Aerobic Exercise</a>	-	- <a href="#">See study</a>	No significant improvements in prolonged aerobic exercise have been noted with cordyceps supplementation
	<a href="#">Bilirubin</a>	-	- <a href="#">See study</a>	
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	
	<a href="#">Kidney Function</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Liver Damage</a>	-	- <a href="#">See study</a>	
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	
	<a href="#">Survival rates for Organ Transplants</a>	-	- <a href="#">See study</a>	
	<a href="#">Uric Acid</a>	-	- <a href="#">See study</a>	
	<a href="#">VO2 Max</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on VO2 max in otherwise healthy persons.

Back to: [Supplements](#) | [Health Outcomes](#)

# Crataegus pinnatifida

Also known as: *Chinese Hawthorn, Shanzha, Shanlihong, Yixintong (tablets)*

Other uses:

---

Crataegus pinnatifida, also known as Chinese hawthorn, is a berry that is being investigated for its anti-inflammatory and anti-allergy effects.

See [Crataegus pinnatifida on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Creatine

Also known as: creatine monohydrate, creatine 2-oxopropanoate,  $\alpha$ -methylguanidinoacetic acid







Other uses:



















Creatine is among the most well-researched and effective supplements. It can help with exercise performance by rapidly producing energy during intense activity. Creatine may also provide cognitive benefits but more research is needed in that area.

See [Creatine on Examine.com](#)

## How to Take

There are many different forms of creatine available on the market, but creatine monohydrate is the cheapest and most effective. Another option is micronized creatine monohydrate, which dissolves in water more easily and can be more practical. Creatine monohydrate can be supplemented through a loading protocol. To start loading, take 0.3 grams per kilogram of bodyweight per day for 5–7 days, then follow with at least 0.03 g/kg/day either for three weeks (if cycling) or indefinitely (without additional loading phases). For a 180 lb (82 kg) person, this translates to 25 g/day during the loading phase and 2.5 g/day afterward, although many users take 5 g/day due to the low price of creatine and the possibility of experiencing increased benefits. Higher doses (up to 10 g/day) may be beneficial for people with a high amount of muscle mass and high activity levels or for those who are non-responders to the lower 5 g/day dose. Stomach cramping can occur when creatine is supplemented without sufficient water. Diarrhea and nausea can occur when too much creatine is supplemented at once, in which case doses should be spread out over the day and taken with meals. What is the best form of creatine? There is no best form - creatine monohydrate is just as effective as other forms.


















LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscle Creatine Content</a>	 Strong	<b>Very High</b> <a href="#">See all 18 studies</a>	Creatine supplementation is the reference compound for increasing muscular creatine levels; there is variability in this increase, however, with some nonresponders.
	<a href="#">Power Output</a>	 Strong	<b>Very High</b> <a href="#">See all 66 studies</a>	Creatine is the reference compound for power improvement, with numbers from one meta-analysis to assess potency being "Able to increase a 12% improvement in strength to 20% and able to increase a 12% increase in power to 26% following a training regiment using creatine monohydrate".
	<a href="#">Weight</a>	 Strong	<b>Very High</b> <a href="#">See all 28 studies</a>	Appears to have a large effect on increasing overall weight due to water retention in persons who respond to creatine supplementation. Degree of increase is variable.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatinine</a>	 Notable	<b>Moderate</b> <a href="#">See all 12 studies</a>	Creatine supplementation usually increases serum creatinine levels during the loading phase (but usually not during maintenance), since creatinine is the breakdown product of creatine. This is <i>not</i> indicative of kidney damage.
	<a href="#">Hydration (Total Body Water)</a>	 Notable	<b>Very High</b> <a href="#">See all 9 studies</a>	Appears to be quite notable due to the increase in water weight in skeletal muscle tissue following creatine supplementation.
	<a href="#">Anaerobic Running Capacity</a>	 Minor	<b>High</b> <a href="#">See all 19 studies</a>	Appears to increase anaerobic cardiovascular capacity, not to a remarkable degree however.
	<a href="#">Lean Mass</a>	 Minor	<b>Very High</b> <a href="#">See all 20 studies</a>	Does appear to have inherent lean mass building properties, but a large amount of research is confounded with water weight gains (difficult to assess potency).
	<a href="#">Kidney Function</a>	-	<b>Very High</b> <a href="#">See all 13 studies</a>	In otherwise healthy persons given creatine supplementation, there is no significant beneficial nor negative influence on kidney function.
	<a href="#">Swimming Performance</a>	-	<b>Moderate</b> <a href="#">See all 17 studies</a>	No reliable improvement in swimming performance. Acute supplementation prior to short sprint tests (50-100 m) may reduce time by around 2%.
	<a href="#">Fatigue</a>	 Notable	<b>High</b> <a href="#">See all 7 studies</a>	400 mg/kg/day in children and adolescents subject to traumatic brain injury reduces fatigue frequency from around 90% down to near 10%. Fatigue is also reduced, though to a lesser degree, in cases of sleep deprivation.
	<a href="#">Blood Glucose</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	No apparent influence on fasting blood glucose, but an 11-22% reduction in the postprandial spike.
	<a href="#">Bone Mineral Density</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	There is limited evidence in favor of improvements in bone mineral density.
	<a href="#">Fatigue Resistance</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	Small degree of fatigue reduction during exercise, but appears unreliable.













LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lipid Peroxidation</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	A minor reduction has been observed.
	<a href="#">Muscle Damage</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	Not overly protective, but there appears to be a degree of protection.
	<a href="#">Muscular Endurance</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Somewhat effective.
	<a href="#">Subjective Well-Being</a>	 Minor	<b>Moderate</b> <a href="#">See all 11 studies</a>	The influence of creatine on well being and general happiness is usually dependent on it treating a disease state; there does not appear to be a <i>per se</i> benefit to well being.
	<a href="#">Testosterone</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	Degree of testosterone spike is not overly notable, although it appears to be present
	<a href="#">Treatment of Myotonic Dystrophy</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Preliminary evidence seems to support a minor to moderate benefit with regard to Myotonic Dystrophy type II (DM2) and a mild benefit or none with regard to DM1.
	<a href="#">VO2 Max</a>	 Minor	<b>Low</b> <a href="#">See all 6 studies</a>	Improvements in VO <sub>2</sub> max are not wholly reliable, and appear to be low in magnitude.
	<a href="#">Aerobic Exercise</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	Does not appear to confer any apparent benefit to prolonged cardiovascular exercise.
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Does not appear to significantly influence blood pressure.
	<a href="#">Cognition (Omnivores)</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No inherent benefit to omnivore cognition appears apparent, but it may benefit cognition in the sleep deprived.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cortisol</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No effect on cortisol changes associated with sleep deprivation.
	<a href="#">Exercise Capacity (with Heart Conditions)</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Although there may be a small reduction of power output (typical of creatine), the main parameter of interest (cardiorespiratory output) is mostly unaffected by creatine supplementation.
	<a href="#">Exercise Capacity in COPD</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	The main parameter of interest with exercise in COPD (cardiovascular capacity and aerobic exercise) is wholly unaffected with supplementation, although power output still can be increased.
	<a href="#">Fat Mass</a>	-	<b>Very High</b> <a href="#">See all 9 studies</a>	Creatine reliably increases lean mass (water at first, then muscle with more prolonged supplementation) but does not appear to significantly alter fat mass.
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No known influence on heart rate.
	<a href="#">IGF-1</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	Insufficient evidence to support a role of creatine in increasing IGF-1
	<a href="#">Insulin</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No effect on fasting insulin.
	<a href="#">Lactate Production</a>	-	<b>Moderate</b> <a href="#">See all 6 studies</a>	No apparent reduction or increase in lactate in swimmers after sprinting exercises.
	<a href="#">Liver Enzymes</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	No known influence on circulating liver enzymes, suggesting no liver toxicity in humans.
	<a href="#">Lung Function</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	No effect on healthy people or on disease states characterized by impaired lung function.

















LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	No effect on overall cholesterol levels in otherwise healthy males.
	<a href="#">Treatment of Amyotrophic Lateral Sclerosis (ALS)</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	Short term usage may increase power output like usual, but prolonged supplementation of creatine has failed to alter the deterioration of muscle and lung function. While no reduction in mortality has been noted statistically, two studies have noted a trend towards reductions in mortality suggesting an unknown protective effect.
	<a href="#">Treatment of COPD</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No effect on cardiovascular exercise performance and lung and heart functions, the main parameters of concern when treating COPD.
	<a href="#">Depression</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Depression symptoms seem to improve noticeably. This improvement is probably related to serotonin (creatine supplementation appears to enhance SSRI therapy). Possible gender differences (a greater efficacy in females) require further study.
	<a href="#">Glycogen Resynthesis</a>	 Notable	- <a href="#">See study</a>	Degree of improvement is somewhat more potent than other supplemental options, and may be related to the improvements in glycemic control seen with creatine.
	<a href="#">Growth Hormone</a>	 Notable	- <a href="#">See all 4 studies</a>	During exercise, creatine supplementation can suppress growth hormone secretion: up to 35% during loading; up to 5% during maintenance. At rest, creatine supplementation can spike growth hormone by up to 83±45%. This bidirectional effect is similar to that of <a href="#">arginine</a> supplementation.
	<a href="#">Myostatin</a>	 Notable	- <a href="#">See study</a>	The reduction in circulating Myostatin, while notable (17%), is of uncertain practical relevance.
	<a href="#">Body Cell Mass</a>	 Minor	- <a href="#">See study</a>	A possible increase in cell mass. Evidence is limited.
	<a href="#">Cognition (Vegetarians)</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be reliable in increasing cognition in vegetarians, but is based on limited evidence and not yet compared to a reference drug.
	<a href="#">DHT</a>	 Minor	- <a href="#">See study</a>	An increase in DHT independent of an increase in testosterone has been noted, but the study requires replication due to some potential issues (its location, the lack of biological plausibility, etc.).



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">DNA Damage</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Creatine supplementation appears to reduce exercise-induced DNA damage. This is potentially promising with regard to cancer prevention.
	<a href="#">DNA Methylation</a>	 Minor	- <a href="#">See study</a>	The effect of creatine supplementation on DNA methylation cannot be properly assessed due to a lack of comparisons with other agents.
	<a href="#">Functionality in Elderly or Injured</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possibly an effect, but the less reliable effects of creatine in the older population (which seem to respond less) seems to manifest here.
	<a href="#">Glycemic Control</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be somewhat effective in diabetics for improving glycemic control.
	<a href="#">Homocysteine</a>	 Minor	- <a href="#">See study</a>	Decrease in homocysteine (biomarker of inflammatory cardiovascular disease) was present, but not to a remarkable magnitude
	<a href="#">Myonuclei Proliferation</a>	 Minor	- <a href="#">See study</a>	Creatine supplementation appears to induce myonuclei proliferation, to a degree unknown relative to other agents.
	<a href="#">Satellite Cell Recruitment</a>	 Minor	- <a href="#">See study</a>	Compared to reference drugs, creatine had no significant effect.
	<a href="#">Symptoms of Duchenne Muscular Dystrophy</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a mild therapeutic effect of creatine supplementation (2-5g) to boys with DMD, mostly related to an improvement in handgrip strength and body composition with some parent-rated improvements.
	<a href="#">Symptoms of McArdle's Disease</a>	 Minor	- <a href="#">See 2 studies</a>	Two trials have shown differing effects, for reasons currently unknown.
	<a href="#">Symptoms of Osteoarthritis</a>	 Minor	- <a href="#">See study</a>	Functionality seems to improve, although not to a remarkable degree.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Sleep Deprivation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The cognitive dysfunction associated with prolonged sleep deprivation can be attenuated, to a small degree, with prior creatine loading.
	<a href="#">Uric Acid</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A minor reduction has been observed.
	<a href="#">Adrenaline</a>	-	- <a href="#">See study</a>	No significant alterations in plasma adrenaline are seen with creatine supplementation during sleep deprivation.
	<a href="#">Aldosterone</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Anti-Oxidant Enzyme Profile</a>	-	- <a href="#">See study</a>	
	<a href="#">Attention</a>	-	- <a href="#">See study</a>	No effect on attention during sleep deprivation.
	<a href="#">Bilirubin</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	
	<a href="#">Cerebral Oxygenation</a>	-	- <a href="#">See study</a>	
	<a href="#">Dopamine</a>	-	- <a href="#">See study</a>	No significant alterations in plasma dopamine are seen with creatine supplementation during sleep deprivation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Oxidation</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Food Intake</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No effect on food intake.
	<a href="#">General Oxidation</a>	-	- <a href="#">See study</a>	
	<a href="#">Glycogen Content</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">HDL-C</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Injury Rehabilitation Rate</a>	-	- <a href="#">See study</a>	
	<a href="#">Insulin Secretion</a>	-	- <a href="#">See study</a>	No effect on the insulin secretion in response to a test meal.
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No effect on insulin sensitivity.
	<a href="#">LDL-C</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Memory</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No effect on short-term recall during sleep deprivation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscle Oxygenation</a>	-	- <a href="#">See study</a>	
	<a href="#">Noradrenaline</a>	-	- <a href="#">See study</a>	No significant alterations in plasma noradrenaline are seen with creatine supplementation during sleep deprivation.
	<a href="#">Proteinuria</a>	-	- <a href="#">See study</a>	There is no significant influence on protein losses in the urine (proteinuria).
	<a href="#">Schizophrenia</a>	-	- <a href="#">See study</a>	Insufficient evidence to support a role in schizophrenia.
	<a href="#">Skeletal Muscle Atrophy</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The study that noted a prevention of lean mass loss did not distinguish between water and muscle, while the study that measured muscle mass specifically failed to find a protective effect during limb immobilization.
	<a href="#">Sprint Performance</a>	-	- <a href="#">See study</a>	
	<a href="#">Symptoms of Mitochondrial Cytopathies</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	
	<a href="#">Training Volume</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No effect on the training volume of swimmers.
	<a href="#">Treatment of Huntington's Disease</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There is insufficient evidence to support a rehabilitative role of creatine supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Treatment of Parkinson's</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There is insufficient evidence to support an improvement in the symptoms of Parkinson's.
	<a href="#">Triglycerides</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Urea</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">vLDL-C</a>	-	- <a href="#">See study</a>	
	<a href="#">Dizziness</a>	 Notable	- <a href="#">See study</a>	Dizziness as a side-effect of traumatic brain injury is reduced with 400 mg/kg/day.
	<a href="#">Treatment of Headaches</a>	 Notable	- <a href="#">See study</a>	400 mg/kg/day in children and adolescents subject to traumatic brain injury reduces headache frequency from around 90% down to near 10%.
	<a href="#">Alertness</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Increases in alertness tend to be during sleep deprivation or stress, rather than outright increases in alertness. Not overly potent
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See study</a>	One study has found that creatine can increase blood flow to the calf and leg when combined with resistance training in healthy men. Creatine alone was found to have no effect.
	<a href="#">Catabolism</a>	 Minor	- <a href="#">See study</a>	Uncertain practical relevance.
	<a href="#">Range of Motion</a>	 Minor	- <a href="#">See study</a>	One study, that needs to be replicated, noted a reduction in range of motion.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Metabolic Rate</a>	-	- <a href="#">See study</a>	
	<a href="#">Symptoms of Cystic Fibrosis</a>	-	- <a href="#">See study</a>	An increase in well-being and muscular strength has been noted in youth, but the main parameters under investigation (lung and chest symptoms) seemed unaffected.

Back to: [Supplements](#) | [Health Outcomes](#)



# Creatinol O-Phosphate

Also known as: COP, Creatinolphosphate, Aplodan

Creatinol O-Phosphate (COP) is a creatine analogue synthesized for the treatment of heart complications. It appears to protect cardiac cells at 3g injections, but does not have sufficient evidence for oral consumption.

See [Creatinol O-Phosphate on Examine.com](#)

## How to Take

Past studies used injections of up to 3g daily. There is currently no bioavailability data on how much is absorbed, but if it is 100% then this is the dose where benefits have been noted in humans.

Back to: [Supplements](#) | [Health Outcomes](#)

# Cucurbita pepo

*Also known as: Pumpkin extract, pumpkin seed oil*

---

Cucurbita pepo is a plant which has variants called pumpkin, squash, zucchini, and gourds; it is sometimes called pumpkin extract (either a water extract or seed oil) and appears to be a phytopharmaceutical for prostate disorders.

See [Cucurbita pepo on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Curcumin

Also known as: *Turmeric extract, Curry Extract, Curcuma, Diferuloylmethane, JiangHuang, Curcuma Longa, 1,7-bis-(3-methoxy-4-hydroxyphenyl)-1,6-heptadiene-3,5-dione*









Other uses:

Curcumin, the primary bioactive substance in turmeric, and has anti-inflammatory properties and decent evidence for indications from chronic pain to depression. It has poor bioavailability alone, necessitating special formulations to be systematically absorbed.

See [Curcumin on Examine.com](#)

## How to Take

By itself, curcumin is poorly absorbed. Among the methods devised to address the issue, the two most common (and most often tested) are to pair curcumin with piperine (a black pepper extract) or to combine it with lipids (BCM-95®, Meriva® ...). To supplement curcumin with piperine, take 500 mg of the former with 20 mg of the latter, thrice a day (i.e., 1,500 mg of curcumin and 60 mg of piperine per day). To supplement BCM-95®, a patented combination of curcumin and essential oils, take 500 mg twice a day (i.e., 1,000 mg/day). To supplement Meriva®, a patented combination of curcumin and soy lecithin, take 200–500 mg twice a day (i.e., 400–1,000 mg/day). Curcumin is usually taken together with food.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	Although the exact enzyme that increases is not overly reliable (SOD, glutathione, and catalase), all three enzymes have individually been noted to be increased and they tend to do so to a large degree.
	<a href="#">Depression</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	Curcumin seems to be more effective than placebo in reducing symptoms of depression. It may take 2-3 months to see any outcomes. Skepticism is warranted though, as the studies comparing curcumin to placebo were not well designed and produced effect sizes not too far apart, even though the differences were statistically significant.
	<a href="#">Inflammation</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	There appears to be a decrease in disease states or conditions characterized by inflammation associated with curcumin ingestion, does not appear to be too discriminatory in which inflammatory states it benefits
	<a href="#">Pain</a>	 Notable	<b>Very High</b> <a href="#">See all 15 studies</a>	There decreases in pain associated with curcumin at higher doses which extend to post-operative, arthritis, and general pain symptoms. In particular, curcumin has been researched for osteoarthritis the most, but many of these studies are of low quality and funded by industry, so caution is warranted.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Osteoarthritis</a>	 Notable	<b>Very High</b> <a href="#">See all 12 studies</a>	Supplementation with curcumin resulted in a notable, consistent reduction in osteoarthritis symptoms across many studies. Of the osteoarthritis symptoms, it seems to be most effective for pain and physical function, while it's less clear if it reduces stiffness. Caution should be taken due to many of the studies not being high quality.
	<a href="#">Anxiety</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Is somewhat more effective than placebo in reducing symptoms of anxiety, specifically state and trait anxiety.
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See all 27 studies</a>	The reduction in glucose is likely small and inconsistent overall, and most likely to be meaningful for people with type 2 diabetics. It is unlikely that plain turmeric has notable effects, and high potency curcuminoids are more likely to have an effect.
	<a href="#">Blood Pressure</a>	 Minor	<b>High</b> <a href="#">See all 14 studies</a>	May decrease blood pressure, but more contextual evidence is required, such as enough studies to properly compare effects in hypertension, type 2 diabetes, and healthy people.
	<a href="#">C-Reactive Protein</a>	 Minor	<b>High</b> <a href="#">See all 19 studies</a>	May decrease C-reactive protein if elevated. Studies are somewhat inconsistent, but an effect in those who will benefit most is likely.
	<a href="#">General Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	Prooxidative biomarkers appear to be reduced following long term supplementation of curcumin
	<a href="#">HDL-C</a>	 Minor	<b>Low</b> <a href="#">See all 26 studies</a>	Possible increases in HDL-C
	<a href="#">LDL-C</a>	 Minor	<b>Low</b> <a href="#">See all 26 studies</a>	A small reduction in people with high cholesterol levels is possible, but studies are inconsistent.
	<a href="#">Lipid Peroxidation</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	A decrease in lipid peroxidation results following curcumin ingestion chronically
	<a href="#">Liver Enzymes</a>	 Minor	<b>Moderate</b> <a href="#">See all 16 studies</a>	No significant influence on liver enzymes associated with curcumin supplementation in most people, however, a small reduction is more likely in people with elevated liver enzymes.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	 Minor	<b>Moderate</b> <a href="#">See all 27 studies</a>	Some reducing effects have been noted, but they seem to be unreliable and not overly potent
	<a href="#">Glycemic Control / Insulin Sensitivity</a>	-	<b>Moderate</b> <a href="#">See all 12 studies</a>	An effect is possible in type 2 diabetics but studies are not generally supportive.
	<a href="#">HbA1c</a>	-	<b>Moderate</b> <a href="#">See all 13 studies</a>	Some studies have found reductions but, even in type 2 diabetics, evidence is inconsistent.
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See all 28 studies</a>	More robust evidence suggests no significant influence of curcumin on total cholesterol, although there may be a potential role in people with elevated lipids.
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See all 15 studies</a>	It's unclear if the reductions found in some studies are genuine effects or random variance.
	<a href="#">Functionality in Elderly or Injured</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	In persons with osteoarthritis, the performance on a treadmill test after eight months was significantly increased (more than twice the distance covered with curcumin relative to control).
	<a href="#">Nitric Oxide</a>	 Notable	- <a href="#">See study</a>	80mg of a bioavailability enhanced curcumin supplement has been reported to increase nitric oxide in serum by 40% or so, which is significantly larger than many other dietary supplements.
	<a href="#">Adiponectin</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Curcumin has been implicated in increasing adiponectin concentrations.
	<a href="#">Blood Flow</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	An increase in blood flow has been noted with curcumin supplementation
	<a href="#">Cell Adhesion Factors</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Decreases in cell adhesion factors have been noted, which may underlie therapeutic benefits towards atherosclerosis of curcumin supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognitive Decline</a>	 Minor	- <a href="#">See study</a>	Rate of cognitive decline may be lesser with dietary inclusion of curcumin, but requires more evidence
	<a href="#">Colorectal Cancer Risk</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be associated with a reduced risk for colon cancer
	<a href="#">DNA Damage</a>	 Minor	- <a href="#">See study</a>	A decrease in DNA damage has been noted to be secondary to reducing arsenic toxicity
	<a href="#">Edema</a>	 Minor	- <a href="#">See study</a>	A decrease in edema has been noted with curcumin supplementation
	<a href="#">Fatigue</a>	 Minor	- <a href="#">See study</a>	A decrease in postoperative fatigue has been noted with curcumin supplementation
	<a href="#">Insulin</a>	 Minor	- <a href="#">See all 13 studies</a>	May increase postprandial insulin concentrations, and a decrease, when taken chronically, is possible but unreliable from studies.
	<a href="#">Insulin Secretion</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Curcumin has been found to increase insulin secretion in insulin resistant persons, suggesting benefits to pancreatic tissue.
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	In insulin resistant persons, curcumin can increase insulin sensitivity.
	<a href="#">Interleukin 1-beta</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	A reduction in IL-1b has been noted in osteoarthritic patients, which is thought to underlie the benefits to joint health seen with curcumin.
	<a href="#">Interleukin 6</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A slight decrease in IL-6 concentrations has been noted, practical relevance unknown.


LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Intestinal Motility</a>	 Minor	- <a href="#">See study</a>	May increase intestinal motility
	<a href="#">Kidney Function</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to promote kidney function in instances where function is normally hindered
	<a href="#">Mucositis</a>	 Minor	- <a href="#">See study</a>	Symptoms of mucositis have been noted to be decreased with curcumin supplementation
	<a href="#">Myeloperoxidase</a>	 Minor	- <a href="#">See study</a>	A slight increase in MPO concentrations has been detected.
	<a href="#">Prostate Cancer Risk</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be associated with a reduced risk of prostate cancer in one study, but another study failed to find clinical implications in people with prostate cancer in remission.
	<a href="#">Prostate Specific Antigen</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Has been noted to decrease prostate specific antigen levels following supplementation
	<a href="#">Proteinuria</a>	 Minor	- <a href="#">See study</a>	A reduction in proteinuria has been noted in persons with kidney impairment given curcumin
	<a href="#">Symptoms of Ulcerative Colitis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Symptoms of ulcerative colitis reduced with supplementation of curcumin
	<a href="#">Vascular Function</a>	 Minor	- <a href="#">See study</a>	An increase in vascular function has been noted with curcumin supplementation
	<a href="#">Arterial Stiffness</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	No apparent effect in one study.







LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatinine</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	No apparent effect in studies.
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influence on heart rate seen with curcumin supplementation
	<a href="#">Hemoglobin</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Inconsistent evidence from 3 studies. Much more research is needed.
	<a href="#">Protein Carbonyl Content</a>	-	- <a href="#">See study</a>	No significant influence on protein carbonylation has been noted with curcumin ingestion
	<a href="#">Serum Albumin</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No apparent effect in 5 studies.
	<a href="#">Stomach Ulcers</a>	-	- <a href="#">See study</a>	No significant influence on stomach ulceration detected
	<a href="#">Symptoms of Pancreatitis</a>	-	- <a href="#">See study</a>	No significant influence on pain associated with pancreatitis
	<a href="#">Urea</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No apparent effect in studies.
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	In postmenopausal women, curcumin supplementation does not improve VO2 max.
	<a href="#">White Blood Cell Count</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Inconsistent evidence from 3 studies. Much more research is needed.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Homocysteine</a>	 Notable	- <a href="#">See study</a>	A notable effect was found in one study in obese people with a high risk of cardiovascular disease, but much more research is needed.
	<a href="#">Symptoms of PMS</a>	 Notable	- <a href="#">See study</a>	One study found a notable reduction in symptoms from 200 mg of curcumin daily, taking one week before until 3 days after menstrual bleeding. Much more research is needed to confirm curcumin's efficacy.
	<a href="#">Antioxidant Potential</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Some studies note a small increase in antioxidant capacity, but much more research is needed.
	<a href="#">Cortisol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction has been noted in two studies, but more research is needed.
	<a href="#">Free Fatty Acids</a>	 Minor	- <a href="#">See study</a>	There was a modest reduction in one study in type 2 diabetics, but much more research is needed.
	<a href="#">Leptin</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed evidence suggesting a possible small reduction in people with non-alcohol fatty liver disease.
	<a href="#">Lipoprotein Lipase Activity</a>	 Minor	- <a href="#">See study</a>	An increase was found in one study in type 2 diabetics.
	<a href="#">Liver Damage</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A notable effect has been found in people with non-alcoholic fatty liver disease but studies are inconsistent and lacking.
	<a href="#">Lymphocyte Count</a>	 Minor	- <a href="#">See study</a>	A decrease in people with type 2 diabetes has been noted in one study.
	<a href="#">Serum BDNF</a>	 Minor	- <a href="#">See study</a>	An increase has been noted in patients with major depression.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Crohn's Disease</a>	 Minor	- <a href="#">See study</a>	Possible reductions of symptoms associated with Crohns Disease
	<a href="#">Symptoms of Diabetic Neuropathy</a>	 Minor	- <a href="#">See study</a>	One study noted a small reduction in symptoms, Much more evidence is needed.
	<a href="#">Symptoms of Rheumatoid Arthritis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A small improvement in one study and a large improvement in another. Much more evidence is needed.
	<a href="#">TNF-Alpha</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	A small reduction is possible, but much more evidence is needed.
	<a href="#">Uric Acid</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	A small decrease in patients with non-alcoholic fatty liver disease has been noted. Much more evidence is needed.
	<a href="#">Apolipoprotein A</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No apparent effect in studies.
	<a href="#">Apolipoprotein B</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No apparent effect in studies.
	<a href="#">Bilirubin</a>	-	<b>Low</b> <a href="#">See all 3 studies</a>	It's unclear if it has much of an effect from the limited research.
	<a href="#">Body Fat</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No apparent effect in 2 short-term studies.
	<a href="#">C-Peptide</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Limited and mixed evidence.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Endothelial Function</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Erections</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Ferritin</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Fructosamine</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Hematocrit</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Interleukin 10</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Interleukin 8</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Iron Absorption</a>	-	- <a href="#">See study</a>	No significant influence on iron absorption seen with low levels of dietary turmeric intake.
	<a href="#">Liver Fat</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Inconsistent evidence from non-alcoholic fatty liver disease.
	<a href="#">Monocyte Count</a>	-	- <a href="#">See study</a>	A decrease in people with type 2 diabetes has been noted

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Neutrophil Count</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Oxidation of LDL</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No apparent effect in one study using turmeric.
	<a href="#">Quality of Life</a>	-	- <a href="#">See study</a>	No apparent effect in one study in prostate cancer patients.
	<a href="#">Red Blood Cell Count</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No effect observed in the studies so far.
	<a href="#">Serum Platelets</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No apparent effect.
	<a href="#">Symptoms of Prostate Cancer</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No apparent effect in prostate cancer patients who had temporarily ceased androgen deprivation therapy.
	<a href="#">vLDL-C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	A notable reduction was found in coronary artery disease patients in a small pilot study, but not in another study in type 2 diabetics that used turmeric. Much more research is needed.

Back to: [Supplements](#) | [Health Outcomes](#)

# Cyanidin

Also known as: *Cyanidin-3-Glucoside*, C3G, *Cyanidin-3-Rutinoside*

Cyanidin is one of the six Anthocyanin subsets, and its glucoside Cyanidin-3-Glucoside (C3G) has been garnering attention for its ability to decrease blood glucose levels, and its ability to not hinder muscle protein synthesis at the same time (downstream of AMPK activation).

See [Cyanidin on Examine.com](#)

## How to Take

Benefits have been seen with blood sugar reductions in the range of 150mg/kg bodyweight, a dose well above what is achieved through foods. It is possible long-term benefits may be seen with a lower dose of cyanidin compounds through foods, due to the many correlations of plant intake and health; however, causation has not been given to cyanidins as of yet. Additionally, it may be possible to increase bioavailability and thus lower the needed dose by inhibiting P450 enzymes (similar to curcumin being potentiated by piperine). However, this is for the most part currently an untested hypothesis.

Back to: [Supplements](#) | [Health Outcomes](#)

# D-Aspartic Acid

Also known as: D-AA, D-Aspartate, DAA







Other uses:

D-aspartic acid (D-AA) is an amino acid regulator of testosterone synthesis and may act on a stimulatory receptor (NMDA). D-AA shows promise in aiding male fertility. Healthy men supplementing D-AA experience only temporary increases in testosterone, which limits its use.

See [D-Aspartic Acid on Examine.com](#)

## How to Take

The standard dose for D-aspartic acid is between 2,000 – 3,000mg. D-AA is taken daily. Different studies have used different supplementation protocols. One study used 3,000mg for 12 days, taken daily, followed by a week with no supplementation. A different study did not cycle D-AA, and used 2,000mg of continual daily supplementation with no harm. Further study is needed to determine whether D-AA should be cycled.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Testosterone</a>	 Minor	- <a href="#">See all 3 studies</a>	There appears to be an increase in testosterone in most subjects acutely (6-12 days), and while this may persist to the tune of 30-60% in infertile men it is reduced to baseline within a month in otherwise healthy men with normal testosterone at baseline. However, high doses also seem to decrease free testosterone and total testosterone in resistance trained men.
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	Despite a possible induction of aromatase seen in some species, D-aspartic acid supplementation does not appear to increase serum estrogen.
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	Fat mass does not appear to be altered with D-aspartic acid supplementation alongside exercise.
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	No significant influence on lean mass in otherwise healthy trained men.
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	Otherwise healthy trained men do not experience a further increase in power output relative to placebo when D-aspartic acid is taken alongside resistance training.






LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant alterations in body weight when D-aspartic acid is taken alongside resistance training.
	<a href="#">Fertility</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Limited evidence for D-aspartic acid suggest an increase in fertility of men, with one study noting that a group went from no conceptions to 26.6% of subjects reporting conception over 90 days.
	<a href="#">Luteinizing Hormone</a>	 Minor	- <a href="#">See study</a>	An increase in LH concentrations has been noted to 30-60% in infertile men, correlating well with the testosterone increases seen in this study.
	<a href="#">Seminal Motility</a>	 Minor	- <a href="#">See study</a>	Seminal motility is increased 50-100% in infertile men supplementing with D-aspartic acid
	<a href="#">Sperm Count</a>	 Minor	- <a href="#">See study</a>	Improvements of sperm count in infertile men have been noted to vary between 50-100% increases over baseline.
	<a href="#">Sperm Quality</a>	 Minor	- <a href="#">See study</a>	Appears effective, needs to be compared against a comparator.
	<a href="#">Free Testosterone</a>	-	- <a href="#">See study</a>	
	<a href="#">Testosterone (Males)</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# D-Ribose

D-ribose is a pentose sugar that plays a role in the production of energy intermediates, DNA, and RNA. It is due to this reasoning that D-ribose is investigated in instances where ATP concentrations (relative to total nucleotides) seem to be reduced, namely cardiac insults and prolonged physical exercise.

See [D-Ribose on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">ATP Regeneration</a>	-	- <a href="#">See study</a>	
	<a href="#">Glycogen Resynthesis</a>	-	- <a href="#">See study</a>	
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	
	<a href="#">Subjective Well-Being</a>	-	- <a href="#">See study</a>	
	<a href="#">Symptoms of Fibromyalgia</a>	-	- <a href="#">See 2 studies</a>	

Back to: [Supplements](#) | [Health Outcomes](#)



# D-Serine













D-Serine is an amino acid that plays a role in cognitive enhancement and schizophrenia treatment.








See [D-Serine on Examine.com](#)

## How to Take

The usual dose used in D-serine studies is 30mg/kg of bodyweight. This correlates to an approximate dosage range of 2,045 – 2,727mg for people between 150 – 200 lbs. This dose appears to be the minimal effective dose for improving cognition in people suffering from a variety of diseases.

Preliminary evidence suggests that doubling or quadrupling the dosage to 60mg/kg and 120mg/kg, respectively, will cause additional benefits for people suffering from schizophrenia.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There may be an improvement in cognitive performance secondary to reducing symptoms of schizophrenia, and while there is mechanistic plausibility that this can also work in normal controls it has not yet been demonstrated
	<a href="#">Symptoms of Schizophrenia</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	D-Serine supplementation is able to reduce symptoms of schizophrenia (more efficacy on negative and cognitive symptoms rather than positive) in a dose-dependent manner between 30-120mg/kg, but possibly due to the unreliable increases in blood D-serine its benefits are also unreliable
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	When taken 2 hours prior to testing, 2.1g D-serine seems effective in reducing anxiety during testing in otherwise healthy humans
	<a href="#">Attention</a>	 Minor	- <a href="#">See study</a>	There was an increase in sustained attention during cognitive testing in otherwise healthy subjects given 2.1g D-serine prior to testing, as assessed by CPT-IP.
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	Reported sadness during cognitive testing appears to be reduced with D-serine supplementation when compared to placebo
	<a href="#">Symptoms of Parkinson's Disease</a>	 Minor	- <a href="#">See study</a>	Preliminary evidence suggests that the standard dosage of D-Serine can alleviate some symptoms of Parkinson's disease

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Post-Traumatic Stress Disorder</a>	 Minor	- <a href="#">See study</a>	One study using 20mg/kg D-serine in subjects with PTSD noted benefits with supplementation when compared to placebo.
	<a href="#">Working Memory</a>	 Minor	- <a href="#">See study</a>	Immediate recall appears to be increased from D-serine when 2.1g is supplemented 2 hours prior to testing.
	<a href="#">Reaction Time</a>	-	- <a href="#">See study</a>	When 2.1g D-serine is taken two hours prior to cognitive testing, there does not appear to be an increase in reaction time when compared to placebo
	<a href="#">Serum BDNF</a>	-	- <a href="#">See study</a>	2.1g D-serine in otherwise healthy humans does not acutely influence serum BDNF concentrations
	<a href="#">Verbal Fluency</a>	-	- <a href="#">See study</a>	In a category fluency test, 2.1g D-serine taken two hours earlier appears to improve fluency. The increase was larger than seen with placebo, but comparing the two groups did not yield a significant benefit with D-serine over placebo statistically


Back to: [Supplements](#) | [Health Outcomes](#)

# DMAE

Also known as: *Dimethylaminoethanol, dimethylethanolamine, Deanol (cream)*

DMAE is a choline molecule with one less methyl group, and has the ability to reduce build-up of the age pigmentation known as beta-amyloid. It is the active component of Centrophenoxine, or Lucidril, a pharmaceutical designed for cognitive health in the elderly.

See [DMAE on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognitive Decline</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Dactylorhiza hatagirea

Also known as: *Early Marsh Orchid*, *Salam Panja*, *Hatta Haddi*, *orchis macula*, *Wang lak*, *Lovha*, *Hathejadi*, *Panchaule*, *Airula*

---

Dactylorhiza hatagirea is an ayurvedic sexual stimulant. There is very limited evidence on this reported tonic, and preliminary studies into its activities have confirmed a libido enhancing and possible testosterone boosting effect in rats.

See [Dactylorhiza hatagirea on Examine.com](#)

## How to Take

There is currently not enough information to recommend a supplemental dose of this herb.

Back to: [Supplements](#) | [Health Outcomes](#)

# Damiana Leaf

Also known as: *Tunera Diffusa*, *Tunera Aphrodisiaca*

---

Damiana Leaf is a part of the *Tunera Diffusa* plant which is traditionally used as an aphrodisiac and physical tonic. Not much evidence on this plant, but may be slightly effective in rat models of aphrodisia when coupled with fatigue.

See [Damiana Leaf on Examine.com](#)

## How to Take

There is currently not enough evidence to recommend an effective dosage of Damiana. Traditionally, the dried leaves have been brewed as a tea.

Back to: [Supplements](#) | [Health Outcomes](#)

# Dark Therapy

---

Hiding in the darkness like a vampire, seeking its nightly hit of Melatonin. Dark Therapy is the gradual process of eliminating light sources closer to sleep, and swapping blue or fluorescent light sources for dim red or pink sources; humorous orange tinted sunglasses may be used.

See [Dark Therapy on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Dehydroepiandrosterone

Also known as: DHEA, Pradesterone, Hydroxyandrosterone, 3 $\beta$ -Hydroxy-5-Androstene-17-one

Other uses:


DHEA is a naturally occurring hormone and either exerts benefits on its own, or can convert into both testosterone or estrogen depending on the body's need. DHEA supplementation is potent for reducing the 'effects of aging', but appears quite unreliable in its benefits.

See [Dehydroepiandrosterone on Examine.com](#)

## How to Take

Supplementation of DHEA appears to be effective in persons over 40 in the dosage range of 25-50mg, while prolonged usage of 100mg appears to be safe in this demographic. While the usage of DHEA in young persons for the purpose of testosterone enhancement is not clear, it tends to be used at 200mg for this purpose.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum DHEA</a>	 Strong	<b>Very High</b> <a href="#">See all 13 studies</a>	Supplemental DHEA results in a reliable and significant increase in DHEA concentrations in the blood (both sulfated DHEAS and unsulfated DHEA)
	<a href="#">Estrogen</a>	 Notable	<b>High</b> <a href="#">See all 14 studies</a>	There appears to be a notable and unreliable increase in estrogen following DHEA supplementation, with most research being conducted in menopausal women. This increase in estrogen has been noted in men as well, although similarly unreliable.
	<a href="#">Testosterone</a>	 Notable	<b>High</b> <a href="#">See all 18 studies</a>	There appears to be an increase in testosterone following DHEA supplementation, but the <b>vast</b> majority of literature is in menopausal women (where testosterone contributes to libido). There is variability in the results, and DHEA is unreliable in increasing testosterone, but this unreliability extends to all demographics and subjects (with limited evidence of DHEA increasing testosterone in all studies including youthful athletes, which are less studied).
	<a href="#">Cortisol</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Highly unreliable influences on cortisol, with decreases seen in studies where androgens and estrogens are also increased (with no significant influence or possibly an increase in other studies)
	<a href="#">IGF-1</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	An increase in IGF-1 hormone levels may exist following DHEA supplementation, although this has only been investigated in older persons.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sex Hormone Binding Globulin</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	There appears to be a decrease in SHBG concentrations in older individuals who also experience an increase in androgen/estrogen concentrations, but this is similarly unreliable
	<a href="#">Blood Glucose</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Most evidence suggests no alterations to fasting blood glucose levels
	<a href="#">Bone Mineral Density</a>	-	<b>High</b> <a href="#">See all 7 studies</a>	Most evidence suggests no increase in bone mineral density, but this may be due to short trials (6 months). Longer trials note a small but unreliable increase in bone mineral density, so there may be a role of DHEA in bone health
	<a href="#">Fat Mass</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	No significant influence on fat mass appears to exist with DHEA supplementation in youth or in elderly persons
	<a href="#">Functionality in Elderly or Injured</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Most evidence measuring functionality in elderly persons have not found any improvement with DHEA supplementation, although it is possible that DHEA may play a role
	<a href="#">HDL-C</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	Most of the evidence leans towards no significant influence of DHEA on HDL-C levels
	<a href="#">LDL-C</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Although there is some counter evidence, usually DHEA supplementation does not alter LDL-C concentrations
	<a href="#">Lean Mass</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	Perhaps due to a lack of studies pairing DHEA with a prolonged resistance training program, there is no evidence to support DHEA supplementation to increase muscular or lean mass
	<a href="#">Libido</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Insufficient evidence to support an increase in libido despite increases in androgen status
	<a href="#">Power Output</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant improvement in power output has been noted with DHEA supplementation (studies mostly in older individuals)



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Subjective Well-Being</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	No significant influence on well being is noted with DHEA per se, although it may come secondary to other changes occurring during DHEA supplementation (such as improved functionality in elderly persons)
	<a href="#">Triglycerides</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Mixed evidence, but it seems that DHEA doesn't have a significant influence on triglycerides
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See study</a>	Possible increases in blood flow associated with DHEA supplementation
	<a href="#">Cognitive Decline</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May attenuate the rate of cognitive decline in persons at higher risk, but this protective effect does not seem to be overly remarkable
	<a href="#">DHT</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May increase DHT levels alongside testosterone levels, but this has only been observed in postmenopausal women
	<a href="#">Fertility</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in fertility has been noted with DHEA supplementation
	<a href="#">Free Testosterone</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Increases in free testosterone have been noted to coincide with testosterone increases (which are unreliable)
	<a href="#">Nitric Oxide</a>	 Minor	- <a href="#">See study</a>	Has been detected to increase nitric oxide concentrations in serum, needs to be replicated to investigate mechanisms
	<a href="#">Oxidation of LDL</a>	 Minor	- <a href="#">See study</a>	One study has noted less small particles of LDL, indicative of less LDL oxidation; possibly protective effects
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	There may be a decrease in cholesterol seen with DHEA in hypercholesteroleemics, but it is not overly reliable

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	-	- <a href="#">See study</a>	Overall cognition not affected by DHEA supplementation
	<a href="#">Depression</a>	-	- <a href="#">See study</a>	No significant interactions with depression noted
	<a href="#">Erections</a>	-	- <a href="#">See study</a>	No significant influence on erectile properties in persons with sexual dysfunction
	<a href="#">Follicle-Stimulating Hormone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in follicle-stimulating hormone levels
	<a href="#">IGF Binding Protein</a>	-	- <a href="#">See study</a>	There may be an influence (study noted both increases and decreases with high variability) but this does not appear to be a clinical concern
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant alterations in fasting glucose levels
	<a href="#">Insulin Sensitivity</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influences on insulin sensitivity seem apparent with DHEA supplementation
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No detectable alteration in serum liver enzymes (biomarker of liver damage) seen with DHEA supplementation
	<a href="#">Luteinizing Hormone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations detected in luteinizing hormone levels
	<a href="#">Progesterone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Mixed effects on progesterone (and 17-hydroxyprogesterone) leaning towards no significant influence (although increases have been noted)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Prostate Specific Antigen</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on PSA levels
	<a href="#">Sleep Quality</a>	-	- <a href="#">See study</a>	No significant influence on sleep quality in menopausal women
	<a href="#">Stress</a>	-	- <a href="#">See study</a>	No significant influence on parameters of stress
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant influence on weight noted with DHEA supplementation
	<a href="#">Growth Hormone</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase growth hormone concentrations, but this appears to be unreliable
	<a href="#">Plasma Endorphins</a>	 Minor	- <a href="#">See study</a>	An increase in plasma endorphins has been noted with DHEA supplementation
	<a href="#">Symptoms of Menopause</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Decreases in menopausal symptoms have been noted with DHEA supplementation
	<a href="#">Serum T3</a>	-	- <a href="#">See study</a>	No significant influence on serum T3 has been noted

Back to: [Supplements](#) | [Health Outcomes](#)

# Dendrobium

*Other uses:*

---

Dendrobium is a family of plants (well over 200 commonly used) that has a history of medicinal usage in East Asia. The bioactivities vary depending on species, but it appears many cater towards reducing inflammation and as a digestive aid.

See [Dendrobium on Examine.com](https://www.examine.com/supplements/dendrobium)

Back to: [Supplements](#) | [Health Outcomes](#)

# Diindolylmethane

Also known as: DIM, 3,3'-diindolylmethane

Diindolylmethane (DIM) is a molecule which is named after its structure, two indole groups attached to a methane group. It is commonly found in broccoli, and holds promise as being a molecule for anti-cancer effects and as an aromatase inhibitor.

See [Diindolylmethane on Examine.com](#)

## How to Take

A supplemental dose of approximately 100mg DIM has been noted to alter urinary estrogens in a manner thought to reflect less estrogenicity.

Back to: [Supplements](#) | [Health Outcomes](#)

# Dimocarpus longan

Also known as: *Euphoria Longan*, *Dragon Eye*, *Soapberry*

---

Dimocarpus Longan (Dragon Eye or Euphoria) is a fruit with limited medicinal use. It does not appear to have a unique composition, but extracts appear quite neuroprotective and may boost cognition.

See [Dimocarpus longan on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Dioscorea villosa

Also known as: *Wild Yam*

Dioscorea villosa is one of the species of yam referred to as 'wild yam'. It is claimed to alleviate symptoms of menopause, but there is no evidence to support this effect.

See [Dioscorea villosa on Examine.com](#)

## How to Take

Animal studies suggest Dioscorea villosa supplementation provides benefits when 9.8 – 37.7mg/ kg of bodyweight is given to mice. This translates to an approximate human dosage range of 0.8 – 3mg/ kg of bodyweight. Rat studies show that doses of 790mg/kg of bodyweight (126mg/kg of bodyweight in humans) are associated with fibrosis. Lower doses have not been confirmed to be safe. Since more research is needed to determine whether Dioscorea villosa is safe for supplementation, it cannot currently be recommended.

Back to: [Supplements](#) | [Health Outcomes](#)

# ECA

Also known as: Ephedrine/Caffeine/Aspirin, ECA Stack, EC Stack



Other uses:

ECA stands for Ephedrine, Caffeine and Aspirin; these compounds were found to be synergistic for fat loss, and isolating ephedrine from the Ephedra Sinicus plant and putting it into ECA appears to be quite an effective method of fat loss and neural stimulation.

See [ECA on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Metabolic Rate</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	The increase in metabolic rate seen with ephedrine is augmented with the inclusion of both aspirin and caffeine, hence its notable efficacy
	<a href="#">Weight</a>	 Notable	- <a href="#">See study</a>	Due to both the increase in metabolic rate and reduction in appetite reported, there are notable weight reductions with the ECA stack
	<a href="#">Nasal Congestion</a>	 Minor	- <a href="#">See study</a>	Due to the ephedrine component, ECA may also reduce nasal congestion
	<a href="#">Pain</a>	 Minor	- <a href="#">See study</a>	At least in persons with upper respiratory tract infections, a possible analgesic effect of ephedrine with aspirin exists
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant alterations in blood glucose noted with ECA supplementation
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant alterations in long term blood pressure, although acute spikes are possible due to the ephedrine and caffeine components
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	Heart rate at rest is not affected by ECA supplementation and may indirectly be lowered secondary to weight loss. However, an acute increase in heart rate is possible from the stimulatory effects of ephedrine



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant alterations in fasting insulin reported
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol levels

Back to: [Supplements](#) | [Health Outcomes](#)

# Ecdysteroids






Also known as: *Suma extract*, *pfaffia extract*, *Brazilian ginseng extract*, *beta-ecdysterone*, *turkesterone*, *ecdysterone*



Ecdysteroids are a class of hormones that are the androgens of insects; they are involved with reproduction and molting, but human ingestion might be healthy or increase muscle mass. Human interventions are lacking and problems with ecdysteroid ingestion exist.

See [Ecdysteroids on Examine.com](#)

## How to Take

Hypoglycemic effects of edcdysterone and its plant sources seems to be dose-dependent, although a good dose that is used safely is typically 200mg a day. An oral dose of 5mg/kg bodyweight in rats seems to possess anabolic properties, and would be a good place to start for increasing muscle mass.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No demonstrated changes in cortisol levels with ecdysterone consumption
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	No differences between ecdysteroids and placebo in improving lean mass accrual during a weight lifting program
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No significant alterations in any measured liver enzymes (ALT, AST, GGT)
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	No difference between improvements in power output between ecdysteroids and placebo
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No alterations noted in serum testosterone associated with ecdysterone consumption

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	In resistance trained males, no significant influence of ecdysterone supplementation on cholesterol
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides

Back to: [Supplements](#) | [Health Outcomes](#)

# Echinacea










Also known as: *Brauneria purpurea*, *Echinacea intermedia*, *Rudbeckia purpurea*, Purple coneflower herb, Coneflower, red sunflower







Echinacea purpurea is a herb commonly used either in response to or daily for prevention of the common cold. It may hold benefit in doing so, although it outperforms placebo unreliably and the amount of benefit derived is similarly unreliable.

See [Echinacea on Examine.com](#)

## How to Take

For dehydrated powders (including encapsulated echinacea) the species of purpuera tends to be used and oral doses are taken upwards of 300mg thrice a day (900mg daily) and 500mg thrice daily (1,500mg daily). Tinctures of an ethanolic extract of the aerial parts (leaves and stems) appears to be used in the concentration of 2.5mL thrice a day or up to 10mL daily. There is no much evidence as to whether these are the optimal doses, and studies seem to be very heterogeneous in their benefits due to lack of standardization.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Length of Sickness</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	Although a high variability exists, the meta-analysis has concluded a 1.4-day reduction in sickness when it occurs relative to placebo. As echinacea is also a comparator for sickness, this reduction is notable
	<a href="#">Upper Respiratory Tract Infection Risk</a>	 Notable	<b>High</b> <a href="#">See all 11 studies</a>	The reduction in rate of sickness seen with echinacea as a daily supplement is highly effective in some instances, but subject to a high degree of variability. It is notable due to it being a comparator.
	<a href="#">Symptoms of the Common Cold</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Insufficient evidence to support modification of symptoms of sickness
	<a href="#">Erythropoietin</a>	 Minor	- <a href="#">See study</a>	Lone trial noted an increase in EPO production without an accompanying increase in red blood cell count; practical significance of these results uncertain
	<a href="#">Exercise-Induced Immune Suppression</a>	 Minor	- <a href="#">See study</a>	Possible effects, but study assessed salivary IgA (biomarker of immunity) and not sickness rates; hard to assess potency.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Oxygenation Cost of Exercise</a>	 Minor	- <a href="#">See study</a>	Effective, but to a small degree based on one trial.
	<a href="#">VO2 Max</a>	 Minor	- <a href="#">See study</a>	Not an astounding increase in VO2 max, requires replication.
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant known effects on blood pressure
	<a href="#">Red Blood Cell Count</a>	-	- <a href="#">See study</a>	Oddly ineffective despite an increase in erythropoetin seen
	<a href="#">Sleep Quality</a>	-	- <a href="#">See study</a>	Likely related to the inefficacy in treating symptoms, but no significant ability to aid in sleep quality during or without sickness

Back to: [Supplements](#) | [Health Outcomes](#)












# Ecklonia cava


Ecklonia Cava is a brown seaweed with a rich polyphenolic content (this particular subset being known as eckols or phlorotannins) that confers anti-oxidant properties, it is being investigated for health properties.

See [Ecklonia cava on Examine.com](#)

## How to Take

Ecklonia Cava products appear to benefit the body in relatively low doses, with weak health benefits on blood pressure and glucose in the range of 100mg; higher doses (which would be expected when consuming the seaweed itself as a food product) confer dose-dependent responses.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	May reduce blood glucose levels, not overly potent in doing so
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A possible reduction in blood pressure in overweight persons with supplementation of ecklonia cava
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Possible reductions in LDL-C
	<a href="#">Total Cholesterol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A possible reduction in total cholesterol concentrations
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides noted with ecklonia cava
	<a href="#">C-Reactive Protein</a>	 Notable	- <a href="#">See study</a>	Appears to reduce C-reactive protein, with the degree of reduction being noted almost a halving

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C detected

Back to: [Supplements](#) | [Health Outcomes](#)

# Eclipta alba











Also known as: False Daisy, Yerba de tago, Kehraj, Karisalankanni

Eclipta Alba (False Daisy) is a herb that has traditional usage as a liver tonic in Ayurveda. It appears to have preliminary evidence to suggest hair growth promotion as potent as Minoxidil and some anti-diabetic effects as well as liver protection.






See [Eclipta alba on Examine.com](#)

## How to Take

Currently, the only human study using Eclipta Alba merely consumed 3,000mg of the leaves. This study did not use a particular extract, but crushed and encapsulated the leaves themselves. Benefits are seen with the petroleum ether extract on hair growth (up to 5% of solution when applied topically) and the ethanolic extract for pain reduction (dose dependent up to 500mg/kg in rats, which is 80mg/kg in human equivalence).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Notable	- <a href="#">See study</a>	Decreases of blood pressure in unhealthy persons using eclipta alba have occurred by 15% (mean arterial pressure)
	<a href="#">Diuresis</a>	 Notable	- <a href="#">See study</a>	Urine volume has been noted to be increased by 34%, which is fairly notable as it outperforms other nutraceuticals
	<a href="#">LDL-C</a>	 Notable	- <a href="#">See study</a>	Decreases in LDL-C have been noted with eclipta alba in hypertensive persons to 24%, which is quite a significant reduction.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in biomarkers of lipid peroxidation has been noted, possible related to an increase in serum <a href="#">Vitamin E</a> concentrations
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	A decrease in total cholesterol has been noted with supplementation of eclipta alba



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	Decreases in triglycerides have been noted, but not to a remarkable degree
	<a href="#">vLDL-C</a>	 Minor	- <a href="#">See study</a>	Decreases in fasting vLDL have been noted
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No detectable influence on HDL-C cholesterol

Back to: [Supplements](#) | [Health Outcomes](#)

# Eggs

*Also known as: Ovum, Ova, Eggs, Egg*

*Other uses:*

---

A shelled vessel for protein and fats in the white and yolk, respectively, that carries a surprisingly large amount of nutrients; especially choline and leucine as well as many carotenoids coloring the yolk. Eggs do not inherently increase circulating cholesterol.

See [Eggs on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Eleutherococcus senticosus

Also known as: Siberian ginseng, Ciwujia, Acanthopanax senticosus, Eleuthero











Other uses:

Eleutherococcus senticosus is an adaptogen and herb that may increase work capacity during strenuous aerobic activity. It also has anti-stress and potential immunity-boosting effects.







See [Eleutherococcus senticosus on Examine.com](#)

## How to Take

The standard dose for Eleutherococcus senticosus is 300-1,200mg, though the 2-4g range and more have been traditionally recommended. The most common form of Eleutherococcus senticosus supplements are root and stem extracts, though leaf extracts have been used as well.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anaerobic Running Capacity</a>	 Minor	- <a href="#">See study</a>	Possibly effective at increasing cardiovascular exercise performance, likely secondary to fatigue reduction (although similarly unreliable)
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	A decrease in glucose consumption during exercise (without affecting metabolic rate and due to an increase in fat oxidation) has once caused an acute lowering of glucose. The magnitude is quite minor, and there is no evidence to assess the effects of eleuthero on fasting blood glucose or in diabetes management
	<a href="#">Cognitive Decline</a>	 Minor	- <a href="#">See study</a>	A positive influence on the cognitive state of elderly persons (reduction of cognitive decline) has once been noted
	<a href="#">DNA Damage</a>	 Minor	- <a href="#">See study</a>	A decrease in DNA damage biomarker has been noted, thought to be secondary to antioxidative effects
	<a href="#">Fat Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Some studies have noted an increase in fat oxidation during exercise; no current studies conducted at rest

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fatigue Resistance</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May increase physical performance, but is unreliable in doing so
	<a href="#">Immunity</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to have a stimulating effect on T-cell proliferation and NK cell activity, but requires more evidence.
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	A decrease in LDL-C has once been noted
	<a href="#">Natural Killer Cell Content</a>	 Minor	- <a href="#">See study</a>	An increase has been noted, but there is insufficient evidence to assess the magnitude of increase or the reliability
	<a href="#">Oxygen Uptake</a>	 Minor	- <a href="#">See study</a>	Limited evidence, but it is in support of an increase in oxygen consumption
	<a href="#">Protein Carbonyl Content</a>	 Minor	- <a href="#">See study</a>	A decrease in protein carbonylation has been noted, which is thought to be secondary to antioxidative effects
	<a href="#">Social Functioning in Elderly</a>	 Minor	- <a href="#">See study</a>	Appears to increase social functioning in elderly persons, which is a measurement of cognition (and eleuthero is thought to, via this, possible attenuate the rate of cognitive aging)
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influences yet known for HDL cholesterol
	<a href="#">Lipid Peroxidation</a>	-	- <a href="#">See study</a>	Insufficient evidence to evaluate lipid peroxidation reducing effects
	<a href="#">Liver Enzymes</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on liver enzymes when measured as a part of a safety test battery

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	Despite possible influences on fatigue production, there is currently no demonstrated reduction in the rate of perceived exertion during exercise
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influences yet known for total cholesterol
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influences yet known for triglycerides
	<a href="#">VO2 Max</a>	 Minor	- <a href="#">See study</a>	Possible increases in VO2 max, but requires more evidence to ascertain potency and reliability
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influences on heart rate are yet known

Back to: [Supplements](#) | [Health Outcomes](#)

# Emblica officinalis

Also known as: *Phyllanthus emblica*, Amla, Anwala, Indian gooseberry











Other uses:

Emblica officinalis (Amla) is an ayurvedic herb which has all parts, including the fruits, used for preventative and therapeutic purposes. It appears to be most used for regulating glucose metabolism and cardiac health, and may also be neuroprotective.

See [Emblica officinalis](#) on [Examine.com](#)

## How to Take

Unless otherwise specified, most benefits associated with emblica officinalis are from the fruits of the plant. The fruits themselves (dry weight) or their powder are taken in the dosage range of 1-3g daily with the higher part of this range being seen as more effective.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Notable	- <a href="#">See study</a>	Preliminary evidence suggested that 3g of the fruits (a fairly reasonable dosage) was as effective as 5mg glibenclamide twice daily
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	Higher doses of the fruits (3g) appear to be able to increase circulating HDL cholesterol in otherwise healthy persons and diabetics
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	A decrease in LDL-C has been noted with consumption of the fruits over 21 days, affecting both healthy controls and diabetics
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	A decrease in cholesterol has been noted and appears to affect both healthy controls as well as diabetics
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	Appears to have triglyceride reducing properties

# Energy Drinks

*Also known as: Redbull Energy Drink, Monster Energy Drink, Full Throttle Energy Drink, NOS Energy Drink*

*Other uses:*

---

Energy Drinks are drinks that are touted to give Energy, usually being a drink of caffeine, taurine, glucuronolactone and B-complex vitamins with one or two random things thrown in to sound pretty and for marketability. They should be treated like a carbonated sum of the parts.

See [Energy Drinks on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Ephedrine

Also known as: *Ephedra Vulgaris*, *Ephedraceae*, *ma huang*











Other uses:

Ephedrine is one of the four active components of the herb Ephedra. It is able to induce fat loss via increasing the amount of fat available for fuel as well as by increasing heat expenditure. It has been implicated in increasing the metabolic rate by up to 5% in humans. It has also been noted to cause serious side-effects in some instances, and its legal status varies by region.

See [Ephedrine on Examine.com](#)

## How to Take

All Doses Standardized to Ephedrine HCl In an ECA stack, ephedrine is dosed at 20-24mg for three doses taken throughout the day. Human studies have found success with ephedrine in isolation on fat metabolism with doses of 20-50mg thrice a day. The higher range (150mg) may be too stimulatory for some, and can induce headaches or light hand tremors. Ephedrine tends to be consumed with xanthine compounds like caffeine and sometimes with Aspirin. The combination of Ephedrine and caffeine is shown repeatedly to be highly synergistic.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Mass</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	It is thought that most weight lost with ephedrine administration is due to fat mass, due to a slight muscle preserving effect; studies that note reductions in fat mass support this hypothesis
	<a href="#">Metabolic Rate</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	Ephedrine, secondary to the stimulatory properties, appears to reliably increased metabolic rate
	<a href="#">Weight</a>	 Notable	<b>High</b> <a href="#">See all 10 studies</a>	Ephedrine tends to result in reliable weight loss over time relative to control (assuming calories are held equal), which is mostly due to a loss of body fat
	<a href="#">Blood Pressure</a>	 Minor	<b>Low</b> <a href="#">See all 5 studies</a>	There may be an acute increase in blood pressure seen with ephedrine intake, although this does not appear to be overly reliable; long-term usage of ephedrine does not seem to alter blood pressure, and may reduce it secondary to weight loss
	<a href="#">Heart Rate</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	An increase in heart rate is present following ephedrine administration which correlates well with its psychostimulatory properties; this is not 100% reliable, and heart rate increases may not occur



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nasal Congestion</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Ephedrine appears to result in notable nasal decongestion
	<a href="#">HDL-C</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in HDL-C has been noted with ingestion of ephedrine, may be confounded with weight loss also seen in the trials
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	A decrease in LDL-C has been noted to be associated with ephedrine, although this may be confounded with weight loss (also seen in the trials)
	<a href="#">Skeletal Muscle Atrophy</a>	 Minor	- <a href="#">See study</a>	May decrease the rate of skeletal muscle breakdown over time
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	Appears to increase well being acutely following the first doses of ephedrine, secondary to the psychostimulatory effects
	<a href="#">Triglycerides</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a decrease in triglycerides over time with ephedrine ingestion, which may be due to either the fat burning effects of ephedrine or the weight loss that tends to ensue
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	No significant influence on power output with standard oral doses of ephedrine (higher doses may influence power output, but this is not well researched)
	<a href="#">Appetite</a>	 Minor	- <a href="#">See study</a>	A decrease in appetite following ephedrine intake is noted and thought to be secondary to its psychostimulatory effects
	<a href="#">Nausea</a>		- <a href="#">See study</a>	Ephedrine has been noted to reduce postoperative nausea, but is also linked to inducing nausea secondary to its psychostimulatory and appetite suppressing effects. The latter is more practical for supplementation

# Eriobotrya japonica

Also known as: *Loquat, Biwa, Pipa, pipaye, chinese plum, japanese plum*

---

Eriobotrya japonica (Common Loquat) is a plant whose fruits are commonly consumed for their taste and other parts (seeds, leaves, flowers) used in traditional chinese medicine for treatment of cough and respiratory distress; it appears to be rich in ursolic acid like triterpenoids.

See [Eriobotrya japonica on Examine.com](#)

## How to Take

There is currently not enough information to recommend an ideal supplemental dose of this plant for any of its recommended supplemental purposes, although one study referencing the 'recommended human dose' for the seeds used a rat dose of 40mg/kg (ie. about 3-5g of the seeds for adults).

Back to: [Supplements](#) | [Health Outcomes](#)

# Eschscholzia californica

Also known as: *California Poppy*

---

California Poppy is an herb that has some bioactive alkaloids which may be nootropic or cognitive enhancing in nature; It is currently in the exploratory stages of research.

See [Eschscholzia californica on Examine.com](#)

## How to Take

There is currently not enough evidence to support an optimal dose of California Poppy. The best bet may be to simply make tea, which has been apparently used as an anxiolytic and sedative by some people.

Back to: [Supplements](#) | [Health Outcomes](#)

# Eucommia ulmoides





Also known as: Du Zhong, Gutta-Percha, Rubber Bark tree, Tochu

Eucommia ulmoides is a traditional chinese medicine of which the bark is used for medicinal purposes. Although most evidence is preliminary, it has minor antiinflammatory properties may augment steroid signalling.

See [Eucommia ulmoides on Examine.com](#)

## How to Take

There is insufficient evidence to suggest an optimal dosage, but the limited human evidence and the animal evidence suggest a daily dose of around 3g of the leaf extract is effective for blood pressure and fat mass reduction. It may be prudent to use this in three daily doses of 1g, as the lone human study used thrice daily dosing.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Euonymus alatus

Also known as: *Winged Euonymus*, *Celastraceae*, *Gui Jeon Wu*, *Burning Bush*

---

Euonymus Alatus (Gui Jeon Wu) is a traditional medicine touted to improve blood circulation and flow. It is not well studied in that regard and has no human evidence, but may reduce glucose absorption from the intestines after a meal.

See [Euonymus alatus on Examine.com](#)

## How to Take

Not enough evidence exists at this moment in time to recommend an effective dose

Back to: [Supplements](#) | [Health Outcomes](#)

# Eurycoma Longifolia Jack











Also known as: Longjack, Tongkat Ali, Malaysian Ginseng, longjax, Cay Ba Binh, Pasak Bumi, Langir Siam, Tung Sawa  
Other uses:


Eurycoma (Tongkat Ali, LongJack) is a pro-fertility agent and aphrodisiac that appears to have a large body of evidence supporting this role and some evidence suggesting it may be an anti-estrogen and pro-erectile agent. Lack of evidence for testosterone boosting.

See [Eurycoma Longifolia Jack on Examine.com](#)

## How to Take

The standard dosage of eurycoma longifolia jack is 200-300mg of a 100:1 extract (the concentration is based on the eurycomamone content), which at least in regards to eurycomamone is as effective as 20-30g of the dry root of the plant. This dose tends to be taken in 1-2 doses throughout the day, and it is unsure if this is the optimal dose.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	In stressed persons, daily supplementation of eurycoma is associated with a 16% reduction in cortisol concentrations.
	<a href="#">Erections</a>	 Minor	- <a href="#">See study</a>	There appears to be a slight proerectile effect of eurycoma supplements as assessed by self-report survey
	<a href="#">Libido</a>	 Minor	- <a href="#">See study</a>	An increase in libido is seen with prolonged daily ingestion of eurycoma supplements in the range of 8.4-10.8%
	<a href="#">Seminal Motility</a>	 Minor	- <a href="#">See study</a>	Sperm motility appears to be increased, with more efficacy in those with lower baseline motility and improvements averaging 44.4%
	<a href="#">Sperm Quality</a>	 Minor	- <a href="#">See study</a>	May increase parameters of sperm quality and volume.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Stress</a>	 Minor	- <a href="#">See study</a>	Supplementation of eurycoma in stressed persons appears to reduce subjective perceptions of stress.
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	In otherwise normal men supplementing eurycoma, an increase in overall quality of life and happiness is seen (alongside increases in libido)
	<a href="#">Weight</a>	 Minor	- <a href="#">See study</a>	A decrease in weight has been noted in overweight and obese men, but did not extend to men of normal weight. Mechanisms unknown.
	<a href="#">IGF-1</a>	-	- <a href="#">See study</a>	No detectable alterations in IGF-1 for eurycoma extract
	<a href="#">Serum DHEA</a>	-	- <a href="#">See study</a>	No significant changes in the sulfate form of DHEA (DHEA-S) is noted after twelve continual weeks of supplementation
	<a href="#">Sex Hormone Binding Globulin</a>	-	- <a href="#">See study</a>	No significant influence on circulating SHBG over the course of 12 weeks in otherwise healthy men.
	<a href="#">Testosterone</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	Although the protective effects of tongkat ali on the testicles and the profertility effects may result in a slight increase in testosterone in infertile men and the adaptogenic effects may cause a preservation of testosterone in stressed men, there is no evidence in otherwise healthy and unanxious men.
	<a href="#">Lean Mass</a>	 Minor	- <a href="#">See study</a>	One pilot study has noted an increase more than control when both eurycoma and control were paired with exercise
	<a href="#">Power Output</a>	 Minor	- <a href="#">See study</a>	A slight increase in power output has been noted, which may be secondary to increased training adaptations
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	No significant known influences on fat mass





# Evodia rutaecarpa

Also known as: *Wuzhuyu*, *Wu Zhu Yu*, *Wu Zhu Yu Tang*, *Evodiae Fructus*, *Evodia Fruit*, *Evodia Fructae*

Other uses:

Used in Traditional Chinese Medicine to increase warmth in the body. It might burn fat, but has not really been looked into it; might also decrease the perception of cold like capsaicin does, which indirectly warms you. A good berry for your oats in the winter.

See [Evodia rutaecarpa on Examine.com](#)

## How to Take

There are currently no human studies on evodia rutaecarpa berries. Traditional usage of the berries involves making a decoction using 3-9g of the berries and then dividing said decoction into either two servings daily (morning and evening) or thrice daily (morning, noon, and evening)

Back to: [Supplements](#) | [Health Outcomes](#)

# Evolvulus alsinoides

Also known as: Dwarf Morning Glory, Shankhapushpi

Evolvulus alsinoides is one of four herbs referred to as Shankhapushpi and is traditionally used in Ayurveda for nootropic and psychotropic effects. It appears to enhance learning in otherwise normal rodents with comparable potency to Piracetam.

See [Evolvulus alsinoides on Examine.com](#)

## How to Take

There is insufficient evidence in humans to recommend an ideal dose, but the estimated effective dose in rats (200mg/kg) correlates to approximately 32mg/kg of the ethanolic extract in humans and thus: 2,200mg for a 150lb person 2,900mg for a 200lb person 3,600mg for a 250lb person These dosages for an ethanolic extract of evolvulus alsinoides are but estimates based on the animal research.

Back to: [Supplements](#) | [Health Outcomes](#)

# Fadogia agrestis

Also known as: *bakin gagai*, *black aphrodisiac*

Other uses:

Fadogia agrestis is a nigerian shrubbery that has traditional usage as a proerectile agent. It currently lacks human studies, but appears to have both aphrodisiac and erectile properties in rats. Possible toxicity needs to be investigated more.

See [Fadogia agrestis on Examine.com](#)

## How to Take

Although there is no human evidence, both mouse and rat studies use up to 100mg/kg of fadogia agrestis daily. This leads to an estimated human dosage of: 550-1,100mg for a 150lb person 700-1,450mg for a 200lb person 900-1,800mg for a 250lb person These are current human estimates based on the animal research, and it is not sure if they are the optimal dosages.

Back to: [Supplements](#) | [Health Outcomes](#)

# Fennel Essential Oil

*Also known as: Fennel, fennel, Foeniculum vulgare*

---

Fennel Essential oil is seen as a 'stimulatory' essential oil.

See [Fennel Essential Oil on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Fenugreek

Also known as: *Trigonella foecum-graecum*, fenugreek seeds








Other uses:

Fenugreek is a plant supplemented for its libido enhancing and anti-diabetic effects.





See [Fenugreek on Examine.com](#)

## How to Take

Fenugreek doses vary based on the goals of supplementation. New mothers that want to increase breast milk production should aim for 500-1000mg of fenugreek. Men who want to increase testosterone or libido could consider taking between 500-600mg of a standardized fenugreek formulation, such as the commonly used product called 'Testofen'. Testofen has 50% fenusides by weight. Fenugreek seeds are very versatile. They can be eaten as seeds, brewed into a tea, made into flour and baked into bread, or pressed into oil. Eating seeds or using fenugreek flour is the most effective form of fenugreek for blood sugar control. An oral dose of 2-5g of fenugreek seeds can help blood glucose levels for diabetics. In fenugreek trials, it is typically taken on a daily basis.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Appetite</a>	-	<b>Low</b> <a href="#">See all 4 studies</a>	Variable effects on appetite, but it seems the fenugreek fibers (not commonly in supplements) may reduce appetite similar to most dietary fibers while the saponins (commonly supplemented) have no significant effect or a possible increase
	<a href="#">Insulin</a>	-	<b>Low</b> <a href="#">See all 3 studies</a>	No consensus as to the influence of fenugreek on insulin levels
	<a href="#">Testosterone</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although there is limited evidence to support an increase in testosterone, more evidence than not denies such an increase
	<a href="#">Milk Production</a>	 Strong	- <a href="#">See study</a>	Increases in milk production have been noted in lactating women given fenugreek, and appears to be a fairly significant degree of improvement with the best trial conducted noting a doubling of milk production
	<a href="#">Libido</a>	 Notable	- <a href="#">See study</a>	Increases in libido have been noted before, which is notable due to the lack of significant influence on testosterone and possible suppression of DHT (theoretically should reduce libido, yet a large increase is seen with fenugreek)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Appears to result in a decrease of blood glucose following ingestion of fenugreek
	<a href="#">DHT</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in DHT has been noted following consumption of fenugreek seeds in otherwise healthy men, but appears to be unreliable
	<a href="#">Fat Mass</a>	 Minor	- <a href="#">See study</a>	A lone study measuring fat mass in athletes given fenugreek noted a reduction in fat mass, which was not to a remarkable degree
	<a href="#">Glycemic Control</a>	 Minor	- <a href="#">See study</a>	May improve glycemic control secondary to reduction in blood glucose, although this may be more indicative of fenugreek fibers than the saponin content
	<a href="#">Glycogen Resynthesis</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed influence on glycogen resynthesis rates, but may have a possible benefit
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	An increase in HDL-C has been associated with fenugreek ingestion
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	An increase in insulin sensitivity has been noted with fenugreek ingestion
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	May reduce triglyceride levels
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant influence on cortisol levels following fenugreek ingestion
	<a href="#">Estrogen</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences detected on estrogen levels

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	No demonstrated benefit to lean mass accrual in otherwise healthy trained men given a workout program
	<a href="#">Leptin</a>	-	- <a href="#">See study</a>	No significant influences detected on circulating leptin levels with fenugreek
	<a href="#">Prolactin</a>	-	- <a href="#">See study</a>	No detectable interactions with fenugreek and prolactin levels
	<a href="#">Prostate Specific Antigen</a>	-	- <a href="#">See study</a>	No significant influence on prostate specific antigen levels

Back to: [Supplements](#) | [Health Outcomes](#)

# Ferula asafoetida

Also known as: *Asant*, *Food of the gods*, *Jowani badian*, *Stinking gum*, *Devil's dung*, *Giant fennel*, *Hing*, *Mvuje*, *Anghuzeh*, *Stinkasant*

Other uses:

Ferula foetida (the active oleoresin being called Ferula asafoetida) is a supplement catered towards lung and gastrointestinal health, and is used as a carminative agent. It may also have benefits to cognition and usage as an aphrodisiac.

See [Ferula asafoetida on Examine.com](#)

## How to Take

Supplementation in rats tend to use 200-400mg/kg of the gum or oleoresin, which leads to an estimated human dosage of: 2,200-4,400mg for a 150lb person 2,900-5,800mg for a 200lb person 3,600-7,300mg for a 250lb person These are estimated human dosages based on the animal research, and it is not known if they are the optimal human doses or not.

Back to: [Supplements](#) | [Health Outcomes](#)



# Feverfew








Also known as: *Tanacetum parthenium*, Wild Chamomile, Featherfew, *Chrysanthemum parthenium*, *Matricaria parthenium*, *Pyrenthrum parthenium*, *Leucanthemum parthenium*, Mutterroot, midsummer daisy, nosebleed, Medieval Aspirin, 18th century Aspirin


Feverfew is an herb with anti-inflammatory properties used to prevent migraines. It is also claimed to alleviate arthritis, but more research is needed to confirm this effect.

See [Feverfew on Examine.com](#)

## How to Take

The standard adult dose for feverfew supplementation is 100-300 mg of a feverfew supplement containing 0.2%-0.4% parthenolide, taken one to four times a day. Children younger than two should not be given feverfew. The standard feverfew dose for children is based off of a standard adult weight of 150 lbs. For example, if a child weighs 50lbs, the dose is one-third of the adult dose. Liquid and tincture feverfew supplements are sometimes used to alleviate arthritis. The suggested dose is 60 – 120 drops of 1:1 (fluid) supplement or a 1:5 (tincture) supplement, taken twice a day.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Migraine</a>	 Strong	<b>Very High</b> <a href="#">See all 5 studies</a>	Feverfew appears to be strongly effective in reducing migraines when the population in question are people with high frequency migraines possibly accompanied by auras. Feverfew is not as effective, although still somewhat effective, in persons with less frequent migraines.
	<a href="#">Erythema</a>	 Notable	- <a href="#">See study</a>	The reduction in erythema with topical parthenolide-depleted feverfew was greater than that of the active control, Ibuprofen.
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant effect on C-Reactive Protein
	<a href="#">Immunity</a>	-	- <a href="#">See study</a>	No significant influence detected on immunity
	<a href="#">Symptoms of Osteoarthritis</a>	-	- <a href="#">See study</a>	No significant interaction between supplemental Feverfew and osteoarthritic symptoms

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Rheumatoid Arthritis</a>	-	- <a href="#">See study</a>	Preliminary evidence has failed to find an effect of Feverfew on reducing symptoms of Rheumatoid arthritis

Back to: [Supplements](#) | [Health Outcomes](#)

# Fish Oil

Also known as: *Eicosapentaenoic Acid, EPA, Docosahexaenoic Acid, DHA, Omega-3 fatty acids, Omega-3, Omega 3, N-3 Fatty Acids*









Other uses:

Fish oil is a source of omega-3 fatty acids. It reduces triglycerides, but does not seem to affect the rate of cardiovascular events. It seems to notably reduce the symptoms of depression and improve some painful, inflammatory conditions.

See [Fish Oil on Examine.com](#)

## How to Take

Fish oil doses vary depending on the goal of supplementation. For general health, 250mg of combined EPA and DHA is the minimum dose and can be obtained via fish intake. The American Heart Association recommends 1g daily. Since fish oil is a combination of two different fatty acids, these numbers reflect a combined total. Total eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) consumption should come from a mix of real food and supplements. The more EPA and DHA is provided by the diet, the less supplementation is required. Fish oil can be taken throughout the day. To minimize the "fish burp" taste, take fish oil with meals. Pregnant women should increase their intake of DHA by at least 200mg a day, as long as there is no risk of elevated mercury levels.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	 Strong	<b>Very High</b> <a href="#">See all 44 studies</a>	Fish oil, both EPA and DHA, are reference drugs for the purpose of reducing triglycerides with highly reliable reductions in the range of 15-30% (higher reductions seen in persons with higher baseline triglycerides)
	<a href="#">Depression</a>	 Notable	<b>Very High</b> <a href="#">See all 28 studies</a>	Fish oil supplementation has been noted to be comparable to pharmaceutical drugs (fluoxetine) in majorly depressed persons, but this may be the only cohort that experiences a reduction of depression. There is insufficient evidence to support a reduction of depressive symptoms in persons with minor depression (ie. not diagnosed major depressive disorder)
	<a href="#">ADHD in Children</a>	 Minor	<b>Very High</b> <a href="#">See all 9 studies</a>	Supplemental DHA above 300mg appears to be effective in reducing ADHD symptoms in children when supplemented
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See all 8 studies</a>	May decrease blood pressure in persons with high blood pressure, but does not appear to have efficacy in persons with normal blood pressure

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 27 studies</a>	Mixed evidence, but a possible increase in HDL-C is seen with fish oil supplementation in unhealthy persons
	<a href="#">Inflammation</a>	 Minor	<b>Moderate</b> <a href="#">See all 17 studies</a>	Highly mixed and unreliable influences on circulating inflammatory cytokines (although, due to immunosuppression on cellular adhesion factors, the overall effect may still be antiinflammatory)
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See all 30 studies</a>	A decrease has been noted in persons without high cholesterol in the first place, and the decreasing effect of statins appears to be augmented with fish oil. However, in persons at higher risk for cardiovascular disease due to high triglycerides and cholesterol (who more frequently use fish oil as therapy) it is possible LDL-C may actually be increased. The magnitude tends to be in the 5-10% range.
	<a href="#">Blood Glucose</a>	-	<b>High</b> <a href="#">See all 19 studies</a>	No significant alterations in fasting glucose are seen over time with fish oil supplementation
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See all 16 studies</a>	Although some decreases have been noted, the vast majority of the evidence suggests that there is no significant influence
	<a href="#">HbA1c</a>	-	<b>Moderate</b> <a href="#">See all 10 studies</a>	Although the majority of evidence suggests absolutely no influence on HbA1c, reductions have been reported and a lone case has noted a clinically irrelevant increase of HbA1c (secondary to the increase in glucose). Practically, there is unlikely to be any large changes
	<a href="#">Insulin Sensitivity</a>	-	<b>Very High</b> <a href="#">See all 12 studies</a>	No significant influence on insulin sensitivity seems to be the consensus, although there are isolated reports of both an increase and decrease (in response to a glucose tolerance test and fasting, respectively)
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See all 18 studies</a>	Although some decreases have been noted, overall there does not appear to be a significant clinical reduction in total cholesterol like there is with triglycerides
	<a href="#">Weight</a>	-	<b>High</b> <a href="#">See all 14 studies</a>	For the most part, no significant influence on body weight over time
	<a href="#">Symptoms of Systemic Lupus Erythematosus</a>	 Notable	<b>Very High</b> <a href="#">See all 7 studies</a>	The decrease in symptoms of lupus as assessed by SLAM-R and BILAG at times reaches up to 50% symptom reduction and tends to exceed 30%, and the first pilot studies noted remission in all subjects (although they have not been replicated since). Oddly, benefit may come from lower doses

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
				(160mg EPA and 140mg DHA) with higher doses conferring less benefit
	<a href="#">Anxiety</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	A decrease in anxiety has been noted in medical students
	<a href="#">Cell Adhesion Factors</a>	 Minor	<b>Low</b> <a href="#">See all 8 studies</a>	Appears to be able to reduce cellular adhesion factors (that draw immune cells into tissue to aid in inflammatory processes, reducing these is immunosuppressive) in elderly persons, while slightly increasing expression in youth
	<a href="#">Cortisol</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	A possible reducing effect of fish oil supplementation on cortisol
	<a href="#">Endothelial Function</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	There appears to be a slight increase in vascular reactivity and blood vessel responsiveness that may be independent of both blood flow alterations and blood pressure
	<a href="#">Infant Birth Weight</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be an increased infant birth weight in mothers that consume fish oil (or fish weekly) relative to no fish oil intake. Although earlier studies have suggested this may be due to prolonging pregnancy, a recent RCT found an increase in birth weight independent of gestational age.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See all 5 studies</a>	Both increases and decreases in lipid peroxidation have been noted with fish oil supplementation, with the increases in peroxidation usually seen with high doses of fish oil paired with other oxidative stressors (such as marathon running)
	<a href="#">Natural Killer Cell Activity</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Although there do not appear to be changes in the amounts of NK cells in the body following fish oil, their activity appears to be a tad reduced
	<a href="#">Photoprotection</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be reduced risk of DNA damage, immunosuppression, and erythema in response to sunlight associated with fish oil consumption. Studies have only investigated higher doses (1,800mg EPA minimum) and it is unsure if these protective effects apply to lower doses
	<a href="#">Platelet Aggregation</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Possible decreases in platelet aggregation


LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Bipolar Disorder</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	There appears to be reduced depressive symptoms in bipolar disorder when the depression is of a large magnitude (similar to the anti-depressant effects of fish oil in general). There may not be a reduction in depressive symptoms with lower severity depression (a trend to increase has been noted) and manic symptoms do not appear to be significantly influenced.
	<a href="#">TNF-Alpha</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	May decrease TNF-a
	<a href="#">vLDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	May decrease vLDL cholesterol
	<a href="#">Apolipoprotein B</a>	-	<b>Moderate</b> <a href="#">See all 6 studies</a>	Although at least one study has noted a decrease, usually there is no significant changes
	<a href="#">B-Cell Count</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	The overall quantity of B lymphocytes does not appear to be altered with fish oil supplementation
	<a href="#">Blood Flow</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	Although there is some counter evidence to suggest an improvement of small magnitude, most evidence suggest no significant changes in blood flow
	<a href="#">Insulin</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	No significant influence on fasting insulin levels
	<a href="#">Insulin Secretion</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	There does not appear to be an augmented insulin release from dietary carbohydrate nor an inherent insulin release from the pancreas associated with fish oil supplementation
	<a href="#">Muscle Soreness</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although one study suggests a decrease, most evidence suggest no significant influence
	<a href="#">Natural Killer Cell Content</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although one increase in NK cell content has been noted after exercise, the two studies using similar doses at rest have failed to find a significant influence on NK cell content

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Postpartum Depression</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	There does not appear to be any unique effect of supplemental fish oil on postpartum depression. Fish oil in postpartum and perinatal periods follows the same motifs as other depressive states, with EPA being the active molecule but likely only of benefit in major depressive disorder
	<a href="#">Pre-Eclampsia Risk</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There does not appear to be a significant protective effect against pre-eclampsia in women who supplement fish oil during pregnancy
	<a href="#">T Cell Count</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Although there is some evidence to suggest an immunosuppressive effect on T cells, most evidence suggest no significant effect. When the immunosuppression does occur, it is due to the EPA content
	<a href="#">VO2 Max</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	There is no evidence to support an improvement of VO2 max when fish oil is consumed alongside an exercise routine
	<a href="#">5-HEPE</a>	 Notable	- <a href="#">See study</a>	5-HEPE is a catabolite of EPA, and its blood levels are increased following consumption of EPA in a dose-dependent manner
	<a href="#">Aggression</a>	 Minor	- <a href="#">See study</a>	A decrease in aggression has been noted, which is thought to be secondary to improvements in mood state and general well being
	<a href="#">Cerebral Blood Flow</a>	 Minor	- <a href="#">See study</a>	Appears to improve cerebral blood flow and volume in persons with low dietary fish intake
	<a href="#">Cerebral Oxygenation</a>	 Minor	- <a href="#">See study</a>	The increase in cerebral oxygenation appears to exist in otherwise healthy persons with low dietary fish intake, and appears to be secondary to improvements in blood flow in general
	<a href="#">Cognitive Decline</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	High dose (900 mg) DHA appears to be somewhat beneficial in reducing the rate of cognitive decline in elderly but otherwise healthy persons, but 350 mg DHA and 600 mg EPA has been seen to have no effect in those with concurrent age-related macular degeneration.
	<a href="#">Erythema</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Ingestion of fish oil appears to prolong the time required for sunlight to induce reddening of the skin, and secondary to this fish oil ingestion above 1,800mg EPA is able to reduce the risk of sunburn.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Exercise-Induced Oxidation</a>	 Minor	- <a href="#">See study</a>	Exercise induced oxidation has been noted to be increased in elite athletes with fish oil supplementation
	<a href="#">Factor VII</a>	 Minor	- <a href="#">See study</a>	An increase in serum Factor VII has been noted with fish oil supplementation
	<a href="#">General Oxidation</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase general oxidation in the body, but seems unreliable in doing so
	<a href="#">Homocysteine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May decrease homocysteine content
	<a href="#">Infant Death Risk</a>	 Minor	- <a href="#">See study</a>	A reduced risk of death of infants after pregnancy has been noted with maternal consumption of fish oil, but this information is preliminary and needs replication (noted offhand in one study)
	<a href="#">Interleukin 2</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on IL-2 concentrations, with an increase noted when supplemented around exercise and no change noted at rest.
	<a href="#">Interleukin 6</a>	 Minor	- <a href="#">See study</a>	A decrease in circulating IL-6 has been noted with fish oil supplementation
	<a href="#">Ketone Bodies</a>	 Minor	- <a href="#">See study</a>	An increase in ketone bodies has been noted when fish oil is paired with a weight loss diet (relative to placebo)
	<a href="#">Leukotriene B5</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in LKB5 has been noted following fish oil supplementation
	<a href="#">Liver Fat</a>	 Minor	- <a href="#">See study</a>	A possible decreasing effect of liver fat seen in persons with NAFLD




LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lymphocyte Count</a>	 Minor	- <a href="#">See study</a>	A decrease in lymphocytic count has been noted in obese persons
	<a href="#">Memory</a>	 Minor	- <a href="#">See 2 studies</a>	Possible improvements in memory
	<a href="#">Nitric Oxide</a>	 Minor	- <a href="#">See study</a>	An increase in exercise-induced nitric oxide production has been noted
	<a href="#">Plasminogen Inhibitor 1</a>	 Minor	- <a href="#">See study</a>	An increase in PAI-1 is noted with fish oil supplementation
	<a href="#">Processing Accuracy</a>	 Minor	- <a href="#">See study</a>	An improvement in processing accuracy (assessed by amount of errors in a cognitive test) has been noted with fish oil in otherwise healthy adults that do not frequently consume fish products
	<a href="#">Prostaglandin J2a</a>	 Minor	- <a href="#">See study</a>	An increase in prostaglandin J2A is noted with fish oil supplementation, which is thought to mediate a variety of fish oil's effects
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See study</a>	A reduction in reaction time has been noted with fish oil supplementation in persons who consume low levels of fish in the diet
	<a href="#">Stress</a>	 Minor	- <a href="#">See study</a>	Self-reported stress in distressed women given fish oil supplementation appears to be reduced
	<a href="#">Subjective Well-Being</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	An improvement in well being has been noted in nondepressed and nonelderly obese persons given fish oil supplementation to a small magnitude.
	<a href="#">Thromboxane B2</a>	 Minor	- <a href="#">See study</a>	An increase in thromboxane B2 is noted with fish oil supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">5-HETE</a>	-	- <a href="#">See study</a>	5-HETE is a catabolite of arachidonic acid (omega-6 fatty acids), and its serum levels do not appear to be significantly influenced by ingestion of fish oil supplementation despite an increase in EPA and DHA
	<a href="#">Adiponectin</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant influence on Adiponectin concentrations
	<a href="#">Apolipoprotein A</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on Apolipoprotein A concentrations
	<a href="#">Attention</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Fish oil supplementation in otherwise healthy adults has failed to significantly influence attention processing
	<a href="#">Cognition of Offspring</a>	-	- <a href="#">See study</a>	Despite the importance of DHA in cognition of offspring (and absolute deprivation likely to reduce cognitive development), additional supplemental fish oil does not appear to be supported for further enhancing the cognition of offspring although it is plausible
	<a href="#">DHEA</a>	-	- <a href="#">See study</a>	No significant influence on DHEA sulfate in serum
	<a href="#">DNA Damage</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Does not appear to influence DNA damage
	<a href="#">Exercise-Induced Immune Suppression</a>	-	- <a href="#">See study</a>	Does not appear to augment nor alleviate the immunosuppression that occurs during exercise in otherwise healthy persons
	<a href="#">Fat Mass</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on fat mass with routine supplemental fish oil
	<a href="#">Fatigue</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	No demonstrable benefit to fatigue

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Food Intake</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There does not appear to be a significant influence of fish oil supplementation on food intake
	<a href="#">Fructosamine</a>	-	- <a href="#">See study</a>	No evidence to support an increase in fructosamine, which alongside HbA1c is thought to indicate pathology from elevated blood glucose (fish oil appears to elevate glucose, but does not appear to be associated with higher diabetes risk)
	<a href="#">Glucagon</a>	-	- <a href="#">See study</a>	No significant influence on plasma glucagon concentrations
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant acute effect on heart rate seen with fish oil supplementation
	<a href="#">Interleukin 1-beta</a>	-	- <a href="#">See study</a>	No significant influence on circulating IL-1 $\beta$ concentrations
	<a href="#">Interleukin 5</a>	-	- <a href="#">See study</a>	No significant influence on circulating IL-5 concentrations
	<a href="#">Lean Mass</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on lean mass associated with fish oil supplementation
	<a href="#">Leptin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on Leptin in serum
	<a href="#">Leukotriene B4</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on LKB4 concentrations
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes noted

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscle Damage</a>	-	- <a href="#">See study</a>	No significant influence on biomarkers of muscle damage seen with fish oil supplementation
	<a href="#">Oxidation of LDL</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence detected
	<a href="#">Proteinuria</a>	-	- <a href="#">See study</a>	Although a trend to reduce protein losses in the urine was noted (which would be kidney protective), this was a statistically insignificant and secondary to lupus treatment
	<a href="#">Sex Hormone Binding Globulin</a>	-	- <a href="#">See study</a>	No significant influence on SHBG levels
	<a href="#">Symptoms of Alzheimer's</a>	-	- <a href="#">See study</a>	Despite the benefit seen with high dose DHA in cognitive decline, there does not appear to be a proven significant protective effect in persons already with Alzheimer's
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No detectable influence on testosterone levels in serum
	<a href="#">Insomnia</a>	 Notable	- <a href="#">See study</a>	A notable improvement in one study on women with PMS. Needs more research.
	<a href="#">Breast Tenderness</a>	 Minor	- <a href="#">See study</a>	A notable improvement in one study on women with PMS. Needs more research.
	<a href="#">Fat Oxidation</a>	 Minor	- <a href="#">See study</a>	An increase in fat oxidation (percentage of energy being taken from fat tissue) has been noted with fish oil supplementation
	<a href="#">Follicle-Stimulating Hormone</a>	 Minor	- <a href="#">See study</a>	Effect occurs in normal-weight women, but not obese women.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Headaches</a>	 Minor	- <a href="#">See study</a>	A notable improvement in one study on women with PMS. Needs more research.
	<a href="#">Bone Mineral Density</a>	-	- <a href="#">See study</a>	No significant influence on bone mineral density noted with fish oil supplementation
	<a href="#">Metabolic Rate</a>	-	- <a href="#">See study</a>	No significant influence on metabolic rate seen with fish oil supplementation
	<a href="#">Sleep Duration</a>	-	- <a href="#">See study</a>	One study found no apparent effect of an algal DHA supplement on children.
	<a href="#">Sleep Latency</a>	-	- <a href="#">See study</a>	One study found no apparent effect of an algal DHA supplement on children.
	<a href="#">Sleep Quality</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	One study found a considerable improvement in people with major depression, but two studies found no apparent effect in people who weren't depressed. Much more research is needed, but it's plausible that omega-3 can improve sleep quality insofar as it improves depression.
	<a href="#">Symptoms of Menopause</a>	-	- <a href="#">See study</a>	One study found no apparent effect on hot flashes.
	<a href="#">Symptoms of PMS</a>	-	<b>Low</b> <a href="#">See all 3 studies</a>	Mixed evidence. One study found a notable improvement in a wide range of symptoms with 360 mg of EPA and 240 mg of DHA daily, and the other didn't find notable differences with a similar dose. The positive study gave omega-3 for the entire first month and then for 10 days before and after menstruation in the following two months, while the negative study only gave fish oil for 10 days during each cycle. Thus, it's possible that the positive study is more reflective of higher omega-3 levels. More research is needed. A third study found a small improvement that was statistically significant with 40 mg daily for 3 months.
	<a href="#">Wakefulness</a>	-	- <a href="#">See study</a>	One study found no apparent effect of an algal DHA supplement on children.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Working Memory</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Folic Acid

Also known as: Folate, Vitamin B9, Pteroyl L-glutamic acid





Other uses:

Folic acid, the synthetic form of folate, is an essential B-vitamin most well known for its role in preventing neural tube defects in infants. It also has a role in supporting general health but may be detrimental in high amounts.

See [Folic Acid on Examine.com](#)

## How to Take

The supplement folic acid there are a few options depending on which form you decide to take: When supplementing folate, use up to 400 DFE (400 mcg folate) When supplementing folic acid, use up to 400 DFE (200 mcg is taken on an empty stomach, 240 mcg if taken with a meal) When supplement L-methylfolate, use in the range of 7.5-15mg a day Supplementing the low doses of folate or folic acid are more than sufficient, in conjunction with a healthy diet, to support bodily levels of all folate metabolites. The higher dose of L-methylfolate is unnecessary for many but for those who suspect or know they have a genetic mutation in the MTHFR enzyme (see MTHFR section) then it would be prudent to supplement L-methylfolate instead of the other two forms since they are rendered less effective. All the above do not appear to rely on any timing strategies (single v. multiple doses; morning v. night) and are simply taken once a day.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Depression</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Limited evidence suggests small reduction in depression symptoms
	<a href="#">Symptoms of Schizophrenia</a>	 Minor	- <a href="#">See study</a>	One small study found a decrease in a non-standard measure of symptoms of schizophrenia in people with folate deficiency when using methylfolate.

Back to: [Supplements](#) | [Health Outcomes](#)

# Fucoxanthin











Also known as: Seaweed Extract, Undaria Pinnatifida, fuco, fucothin

Fucoxanthin is a carotenoid found in brown seaweed that is being investigated for its fat burning abilities. It reduces fat mass, but has a time delay due to build up in fat tissue and does not stimulate the brain. Also appears healthy, but needs more corroborating evidence.





See [Fucoxanthin on Examine.com](https://www.examine.com/supplements/fucoxanthin/)

## How to Take

A daily dosage of 2.4-8mg fucoxanthin has shown benefit in some human studies over a prolonged period of time, and while within this range the benefits are dose-dependent higher doses have not been tested sufficiently. If buying a seaweed standardized for fucoxanthin, look for the extract percentage and then backtrack. Buying an undaria pinnatifida supplement that is 1% fucoxanthin by weight would require 240-800mg of the supplement to get 2.4-8mg fucoxanthin. Assuming this page on consuming seaweed is read and understood, then daily consumption of dietary seaweed may be sufficient to get enough fucoxanthin for optimal antioxidative and fat burning effects.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Liver Enzymes</a>	 Notable	- <a href="#">See study</a>	In a model of liver fat in obese premenopausal women, fucoxanthin was fairly effective at reducing liver enzymes after prolonged usage
	<a href="#">Liver Fat</a>	 Notable	- <a href="#">See study</a>	The decrease in liver fat seen with fucoxanthin tends to be greater than that seen with other supplements, although insufficient evidence exists to suggest reliability of results
	<a href="#">Metabolic Rate</a>	 Notable	- <a href="#">See study</a>	The lone study in obese premenopausal women noted a fairly remarkable increase in metabolic rate (the highest estimate being around 450kcal daily); this study requires replication to see if the effect size persists
	<a href="#">Weight</a>	 Notable	- <a href="#">See study</a>	The lone study in obese, premenopausal women noted a large degree of weight loss over time relative to control, which was thought to be due to increasing the metabolic rate (secondary to alleviating fatty liver). Needs to be replicated in other demographics
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	In obese, premenopausal women, fucoxanthin may lower blood pressure; this is confounded with overall weight loss, however



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	 Minor	- <a href="#">See study</a>	A decrease in C-reactive protein is noted with fucoxanthin ingestion
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	A decrease in circulating triglycerides is noted with fucoxanthine

Back to: [Supplements](#) | [Health Outcomes](#)

# GABA

Also known as: *Gamma-Aminobutyric Acid*

Other uses:

---

GABA is the 'downer' neurotransmitter that counters glutamate (upper), as the two mediate brain activation in a Ying:Yang manner. Highly important in the brain, oral ingestion of GABA is complex due to its difficulty in crossing the blood brain barrier.

See [GABA on Examine.com](#)

## How to Take

Supplemental GABA has been used in humans (for the purpose of enhancing growth hormone metabolism) in the dosage range of 3,000-5,000mg GABA. It is unsure if this is the optimal dosage.

Back to: [Supplements](#) | [Health Outcomes](#)

# Gamma Oryzanol

Also known as:  $\gamma$ -Oryzanol






Other uses:







Gamma Oryzanol ( $\gamma$ -Oryzanol), a mixture of compounds found notably in rice bran oil, is a promising but unproven cholesterol-lowering agent with some skin health properties. It does not increase testosterone.

See [Gamma Oryzanol on Examine.com](#)

## How to Take

The dosages of Gamma-oryzanol used are highly variable, with some studies using a lower dose (50mg once daily or 20mg thrice daily) and other studies using a markedly higher dosage (300-800mg daily). As there are no reliable benefits associated with Gamma-oryzanol supplementation in the first place, it is unsure what dosage should be recommended (if this supplement is to be recommended at all).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant influence on cortisol levels with prolonged supplementation
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No significant influence on circulating estrogen levels in healthy men given gamma-oryzanol over a few weeks
	<a href="#">Growth Hormone</a>	-	- <a href="#">See study</a>	No significant alterations in growth hormone following ingestion of gamma-oryzanol
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No detectable influences on HDL cholesterol, although rice bran oil (a source of gamma oryzanol) may have a slight positive effect
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant alterations noted in fasting insulin levels following prolonged ingestion of gamma-oryzanol in healthy persons

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	Although rice bran oil may reduce LDL cholesterol, there is insufficient evidence to support the role of gamma-oryzanol in this role
	<a href="#">Plasma Endorphins</a>	-	- <a href="#">See study</a>	Plasma beta-endorphin is unaltered following ingestion of standard doses of gamma-oryzanol
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	No interactions with power output have been noted with gamma-oryzanol ingestion
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No detectable influence on testosterone levels in otherwise healthy men
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations seen in total cholesterol levels with supplementation
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant alterations in plasma triglycerides seen with supplementation

Back to: [Supplements](#) | [Health Outcomes](#)

# Ganoderma lucidum

Also known as: Reishi, Lingzhi, Yeongji, Mannamtake, 10,000 years mushroom, Mushroom of Immortality, Antlered Reishi, Rokkaku-Reishi, Ganoderma spores









Other uses:

Ganoderma lucidum is a potent immune system regulator, promising anti-cancer agent, and stress reducer. This mushroom is frequently used in traditional Chinese medicine.

See [Ganoderma lucidum on Examine.com](#)

## How to Take

The standard dose of Ganoderma lucidum depends on the form of the supplement. A general Ganoderma lucidum extract does not separate the triterpenoids and the polysaccharides present in the mushroom, which make up the ethanolic and water-soluble extracts, respectively. The standard dose for the basic extract is 1.44g – 5.2g. The most popular dose is 5.2g, taken in three doses of 1,800mg. The standard dosage for the ethanolic extract is 6mg. The water-soluble extract should be dosed similarly to the basic extract. The basic extract is essentially dehydrated mushroom powder, which makes it about 10 times as potent as the actual mushroom. This means that 5g of extract is similar to about 50g of whole mushroom.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Subjective Well-Being</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Subjective well being increases in disease states where other symptoms (seen as adverse) are decreased; an inherent increase of well being is uncertain.
	<a href="#">HDL-C</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	There may be an increase in HDL-C in persons with hyperlipidemia that doesn't occur in otherwise healthy adults, but this is not certain due to lack of evidence. The degree of increase was fairly strong (24%).
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	Some possible anti-anxiety effects secondary to reducing symptoms of cancer related fatigue
	<a href="#">CD3 Lymphocytes</a>	 Minor	- <a href="#">See study</a>	Reishi appears to directly stimulate production of CD3+ T-cells at a dosage of 5,000mg of the water soluble polysaccharides in otherwise healthy athletes

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">CD4 Lymphocytes</a>	 Minor	- <a href="#">See study</a>	The decrease in the CD4:CD8 ratio seen with altitude training is attenuated with 2,500-5,000mg of the water soluble polysaccharides
	<a href="#">Colorectal Cancer</a>	 Minor	- <a href="#">See study</a>	There appears to be a suppressive effect of reishi ingestion of colorectal adenocarcinomas with prolonged ingestion
	<a href="#">Depression</a>	 Minor	- <a href="#">See study</a>	Depression as a symptom of cancer-related fatigue was reduced, may not hold inherent antidepressive effects
	<a href="#">Fatigue</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in fatigue has been noted, but secondary to disease states characterized by fatigue. Usage of Reishi to reduce fatigue outright or to aid exercise is unexplored
	<a href="#">Immunity</a>	 Minor	- <a href="#">See all 4 studies</a>	There appears to be proliferative effects on T-lymphocytes and natural killer cells and no significant alteration in a CD4:CD8 lymphocytic ratio following ingestion of Ganoderma polysaccharides.
	<a href="#">Symptoms of Neurasthenia</a>	 Minor	- <a href="#">See study</a>	Appears to slightly reduce the symptoms of neurasthenia, although this needs to be replicated
	<a href="#">Symptoms of the Lower Urinary Tract</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Total symptoms scores (IPSS) appear to be decreased following ingestion of the ethanolic extract of reishi, although not to a remarkable degree (peak urine flow and residual urine seem unaffected)
	<a href="#">TNF-Alpha</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction in TNF-alpha levels have been noted in persons with elevated baseline TNF-alpha levels
	<a href="#">Triglycerides</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There may be a small decrease in triglycerides (8% or so) in unhealthy persons, but this has not been observed in otherwise healthy individuals
	<a href="#">Adrenaline</a>	-	- <a href="#">See study</a>	No significant influence on serum adrenaline

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anti-Oxidant Enzyme Profile</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on superoxide dismutase or glutathione peroxidase are noted with ganoderma polysaccharide ingestion
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	No significant influence on blood flow noted with reishi ingestion
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure noted with reishi
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant interactions with C-reactive protein have been detected
	<a href="#">DNA Damage</a>	-	- <a href="#">See study</a>	DNA damage in lymphocytes of volunteers given the polysaccharides appear unchanged
	<a href="#">Dopamine</a>	-	- <a href="#">See study</a>	No significant influence on serum dopamine
	<a href="#">General Oxidation</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in whole-body oxidation are apparent
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant reducing effects on LDL cholesterol have been noted with ganoderma supplementation
	<a href="#">Lipid Peroxidation</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant changes in lipid peroxidation biomarkers (such as MDA) are present following ingestion of Reishi
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes has been noted in toxicological testing with ganoderma

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Prostate Hypertrophy</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	At an oral dose that can reduce symptoms of prostatic hyperplasia, there is no apparent effect on prostatic hypertrophy
	<a href="#">Prostate Specific Antigen</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The ethanolic extract has failed to alter serum levels of PSA
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No significant influence on testosterone levels following ingestion of Reishi
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant alterations in total cholesterol observed with reishi ingestion
	<a href="#">Uric Acid</a>	-	- <a href="#">See study</a>	No changes in serum uric acid seem apparent
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant alterations in body weight seen with ganoderma ingestion
	<a href="#">Natural Killer Cell Activity</a>	 Notable	- <a href="#">See study</a>	Up to a 50% increase in NK cell activity relative to control has been noted with reishi, and this may be independent of a basic stimulatory action (which would lead into possible supplement combinations)
	<a href="#">Proteinuria</a>	 Minor	- <a href="#">See study</a>	A decrease in urinary protein has been noted, indicative of kidney protective effects

Back to: [Supplements](#) | [Health Outcomes](#)



# Garcinia cambogia






Also known as: Gambooge, Pazham Puzhi, Bitter Kola, Malabar tamarind, (-)-Hydroxycitric acid, HCA, Hydroxycitric acid






Garcinia Cambogia is a fruit that is known to enhance the culinary experience of food, and enhances satiety from a meal (possibly by enhancing the flavor experience). Its usage as a fat burner does not appear to extend to humans.

See [Garcinia cambogia on Examine.com](#)

## How to Take

Standard dosing of Garcinia Cambogia and its bioactive, (-)-Hydroxycitric acid, is 500mg of (-)-Hydroxycitric acid taken 30-60 minutes prior to a meal and usually taken at up to three different meals daily. It is unsure if this is the ideal dose since human studies usually fail to find a benefit with any dosage.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although there is some counter evidence, it tends to be less robust and for the most part there is no significant weight reducing effect of garcinia cambogia supplementation
	<a href="#">Apolipoprotein B</a>	-	- <a href="#">See study</a>	No significant influence on apolipoprotein B detected
	<a href="#">Appetite</a>	-	- <a href="#">See study</a>	No significant influence of acute HCA supplementation on appetite when taken before a meal
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No significant influence on circulating estrogen levels associated with garcinia
	<a href="#">Food Intake</a>	-	- <a href="#">See study</a>	Food intake appears to be unaltered following ingestion of garcinia supplements, which is different than results seen in rats

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C levels
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	Garcinia appears unable to influence LDL-C levels based on preliminary evidence
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	Testosterone appears to be unaltered following ingestion of garcinia cambogia
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant alterations seen in total cholesterol levels
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No detectable influence on triglyceride levels

Back to: [Supplements](#) | [Health Outcomes](#)

# Garlic

Also known as: *Allium sativum*, Vegetable Viagra, Da suan, Camphor of the poor, Lasun, Stinking Rose, Ail, Ajo









Other uses:

Garlic (*Allium sativum*) is a food product that can improve immunity and cardiovascular health.

See [Garlic on Examine.com](#)


## How to Take

Most studies on garlic use a dosage range of 600-1,200mg a day, usually divided into multiple doses. The minimum effective dose for raw garlic is a single segment of a garlic bulb (called a clove), eaten with meals two or three times a day. Aged garlic is a popular form of garlic to use for supplementation, since it does not have a fresh garlic scent. Garlic supplementation can also be done through food alone, though side-effects will include strong garlic-scented breath. Microwaving garlic will partially destroy the beneficial components of the vegetable, but grilling and roasting will not damage the bioactives, provided the garlic is sliced or crushed beforehand. Garlic can be toxic if consumed in very high doses, so supplementation should never go beyond 5% of the diet. This results in the following maximum dosages: 17.0 grams for a 150lb person 22.7 grams for a 200lb person 28.4 grams for a 250lb person

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	 Notable	<b>Very High</b> <a href="#">See all 14 studies</a>	Garlic supplementation tends to increase HDL cholesterol in persons with cardiovascular disease risk reliably and in the range of 10-15% when looking at individual trials and by 1.49mg/dL (95% CI of 0.19-2.79mg/dL) as assessed by meta-analysis.
	<a href="#">LDL-C</a>	 Notable	<b>Very High</b> <a href="#">See all 14 studies</a>	There appears to be a reliable and significant reduction in circulating LDL cholesterol in hypercholesterolemic persons with garlic supplementation, and the magnitude of this change tends to be in the range of 10-20% (more potency in those with worse profiles at baseline)
	<a href="#">Total Cholesterol</a>	 Notable	<b>Very High</b> <a href="#">See all 17 studies</a>	Garlic supplementation or the raw garlic bulb appears to reduce cholesterol (total cholesterol, mostly due to LDL reductions) reliably and in the range of 10-15%
	<a href="#">Triglycerides</a>	 Minor	<b>Very High</b> <a href="#">See all 15 studies</a>	There appears to be quite an unreliable decrease in triglycerides following garlic supplementation. When looking at meta-analyses, there is either a significant but small decrease or a reduction that fails to reach statistical significance.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Notable	<b>High</b> <a href="#">See all 12 studies</a>	Garlic supplementation appears to reduce blood pressure, and the magnitude is quite respectable in persons with hypertension (around 10 points systolic or 8-10%) whereas there is a smaller but present reduction in persons with normal blood pressure.
	<a href="#">Symptoms of Peripheral Vascular Disease</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although there may theoretically be some benefit with higher doses, currently the available evidence has not found a protective effect with 900mg of raw garlic extract.
	<a href="#">White Blood Cell Count</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	While there are significant modifications in the subpopulations of white blood cells (ie. <i>which</i> immune cells you have) the overall quantity does not appear significantly affected.
	<a href="#">Rate of Sickness</a>	 Strong	<b>Very High</b> <a href="#">See 2 studies</a>	The rate (frequency of occurring) of the common cold has twice been found to be reduced by 60-70% in persons who take garlic supplementation daily; this is associated with both allicin and the aged garlic extract, and requires higher doses (2.5g aged extract or 180mg allicin).
	<a href="#">Treatment of Hepatopulmonary Syndrome</a>	 Notable	- <a href="#">See study</a>	Following 250mg of garlic oil ingestion for a variable 9-18 months, two thirds of the group given supplementation reversed their status of having hepatopulmonary symptoms (1 person in placebo) and the mortality rate during followup was greatly reduced.
	<a href="#">γδ-T Cell Count</a>	 Notable	- <a href="#">See study</a>	The lone human study using a rather high dose of Aged Garlic extract (2.56g) noted an 8-fold increase of this T-cell subpopulation relative to control; thought to be related to the cold fighting properties of garlic
	<a href="#">Adiponectin</a>	 Minor	- <a href="#">See study</a>	There appears to be an increase in adiponectin associated with 1,200mg of aged garlic supplementation despite no other influence on the body of persons with metabolic syndrome.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	There appears to be an increase in glutathione related enzymes in red and white blood cells following ingestion of garlic supplements.
	<a href="#">Arterial Stiffness</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a reduction in arterial stiffness seen with daily supplementation of garlic when measured over the course of a few years, relative to no garlic ingestion.
	<a href="#">Atherosclerosis</a>	 Minor	- <a href="#">See study</a>	Stasis has been reported in the growth of arterial plaque over 48 months when people consume 900mg of garlic, but this effect may only be statistically significant for women.







LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Interferon Gamma</a>	 Minor	- <a href="#">See study</a>	Alongside the increase in immune cell activity in otherwise healthy persons is an increase in IFN-γ concentrations
	<a href="#">Length of Sickness</a>	 Minor	- <a href="#">See study</a>	The length that one is sick for is only modestly reduced with garlic supplementation even at higher doses.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See all 3 studies</a>	A reduction in lipid peroxidation in the blood and in red blood cells has been noted in some states of metabolic ailment (aging and hypertension). Not 100% reliable as it wasn't seen in one study on hypercholesterolemia, and no studies in healthy controls.
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See 2 studies</a>	One study has noted a 20% decrease in the ALT enzyme following garlic supplementation to otherwise healthy controls.
	<a href="#">Natural Killer Cell Activity</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There is an increase in NK cell activity alongside the increase in NK cell content, although it is not sure if there is an inherent increase in NK cell activity if you control for the increase in cell content.
	<a href="#">Natural Killer Cell Content</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There is an increase in NK cell levels seen in both healthy controls as well as cancer patients, and this is thought to be due in part to both immunostimulatory and anti-immunosuppressive effects.
	<a href="#">Oxidation of LDL</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible decrease in LDL oxidation rates, although this does not appear to be overly reliable.
	<a href="#">Platelet Aggregation</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Garlic appears to reduce platelet aggregation at the supplemental dose, but not a moderate dietary dose of garlic cloves. The potency is less than <a href="#">ginkgo biloba</a> as a reference.
	<a href="#">Severity of Sickness</a>	 Minor	- <a href="#">See study</a>	Despite the potent efficacy in reducing the occurrence of sickness, the actual severity of symptoms is only modestly reduced with garlic.
	<a href="#">Symptoms of the Common Cold</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Similar to symptoms of sickness in general and the length of sickness, the therapeutic efficacy of garlic appears to be modest at best.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">TNF-Alpha</a>	 Minor	- <a href="#">See 2 studies</a>	Decreases have been noted in inflammatory states (indicative of antiinflammatory effects) and increases seen in healthy persons; suggesting an immunomodulatory effect
	<a href="#">Upper Respiratory Tract Infection Risk</a>	 Minor	- <a href="#">See study</a>	There appears to be a reduction in the lung infection risks with garlic supplementation.
	<a href="#">Blood Flow</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Minimal studies have directly measured blood flow associated with garlic, and the best evidence currently suggests that basal flow mediated vasodilation is unaffected; there is likely an effect, although most studies indirectly measure blood pressure.
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	Supplementation of garlic does not appear to significantly reduce fasting blood glucose in persons with metabolic syndrome.
	<a href="#">Blood Viscosity</a>	-	- <a href="#">See study</a>	The long study to assess basal viscosity of the blood has failed to find an interaction with garlic supplementation.
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on C-reactive protein is noted with supplementation of garlic.
	<a href="#">CD4 Lymphocytes</a>	-	- <a href="#">See study</a>	CD4+ Lymphocytes do not appear to be influence with supplementation of garlic
	<a href="#">CD8 Lymphocytes</a>	-	- <a href="#">See study</a>	CD8+ Lymphocytes do not appear to be influenced with supplementation of garlic.
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant influence of garlic supplementation has been found on cortisol in cancer patients.
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	No significant influence of garlic supplement on creatinine concentrations in serum are present.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Food Intake</a>	-	- <a href="#">See study</a>	No significant alterations in food intake are seen with garlic ingestion (assuming no taste aversion).
	<a href="#">Gastric Cancer Risk</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	800mg aged garlic extract has failed to reduce the risk of developing gastric cancer when taken daily for 7.3 years
	<a href="#">Homocysteine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in homocysteine concentrations are seen with garlic supplementation.
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	In persons with metabolic syndrome, there is no significant influence on fasting insulin concentrations relative to placebo after supplementation of garlic.
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	There is no significant influence on insulin sensitivity when garlic is given to persons with metabolic syndrome.
	<a href="#">Interleukin 1</a>	-	- <a href="#">See study</a>	No significant influence on circulating IL-1 concentrations seen with garlic supplementation (alongside no influence on IL-6 yet a decrease in TNF- $\alpha$ )
	<a href="#">Interleukin 6</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Supplementation of garlic to persons in chronic pro-inflammatory states does not seem to significantly influence circulating IL-6 concentrations
	<a href="#">Leptin</a>	-	- <a href="#">See study</a>	In a study that noted an increase in adiponectin in persons with metabolic syndrome, there was no influence on circulating leptin concentrations.
	<a href="#">Quality of Life</a>	-	- <a href="#">See study</a>	Quality of life in cancer patients is unaffected despite an increase in NK cell activity, thought to be indicative of a therapeutic effect of supplementation.
	<a href="#">Red Blood Cell Count</a>	-	- <a href="#">See study</a>	There are no alterations in red blood cell count with normal doses of garlic (although there does appear to be a decrease when a <i>toxic</i> dose of garlic oil is ingested)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum Platelets</a>	-	- <a href="#">See study</a>	Despite any possible interactions with the platelets (in regards to preventing their clotting), there are no alterations in the overall amount of platelets.
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although there are theoretical benefits of garlic to weight loss, prolonged supplementation of garlic in other studies (where weight is measured as a secondary parameter of interest) is not altered. The weight loss effects are either small or nonexistent in otherwise normal conditions
	<a href="#">Basal Cell Carcinoma</a>	 Notable	- <a href="#">See study</a>	Topical application of a solution containing the sulfur bearing molecule Ajoene was able to half the tumor size and Bcl-2 expression after half a year of once daily application.
	<a href="#">Interferon Alpha</a>	 Notable	- <a href="#">See study</a>	The lone study noted that interferon alpha concentrations in serum increased 384% when measured 2-4 hours after 2g of raw garlic clove.
	<a href="#">Mineral Bioaccumulation</a>	 Notable	- <a href="#">See study</a>	Mineral bioaccumulation from garlic ingestion (allicin in particular) is reduced in persons working in a car battery factory with excessive lead levels to a level similar to the reference drug D-penicillamine
	<a href="#">Nitric Oxide</a>	 Notable	- <a href="#">See study</a>	The lone study assessing nitric oxide and garlic noted that a raw garlic clove (2g) could increase nitric oxide by 224% in otherwise healthy persons within 2-4 hours of ingestion; potency did not decrease after seven days
	<a href="#">Prostate Hypertrophy</a>	 Notable	- <a href="#">See study</a>	The lone pilot study has noted a 32% reduction in prostatic size after a month of eating 200mg/kg garlic (as a water soluble liquid extract)
	<a href="#">Prostate Specific Antigen</a>	 Notable	- <a href="#">See study</a>	The lone study (no placebo control) noted a 60% reduction in both total and free PSA in a small group of men with prostate cancer; requires more evidence to evaluate the therapeutic potential
	<a href="#">DNA Damage</a>	 Minor	- <a href="#">See study</a>	Urinary biomarkers of DNA damage are reduced in hypertensive persons following supplementation of garlic.
	<a href="#">Exercise Capacity (with Heart Conditions)</a>	 Minor	- <a href="#">See study</a>	In persons with coronary heart disease, supplementation of garlic appears to increase physical performance when ingested at a food dose (1g) daily over six weeks; the increase in performance is moderate.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	Oxidative biomarkers in the blood appear to be modestly reduced following supplementation of garlic in persons with high levels of oxidative damage indicative in serum.
	<a href="#">Symptoms of Benign Prostatic Hyperplasia</a>	 Minor	- <a href="#">See study</a>	A decrease was noted alongside improvements in prostatic size, but a magnitude of reduction was not given for evaluation.
	<a href="#">Cancer Mortality</a>	-	- <a href="#">See study</a>	The overall mortality rate from stomach cancer is not influence with garlic supplementation during 15 years of followup
	<a href="#">Esophageal Cancer Risk</a>	-	- <a href="#">See study</a>	The protective effect of 800mg aged garlic extract daily for 7.3 years does not appear to be statistically significant
	<a href="#">Exercise Performance During Hypoxia</a>	-	- <a href="#">See study</a>	Large doses of garlic (4.5g of the bulb) to athletes undergoing hypoxic training does not appear to increase performance.
	<a href="#">Heart Rate</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	There is no inherent influence of garlic on heart rate, although when garlic aids cardiovascular performance in persons with heart problems it is associated with a reduced heart rate relative to control (due to less stress on the tissue).
	<a href="#">Helicobacter Pylori Infection</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Despite potent antibacterial properties of garlic oil when tested outside of the body, it appears to be ineffective when given to human volunteers.
	<a href="#">Oxygen Uptake</a>	-	- <a href="#">See study</a>	In otherwise healthy athletes given 4.5g of garlic cloves daily before a performance test, the lack of increased performance is met by a lack of changes in oxygen uptake.
	<a href="#">Thromboxane B2</a>	-	- <a href="#">See study</a>	No significant interactions with Thromboxane A2 are currently known.
	<a href="#">Uric Acid</a>	-	- <a href="#">See study</a>	No significant interactions with uric acid concentrations in serum.



# Ginger

Also known as: *Zingiber officinale* Roscoe, Zingiberaceae







Other uses:

Ginger is a spice that has traditionally been treated as medicine in both Traditional Chinese Medicine and Ayurveda, doses of 1-3g can reduce nausea and ease digestion quite effectively; superloading the powdered rhizome (vertical root) at 10-15g daily might increase testosterone.

See [Ginger on Examine.com](#)

## How to Take

Typically, dosages of 1-3g are used as a preventative treatment for nausea. This applies to morning sickness in pregnancy, motion sickness, and sometimes chemotherapy or operation-induced nausea. For other usages of ginger, 1g is typically used. This seems to be effective for increasing intestinal motility, but was insufficient in reducing blood glucose in the one study attempting it. For testosterone boosting, a supplement is probably advised. The dosage used in rats, after conversion to humans based on Body Surface Area, equates to about 14g from natural sources (usually less of an extract percentage than is possible with supplements). Ginger can be ingested via several ways, and the following is an approximate standardization table for 1g of Ginger Extract:[1] A capsule that has 1g ginger extract in it A teaspoon of fresh, grated, rhizome (the vertical aspect of ginger root) 2 droppers (2mL) of liquid extract 2 teaspoons (10mL) of syrup 4 cups (8 oz each) ginger tea, steeping 1/2 teaspoon grated ginger for 5-10 min 8-oz cup ginger ale, made with real ginger 2 pieces crystallized ginger, each 1 inch square, 1/4 inch thick

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nausea</a>	 Notable	<b>Very High</b> <a href="#">See all 11 studies</a>	There appears to be a reliable and fairly notable decrease in nausea symptoms with 1-3g of ginger related to pregnancy and seasickness (not as much consensus for post-operative nausea)
	<a href="#">Inflammation</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Inflammatory parameters seem to be reduced following ginger consumption
	<a href="#">Rate of Gastric Emptying</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Ginger appears to increase the rate of gastric digestion, although the potency thereof is not too reliable

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Osteoarthritis</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There may be a small reducing effect, but it does not appear to be greater than the active control of Ibuprofen
	<a href="#">Colon Cancer Risk</a>	 Minor	- <a href="#">See study</a>	May reduce colon cancer risk as assessed by a beneficial influence in eicosanoids in the colon; requires more evidence
	<a href="#">Dysmenorrhea</a>	 Minor	- <a href="#">See study</a>	Ginger was capable of reducing menstrual pain at 1g daily
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	May increase HDL-C levels
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	May decrease LDL-C
	<a href="#">Lower Esophageal Pressure</a>	 Minor	- <a href="#">See study</a>	A decrease in LES pressure (not necessarily a good thing, especially for acid reflux) has been noted with ginger ingestion
	<a href="#">Memory</a>	 Minor	- <a href="#">See study</a>	An increase in memory has been noted in older women, no current studies in youth
	<a href="#">Muscle Soreness</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reduction of delayed onset muscle soreness, but this topic is a bit contested
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See study</a>	A decrease in reaction time has been noted to be secondary to improvements in cognition in older women; no studies in youth at this moment in time.
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	Possible cholesterol reducing effects associated with ginger consumption

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	May decrease triglycerides
	<a href="#">Vertigo</a>	 Minor	- <a href="#">See study</a>	May reduce symptoms of vertigo related to the anti-nausea effects, but this research is highly preliminary
	<a href="#">Motion Sickness</a>	-	- <a href="#">See study</a>	Despite the reduction in nausea associated with ginger consumption, it does not appear to be associated with reduced symptoms of motion sickness
	<a href="#">Nystagmus</a>	-	- <a href="#">See study</a>	No significant influence on pathological involuntary eye movements
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	No significant influence on the rate of perceived exertion
	<a href="#">Lipid Peroxidation</a>	 Notable	- <a href="#">See study</a>	In the semen of infertile men, the reduction in lipid peroxidation has reached 53.7% with supplementation of ginger over three months.
	<a href="#">Luteinizing Hormone</a>	 Notable	- <a href="#">See study</a>	Although the study is limited by lack of placebo control and disclosure of dosage, ginger is associated with a 43.2% increase in serum luteinizing hormone over three months in infertile men.
	<a href="#">Seminal Motility</a>	 Notable	- <a href="#">See study</a>	Preliminary evidence suggests a 47.3% increase in seminal motility seen with three months supplementation of ginger to infertile men.
	<a href="#">Symptoms of PMS</a>	 Notable	- <a href="#">See study</a>	One study found a notable improvement in mood, physical, and behavioral symptoms with 500 mg of ginger daily. This study needs replication.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	- <a href="#">See study</a>	An increase in seminal glutathione has been noted to reach 26.7% in otherwise infertile men.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Appetite</a>	 Minor	- <a href="#">See study</a>	A decrease in appetite has been noted with ginger intake
	<a href="#">Ejaculate Volume</a>	 Minor	- <a href="#">See study</a>	In infertile men, an undisclosed amount of ginger for three months is able to increase ejaculate volume by an average of 36.1%
	<a href="#">Follicle-Stimulating Hormone</a>	 Minor	- <a href="#">See study</a>	A 17.6% increase in follicle stimulating hormone has been noted in infertile men given ginger, which is thought to underlie the observed pro-seminal effects of supplementation.
	<a href="#">Sperm Count</a>	 Minor	- <a href="#">See study</a>	A somewhat minor increase in sperm count (16.2%) is seen with supplementation of ginger (amount undisclosed) to infertile men over three months.
	<a href="#">Sperm Quality</a>	 Minor	- <a href="#">See study</a>	Seminal viability (40.7%) and normal morphology () is increased in infertile men given ginger.
	<a href="#">Testosterone</a>	 Minor	- <a href="#">See study</a>	An increase in testosterone has been noted to reach 17.7% in infertile men given an undisclosed amount of ginger over three months.
	<a href="#">Thermic Effect of Food</a>	 Minor	- <a href="#">See study</a>	Ginger has been found to increase the thermic effect of coingested food products
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant alterations in blood glucose seen with ginger ingestion
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant alterations in insulin levels (fasting) seen with ginger
	<a href="#">Metabolic Rate</a>	-	- <a href="#">See study</a>	Despite an increase in the thermic effect of food, overall metabolic rate does not appear affected



# Ginkgo biloba











Also known as: *Tanakan, Tebonin, Rökän, Maidenhair, gingko*

Ginkgo biloba is the most commonly ingested herb for brain health. While it may boost cognition in older populations, this effect is not very reliable or generalizable.

See [Ginkgo biloba on Examine.com](#)

## How to Take

Ginkgo biloba can be supplemented for cognitive enhancement, or to alleviate cognitive decline. For cognitive enhancement, take 120-240mg, one to four hours before performance. To alleviate cognitive decline in older adults, take 40-120mg, three times a day. The supplement form of Ginkgo biloba is also called EGb-761 extract. It should be a 50:1 concentrated extract. Ginkgo biloba should be taken with meals.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognitive Decline</a>	 Notable	<b>High</b> <a href="#">See all 11 studies</a>	For usage of EGb-761 at 240-360mg daily as a therapeutic option in people who already are experiencing cognitive decline, then it appears to be reliably effective and comparable to 10mg Donepezil.
	<a href="#">Memory</a>	 Minor	<b>High</b> <a href="#">See all 12 studies</a>	There appears to be a fairly reliable increase in short term memory and free recall associated with ginkgo supplementation in older individuals (55yrs or above) either with or without diagnosed neurodegenerative disease states.
	<a href="#">Symptoms of Intermittent Claudication</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	There appears to be reduced symptoms of intermittent claudication with ginkgo supplementation, although it seems to vary significantly from one individual to another and despite some persons experiencing large benefit the overall 'net' benefit is relatively minor.
	<a href="#">Symptoms of Acute Mountain Sickness</a>	 Notable	<b>Moderate</b> <a href="#">See all 7 studies</a>	There appears to be a quite potent yet quite unreliable reduction in symptoms of AMS when ginkgo is taken at 240mg daily for 1-5 days prior to a trip up a mountain. The reason for this variability is not known.
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See all 7 studies</a>	Ginkgo biloba has shown both vasodilatory effects (via nitric oxide metabolism) and some possible constrictive effects, depending on the context of supplementation.




LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Other parameters of cognition are differentially influenced by ginkgo, as facial recognition in those with dementia has noted improvement yet trip planning in middle-aged persons is unaffected.
	<a href="#">Ocular Blood Flow</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	An increase in ocular blood flow has been noted in instances of normal tension glaucoma as well as healthy controls, although a one-time oral dose is ineffective (at least two days supplementation is required)
	<a href="#">Subjective Well-Being</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	An improvement in mood has been noted in persons with cerebral injury, but not in otherwise healthy middle aged persons.
	<a href="#">Symptoms of Alzheimer's</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Cognitive impairment that is associated with Alzheimer's appears to be significantly reduced with ginkgo supplementation.
	<a href="#">Attention</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	Attentional focus and similar parameters (task switching) do not appear to be significantly influenced by ginkgo supplementation.
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	Despite the influence on blood flow and circulation, there does not appear to be a significant influence on blood pressure
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	No significant influence of ginkgo biloba supplementation on heart rate.
	<a href="#">Intraocular Pressure</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Despite the increase in ocular blood flow associated with repeated dosing of ginkgo biloba, there does not appear to be a significant modification of intraocular blood pressure in persons with normal IOP.
	<a href="#">Libido</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Although a potential benefit cannot be ruled out at this moment in time (the first pilot study showed promise and there are some responders), overall ginkgo does not appear to influence SSRI-induced sexual dysfunction in more well conducted trials.
	<a href="#">Stroke Recovery Rate</a>	-	- <a href="#">See study</a>	Although there is some scattered evidence to support the role of ginkgo in stroke recovery rates, the best evidence currently available does not find a significant therapeutic benefit.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Tinnitus</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	There does not appear to be a significant and reliable therapeutic effect of ginkgo on tinnitus symptoms, although limited evidence suggests that if tinnitus is a side-effect of cognitive decline that it may be attenuated.
	<a href="#">Working Memory</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Despite the improvement in short term memory and recall, there does not appear to be a significant improvement in working memory.
	<a href="#">Myeloperoxidase</a>	 Notable	- <a href="#">See study</a>	The 29.6% reduction in MPO concentrations following supplementation of 240mg EGb-761 in persons with metabolic syndrome was fairly notable.
	<a href="#">Oxidation of LDL</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	In high risk individuals, the reduction has been noted to be 17.0+/-5.5%
	<a href="#">Proteinuria</a>	 Notable	- <a href="#">See study</a>	The study in diabetics noting a reduction in urinary albumin noted a near halving over 8 weeks with a low dose of ginkgo.
	<a href="#">ADHD in Children</a>	 Minor	- <a href="#">See study</a>	Ginkgo appears to reduce symptoms of ADHD, but 80-120mg of the EGb-761 extract has been confirmed to be less potent than 20-30mg Ritalin
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	- <a href="#">See 2 studies</a>	Superoxide dismutase and glutathione have been noted to be increased with supplementation of ginkgo (240mg EGb-761) in persons with metabolic syndrome, while the abnormal elevation of these enzymes in schizophrenia is attenuated; essentially, a beneficial modulation appears to exist
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	Prolonged supplementation of ginkgo biloba appears to confer anxiolytic effects in persons with generalized anxiety disorder. Anxiety in dementia may also be reduced secondary to treating the symptoms of dementia
	<a href="#">Apolipoprotein A</a>	 Minor	- <a href="#">See study</a>	In high risk individuals, the reduction has been noted to be 23.4+/-7.9%
	<a href="#">Atherosclerosis</a>	 Minor	- <a href="#">See study</a>	In high risk subjects, supplementation of ginkgo biloba appeared to reduce atherosclerotic buildup relative to control at the standard supplemental dose.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Breast Cancer Risk</a>	 Minor	- <a href="#">See study</a>	An increase in breast cancer risk has been noted to barely pass statistical significance in an analysis of cancer development in elderly persons (75 years or older) given EGb-761 daily for a median 6.1 years.
	<a href="#">C-Reactive Protein</a>	 Minor	- <a href="#">See study</a>	A decrease in C-reactive protein is noted with supplementation of Ginkgo biloba
	<a href="#">Calmness</a>	 Minor	- <a href="#">See study</a>	One study to assess the effects of ginkgo biloba in cognition, which failed to improve alertness, noted an increase in self-reported calmness with 120mg (EGb-761)
	<a href="#">Cerebral Blood Flow</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be a significant improvement in blood flow to the middle and anterior cerebral arteries, although other arteries are unaffected.
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	The increase in cortisol seen before a stress test is attenuated with supplementation of ginkgo, secondary to its anti-stress effects
	<a href="#">Creatinine</a>	 Minor	- <a href="#">See study</a>	A slight decrease in urinary creatinine has been noted with ginkgo supplementation in diabetics with nephropathy
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	There appears to be a reduction in general oxidation as assessed by biomarkers (reduced glutathione, etc.) associated with supplementation of ginkgo biloba
	<a href="#">Interleukin 6</a>	 Minor	- <a href="#">See study</a>	A slight reduction in IL-6 has been reported in persons who are diagnosed with metabolic syndrome
	<a href="#">Microcirculation</a>	 Minor	- <a href="#">See study</a>	There is a small increase in microcirculation seen in elderly persons given ginkgo biloba, extending to both periphery and the liver. Benefits seem to be time dependent and greater at day 30 relative to day 10
	<a href="#">Nitric Oxide</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in cGMP (downstream mediator of nitric oxide signalling) has been noted in high risk individuals alongside an increase in superoxide dismutase, to the degree of 27.7+/-8.3% and nitric oxide itself has been increased by up to 40% in persons with poor circulation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Numerical Memory</a>	 Minor	- <a href="#">See study</a>	The study that investigated numerical working memory has noted an impairment associated with ginkgo relative to placebo
	<a href="#">Oxygen Uptake</a>	 Minor	- <a href="#">See study</a>	In persons undergoing high altitude climbing, the reduced risk of AMD is associated with increased functional capacity of blood to carry oxygen.
	<a href="#">Pink Eye</a>	 Minor	- <a href="#">See study</a>	Eye drops containing ginkgo biloba appear to be more effective than control in reducing symptoms of conjunctivitis (pink eye) after a month of treatment
	<a href="#">Processing Accuracy</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The number of errors seen in serial threes and serial sevens tasks appears to be reduced with acute supplementation of EGb-761
	<a href="#">Processing Speed</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	In older individuals, there appears to be an increase in processing speed without a sacrifice in accuracy
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See 2 studies</a>	Alongside improvements in general cognition in older individuals, an improvement in reaction time has been noted.
	<a href="#">Risk of Peripheral Vascular Disease</a>	 Minor	- <a href="#">See study</a>	There appears to be a significantly reduced risk of developing peripheral vascular diseases when using ginkgo biloba supplementation relative to placebo in older individuals
	<a href="#">Serum BDNF</a>	 Minor	- <a href="#">See study</a>	An increase in serum BDNF has been confirmed in persons with schizophrenia and tardive dyskinesia only
	<a href="#">Sleep Quality</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There may be an increase in sleep efficiency (reduced waking during the night) without any apparent enhancement of REM sleep, this seems to be related to the flavonoid portion
	<a href="#">Stress</a>	 Minor	- <a href="#">See study</a>	There may be some anti-stress properties of ginkgo biloba supplementation when a single dose is taken prior to a stress test

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of PMS</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appear to be reductions in the symptoms of PMS associated with ginkgo supplementation, the degree of reduction being reported at up to 23.68%
	<a href="#">Symptoms of Schizophrenia</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Symptoms of schizophrenia appear to be reduced with supplementation of ginkgo biloba (EGb-761 at 240-360mg daily), although all studies currently use ginkgo alongside standard antipsychotic therapy. It appears effective as an add-on
	<a href="#">Symptoms of Tardive Dyskinesia</a>	 Minor	- <a href="#">See study</a>	Symptoms of tardive dyskinesia appear to be slightly reduced with supplementation of ginkgo biloba
	<a href="#">Symptoms of Vitiligo</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	EGb-761 appears to be associated with skin repigmentation in persons suffering from vitiligo, although the degree of this effect is fairly modest
	<a href="#">Visual Acuity</a>	 Minor	- <a href="#">See study</a>	Improvements have been noted in the visual field in persons with normal tension glaucoma, which is characterized by damage to this parameter. It is uncertain whether ginkgo increases visual acuity in otherwise healthy persons.
	<a href="#">Apolipoprotein B</a>	-	- <a href="#">See study</a>	No significant alterations are observed in apolipoprotein B concentrations
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	In diabetics, ginkgo does not appear to significantly reduce blood glucose
	<a href="#">Cancer Risk</a>	-	- <a href="#">See study</a>	No significant influence on overall cancer risk associated with prolonged usage of EGb-761 in elderly individuals
	<a href="#">Depression</a>	-	- <a href="#">See study</a>	Supplementation of ginkgo does not appear to significantly influence depressive symptoms in older individuals
	<a href="#">Risk of Alzheimer's Disease</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although ginkgo may have an acute therapeutic benefit, supplementation of ginkgo daily over the course of years in persons at risk for Alzheimer's does not appear to be too effective as a preventative supplement

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Risk of Dementia</a>	-	- <a href="#">See study</a>	Similar to the inability of ginkgo biloba to influence Alzheimer's disease occurrence, ginkgo does not appear to reduce the risk of developing dementia.
	<a href="#">Risk of Myocardial Infarction</a>	-	- <a href="#">See study</a>	The risk of myocardial infarction (as well as other heart conditions such as angina) does not appear to be significantly affected by ginkgo supplementation.
	<a href="#">Risk of Stroke</a>	-	- <a href="#">See study</a>	The risk of stroke does not appear to be reduced with supplementation of 240mg EGb-761 in older individuals.
	<a href="#">Symptoms of Autism</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The better conducted trial and parts of the preliminary evidence suggest no therapeutic benefit of ginkgo biloba in the treatment of autism
	<a href="#">Symptoms of Multiple Sclerosis</a>	-	- <a href="#">See study</a>	Supplementation of ginkgo has failed to significantly benefit the cognition of persons with multiple sclerosis
	<a href="#">Symptoms of Raynaud's Phenomena</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of ginkgo biloba supplementation on the symptomology of Raynaud's Phenomenon
	<a href="#">Verbal Fluency</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of supplemental ginkgo on verbal fluency even in persons with cognitive injuries.
	<a href="#">Skin Moisture</a>	 Notable	- <a href="#">See study</a>	The lone study assessing the effects of topical application of 0.3% ginkgo flavonoids in a cream noted a 28% increase in skin moisture content over 28 days, a highly relevant increase.
	<a href="#">Skin Quality</a>	 Minor	- <a href="#">See study</a>	Skin smoothness/roughness is beneficially influenced with topical application of ginkgo flavonoids at 0.3%
	<a href="#">Wrinkles</a>	 Minor	- <a href="#">See study</a>	There appears to be a slight decrease in skin wrinkling following topical application of 0.3% ginkgo for 28 days













# Glucosamine

Glucosamine is a supplement derived from shellfish that can provide minor pain relief. Glucosamine sulfate slightly delays the progression of knee osteoarthritis.





See [Glucosamine on Examine.com](#)

## How to Take

To supplement glucosamine, take 300 – 500 mg, three times a day, for a total daily dose of 900 – 1,500 mg. The benefits of glucosamine are dose-dependent, and studies use up to 2,000 – 3,000 mg a day, taken in several doses. Glucosamine sulfate salts are the best way to supplement glucosamine, with glucosamine sulfate as a close second. Glucosamine hydrochloride is ineffective. N-Acetylglucosamine is not glucosamine and should be considered a different supplement. Glucosamine should be supplemented alongside food.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pain</a>	 Minor	<b>Very High</b> <a href="#">See all 8 studies</a>	There appears to be a decrease in pain, with one meta-analysis noting that over the long term it account for "a 13 point reduction on a scale of 0-100". Although present, it is not as effective as most painkillers and may be exclusive to osteoarthritis
	<a href="#">Symptoms of Osteoarthritis</a>	 Minor	<b>Very High</b> <a href="#">See all 19 studies</a>	There appears to be a small decrease in osteoarthritis symptoms associated with glucosamine (as sulfate, not hydrochloride) which is somewhat unreliable but consistently outperforms placebo on meta-analyses. The magnitude of reduction, however, is somewhat minor but still comparable to acetaminophen
	<a href="#">CTX-II</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	This biomarker of collagen degradation has been twice noted to be suppressed in athletes given 3g glucosamine sulfate daily, suggesting that prevention of collagen degradation applies (without measuring collagen per se)
	<a href="#">Injury Rehabilitation Rate</a>	 Minor	- <a href="#">See study</a>	May be able to accelerate the rate of tissue injuries, limited evidence however
	<a href="#">Range of Motion</a>	 Minor	- <a href="#">See study</a>	An increase in range of motion has been noted alongside general osteoarthritis symptom reduction



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Kashin-Beck Disease</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Can decrease the rate of collagen degradation in this disease state; lack of reference drugs prevents gauging potency
	<a href="#">Lower Back Pain</a>	-	- <a href="#">See study</a>	No significant benefits seen on lower back pain; all benefits associated with glucosamine are related to the knee
	<a href="#">Symptoms of Temporomandibular osteoarthritis</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Limited evidence suggests that glucosamine's benefits do not extend to the jaw

Back to: [Supplements](#) | [Health Outcomes](#)

# Glucuronolactone

Also known as: *Glucuronic Acid, Glucaro 1,4-lactone, Glutarate*

---

Glucuronolactone is a molecule commonly found as a component of energy drink formulations with surprisingly minimal research on it, given its societal usage.

See [Glucuronolactone on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Glutamine

Also known as: L-Glutamine











Other uses:














A conditionally essential amino acid which only appears to benefit the body as supplementation when otherwise deficient (vegans, vegetarians with low dairy intake) or during prolonged endurance exercise. Anecdotally reported to reduce sugar cravings.









See [Glutamine on Examine.com](#)

## How to Take

Supplementation of L-glutamine tends to be dosed at 5 g or above, with higher doses being advised against due to excessive ammonia in serum. The lowest dose found to increase ammonia in serum has been 0.75 g/kg, or approximately 51 g for a 150 lb individual. Due to the relative inefficacy of glutamine supplementation for increasing muscle mass, the optimal dosage is not known. The above recommended doses are sufficient for intestinal health reasons and for attenuating a possible relative glutamine deficiency (seen in instances of low protein intake or veganism).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ammonia</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	Differential effects on ammonia, with decreases being present when glutamine is taken as part of a daily supplement routine and measured during prolonged exercise with a possible increase with high acute doses (which fades with time)
	<a href="#">Blood Glucose</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in blood glucose may occur from direct conversion of glutamine into glucose following oral ingestion
	<a href="#">Creatinine</a>	 Minor	- <a href="#">See study</a>	An increase in serum creatinine has been noted, but thought to be due to a reduction in glomerular filtration rate acutely rather than due to alterations in muscle damage
	<a href="#">Exercise Capacity (with Heart Conditions)</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although a failure has been noted in persons with COPD, one study has noted acute benefits in chronic stable angina with 80mg/kg oral glutamine supplementation.
	<a href="#">Glomerular Filtration Rate</a>	 Minor	- <a href="#">See study</a>	A decrease has been noted in elderly persons given 0.5g/kg glutamine to a level where although the authors were not concerned but some serum biomarkers were adversely affected; long-term significance of this unknown

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in insulin occurs following ingestion of glutamine supplementation, which is thought to be secondary to the increase in blood glucose seen with glutamine ingestion
	<a href="#">Urea</a>	 Minor	- <a href="#">See study</a>	An increase in urea has been noted with glutamine supplementation
	<a href="#">Uric Acid</a>	 Minor	- <a href="#">See study</a>	An increase in serum urate has been noted in the range of 10-20% acutely, but attenuates with time and is likely not a concern within a week. Practical significance of this increase unknown.
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant alterations in C-Reactive Protein levels
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant alterations in cortisol noted
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	The addition of glutamine supplementation to an exercise regiment has failed to outperform placebo in reducing fat mass.
	<a href="#">Hematocrit</a>	-	- <a href="#">See study</a>	No significant alterations in hematocrit noted
	<a href="#">Immunity</a>	-	- <a href="#">See study</a>	No significant influence on immunity per se
	<a href="#">Inflammation</a>	-	- <a href="#">See study</a>	No significant influence on inflammatory cytokines except perhaps IL-6 seen with glutamine supplementation
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	Supplemental glutamine does not appear capable of increasing lean mass when paired with a weightlifting routine.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	In safety testing, there does not appear to be an adverse effect of glutamine supplementation on liver enzymes in serum
	<a href="#">Muscle Damage</a>	-	- <a href="#">See study</a>	Serum creatinine (increased during exercise and thought to be indicative of muscle damage) does not appear to be significantly altered with glutamine supplementation
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	No significant influence on power output and strength associated with glutamine supplementation over placebo.
	<a href="#">Symptoms of Duchenne Muscular Dystrophy</a>	-	- <a href="#">See study</a>	Glutamine has failed to be of benefit to symptoms associated with Duchenne muscle dystrophy
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No significant alterations in testosterone noted
	<a href="#">White Blood Cell Count</a>	-	- <a href="#">See study</a>	In safety testing, no significant alterations in white blood cell count is noted.
	<a href="#">Symptoms of Crohn's Disease</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	A possible reduction of symptoms associated with Crohn's disease may occur, but this appears to be unreliable






Back to: [Supplements](#) | [Health Outcomes](#)

# Glutathione

Other uses:

Glutathione is an antioxidant used by every cell and tissue in the body. Although critical for a number of processes, it has limited use as dietary supplement due to rapid breakdown during oral ingestion. Its metabolite, L-cysteine, can increase glutathione in the body but consuming L-cysteine via glutathione is inefficient and costly.

See [Glutathione on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anti-Oxidant Enzyme Profile</a>	-	- <a href="#">See study</a>	
	<a href="#">DNA Damage</a>	-	- <a href="#">See study</a>	
	<a href="#">General Oxidation</a>	-	- <a href="#">See study</a>	
	<a href="#">Lipid Peroxidation</a>	-	- <a href="#">See study</a>	
	<a href="#">Natural Killer Cell Activity</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Gluten

---

Gluten is a protein found in wheat and related grain products. It is involved in the rising of baked goods. People with celiac disease should not consume gluten, and it may also cause issues for people with other intestinal disorders. There is not much evidence to support the idea that gluten damages healthy intestinal tracts.

See [Gluten on Examine.com](#)

## How to Take

Gluten is not a supplement and does not provide benefits to the body after ingestion. Supplementing gluten is not recommended. People with celiac disease should not consume gluten.

Back to: [Supplements](#) | [Health Outcomes](#)

# Glycine

Also known as: 2-Aminoacetic acid









Other uses:

Glycine is an amino acid and neurotransmitter. It can play both stimulatory and depressant roles in the brain. Supplementation can improve sleep quality.

See [Glycine on Examine.com](#)

## How to Take

For glycemic and sleep benefits, doses of 3-5 grams with meals and before bed, respectively, have been used successfully in clinical research.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There are improvements in cognition due to glycine being able to treat schizophrenia and due to glycine being able to improve sleep; two states of impaired cognition.
	<a href="#">Fatigue</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The reduction in fatigue may solely be secondary to how Glycine supplementation can improve sleep quality
	<a href="#">Sleep Quality</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	In persons undergoing mild sleep deprivation, 3g of glycine an hour prior to sleep is able to increase sleep quality and improve self-reports of fatigue and well being the next day due to better sleep.
	<a href="#">Symptoms of Schizophrenia</a>	 Minor	- <a href="#">See study</a>	Is able to decrease symptoms of schizophrenia similar to both D-serine and sarcosine, but this occurs at an impractically high dose (minimum effective dose being around 800mg/kg bodyweight)

Back to: [Supplements](#) | [Health Outcomes](#)



# Grape Seed Extract

Also known as: GSE, OPC-3, Oligomeric Procyanidins, Procyanidin

Other uses:

Grape Seed Extract is a mixture of tannins and procyanidins (chains of catechins) that appears to exert anti-estrogenic effects and may enhance blood flow. More related to green tea catechins than to resveratrol mechanistically.

See [Grape Seed Extract on Examine.com](#)

## How to Take

Studies conducted in humans used in the range of 150-300mg Grape Seed extract daily for heart health purposes, while doses up to 600mg have been used with no reported side effects.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The meta-analysis conducted noted a pooled reduction of 1.54mmHg systolic associated with standard doses of grape seed extract; something, but a small reduction.
	<a href="#">Heart Rate</a>	 Minor	- <a href="#">See study</a>	A small decrease in heart rate may occur following grape seed extract, although the studies are currently in persons with metabolic syndrome and not healthy persons
	<a href="#">Total Cholesterol</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	May decrease total cholesterol to an unremarkable degree when taken either at high (600mg) doses or in high risk populations; reductions in cholesterol are definitely not reliable
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on HDL-C even at up to 600mg GSE daily in a high risk population
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence of grape seed extract on triglycerides even in a high risk population at a high oral intake of GSE (600mg)
	<a href="#">Blood Flow</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in blood flow appears to be reliable following ingestion of high dose procyanidins; this is likely the same increase seen with <a href="#">Pycnogenol</a> due to the same molecules being bioactive

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	 Minor	- <a href="#">See study</a>	May reduce levels of C-reactive protein
	<a href="#">Food Intake</a>	 Minor	- <a href="#">See study</a>	A decrease in voluntary food intake has been noted with grape seed extract ingestion, appetite <i>per se</i> not measured
	<a href="#">General Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	A decrease in whole body oxidation appears to occur following ingestion of grape seed extract
	<a href="#">Leg Swelling</a>	 Minor	- <a href="#">See study</a>	A reduction in leg swelling has been noted in sedentary women (sitting for a day or so), thought to be indicative of better blood flow with grape seed extract
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant interactions with LDL-C even in high risk persons
	<a href="#">Oxidation of LDL</a>	-	- <a href="#">See study</a>	Does not appear to influence oxidation rates of LDL cholesterol
	<a href="#">Symptoms of Chloasma</a>	 Minor	- <a href="#">See study</a>	A decrease in chloasma has been noted in following orally consumed low doses of grape seed extract
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	












# Grapefruit


Grapefruit is a food product known for having a high level of bioactives, similar to the pomegranate. It does appear to be effective at reducing fat mass when a mixture of polyphenols are used, and may work nicely with caffeine.

See [Grapefruit on Examine.com](#)

## How to Take

Studies that use the grapefruit itself (whole fruit) tend to use one half of a grapefruit at 2-3 meals throughout the day.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Mass</a>	 Minor	- <a href="#">See study</a>	Fat mass appears to be reduced more in groups consuming grapefruit relative to placebo
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	Improvement in insulin sensitivity may be secondary to weight loss
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	A decrease in LDL cholesterol has been noted, but may be due to weight loss
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	A decrease in total cholesterol has been noted, this is confounded with weight loss (also occurred)
	<a href="#">Weight</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be a weight reducing effect of grapefruit consumption relative to isocaloric controls (such as apple juice)
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	No significant influence on blood flow noted

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant alterations in heart rate associated with grapefruit ingestion

Back to: [Supplements](#) | [Health Outcomes](#)

# Green Coffee Extract











Other uses:

Green Coffee Extract is a concentrated source of dietary Chlorogenic Acid and is currently being used for heart health and fat loss as a supplement; it seems weakly to moderately effective on these parameters.

See [Green Coffee Extract on Examine.com](#)

## How to Take

Studies using Green Coffee Extract (GCE) tend to be dosed based on their chlorogenic acid content, which in isolation are taken in the 120-300mg range. Based on this, recommended intakes of GCE would be approximately: 1,200-3,000mg for a 10% chlorogenic acid supplement 600-1,500mg for a 20% chlorogenic acid supplement 240-600mg for a 50% chlorogenic acid supplement The optimal dosage of both GCE and isolated chlorogenic acid is not known at this moment in time.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Notable	- <a href="#">See study</a>	Decrease in blood pressure noted with green coffee extract ingestion, due to the <a href="#">chlorogenic acid</a> component. Degree of reduction reached 10mmHg (from just above 145mmHg to just above 135mmHg) and is quite notable.
	<a href="#">Fat Mass</a>	 Minor	- <a href="#">See study</a>	Lone study to measure fat mass noted a decrease associated with green coffee extract consumption, but this is similarly confounded with industrial influence.
	<a href="#">Heart Rate</a>	 Minor	- <a href="#">See study</a>	A decrease has been noted in hypertensives alongside a reduction in blood pressure; no studies in otherwise healthy persons
	<a href="#">Homocysteine</a>	 Minor	- <a href="#">See study</a>	Decrease in homocysteine noted, thought to be indicative of cardioprotection
	<a href="#">Vascular Function</a>	 Minor	- <a href="#">See study</a>	An increase in vascular responsiveness has been noted with green coffee extract, thought to be due to the metabolite ferulic acid

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There may be a weight reducing effect, but currently the literature is too influenced by industrial producers of GCE and the magnitude of effect seems too large. Independent replication is needed.
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence noted on fasting glucose levels (may reduce postprandial slightly)
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	No alterations noted in creatinine associated with green coffee extract intake
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant alterations in HDL cholesterol noted following consumption of GCE
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	LDL cholesterol appears unaffected
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No significant influence noted for liver enzymes when tested in part of a safety assay
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant alterations in total cholesterol seen with green coffee extract
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides following oral intake
	<a href="#">White Blood Cell Count</a>	-	- <a href="#">See study</a>	No significant alterations in WBC count

# Green Tea Catechins

Also known as: *Camellia sinensis*, Green Tea Extract, GTE









Other uses:

Green tea catechins are four molecules, high amounts of which are present in green tea and other sources. The most potent one is EGCG. It is effective in respect to most claims and potent in a few. Any fat burning benefits are dependent on being caffeine naive.

See [Green Tea Catechins on Examine.com](#)

## How to Take



Most doses are standardized against EGCG. Although the amount of EGCG-equivalent varies from one cup of tea to another, depending on many factors (species of tea, length of steeping, time spent oxidizing), one cup of camellia sinensis green tea contains approximately 50mg of EGCG-equivalent. Fat burning: The benefits of green tea catechins on lipid oxidation and related fat-burning pathways are achieved in a dose dependent manner. Significant effects in humans are noted only at high doses, such as 400-500mg EGCG equivalent per day (most Green Tea Extract supplements are roughly 50% EGCG). Fat burning effects are highly synergistic, almost dependent, on not consuming caffeine habitually. Cancer Prevention: Cancer prevention effects are quite dose-dependent, and would be better to consume all catechins (as green tea extract) rather than isolated EGCG. Minimal doses would be good (200mg or higher) but with more frequency (3+ times a day). High, frequent doses may make one prone to nausea.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Mass</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	There appears to be a fat reducing effect associated with green tea, but it is minor and unreliable
	<a href="#">Fat Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See all 8 studies</a>	There appears to be a slight but unreliable increase in fat oxidation (percentage of overall calories used coming from fatty acids rather than glucose) associated with consumption of green tea catechins
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See study</a>	Appears to somewhat increase blood flow
	<a href="#">HDL-C</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed effects with somewhat of an increase, not to a remarkable magnitude

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed effects on insulin sensitivity, possible improvements seen in unhealthy persons
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	There appears to be somewhat of a reduction in LDL-C associated with consumption of green tea polyphenolics (5% or so with 500mg catechin intake)
	<a href="#">Metabolic Rate</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influences on metabolic rate overall
	<a href="#">Adiponectin</a>	 Minor	- <a href="#">See study</a>	Possible increase in adiponectin associated with green tea ingestion
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	A decrease in fasting blood glucose is noted with green tea catechin ingestion
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	Possible decrease in blood pressure noted with green tea catechin consumption
	<a href="#">Cerebral Blood Flow</a>	 Minor	- <a href="#">See study</a>	A reduction in cerebral blood flow has been noted with green tea catechins; a simultaneous reduction in cognitive performance was not noted.
	<a href="#">Cognition</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed results, but may improve cognitive performance acutely in persons with poorer cognition at baseline
	<a href="#">Exercise-Induced Oxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in the oxidation that occurs during exercise may occur following acute ingestion of green tea catechins
	<a href="#">Heart Rate</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed influence on heart rate, a possible decrease secondary to weight loss and blood pressure reduction but no apparent alteration <i>per se</i> (possible increases with overdoses of green tea catechins)



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin Secretion</a>	 Minor	- <a href="#">See study</a>	A minor decrease in insulin secretion has been noted associated with green tea catechin ingestion
	<a href="#">Iron Absorption</a>	 Minor	- <a href="#">See study</a>	A decrease in iron absorption associated with green tea catechins has been noted
	<a href="#">Muscle Soreness</a>	 Minor	- <a href="#">See study</a>	A decrease in muscle soreness has been noted with catechin ingestion
	<a href="#">Oxygen Uptake</a>	 Minor	- <a href="#">See study</a>	An increase in oxygen uptake has been noted with green tea catechin ingestion
	<a href="#">Photoprotection</a>	 Minor	- <a href="#">See study</a>	An increase in photoprotection (protection of the skin from the sun) has been found with green tea catechin ingestion
	<a href="#">Skin Quality</a>	 Minor	- <a href="#">See study</a>	Oral ingestion of high dose catechins (1400mg) has been shown to improve skin quality
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	An increase in well being has been noted in unhealthy persons given green tea catechins
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	A decrease in cholesterol is noted with green tea catechins, but to a small degree
	<a href="#">VO2 Max</a>	 Minor	- <a href="#">See study</a>	An increase in VO2 max has been noted in untrained persons
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No significant influence on serum estrogens

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant influence on fasting insulin levels
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No significant influence on serum testosterone
	<a href="#">Thermic Effect of Food</a>	-	- <a href="#">See study</a>	No significant influence on the thermic effect of food
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No apparent influence on triglycerides
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	
	<a href="#">Carbohydrate Absorption</a>	 Notable	- <a href="#">See study</a>	One study has found a 30% reduction in carb absorption when coingesting 4 g green tea extract.
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	Can decrease oxidation in the body (assessed via oxidative biomarkers)
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	Can decrease biomarkers of lipid peroxidation
	<a href="#">Oxidation of LDL</a>	 Minor	- <a href="#">See study</a>	One study has shown that 1 g green tea catechins taken once slowed the oxidation of LDL 1 hour post-ingestion.

# Griffonia simplicifolia

Other uses:

Griffonia simplicifolia is an African shrub and a source of the compound 5-HTP. It has anxiety and appetite-reducing effects.

See [Griffonia simplicifolia on Examine.com](#)

## How to Take

Further research is needed to determine the optimal human dose of Griffonia simplicifolia. The lowest effect dose for rats is 25mg/kg of bodyweight, which is about 4mg/kg of Griffonia simplicifolia extract, assuming 20% 5-HTP content. This translates to following human doses: • 275mg Griffonia(55mg of 5-HTP) for a 150lb person • 350mg Griffonia (70mg of 5-HTP) for a 200lb person • 450mg Griffonia (90mg of 5-HTP) for a 250lb person It is unknown whether Griffonia simplicifolia has other bioactives other than 5-HTP. The human dosages listed above are derived from rodent studies, and are not optimal, which is why they are different from the optimal dose of 5-HTP.

Back to: [Supplements](#) | [Health Outcomes](#)

# Guggul

Also known as: *Commiphora mukul*, *Commiphora Wightii*, Guggulsterones, *pregna-4,17-diene-3,16-dione*









Other uses:



Guggul is a product of the Guggul tree, *Commiphora Mukul*. Guggul and its active guggulsterones have been investigated for their usage in elevating thyroid function, but with lacklustre results.

See [Guggul on Examine.com](#)

## How to Take

A standard dose of guggul (plant extract) is 400-500mg taken thrice daily with meals, totaling 1,200-1,500mg daily (although doses up to 2,000mg have been used before) If using the guggulsterones in isolation, a dose of 25mg taken thrice a day with meals is used. Sometimes 'gum guggul' is used in doses of 2-4.5g a day (total), and while it is not sure if guggul needs to be consumed with meals it still tends to be recommended out of prudence.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Either no significant change associated with Guggul supplementation or a small decrease is observed
	<a href="#">LDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although unreliable, there is a possible increase in LDL cholesterol from Guggul supplementation
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible decrease in total cholesterol, but this is unreliable (and paired with a possible increase in LDL-C, this is likely to be not desirable)
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of Guggul on triglycerides is detectable
	<a href="#">vLDL-C</a>	-	- <a href="#">See study</a>	No significant influence on vLDL cholesterol levels

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Osteoarthritis</a>	 Minor	- <a href="#">See study</a>	Possible reductions in the symptoms associated with osteoarthritis

Back to: [Supplements](#) | [Health Outcomes](#)

# Gynostemma pentaphyllum

Also known as: Southern Ginseng, Jiao Gu-lan, Giao-Co-Lam (Tea), jiaogulan











Other uses:







Gynostemma pentaphyllum (Southern Ginseng) is a herb given Ginseng status although not related to Panax Ginseng. It appears to share some saponins though, and is investigated for similar effects as True Ginseng.

See [Gynostemma pentaphyllum on Examine.com](#)

## How to Take

Although not too many trials have been conducted, the two studies noting that Gynostemma Pentaphyllum could be useful to help diabetes used 6g of the leaves (dry weight) and made tea from that. The leaves themselves are a good source of both classes of active ingredients (the saponins, of which Gypenosides are a subset, and the flavonoids), and this is currently the best known dosage to use. Alternatively, due to the similarity between Gynostemma pentaphyllum gypenosides and Panax ginseng ginsenosides they may have a similar active level for isolated alkaloids. 100-500mg gypenosides may be a good educated guess to start from.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Decrease in blood glucose in diabetics given gynostemma tea or root appears to be greater than other supplements; currently no studies in otherwise healthy persons.
	<a href="#">HbA1c</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Preliminary evidence in diabetics suggest potent HbA1c reducing effects (6g of the root reducing HbA1c by 2% over a few months)
	<a href="#">Insulin Sensitivity</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	An improvement in insulin sensitivity is noted in diabetics which is fairly notable; no studies in otherwise healthy persons at this time
	<a href="#">Insulin</a>	 Minor	- <a href="#">See study</a>	A decrease in fasting insulin has been noted with supplementation in diabetics
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	Liver enzymes in a model of fatty liver are decreased with gynostemma ingestion

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	 Minor	- <a href="#">See study</a>	Long term, but not short term, ingestion of gynostemma tea appears to reduce fat mass in diabetics; no studies in healthy persons yet
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	HDL appears unaffected
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	LDL cholesterol appears unaffected
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant alterations in triglycerides noted with supplementation
	<a href="#">Uric Acid</a>	-	- <a href="#">See study</a>	No significant influences on uric acid

Back to: [Supplements](#) | [Health Outcomes](#)

# HMB








Also known as: *Hydroxy-MethylButyrate, beta-hydroxy-beta-methylbutyrate*

HMB is an active metabolite of leucine that reduces muscle protein breakdown. It appears to have an anticatabolic role for muscle, but fails to be more effective than its parent amino acid for inducing muscle protein synthesis.

See [HMB on Examine.com](#)

## How to Take

Supplementation of HMB tends to be in the dosage range of 1-3g daily for the purpose of reducing muscle mass losses over time (anti-catabolic). As HMB is said to be 20-fold more potent than leucine for this purpose, it is seen as equivalent to 20-60g of leucine supplementation. For the purpose of muscle protein synthesis, HMB and leucine are fairly equivalent if not the latter (leucine) being more potent on a gram basis. HMB is not advised for inducing muscle protein synthesis since leucine is likely more effective as well as cheaper. Supplementation of HMB prior to an exercise session would require the usage of an HMB free acid rather than a calcium salt, and the above dosage range still holds. For this specific purpose, HMB is to be taken 30-45 minutes before a workout.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Power Output</a>	-	<b>Moderate</b> <a href="#">See all 12 studies</a>	Limited evidence supports the increase in power output, which may be due to chance; more often than not, there is no significant influence
	<a href="#">Muscle Damage</a>	 Notable	<b>High</b> <a href="#">See all 3 studies</a>	Decrease creatine kinase exists following acute supplementation (15-30 minutes before a workout) of HMB free acid to about a third of control, and is effective in trained individuals
	<a href="#">Fat Mass</a>	 Minor	<b>Low</b> <a href="#">See all 7 studies</a>	There may be a decrease in fat mass associated with HMB supplementation when combined with resistance training, but this reduction is not a large magnitude and usually does not occur; quite unreliable
	<a href="#">Cortisol</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on cortisol levels following acute ingestion
	<a href="#">Food Intake</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Although there are sporadic alterations seen in food intake in studies using HMB supplementation, they are not reliable and the exact change observed changes. It is likely that there is no significant effect per se and this is due to the study population



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lean Mass</a>	-	<b>High</b> <a href="#">See all 8 studies</a>	No significant influences on lean body mass associated with HMB supplementation
	<a href="#">Testosterone</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence of acute usage on testosterone levels
	<a href="#">Training Volume</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on training volume when used acutely
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See 2 studies</a>	One underpowered study noted an increase in total cholesterol while another suggested no significant effect. The exact effect of HMB on total cholesterol is not currently known and required replication
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	No significant improvement in sprint capacity in trained persons supplementing HMB
	<a href="#">Bone Mineral Density</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Studies that assess bone mineral density via DEXA, albeit short in duration and in athletes rather than populations at risk for osteoporosis, fail to find significant alterations in bone mineral density.
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant influence on C-reactive protein
	<a href="#">Fatigue</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant reduction in exercise-induced fatigue associated with HMB supplementation in athletes
	<a href="#">Growth Hormone</a>	-	- <a href="#">See study</a>	Serum growth hormone is not significantly altered with HMB supplementation in athletes
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on HDL cholesterol levels

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">IGF-1</a>	-	- <a href="#">See study</a>	No significant alterations in circulating IGF-1 concentrations
	<a href="#">Interleukin 6</a>	-	- <a href="#">See study</a>	No significant alterations in circulating IL-6 concentrations
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on LDL cholesterol levels
	<a href="#">Liver Enzymes</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in serum liver enzymes are noted with HMB supplementation
	<a href="#">Muscle Soreness</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on perceived muscle soreness following exercise with HMB supplementation
	<a href="#">Range of Motion</a>	-	- <a href="#">See study</a>	No significant influence on range of motion (impaired in both groups due to soreness post workout)
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	A lone study that is underpowered suggest a decrease in blood glucose (measured by chance during a blood panel); not enough robust evidence supports a reduction in blood glucose but it cannot be ruled out
	<a href="#">Urea</a>	 Minor	- <a href="#">See study</a>	A slight increase in urea has been noted, requires replication
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	No significant influence on VO2 max in trained athletes



# Harpagophytum procumbens





Also known as: Devil's Claw, Grapple plant, Duiwelsklou, Wood Spider

Harpagophytum Procumbens (Devil's Claw) is a tuber that has traditional usage for musculoskeletal disorders, pain relief, and appetite stimulation; it appears to have preliminary evidence for its benefits to osteoarthritis and pain.

See [Harpagophytum procumbens on Examine.com](#)

## How to Take

Studies conducted on humans using Devil's Claw tend to use a brand called Doloteffin, where 6,000mg of Devil's Claw root is taken daily which totals 50mg Harpagoside (tends to be used as an indicator of efficacy). It was taken in three divided doses, with 2,000mg taken at each of the three major meals. Benefits of Devil's Claw extract, as it pertains to arthritis and inflammation, may take upwards of 1-4 months to achieve maximal efficacy.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lower Back Pain</a>	 Minor	- <a href="#">See study</a>	A decrease in back pain has been noted (with a greater frequency of pain abolishment than placebo) which needs to be replicated
	<a href="#">Symptoms of Osteoarthritis</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Symptoms of osteoarthritis appear to be reduced following ingestion of devil's claw, but insufficient robust evidence exists

Back to: [Supplements](#) | [Health Outcomes](#)

# Hederagenin

---

Hederagenin is a triterpenoid saponin similar to ones like ursolic acid, and is found in high levels in foods such as quinoa.

See [Hederagenin on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Hemp Protein




Also known as: Hemp, Cannabis sativa, Hempseed meal




Hemp is a food product derived from the same plant of which Marijuana originates from, but without intoxicating components; the protein fragment appears to be a popular meal replacement supplement but is not yet linked to unique properties (relative to other Protein supplements).

See [Hemp Protein on Examine.com](#)

## How to Take

Like any protein supplement, hemp protein supplements are dosed in relation to dietary protein goals and how much dietary protein is consumed via other sources. Protein goals vary from person to person, but a general guide is: If you are an athlete or highly active person currently attempting to lose body fat while preserving lean muscle mass, a daily intake of 1.5-2.2g/kg bodyweight (0.68-1g/lb bodyweight) would be a good target. If you are an athlete or highly active person, or you are attempting to lose body fat while preserving lean mass, then a daily intake of 1.0-1.5g/kg bodyweight (0.45-0.68g/lb bodyweight) would be a good target. If you are sedentary and not looking to change body composition, a daily target of 0.8g/kg bodyweight (0.36g/lb bodyweight) and upwards would be a good target. Supplementation of hemp protein should be in the dose that is required to meet these ranges after dietary protein has been accounted for. If dietary protein has adequately reached these ranges, then protein supplementation is not required. Obese individuals (body fat over 20/30% for males and females or a BMI greater than 30 without significant levels of muscle mass) should not follow the above recommendations exactly as the state of obesity would overshoot requirements. In these instances, calculate your targets based upon what your weight would be assuming an overweight BMI.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No detectable differences in HDL-C levels
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant modifications in LDL-C levels
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of oral hemp seeds on triglycerides

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Atopic dermatitis</a>	 Minor	- <a href="#">See study</a>	Topical application of the oil of hemp may confer some aid to atopic dermatitis; oral intake of the protein not tested
	<a href="#">Skin Quality</a>	-	- <a href="#">See study</a>	No significant influence of topical hemp oil on skin quality

Back to: [Supplements](#) | [Health Outcomes](#)

# Hesperidin

Also known as: 5,7,3'-trihydroxy-4'-methoxyflavanone, hesperitin-7-O-rutinoside, Hesperitin glycoside, glucosyl hesperidin, Vitamin P, hesperitin, G-hesperidin




Other uses:

Hesperidin is a compound in orange peels that gives the flavonoid hesperitin to the body, and this flavonoid mediates most benefits of hesperidin including a possible increase in circulation (but unclear effects on blood pressure) and possible brain protective effects. Hesperidin, alongside naringenin, are known as the main citrus flavonoids.

See [Hesperidin on Examine.com](#)










## How to Take

Most studies using hesperidin tend to use 500mg of supplemental hesperidin, and use the standard form of hesperidin if taking it as a daily preventative. If using it for acute improvements in blood flow (ie. before a workout) then the form of G-Hesperidin may be preferred since it is absorbed faster and reaches higher levels in the blood. It does not have significantly better absorption overall, but it is faster at peaking in the blood. Supplementation of hesperidin should be around 500mg and preferably taken with food. In regards to food products, the lowest known beneficial dose of hesperidin in rodent studies is around 25mg/kg oral intake daily. This is approximately 4mg/kg oral intake for an adult human which may be a bit too high to consume via orange juice products (in optimal conditions, a 150lb man would need to consume 1,800mL) and orange fruits (1,800g of the fresh fruit). The exception to the above is the antiallergic effects, which have occurred at a fifth of the aforementioned dose. The peels of tangerines, however, appear to have 5-10% of their weight as hesperidin after 5-7 days of drying (to remove water content and concentrate the hesperidin) and as such a 500mg supplemental dose of hesperidin can be achieved by 5-10g of the dried tangerine peel. This is a low cost alternate assuming that the peel is thoroughly scrubbed prior to drying to remove possible contamination and grime collected on the peel. When looking at food products, it is unlikely that the benefits of hesperidin can be mediated by standard orange consumption except maybe for antiallergic effects. Sundrying the peels of tangerines or oranges, however, can yield enough hesperidin for supplemental purposes.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	There is no significant influence on triglycerides noted with supplementation of hesperidin; if an effect occurs, it is of very minor magnitude and only lasts for as long as supplementation persists.
	<a href="#">C-Reactive Protein</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There is a decrease in C-Reactive Protein (inflammatory biomarker) in those with higher baseline inflammation or inflammatory disease conditions, but not in healthy persons.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Overall, studies don't suggest a notable effect on blood pressure. Some studies have found small reductions, and one has found a large reduction, but the evidence is inconsistent. A meta-analysis didn't find a notable influence of dose or study duration. More research is needed, particularly in people with severe hypertension.
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	There is no significant or long lasting effect on HDL cholesterol seen with hesperidin, except maybe a very small (less than 5%) increase in those with the lowest levels of HDL which fades after cessation of supplementation.
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	Similar to total cholesterol, while there may be a minor reduction in those at the worst levels of LDL cholesterol those with minor increases fail to find benefit.
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	While there may be a slight decrease which only applies to those with very elevated cholesterol at baseline, in normal persons or those with mild to moderately high cholesterol there is no significant influence.
	<a href="#">Blood Flow</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in blood flow has been noted in persons with metabolic impairments, and was fairly notable in the lone study due to reaching 24.5% over placebo.
	<a href="#">Apolipoprotein B</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appear to be mild decreases of circulating Apolipoprotein B seen with supplementation of hesperidin in the populations with poor baseline cholesterol that actually see benefit from supplementation.
	<a href="#">Cell Adhesion Factors</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There is a mild decrease in E-selectin and perhaps sCAM-1 seen with oral supplementation of hesperidin, but not ICAM or VCAM; this is thought to be a mechanism underlying atherogenesis prevention.
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	In men with high triglycerides and cholesterol, the serum liver enzymes appear to be reduced suggesting protective effects at the level of the liver.
	<a href="#">Microcirculation</a>	 Minor	- <a href="#">See study</a>	While hesperidin does not influence basal (fasting) microcirculation, there is an acute increase in circulation seen with supplementation of hesperidin at the time of peak blood concentrations.
	<a href="#">Oxidation of LDL</a>	 Minor	- <a href="#">See study</a>	There is a mild increase in particulate size of LDL cholesterol, indicative of less oxidation of these particulates and less atherogenicity, with hesperidin supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Rheumatoid Arthritis</a>	 Minor	- <a href="#">See study</a>	Preliminary evidence suggests a mild decrease in symptoms of rheumatoid arthritis seen with high (3,000mg) supplemental doses of G-hesperidin.
	<a href="#">Apolipoprotein A</a>	-	- <a href="#">See study</a>	No significant influence on Apolipoprotein A seen with supplementation of hesperidin.
	<a href="#">B-Cell Count</a>	-	- <a href="#">See study</a>	Overall B-cell count does not appear to be influenced with supplementation of hesperidin.
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There are no known significant alterations in blood glucose seen with supplementation of hesperidin
	<a href="#">Fibrinogen</a>	-	- <a href="#">See study</a>	No significant alterations in fibrinogen content have been noted with oral supplementation of hesperidin
	<a href="#">General Oxidation</a>	-	- <a href="#">See study</a>	General oxidative parameters do not appear to be significantly altered with supplementation of hesperidin under resting conditions.
	<a href="#">HbA1c</a>	-	- <a href="#">See study</a>	Alongside a failure to improve insulin sensitivity or to reduce glucose was a failure to reduce HbA1c concentrations in the plasma of those with metabolic syndrome given 500mg hesperidin.
	<a href="#">Homocysteine</a>	-	- <a href="#">See study</a>	There was no influence on homocysteine seen with supplementation of hesperidin relative to placebo, despite subjects being in an inflammatory state.
	<a href="#">Insulin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Similar to blood glucose, there is no significant influence on basal insulin concentrations in otherwise healthy persons or those with metabolic diseases.
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	There is no significant change in insulin sensitivity in persons with metabolic syndrome given 500mg of hesperidin daily.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Interleukin 6</a>	-	- <a href="#">See study</a>	No significant influence on interleukin 6 (IL-6) is seen with oral supplementation of hesperidin.
	<a href="#">Natural Killer Cell Activity</a>	-	- <a href="#">See study</a>	Natural Killer (NK) cell activity does not appear to be influenced with supplementation of hesperidin, with the count also remaining unchanged.
	<a href="#">Natural Killer Cell Content</a>	-	- <a href="#">See study</a>	The overall cell population of Natural Killer (NK) cells does not appear to be influenced with supplementation of Hesperidin
	<a href="#">Neutrophil Activity</a>	-	- <a href="#">See study</a>	The activity of neutrophils taken from subjects consuming hesperidin does not appear to be significantly altered when stimulated relative to placebo.
	<a href="#">Neutrophil Count</a>	-	- <a href="#">See study</a>	There are no significant alterations in the amount of neutrophils seen in subjects consuming hesperidin.
	<a href="#">Nitric Oxide</a>	-	- <a href="#">See study</a>	The increase in nitric oxide (and nitrate) seen with supplementation of hesperidin failed to reach statistical significance.
	<a href="#">T Cell Count</a>	-	- <a href="#">See study</a>	There do not appear to be any significant influence on the overall count of T Lymphocytes (collectively referring to Th1 and Th2 cells) with hesperidin supplementation.
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In studies measuring weight as well as other parameters, weight is not influenced by supplementation of hesperidin relative to placebo
	<a href="#">White Blood Cell Count</a>	-	- <a href="#">See study</a>	No significant influence on total white blood cell count is seen with supplemental hesperidin.

# Hibiscus macranthus

*Other uses:*

---

Hibiscus Macranthus is a herb commonly used alongside the herb Basella Alba in order to promote male fertility and increase testosterone, and this combination therapy has shown benefits in at least one rat study; overall, understudied.

See [Hibiscus macranthus on Examine.com](#)

## How to Take

There is insufficient evidence to recommend a supplemental dose of hibiscus macranthus at this moment in time.

Back to: [Supplements](#) | [Health Outcomes](#)

# Hibiscus rosasinensis

*Also known as: China rose, Rose mallow, Chinese hibiscus, Jasun, Badsha pasant, Gurhal, Ghorawal*

---

Hibiscus rosasinensis (China Rose) is a flower that has traditionally been used for hair growth and for the treatment of stomach ulcers. It has general antioxidant properties, but is otherwise underresearched.

See [Hibiscus rosasinensis on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Hibiscus sabdariffa








Also known as: *Roselle, Isakpa, Krachiap daeng, Sour Tea*

Hibiscus Sabdariffa (Roselle or Sour Tea) is a tea where the usually dark colored flowers are used to brew. It appears to inhibit carbohydrate absorption to a degree and appears to be effective in reducing blood pressure.


See [Hibiscus sabdariffa on Examine.com](#)

## How to Take

When using Hibiscus Sabdariffa as a tea, a dried calyx (the part of the blooming top of a flower that is not the petals, but beneath them) weighing about a gram is steeped into tea; drunk either once in the morning or twice a day with 8 hours between doses. Supplemental Hibiscus Sabdariffa is taken according to the content of anthocyanins; 10mg of anthocyanins derived from Hibiscus Sabdariffa (which would be 1g of a 1% extract or 500mg of a 2% extract) appears to be effective. Higher doses are associated with toxicity in rats, and it would be prudent to not exceed the above doses unnecessarily.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	The decrease in blood pressure seen with roselle tea and supplements is notable and is greater than that seen with other supplements
	<a href="#">Triglycerides</a>	 Notable	<b>Moderate</b> <a href="#">See all 4 studies</a>	Mixed effects on triglycerides, but the lone study that noted a decrease noted comparable potency to pravastatin; requires more literature
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in blood glucose noted
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	HDL cholesterol appears to be unaffected following roselle ingestion
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	LDL cholesterol appears to be unaffected following Roselle ingestion

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant changes in total cholesterol noted
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Weight appears to be unaffected following ingestion of Roselle tea
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	Appears to reduce oxidative biomarkers in the body, surprisingly not the potency one would expect from <i>in vitro</i> evidence
	<a href="#">Inflammation</a>	 Minor	- <a href="#">See study</a>	Possible decreases in MCP-1 with mixed or no influence on other inflammatory cytokines
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	Has been noted to reduce lipid peroxidation
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	A decrease in liver enzymes has been reported
	<a href="#">Apolipoprotein A</a>	-	- <a href="#">See study</a>	No significant influence on apolipoprotein A levels in serum
	<a href="#">Apolipoprotein B</a>	-	- <a href="#">See study</a>	No significant influence on Apolipoprotein B levels in serum
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	No significant influence on creatinine
	<a href="#">Urea</a>	-	- <a href="#">See study</a>	No significant influence on urea

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Uric Acid</a>	-	- <a href="#">See study</a>	Does not appear to influence uric acid concentrations in serum

Back to: [Supplements](#) | [Health Outcomes](#)



# Higenamine

Also known as: Norcoclaurine, 1-(4-hydroxyphenyl)methyl-1,2,3,4-tetrahydroisoquinoline-6,7-diol

Higenamine (Norcoclaurine) is part of the Nandina plant that has traditionally been used as an anti-asthmatic and is currently used as a fat burner due to sharing similar mechanisms to ephedrine; limited evidence on these claims.

See [Higenamine on Examine.com](#)

## How to Take

Higenamine tends to be dosed in similar levels as synephrine or ephedrine, meaning a dose of 20-30mg taken 2-3 times daily. There is currently no evidence to support this as an optimal dose.

Back to: [Supplements](#) | [Health Outcomes](#)

# Holy Basil











Also known as: *Ocimum sanctum*, *Green Tulsi*, *Sacred Basil*, *Tulsi*, *Ocimum tenuiflorum*

A traditional anti-fertility agent and libido enhancer in Ayurveda, Holy Basil (also known as Tulsi) is currently being investigated for these two claims and its general health properties. A good source of dietary Ursolic acid, which may cause the anti-fertility aspects.

See [Holy Basil on Examine.com](#)

## How to Take

500mg of the leaf extract taken twice daily appears to be recommended for neurological and adaptogenic effects of holy Basil, whereas the only evidence on other health effects or testosterone boosting are done in rats with the dosages of 100-200mg/kg and 500mg/kg respectively. This leads to an estimated human dose of: 1,100-2,200mg for a 150lb person for general health and 5,500mg for testosterone boosting 1,500-2,900mg for a 200lb person for general health and 7,300mg for testosterone boosting 1,800-3,600mg for a 250lb person for general health and 9,100mg for testosterone boosting These are estimated human dosages based on animal research, and it is unsure if they are the optimal doses for humans.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Immunity</a>	 Minor	- <a href="#">See study</a>	Appears to induce proliferation of T cytokines and T lymphocytes
	<a href="#">Natural Killer Cell Content</a>	 Minor	- <a href="#">See study</a>	An increased level of NK cell count has been noted following ingestion of Tulsi leaves
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	A decrease has been noted, but the studies are not overly robust at this moment in time
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	May reduce blood glucose, with the potency demonstrated (fairly good) limited by the quality of the evidence currently
	<a href="#">Depression</a>	 Minor	- <a href="#">See study</a>	A decrease in depressive symptoms during generalized anxiety disorder has been noted



# Hoodia gordonii










Also known as: Hoodia, Veldkos, Slimming cactus, Trichocaulon gordonii, Stapelia gordonii




Hoodia gordonii is a small shrub (falsely said to be a cactus) that is claimed to suppress appetite. It seems the main bioactive (P57) cannot easily reach the brain to do this, and aside from failures of hoodia to suppress the appetite it may also be mildly toxic and imprudent to supplement.

See [Hoodia gordonii on Examine.com](#)

## How to Take

Recommended doses of Hoodia Gorgonii tend to be around one gram of an extract of 70% steroidal glycosides or more, taken twice a day with each dose about an hour before a meal. There is no evidence to suggest an optimal dose nor to support the above as being active, and the toxic dose in mice (as well as preliminary human evidence) is the exact same as the supplemental dose.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Notable	- <a href="#">See study</a>	The increase in blood pressure noted with <i>hoodia gordonii</i> in otherwise healthy persons reached 5.9-15.9mmHg systolic and 4.6-11.5mmHg diastolic; a worrying increase
	<a href="#">Bilirubin</a>	 Minor	- <a href="#">See study</a>	The increase in bilirubin seen with hoodia is thought to be a biomarker of possible hepatotoxicity, although it was not met with hemolysis (usually accompanies)
	<a href="#">Heart Rate</a>	 Minor	- <a href="#">See study</a>	Both heart rate and pulse rate are increased with hoodia ingestion, which are thought to be related to toxic effects of the herb
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	ALP was noted to be increased in otherwise healthy women given the standard dose of hoodia, although the other liver enzymes were not affected significantly
	<a href="#">Appetite</a>	-	- <a href="#">See study</a>	No significant reduction in appetite was seen with hoodia relative to placebo

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	No significant reductions in fat mass are noted, secondary to a lack of influence on appetite
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	No significant modifications in lean mass during weight loss with hoodia relative to placebo
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant influence on overall body weight (due to no fluctuations in appetite and thus no significant fat loss)

Back to: [Supplements](#) | [Health Outcomes](#)

# Hordenine

Also known as: *N,N*-dimethyltyramine

---

Hordenine (N,N-dimethyltyramine) is an adrenergic-like compound found in a variety of foods investigated for its fat-burning effects. May be a noradrenaline reuptake inhibitor.

See [Hordenine on Examine.com](#)

## How to Take

There is currently insufficient evidence to recommend an oral dose of hordenine supplementation for human consumption.

Back to: [Supplements](#) | [Health Outcomes](#)

# Horny Goat Weed

Also known as: Epidemium, Herba Epimdii, Icariin, Yinyanghuo, Fairy Wings, Rowdy Lamb Herb




Other uses:

Epimedium, known as Horny Goat Weed, is an erectile aid and aphrodisiac used in Traditional Chinese Medicine that just so happens to also increase testosterone in research animals (has not been looked at in humans). May also be a cognitive booster and heart health agent.

See [Horny Goat Weed on Examine.com](#)

## How to Take

Testosterone boosting effects in rats have been noted at a dosage of 200mg/kg of a 40% extract (80mg/kg Icariin), and based on body weight conversions from rats to humans[1] this results in an estimated human dose of: 900mg Icariin for a 150lb person 1,200mg Icariin for a 200lb person 1,500mg Icariin for a 250lb person Studies that use a lower dosage of Icariin (1-10mg/kg) are approximately equal to: 11-110mg Icariin for a 150lb person 15-150mg Icariin for a 200lb person 18-180mg Icariin for a 250lb person The human study on postmenopausal women and bone health noted that 60mg Icariin daily was active, and might serve as the lowest active dose currently known. It also appears to fall within the above range of lower active dosages which show benefits in rats.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Bone Mineral Density</a>	 Minor	- <a href="#">See study</a>	The rate of bone loss over 2 years has been noted to be reduced with icariin supplementation, although not to a remarkable degree
	<a href="#">Estrogen</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on serum estrogen levels

Back to: [Supplements](#) | [Health Outcomes](#)

# Horse Chestnut










Also known as: *Aesculus hippocastanum*, Conker tree, Roskastanie, venostasin

Horse Chestnut (*Aesculus hippocastanum*) is a plant extract with a group of molecules known as aescins, which are beneficial to circulatory health. Supplementation of horse chestnut appears to be beneficial for varicose veins and venous insufficiency.


See [Horse Chestnut on Examine.com](#)

## How to Take

Horse chestnut tends to be taken in the 400-600mg range, although it seems that the overall dose is less important than the standardization for aescin which should ultimately reach 100-150mg daily. Supplementation tends to be divided into two daily doses divided by 12 hours (so, a morning and evening dose at 8am and 8pm as an example), which is due to the active components (aescins) requiring about 12 hours to reach baseline concentrations.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chronic Venous Insufficiency</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Due to the venotropic effects of aescin supplementation, disease states associated with blood pooling in extremities are significantly and fairly reliably treated with horse chestnut.
	<a href="#">Leg Swelling</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Symptoms of leg swelling and varicose veins appear to be fairly reliably reduced with the recommended oral doses of horse chestnut supplementation.
	<a href="#">Pain</a>	 Minor	- <a href="#">See study</a>	The pain associated with chronic venous insufficiency may be alleviated when that condition is treated by horse chestnut extract.
	<a href="#">Hemorrhoids</a>	 Minor	- <a href="#">See study</a>	Preliminary evidence suggests that the classical usage of horse chestnut for the treatment of hemorrhoids may be relevant to oral supplementation, with benefits within a week of usage.
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C levels associated with horse chestnut extract supplementation.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No detectable influence on LDL cholesterol concentrations associated with horse chestnut extract.

Back to: [Supplements](#) | [Health Outcomes](#)

# Hovenia dulcis

*Also known as: Japanese Raisin Tree*

Hovenia dulcis (Japanese Raisin Tree) is a source of dihydromyricetin (Ampelopsin) and has traditionally been used as an anti-alcohol herb and hangover cure. At least one human study has noted that, when taken before drinking, it can reduce circulating levels of alcohol.

See [Hovenia dulcis on Examine.com](#)

## How to Take

An ethanolic extract of 125mg/kg has been used in rats with efficacy, which translates to an estimated human dosage of: 1,400mg for a 150lb person 1,800mg for a 200lb person 2,300mg for a 250lb person These are estimated human doses based on rat studies, and it is uncertain if they are the optimal dosage or not.

Back to: [Supplements](#) | [Health Outcomes](#)

# Huperzine-A

Also known as: (1R,9S,13E)-1-amino-13-ethylidene-11-methyl-6-azatricyclo- 7.3.1.0 2,7 trideca-2(7),3,10-trien-5-on, Qian Ceng Ta (Huperzia Serrata)

Huperzine-A is a cognitive enhancer that inhibits an enzyme that degrades the learning neurotransmitter, acetylcholine; due to this, a relative increase occurs. It belongs to the cholinergics class of molecules, and may be useful in fighting cognitive decline in the elderly. May need to be cycled.

See [Huperzine-A on Examine.com](#)

## How to Take

Supplementation of huperzine-A tends to be in the range of 50-200mcg daily, and while this can be divided into multiple dosages throughout the day it tends to be taken at a single dose.

Supplementation of huperzine-A does not require food to be coingested with it and can be taken in a fasted state. Cycling of huperzine-A tends to be used since it can remain in the body for quite some time (half-life of 10-14 hours), and although a 'cycle' of huperzine-A tends to last 2-4 weeks followed by a break the optimal cycle length is not yet known.

Back to: [Supplements](#) | [Health Outcomes](#)

# Hypericum perforatum

*Also known as: St. John's Wort*

---

Hypericum Perforatum (St. John's Wort) is an anti-depressant herb that is commonly used for its neurological effects. While it appears effective, it is well known to adversely interact with a variety of pharmaceuticals.

See [Hypericum perforatum on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Idebenone

*Other uses:*

---

Idebenone (CV-2619) is a synthetic derivative of CoQ10 that appears to retain the antioxidative and bioenergetic effects of its parent compound. It appears to be useful in certain disease states.

See [Idebenone on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Inositol

Also known as: Myoinositol, Cyclohexanehexol, 1,2,3,4,5,6-cyclohexanehexol











Other uses:

Inositol usually refers to Myo-inositol, a small molecule structurally similar to glucose that is involved in cellular signalling. It appears to be an effective anxiolytic at higher doses, and is quite effective in treating insulin resistance and PCOS with standard doses.


















See [Inositol on Examine.com](#)

## How to Take

For the treatment of polycystic ovarian syndrome (PCOS), myo-inositol is taken in the range of 200-4,000mg once daily before breakfast; the higher dose seems to be used more often and seems more effective. Neurological usage of inositol tends to require higher doses, and while antidepressant effects have been noted as low as 6g at times the standard dose is between 14-18g daily. If using a soft gel formulation rather than powdered myo-inositol, then only 30% of the same dose is required to be equivalent. This would mean the 14-18g range for psychopharmacological effects is now reduced to 4.2-5.4g of myo-inositol soft gels.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Treatment of PCOS</a>	 Notable	<b>Very High</b> <a href="#">See all 14 studies</a>	Supplementation of inositol in the range of 200-4,000mg daily appears to be effective in improving fertility in women with PCOS, while doses in the 2,000-4,000mg range appear effective in improving testosterone levels and insulin sensitivity.
	<a href="#">Anxiety</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	There appears to be a decrease in anxiety symptoms associated with high dose inositol, and it has been noted to be comparable to fluvoxamine in potency.
	<a href="#">Fertility</a>	 Notable	<b>Very High</b> <a href="#">See all 9 studies</a>	In women with PCOS, inositol (typically 2000 mg once or twice daily) can significantly increase ovulation and fertility rates.
	<a href="#">Panic Attacks</a>	 Notable	<b>High</b> <a href="#">See all 3 studies</a>	Chronic ingestion of high doses of inositol (18g) is associated with reductions in panic attack frequency to a level greater than the reference drug fluvoxamine; acute usage does not appear effective.
	<a href="#">Blood Glucose</a>	 Minor	<b>Moderate</b> <a href="#">See all 9 studies</a>	Blood glucose can be reduced in women with PCOS secondary to treating that condition.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	There may be a slight decrease in blood pressure in women with PCOS who are having it treated with inositol therapy.
	<a href="#">Depression</a>	 Minor	<b>Very High</b> <a href="#">See all 8 studies</a>	There appears to be a reduction in depressive symptoms associated with inositol supplementation, although it is less potent than the benefits of inositol on anxiety and panic attacks.
	<a href="#">HDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	An increase in circulating HDL-C is seen in women with PCOS getting inositol therapy
	<a href="#">Insulin</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Secondary to treating symptoms of PCOS, fasting insulin concentrations are fairly reliably reduced.
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>High</b> <a href="#">See all 12 studies</a>	Insulin sensitivity appears to be reliably improved following the treatment of PCOS in women.
	<a href="#">Triglycerides</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	There may be a small decrease in triglycerides associated with supplementation of inositol to women with PCOS
	<a href="#">Weight</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Decreases in body weight have been noted in women with PCOS, as inositol is effective in treating PCOS. They seem to influence leaner and overweight women more than obese women.
	<a href="#">Symptoms of Schizophrenia</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	At the dose that showed anti-depressant effects, inositol failed to improve any symptoms associated with schizophrenia.
	<a href="#">Adiponectin</a>	 Minor	- <a href="#">See study</a>	An increase in adiponectin has been noted in women with PCOS
	<a href="#">Binge-eating</a>	 Minor	- <a href="#">See study</a>	Symptoms of bulimia and binge-eating in diagnosed women have been significantly improved with high dose inositol therapy (18g daily)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	There may be a reduction in oxidation associated with PCOS when the condition is being treated by inositol
	<a href="#">Gestational Diabetes Risk</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The limited evidence on the topic suggests that supplementation of inositol throughout pregnancy can reduce the risk of developing gestational diabetes by half.
	<a href="#">Insulin Secretion</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	The amount of insulin secreted in response to orally ingested glucose is attenuated after supplementation of inositol to insulin resistant persons
	<a href="#">Psoriasis</a>	 Minor	- <a href="#">See study</a>	Lithium-induced psoriasis is reduced with supplemental inositol at 6g daily. Inositol may only be effective in this particular scenario
	<a href="#">Symptoms of OCD</a>	 Minor	- <a href="#">See study</a>	Although a small decrease, there appear to be benefits to OCD symptoms associated with high dose inositol supplementation
	<a href="#">Symptoms of PMS</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	<i>Myo</i> -inositol supplementation appears to be effective in reducing dysphoric and depressive symptoms during PMS
	<a href="#">Total Cholesterol</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	A small decrease in total cholesterol has been noted with supplementation of inositol in women with PCOS
	<a href="#">Forgetting</a>	-	- <a href="#">See study</a>	Electroconvulsion therapy induced amnesia is not prevented with oral administration of 6g <i>myo</i> -inositol preloaded for five days
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No adverse effects to the liver during human toxicology testing.
	<a href="#">Symptoms of Alzheimer's</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	The preliminary evidence at this point in time using <i>scyllo</i> -inositol has failed to find a significant therapeutic benefit and <i>myo</i> -inositol shows a nonsignificant trend for improvement based on preliminary evidence.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Bipolar Disorder</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although a beneficial effect cannot fully be ruled out, the best evidence currently available does not support a significant role for inositol in the treatment of bipolar disorder.
	<a href="#">Symptoms of Post-Traumatic Stress Disorder</a>	-	- <a href="#">See study</a>	Despite the notable improvements in general panic disorders and anxiety, the lone study specifically looking at PTSD failed to find any significant benefits of inositol therapy.
	<a href="#">Acne</a>	 Notable	- <a href="#">See study</a>	Although this may only apply to acne in women with PCOS, supplementation of normal doses of <i>myo</i> -inositol can abolish acne in over half of subjects within 3-6 months.
	<a href="#">LDL-C</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	A decrease in LDL-C has been noted alongside other improvements in lipid parameters.
	<a href="#">Plasmalogens</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	An increase in choline plasmalogen has been noted with <i>myo</i> -inositol oral ingestion, which is thought to underlie the reductions in LDL-C seen in persons with metabolic syndrome only.
	<a href="#">Risk of Lung Cancer</a>	 Minor	- <a href="#">See study</a>	Although much more evidence is required in humans, there has been a high rate of regression seen with lung dysplasia in smokers due to ingestion of 18g <i>Myo</i> -inositol
	<a href="#">Symptoms of Hirsutism</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The hair growth associated with high androgen levels in women (hirsutism) appears to be reduced secondary to reducing androgens in women with PCOS or hyperandrogenemia
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant influence on C-reactive protein concentrations even in persons with metabolic syndrome.
	<a href="#">Symptoms of Autism</a>	-	- <a href="#">See study</a>	The preliminary evidence on autism does not support a role for inositol therapy

# Iodine



Iodine is a mineral for thyroid function found mostly in iodized table salt, fish, and highest in seaweed. Despite most first world diets being sufficient in iodine, it may benefit those who do not consume seafood and are also in a high risk population (pregnancy and intentional salt restriction).

See [Iodine on Examine.com](#)

## How to Take

Supplementation of iodine is designed to circumvent a deficiency, and deficiencies of iodine are quite rare in first world countries. For those in a first world country, iodine should only be considered if you meet all of the following requirements: You are a vegetarian or vegan who actively avoids processed foods, or a meat eater who never eats fish and avoids processed foods You avoid adding additional salt to your diet You avoid consumption of seaweed or seaweed based products (such as sushi, which are wrapped with Nori) Assuming all the criteria are met, recommendations for iodine intake tend to be in the range of 75-150 µg (micrograms) or 0.075-0.15 mg daily while higher doses are not inherently dangerous although there may be a slight suppression of thyroid hormones (T3 and T4) at 500 µg or above.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum T3</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	500µg iodine or higher (in addition to the diet) appears to have a slight suppressive effect on thyroid function in otherwise healthy persons
	<a href="#">Serum T4</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Supplemental iodine above 500µg appears to be capable of suppressing T4 to a small degree whereas lower doses are not associated with such an effect.
	<a href="#">Thyroid-Stimulating Hormone</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	An increase in Thyroid Stimulating Hormone (TSH) occurs both at the doses that suppress T3 and T4 and sometimes at lower doses where thyroid function is not impaired
	<a href="#">Thyrotropin Releasing Hormone</a>	 Minor	- <a href="#">See study</a>	Alongside the suppression of circulating thyroid hormones and TSH, there is a mild and transient increase in levels of the hormone that stimulates TSH known as thyrotropin releasing hormone (TRH)
	<a href="#">C-Reactive Protein</a>	 Minor	- <a href="#">See study</a>	There may be a small decrease in C-reactive protein associated with moderate iodine supplementation in otherwise healthy persons, indicative of an antiinflammatory effect.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Interleukin 6</a>	 Minor	- <a href="#">See study</a>	There is a minor decrease in circulating IL-6 associated with iodine supplementation, thought to be indicative of a minor antiinflammatory effect.

Back to: [Supplements](#) | [Health Outcomes](#)

# Iron











Iron is an essential mineral best known for allowing blood to carry oxygen between tissues. Except in case of deficiency, iron supplementation has no proven benefit; on the contrary, it can lead to iron poisoning.

See [Iron on Examine.com](#)

## How to Take

Make sure you get the recommended daily allowance (RDA) for your gender, age, and situation: 8 mg for men and non-menstruating women 15 mg for menstruating women under 19 18 mg for menstruating women over 18 27 mg for pregnant women 9 mg for lactating women under 19 10 mg for lactating women over 18 Those numbers include the iron in your diet. Getting enough iron through foods makes supplementation unnecessary. Be careful not to ingest more iron than the daily tolerable upper intake level (UL) for your age: 45 mg for people over 13. For more details, see the Recommended Intake section below.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fatigue (non-anemic)</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	In people without anemia, but who have iron deficiency or low ferritin levels, increasing iron stores through oral or intravenous supplementation can reduce fatigue somewhat. It's unclear if the average person with iron levels traditionally considered to be sufficient can benefit from increased iron intake in this regard, though what research we have suggests that it's unlikely.
	<a href="#">Alertness</a>	 Minor	- <a href="#">See study</a>	One study found a small increase in iron-deficient but non-anemic participants. This isn't a systematic assessment of studies.
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	One study found a small decrease in iron-deficient but non-anemic participants which wasn't statistically significant. This isn't a systematic assessment of studies.
	<a href="#">Calmness</a>	 Minor	- <a href="#">See study</a>	One study found a small increase in iron-deficient but non-anemic participants. This isn't a systematic assessment of studies.
	<a href="#">Depression</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	One study found a notable reduction in people with iron deficiency but not anemic, a small reduction in people with iron deficiency anemia, and ambiguous evidence in people without iron deficiency. The other study didn't find an effect. This isn't a systematic assessment of studies.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscular Endurance</a>	 Minor	- <a href="#">See study</a>	There was a small improvement in one study of people with low iron levels but not anemia. This isn't a systematic assessment of studies.
	<a href="#">VO2 Max</a>	 Minor	- <a href="#">See study</a>	Both relative and absolute VO2max increased moderately in people with iron deficiency but not anemia who were undergoing exercise training. This isn't a systematic assessment of studies.
	<a href="#">Aerobic Exercise</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	It's unclear if iron supplementation consistently improves aerobic exercise in people without anemia but deficient or low iron levels. This is not a systematic evaluation of studies.
	<a href="#">Attention</a>	-	- <a href="#">See study</a>	One study didn't find an effect in iron-deficient but non-anemic participants. This isn't a systematic assessment of studies.
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Memory</a>	-	- <a href="#">See study</a>	No apparent effect in non-anemic but deficient participants in one study. This is not a systematic assessment of studies.
	<a href="#">Respiratory Exchange Ratio</a>	-	- <a href="#">See study</a>	No apparent effect in one study of people with iron deficiency but not anemia. This is not a systematic assessment of studies.
	<a href="#">Subjective Well-Being</a>	-	- <a href="#">See study</a>	There was a small, nonsignificant improvement in one study of people with moderately low iron levels but not anemia. This isn't a systematic assessment of studies.

# Irvingia gabonensis

Also known as: African Wild Mango, African Mango Extract, African Bush Mango, Dika nut













Irvingia Gabonensis (African Mango) is a supplement derived from the seeds of the plant known as African Mango (not related to common Mango fruits); there is insufficient evidence to support its usage as a fat burning supplement, and it may merely be a vessel for fiber and fatty acids.

See [Irvingia gabonensis on Examine.com](#)

## How to Take

Supplemental dosages of irvingia gabonensis are quite variable, being anywhere between 150-3,200mg taken daily alongside meals. The optimal or effective dose is not currently known, but since the dietary fiber may be the active ingredient then supplementing in the higher end of the aforementioned range may be prudent.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Adiponectin</a>	 Minor	- <a href="#">See study</a>	An increase in adiponectin is noted with irvingia gabonensis, but this result is somewhat unreliable due to being confounded with both weight loss and industry influence
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	May reduce fasting blood glucose following prolonged supplementation; confounded with both weight loss (seen in trials) and industry influence
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	A decrease in blood pressure has been noted with weight loss associated with this supplement; no inherent blood pressure reduction has been demonstrated
	<a href="#">C-Reactive Protein</a>	 Minor	- <a href="#">See study</a>	A decrease in C-reactive protein has been noted, confounded with weight loss and industry influence
	<a href="#">Fat Mass</a>	 Minor	- <a href="#">See study</a>	A decrease in fat mass has been detected, but may be due to industry influence; independent trials are needed. Mechanism appears to be from suppressing food intake

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase has been noted, but not to a remarkable degree. Independent trials need to be conducted to confirm.
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in LDL-C has been noted, confounded with both weight loss and industry influence.
	<a href="#">Leptin</a>	 Minor	- <a href="#">See study</a>	May decrease leptin, but is confounded with weight loss
	<a href="#">Total Cholesterol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in total cholesterol has been noted, but is confounded with weight loss
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	A decrease in triglycerides has been noted, confounded with weight loss
	<a href="#">Weight</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Decreased body weight has been noted when african mango is consumed before meals, which may be secondary to reduced food intake; studies are somewhat confounded by industry influence.

Back to: [Supplements](#) | [Health Outcomes](#)

# Isoleucine

Other uses:

Isoleucine is one of the three branched chain amino acids and appears to promote glucose consumption and uptake. Isoleucine may have roles as an anti-catabolic agent (without promoting synthesis) similar to HMB.

See [Isoleucine on Examine.com](#)

## How to Take

Isoleucine, practically speaking, is likely only a good supplement to purchase when wanting to increase glucose uptake; it is outperformed by leucine for inducing muscle protein synthesis and outperformed by HMB for reducing muscle protein breakdown, yet outperforms both of those agents and valine in increasing glucose uptake into skeletal muscle. As efficacy has been noted with 0.3-0.45g/kg in rats (the latter being the maximal dose, increasing beyond that does nothing more due to no further absorption) a recommended dosage range for isoleucine per se is 48-72mg/kg (for a 150lb person, 3.3-4.9g). Isoleucine can be found in branched chain amino acids (in which case, the ratio listed on the label should be investigated and the BCAAs dosed accordingly) and in food products. As isoleucine from food products is also bioactive, supplemental doses of isoleucine taken with meals can be lower (ie. if eating a meal with 50g protein that contains 4g isoleucine already, then a 10.8g dose is no longer needed and 6.8g will suffice).

Back to: [Supplements](#) | [Health Outcomes](#)



# Japanese Knotweed









Also known as: *Polygonum Cuspidatum*, *Huzhang*, *Fleeceflower*, *Monkeyweed*, *itadori*, *Polygonum Japonicus*, *Kudzu*







Japanese Knotweed, or *Polygonum Cuspidatum*, is a Traditional Chinese Medicine used for circulation and heart health. It is a very good source of resveratrol, and most benefits of Japanese Knotweed may actually just be benefits of Resveratrol.

See [Japanese Knotweed on Examine.com](#)

## How to Take

The only current human study used Japanese Knotweed at 200mg daily and standardized to 40mg Resveratrol which was effective. Although there are other bioactives in Japanese Knotweed, it may be prudent to dose it in accordance to the dosing guidelines on the resveratrol page.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Inflammation</a>	 Notable	- <a href="#">See study</a>	The study in question measured nF-kB activity and noted a 25% decrease, which is somewhat novel (not a common measurement) and to quite a large degree; may be related to the <a href="#">resveratrol</a> or stilbene content
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	Appears to reduce oxidative biomarkers, requires more evidence to gauge potency and reliability thereof
	<a href="#">TNF-Alpha</a>	 Minor	- <a href="#">See study</a>	A decrease in TNF-a has been noted following oral consumption of japanese knotweed
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	Blood glucose appears to be unaffected following ingestion of Japanese knotweed in otherwise healthy lean persons
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C in otherwise healthy lean persons

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant alterations in fasting insulin levels seen with treatment
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	Insulin sensitivity is unaffected in otherwise healthy lean persons given this supplement
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	LDL-C appears to be unaffected, but testing has not been conducted in metabolically unwell persons
	<a href="#">Leptin</a>	-	- <a href="#">See study</a>	No significant influence on leptin in otherwise healthy and lean individuals
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant alterations in cholesterol seen with Japanese Knotweed ingestion
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence of Japanese Knotweed on triglycerides

Back to: [Supplements](#) | [Health Outcomes](#)

# Juniperus chinensis

Also known as: *byakushin*

Juniperus Chinensis is a plant with folklore but no proven medical uses; is an effective insect repellent. It may have protective effects against colon cancer, and the lone rat study assessing glucose tolerance noted fairly remarkable anti-diabetic effects.

See [Juniperus chinensis on Examine.com](#)

## How to Take

The only animal evidence at this moment in time used 50-150mg/kg in rats, which is an estimated human dose of: 550-1,600mg for a 150lb person 700-2,200mg for a 200lb person 900-2,700mg for a 250lb person There is no assurance that these dosage ranges are optimal for human consumption

Back to: [Supplements](#) | [Health Outcomes](#)

# Kaempferia parviflora









Also known as: Krachai Dum, Black Turmeric, Black Galingale, Thai Ginseng


Kaempferia Parviflora (Thai Ginseng) is a root plant that is touted to be an aphrodisiac and glucose support agent, with its effects on testosterone and aphrodisia relatively unresearched; it may be (slightly) erectogenic by various mechanisms.

See [Kaempferia parviflora on Examine.com](#)

## How to Take

According to traditional usage of Kaempferia Parviflora,[1] 0.5-1 teaspoon of ground power is made into a tea and drank about 1-2 hours before physical performance. This is similar to the recommended daily dose from the Thai traditional medicine institute of 1.2g daily, and the one human study on the matter (failing to note benefit acutely) used 1.35g. General health protective effects have been noted at lower doses, although not enough evidence exists to suggest an optimal dose.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Notable	- <a href="#">See study</a>	The lone study to assess superoxide dismutase found a doubling after 8 weeks of supplementation (in older individuals); needs replication in youth
	<a href="#">Functionality in Elderly or Injured</a>	 Minor	- <a href="#">See study</a>	Grip strength has been found to be increased in elderly persons associated with supplementation at low doses
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A minor decrease in lipid peroxidation has been noted with supplementation of low doses
	<a href="#">Aerobic Exercise</a>	-	- <a href="#">See study</a>	No significant influence on aerobic exercise when taken acutely before exercise in youth
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	No significant influence on power output when taken acutely before exercise

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	No significant influence on the rate of perceived exertion when a single dose is taken acutely

Back to: [Supplements](#) | [Health Outcomes](#)

# Kaempferol

---

Kaempferol is one of the bioflavonoids that is present in high levels in cruciferous vegetables, and may mediate some of the bioactivities of these plants. It appears to hold anti-cancer potential.

See [Kaempferol on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Kava

Also known as: *Piper methysticum*, *Kava Pepper*, *Ava Pepper*, *Kava Kava*, *Intoxicating Pepper*, *Awa*, *rauschpfeffer*, *sakau*, *tonga*, *wurzelstock*, *yangona*









Other uses:












Kava is a herb that has traditionally been drunk as a hypnotic and anxiety reducer. It has been shown effective in reducing anxiety, sometimes at a potency similar to pharmaceuticals; may be a cognitive enhancer, but not completely safe.

See [Kava on Examine.com](#)

## How to Take

When supplementing Kava, initially an extract known as WS1490 should be sought out. 300mg of this extract daily (in three divided doses of 100mg) appears to be reliable and effective for the treatment of anxiety and other cognitive issues. Doses of up to 800mg of the WS1490 extract have been tolerated for short periods of time. Otherwise, supplementation of any product conferring 250mg collective kavalactones (the active ingredients) is used. Although it is usually taken at multiple times throughout the day with meals, if a single dose per day is being used it tends to be used prior to sleep.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anxiety</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	Appears to be quite reliable and effective in treating non-psychotic anxiety, with less reliability on the topic of generalized anxiety (which <a href="#">lavender</a> shows some promise for). It is possible that long-term usage of kava may have similar side-effects as long term usage of benzodiazepines (note demonstrated, but wholly logical) and most studies on kava are of a few weeks in duration without any problems.
	<a href="#">Subjective Well-Being</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	The increase in well being appears to be quite large, but secondary to reducing anxiety. At least one study has noted that, in healthy persons subject to a minor stressor (testing) that kava enhanced cheerfulness
	<a href="#">Reaction Time</a>	 Notable	- <a href="#">See study</a>	The one study to measure reaction time noted an astounding decreased (approximately 40% reduction), which needs to be replicated
	<a href="#">Aggression</a>	 Minor	- <a href="#">See study</a>	Aggressive symptoms of anxiety have been noted to be decreased following kava ingestion, an outright reduction of anxiety (without treating anxiety) is uncertain

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	 Minor	- <a href="#">See study</a>	Possibly secondary to the antianxiety effects, kava taken prior to a test is able to enhance cognition related to mood during the stressful test.
	<a href="#">Depression</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Depressive symptoms have been reduced vicariously through reductions in anxiety; <i>per se</i> antidepressant effects of kava uncertain
	<a href="#">Sleep Quality</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Sleep quality is enhanced via reducing the symptoms of anxiety which impair sleep
	<a href="#">Liver Enzymes</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on liver enzymes assuming the water extract (WS1490) is being used
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	One study has noted a reduction in blood pressure associated with kava, of minor magnitude
	<a href="#">Stress</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Possible antistress effects of kava that requires larger studies

Back to: [Supplements](#) | [Health Outcomes](#)



# Ketogenic diet











Also known as: TKD,CKD,VLCKD,LCKD,keto




Keto was the most-Google'd diet of 2018. It limits carb intake to under ~50 grams a day, and typically reduces appetite and intake of easy-to-overeat, hyperpalatable foods. However, most trials don't show a large weight loss advantage over higher carb diets, although individual results vary widely. Keto has therapeutic potential for a variety of health conditions. Stay tuned to this page, as 140+ trials are ongoing!




See [Ketogenic diet on Examine.com](#)

## How to Take

Consume under 50 grams of carbs a day, generally. Some people may need to lower this to under 20 grams, and some can produce more ketones even above 50 grams.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	 Strong	<b>High</b> <a href="#">See all 19 studies</a>	A pronounced and persistent decrease in circulating triglycerides is seen the majority of keto diet trials. Importantly, this drop is seen in what long-term trials are available.
	<a href="#">Blood Glucose</a>	 Notable	<b>Moderate</b> <a href="#">See all 22 studies</a>	In both short and long-term trials, a keto diet has been shown to notably reduce fasting blood glucose independently of weight loss when compared with various other control diets (usually low-fat diets). Particularly in those with elevated levels to begin with. Glycemic variability may be reduced, and average glucose levels throughout the day will tend to be lower. Ketogenic diets tend to worsen carbohydrate tolerance during postprandial testing.
	<a href="#">Insulin</a>	 Notable	<b>High</b> <a href="#">See all 21 studies</a>	While not necessarily more potent than all control diets, studies have generally found a notably larger reduction in fasting insulin, independently of weight loss. The average insulin levels throughout the day tend to be lower on a ketogenic diet as well.
	<a href="#">LDL-C</a>	 Notable	<b>Very High</b> <a href="#">See all 17 studies</a>	There appears to be a reliable and significant increase in circulating LDL cholesterol when people undertake a keto diet. In what long-term trials we have, this effect appears to persist on average.
	<a href="#">Total Cholesterol</a>	 Notable	<b>Very High</b> <a href="#">See all 16 studies</a>	Due to the increase in LDL, total cholesterol tends to be notably higher on a ketogenic diet than diets lower in fat. Even when ketogenic diets lead to more weight loss, total cholesterol and LDL still tend to be higher on ketogenic diets. Some of this effect is likely to be due to lower fiber intake, but some is inherent to diets high in palmitic acid.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	 Minor	<b>High</b> <a href="#">See all 17 studies</a>	Most trials, across various health condition, have seen a keto diet modestly increase HDL-C levels. This can be due, in part, to an increase in overall fat intake.
	<a href="#">Weight</a>	 Minor	<b>Moderate</b> <a href="#">See all 15 studies</a>	In studies where calories are matched, there isn't generally a difference between ketogenic diets and control diets, and what differences there are can generally be attributed to a loss in water. Ketogenic diets often lead to spontaneous weight reduction even when the aim isn't to reduce calories.
	<a href="#">Free Fatty Acids</a>	 Strong	<b>Very High</b> <a href="#">See all 5 studies</a>	The greater reliance on fatty acids for energy leads to an increase in circulating free fatty acids.
	<a href="#">Ketone Bodies</a>	 Strong	<b>Very High</b> <a href="#">See all 8 studies</a>	When a ketogenic diet is followed, ketone bodies will increase considerably. Ketosis is compatible with a wide range of protein intakes as long as carbohydrate intake is low, but the most ketogenic diets will be the ones low in both carbohydrates and protein.
	<a href="#">C-Reactive Protein</a>	 Notable	<b>Moderate</b> <a href="#">See all 9 studies</a>	Studies have generally found notably higher c-reactive protein on a ketogenic diet than control diet. Some studies have found no difference and some have found a greater reduction, one with considerably greater weight loss in the ketogenic group, and the other with unbalanced baseline levels.
	<a href="#">Glycemic Control / Insulin Sensitivity</a>	 Notable	<b>High</b> <a href="#">See all 10 studies</a>	Calculations based on glucose and insulin such as HOMA and QUICKI suggest an improvement in insulin sensitivity on ketogenic diets, even independently of weight loss. One study used a euglycemia hyperinsulinemia clamp and found an improvement in insulin sensitivity, but it was confounded by weight loss.
	<a href="#">Blood Flow</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Flow-mediated dilation is sometimes worsened on a ketogenic diet and improved on a low-fat diet, although this isn't always the case in studies.
	<a href="#">Fat Mass</a>	 Minor	<b>Moderate</b> <a href="#">See all 11 studies</a>	The effects of a ketogenic diet are likely reducible to its effects on calorie intake. Strictly controlled calorie intake means no difference, and ad libitum diets often mean greater fat loss, but sometimes don't.
	<a href="#">Lean Mass</a>	 Minor	<b>Moderate</b> <a href="#">See all 10 studies</a>	Studies generally find no difference or a decrease in the ketogenic group. The decrease may have to do with either greater calorie restriction, more water loss, or increase utilization of amino acids for glucose.
	<a href="#">Blood Pressure</a>	-	<b>Moderate</b> <a href="#">See all 9 studies</a>	Studies that find a greater reduction in blood pressure compared with the control group are studies where the ketogenic diet group experience greater weight loss. When calories are matched, there is generally no difference.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Peptide</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	Notable, consistent reduction in the studies.
	<a href="#">Calcium Excretion</a>	 Notable	- <a href="#">See study</a>	One study found a notable increase. The reason is unknown though increased absorption from increased protein intake can be ruled out.
	<a href="#">Glycerol</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Two studies have found an increase, which makes sense given the greater liberation of fatty acids from triglycerides for energy.
	<a href="#">Liver Damage</a>	 Notable	- <a href="#">See study</a>	One study found a greater reduction in fibrosis after 1 and 2 years of a ketogenic diet that led to substantial weight loss than a control diet that didn't.
	<a href="#">Resistin</a>	 Notable	- <a href="#">See study</a>	The ketogenic diet group didn't see much of a difference but the low-fat control group saw a notable reduction.
	<a href="#">Adiponectin</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Studies have found notable increases in studies where calories are matched and when they're's more weight loss in the ketogenic group. On the other hand, another calorically matched study found a reduction. One found no real effect despite weight loss.
	<a href="#">Adrenaline</a>	 Minor	- <a href="#">See study</a>	One study found somewhat lower levels than on a medium or high carbohydrate diet.
	<a href="#">Cortisol</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Studies so far have found small to notable increases in cortisol.
	<a href="#">Creatinine</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	While inconsistent, some studies have found an increase in the ketogenic group. It's possible that some of the effect may be due to increased meat consumption, in a similar way that supplementation creatine increases levels, though more research is needed.
	<a href="#">Endothelial Microparticles</a>	 Minor	- <a href="#">See study</a>	Reduction in one study. Needs replication.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ghrelin</a>	 Minor	- <a href="#">See study</a>	Somewhat of an increase in one study with ad libitum energy intake.
	<a href="#">Glucagon</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Small increases in most studies, independently of caloric intake. The one study that found a reduce compared with the control group was a very low calorie diet for both groups.
	<a href="#">Glucagon-like Peptide 1</a>	 Minor	- <a href="#">See study</a>	Somewhat of an increase in one study compared with a calorically matched control.
	<a href="#">HbA1c</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Most studies have found a reduction, and the one that didn't was far too short to evaluate the effect of a ketogenic diet. More research is needed in type 2 diabetics.
	<a href="#">Homocysteine</a>	 Minor	- <a href="#">See study</a>	One study found a greater increase than the control group, likely due to reduced folate intake.
	<a href="#">Hydration (Total Body Water)</a>	 Minor	- <a href="#">See study</a>	One study found a small reduction. The implication isn't dehydration, but less water needed for glycogen storage.
	<a href="#">IGF Binding Protein</a>	 Minor	- <a href="#">See study</a>	One study found a small increase compared with the control group.
	<a href="#">IGF-1</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Somewhat of a reduction in two trials where the ketogenic group reduced calories and lost weight.
	<a href="#">Intercellular Adhesion Molecule 1</a>	 Minor	- <a href="#">See study</a>	One study found an increase and one found a decrease, but neither were too dissimilar to that of the control group.
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	One study found a great reduction in ALT, AST, and ALP after 1 and 2 years on a ketogenic diet that led to substantial weight loss than on a control group that didn't.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Liver Fat</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed results, and the study that found the large reduction observed considerably more weight loss in the ketogenic group. More research is needed.
	<a href="#">Power Output</a>	 Minor	- <a href="#">See study</a>	A small reduction in one uncontrolled study where caloric intake was reduced on the ketogenic diet.
	<a href="#">Respiratory Exchange Ratio</a>	 Minor	- <a href="#">See study</a>	Somewhat lower than while on a medium or high carbohydrate diet.
	<a href="#">Serum T3</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There was a similar reduction to a control group in one study without much of a difference in weight change, and a more notable reduction in an uncontrolled study where the participants lost a modest amount of weight.
	<a href="#">Serum T4</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	In one study, T4 declined less in the ketogenic group than a control group, there was no difference after 2 years in another study where the ketogenic group lost considerably more weight, and there was a small increase in one uncontrolled 6-week study.
	<a href="#">Symptoms of Parkinson's Disease</a>	 Minor	- <a href="#">See study</a>	In one study, nonmotor and motor daily living experienced improved more in a ketogenic group, while the other group improved more in the motor examination and motor complications. More research is needed.
	<a href="#">Urea</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	The increase is consistent across all studies
	<a href="#">Urinary Albumin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Either a decrease in an uncontrolled trial or less of an increase compared with a control group in another.
	<a href="#">White Blood Cell Count</a>	 Minor	- <a href="#">See study</a>	Somewhat of a decrease after 1 and 2 years, with a greater decrease after to. The control group so no real change.
	<a href="#">vLDL-C</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Decreased more than in the control group in 2 studies, and in one study there was no difference. It's unclear why studies differed.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Apolipoprotein B</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No apparent effect in 2 studies where the ketogenic group lost more weight.
	<a href="#">Arterial Stiffness</a>	-	- <a href="#">See study</a>	No apparent difference in augmentation index in one study that lasted 8 weeks.
	<a href="#">Attention</a>	-	- <a href="#">See study</a>	No apparent difference between diets in one study.
	<a href="#">Beta-cell function</a>	-	- <a href="#">See study</a>	Unclear effects from one study. More research is needed.
	<a href="#">Bilirubin</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Unclear effects from 2 studies. One found a reduction but wasn't controlled.
	<a href="#">Bone Mineral Density</a>	-	- <a href="#">See study</a>	No change in spine BMD after 2 years and considerable weight loss.
	<a href="#">Carbohydrate Oxidation</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Inconsistent effects from 2 studies.
	<a href="#">Creatinine Clearance</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Fat Oxidation</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Inconsistent effects in 2 studies.
	<a href="#">Glomerular Filtration Rate</a>	-	- <a href="#">See study</a>	No apparent effect in one study.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Growth Hormone</a>	-	- <a href="#">See study</a>	No apparent effect in a short-term, uncontrolled study.
	<a href="#">Hematocrit</a>	↓↓↓	- <a href="#">See study</a>	No apparent effect in one 6-week study.
	<a href="#">Hemoglobin</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	The results of two don't suggest a noticeable influence.
	<a href="#">Interleukin 10</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Interleukin 18</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Interleukin 6</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	One study found an initial increase followed by a return to roughly baseline, while the other found no notable difference in the increase compared with the control diet.
	<a href="#">Leptin</a>	-	- <a href="#">See all 3 studies</a>	Inconsistent results but compatible with the effect being secondary to body fat reduction.
	<a href="#">Lymphocyte Count</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Metabolic Rate</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	No notable difference between groups when calories are matched, and a reduction in two uncontrolled trials with weight loss, as could be expected.
	<a href="#">Monocyte Count</a>	-	- <a href="#">See study</a>	No apparent effect in one short study.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Noradrenaline</a>	-	- <a href="#">See study</a>	No apparent effect in one short study.
	<a href="#">Oxidation of LDL</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No apparent effect in one study and a greater reduction than the control group in another study. More research is needed.
	<a href="#">Pulse Rate</a>	-	- <a href="#">See study</a>	No apparent effect.
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	No apparent effect.
	<a href="#">Remnant Lipoprotein Cholesterol</a>	-	- <a href="#">See study</a>	No apparent effect.
	<a href="#">Serum Albumin</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Thyroid-Stimulating Hormone</a>	-	- <a href="#">See 2 studies</a>	There was a small decrease in one study with substantial weight loss and a slight increase in one study with slight weight loss.
	<a href="#">Uric Acid</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	There's unlikely to be a notable change on a ketogenic diet, though uric acid declined considerably more on a control diet in one study.
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	Absolute VO2 peak declined slightly and relative VO2 peak was unchanged in one uncontrolled study of 6 weeks on a ketogenic diet.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ventilatory Threshold</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Vigor/Activity</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	There was a decrease compared to a control group in one 6-week study, and no difference in activity in another study that lasted for 1 week.

Back to: [Supplements](#) | [Health Outcomes](#)

# King Oyster

Also known as: *Pleurotus eryngii*, *Eringi*, *King Brown*

King Oyster (*Pleurotus eryngii*) is a dietary mushroom that contains an assortment of bioactive molecules. Oyster mushrooms in general tend to be more popular than other Bioactive Mushrooms due to their taste and usage in meals.

See [King Oyster on Examine.com](#)

## How to Take

At this moment in time, all that can be recommended is to consume the fruiting body or stem of the King Oyster mushroom in your diet if you want the effects. Supplementation would work fine (and if we take motifs from other Bioactive Mushrooms would be around 1-3g daily) but minimal human studies have been conducted.

Back to: [Supplements](#) | [Health Outcomes](#)

# Kombucha

Also known as: *Fungal tea, Mushroom tea*

---

Kombucha is a fermented form of *Camellia sinensis*, the plant that makes green and black tea. Though it is thought to be a healthy drink, improper preparation can cause toxicity and has resulted in multiple deaths.

See [Kombucha on Examine.com](#)

## How to Take

There are several case reports of adverse effects occurring following Kombucha consumption. This may be due to toxins, pathogens, or excess acid, as a result of over-fermentation. Due to this potential harm, regular kombucha consumption is not recommended. Although rare, most adverse effects occurred after a person drank more than 4 ounces (125mL). Therefore, it is not recommended to ingest more than 4 ounces of kombucha a day, in order to minimize the chance of an adverse effect. If kombucha is brewed at home, it must be properly prepared in a sanitized environment and fermented for less than a week to be safe to drink.

Back to: [Supplements](#) | [Health Outcomes](#)

# Krill Oil

Also known as: *Euphausiacea superba*











Other uses:

Krill oil is a mixture of fatty acids high in EPA and DHA (fish oil fatty acids) in the form of phospholipids, mostly as phosphatidylcholine; it appears to be better absorbed than fish oil, may be more cardioprotective, and has some unique (unexplored) fat burning effects.





See [Krill Oil on Examine.com](#)

## How to Take

Supplementation of Krill oil tends to be in the range of 1-3g daily (overall oil weight), which has been used in the clinical trials of krill oil supplementation. If supplementing in accordance with the omega-3 content, the omega-3 content that is supplemented from krill oil should be equal to approximately 2/3rds that used with basic fish oil supplementation to account for the increased absorption. If one were to normally supplement 1000mg EPA plus DHA, then 660mg of EPA and DHA from krill oil would be equivalent.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in C-Reactive protein has only been noted in rheumatoid arthritis (none in obese but healthy persons) but reached 30% within 30 days of 500mg krill oil, a very significant reduction
	<a href="#">HDL-C</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Although one study suggest no such increase (healthy persons), the increase seen in hyperlipidemics exceeded 50% and was remarkable; requires replication
	<a href="#">LDL-C</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in LDL-C has been noted with krill oil, which appears to be to quite a significant degree
	<a href="#">Symptoms of Rheumatoid Arthritis</a>	 Notable	- <a href="#">See study</a>	500mg Krill oil reduced symptoms of osteoarthritis up to 30%, which is a pretty significant effect size that requires future research to investigate.
	<a href="#">2-Arachidonoylglycerol Acid</a>	 Minor	- <a href="#">See study</a>	On obese subjects, this endocannabinoid has been found to be reduced somewhat

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Breast Tenderness</a>	 Minor	- <a href="#">See study</a>	Secondary to reducing symptoms of PMS, a reduction in breast tenderness has been reported
	<a href="#">Functionality in Elderly or Injured</a>	 Minor	- <a href="#">See study</a>	The increase in functionality appears to be secondary to reductions in symptoms of rheumatoid arthritis
	<a href="#">Irritability</a>	 Minor	- <a href="#">See study</a>	Irritability as a side-effect of PMS has been reduced with supplemental krill oil
	<a href="#">Stress</a>	 Minor	- <a href="#">See study</a>	Stress as a side-effect of PMS has been reduced with supplemental krill oil
	<a href="#">Symptoms of PMS</a>	 Minor	- <a href="#">See study</a>	PMS and its symptoms (breast tenderness, stress, and irritability mostly) have been reduced with krill oil supplementation
	<a href="#">Total Cholesterol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in total cholesterol has been noted with krill oil, to a fairly normal degree (reduction is lessened from the remarkable increase in HDL)
	<a href="#">Triglycerides</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in triglycerides has been noted with krill oil
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose levels
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant influence on weight over time

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Apolipoprotein A</a>	 Minor	- <a href="#">See study</a>	A decrease in Apolipoprotein A has been noted with krill oil supplementation
	<a href="#">Apolipoprotein B</a>	-	- <a href="#">See study</a>	No significant influence on Apolipoprotein B noted
	<a href="#">Lipid Peroxidation</a>	-	- <a href="#">See study</a>	Despite containing PUFAs, no significant changes in lipid peroxidation

Back to: [Supplements](#) | [Health Outcomes](#)

# L-Carnitine

Also known as: Acetyl-L-Carnitine, ALCAR, Acetylcarnitine, L-Carnitine-L-Tartrate, LCLT, Glycine Propionyl-L-Carnitine, GPLC, Levocarnitine, Levacecarnine, L-3-hydroxytrimethylamminobutanoate, carnitine









Other uses:


















L-Carnitine and ALCAR are two related compounds used for a variety of purposes, including boosting exercise performance and improving cognition and depression. L-Carnitine is often used for fat loss, but evidence doesn't support this indication.

See [L-Carnitine on Examine.com](#)

## How to Take

The standard dose for L-carnitine is between 500-2,000mg. There are various forms of carnitine supplementation available. Acetyl-L-Carnitine (ALCAR) is used for cognitive enhancement. L-Carnitine L-Tartrate (LCLT) is typically used for physical performance and power output. Glycine Propionyl L-Carnitine (GPLC) is used to alleviate intermittent claudication and blood flow issues. L-carnitine is supplemented daily. The equivalent dosage range for other forms of L-carnitine are as follows: 630-2,500mg (ALCAR), 1,000-4,000mg (LCLT) and 1,000-4,000mg (GPLC).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ammonia</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	A decrease in ammonia has been noted, and appears to influence both hepatic encephalopathy as well as persons with no significant liver damage
	<a href="#">Sperm Quality</a>	 Notable	<b>High</b> <a href="#">See all 5 studies</a>	Carnitine at 3g daily appears to increase sperm quality mostly related to sperm morphology; there are mixed effects on sperm motility
	<a href="#">Symptoms of Intermittent Claudication</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Symptoms of intermittent claudication are notably reduced with L-Carnitine supplementation (the rate of improvement over time, as assessed by walking distance, seems to be doubled; ie. from 40% to 60% or 60% to 90%) and associated with the Propionyl-L-Carnitine form (found in the supplement GPLC). The role of propionic acid cannot be ruled out at this time, and studies have not used basic L-carnitine or ALCAR
	<a href="#">Blood Glucose</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	A decrease in blood glucose has been noted with carnitine supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Exercise-Induced Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A decrease in the exercise-induced increase in MDA levels is seen with carnitine supplementation, possibly secondary to reducing damage to muscle tissue. The degree of MDA reduction is not overly remarkable
	<a href="#">Fat Mass</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There appears to be a fat reducing effect of L-Carnitine supplementation, but this may be limited to elderly persons; limited studies in otherwise healthy youth and adults fail to note an effect
	<a href="#">Fatigue</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Carnitine appears to be somewhat effective in reducing fatigue in elderly persons with low muscular endurance and perhaps in chronic fatigue syndrome; there is insufficient evidence to support a role of carnitine in reducing exercise-induced fatigue
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	An increase in insulin sensitivity appears to exist with carnitine supplementation, and at least once has been noted in otherwise healthy lean males. This may be secondary to glucose disposition into tissues
	<a href="#">Lactate Production</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Lactate production appears to be decreased in studies that note an increase in muscular carnitine stores, although the decrease is not overly notable
	<a href="#">Lipid Peroxidation</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	The reduction in MDA that occurs during exercise may also occur at rest, suggesting a per se effect
	<a href="#">Muscle Carnitine Content</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	Unreliable and mixed effects, but some studies do note that muscular carnitine levels can be increased with carnitine supplements.
	<a href="#">Muscle Damage</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Biomarkers of muscle damage including creatine kinase and muscle soreness are both fairly reliably reduced following ingestion of carnitine and pairing with exercise
	<a href="#">Treatment of Hepatic Encephalopathy</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Cognitive side effects of hepatic encephalopathy are alleviated with carnitine supplementation, notably fatigue and cognitive performance.
	<a href="#">Aerobic Exercise</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	More evidence than not suggest no significant influence on low intensity and high duration cardiovascular exercise











LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	
	<a href="#">Fat Oxidation</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Rates of fat oxidation appear unaffected following carnitine supplementation
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant changes in HDL cholesterol seen with supplementation
	<a href="#">Hematocrit</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Hemoglobin</a>	-	- <a href="#">See study</a>	
	<a href="#">LDL-C</a>	-	- <a href="#">See 2 studies</a>	No detectable influence on LDL-C levels
	<a href="#">Power Output</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	Highly mixed effects on power output, with mostly no significant influence but a possible increase in mean power output occurring in short-term anaerobic endurance exercise secondary to reducing the rate of perceived exertion
	<a href="#">Serum Albumin</a>	-	- <a href="#">See study</a>	
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	For the most part, there does not appear to be a significant influence of carnitine on total cholesterol levels
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on triglycerides

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Autism</a>	 Notable	- <a href="#">See study</a>	High dose carnitine (50mg per kilogram) appears to reduce some symptoms of autism as assessed by rating scales; notable due to the rarity of a supplement towards this goal
	<a href="#">ADHD in Children</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	At least one study has noted reduction in ADHD symptoms in children
	<a href="#">Adiponectin</a>	 Minor	- <a href="#">See study</a>	An increase in adiponectin has been noted
	<a href="#">Aggression</a>	 Minor	- <a href="#">See study</a>	Secondary to reducing symptoms of ADHD, L-carnitine may reduce aggression in children.
	<a href="#">Alcohol Dependence</a>	 Minor	- <a href="#">See study</a>	A reduced rate of relapse and alcohol cravings was noted with ALCAR ingestion relative to placebo
	<a href="#">Anaerobic Running Capacity</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in anaerobic cardiovascular exercise has been noted with carnitine ingestion
	<a href="#">Androgen Receptor Density</a>	 Minor	- <a href="#">See study</a>	At least one study has noted an increase in androgen receptor density in skeletal muscle tissue
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in all three main enzymes (SOD, glutathione peroxidase, catalase) has been detected following ingestion of carnitine
	<a href="#">Attention</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in attention has been noted to be secondary to reductions in the symptoms of chronic fatigue
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See study</a>	Increases in blood flow appear to occur following carnitine supplementation, which may be related to the increases in nitrate

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	May reduce blood pressure
	<a href="#">Cognition</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Improvements in general cognitive capacity has been noted in elderly persons and in disease models (hepatic encephalopathy); lack of literature on otherwise healthy youth
	<a href="#">Heart Rate</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in heart rate has been noted associated with supplementation
	<a href="#">IGF Binding Protein</a>	 Minor	- <a href="#">See study</a>	An increase in IGF binding protein (3) has been noted following carnitine supplementation in otherwise healthy youth
	<a href="#">Inflammation</a>	 Minor	- <a href="#">See study</a>	Possible antiinflammatory effect on exercise-induced inflammatory biomarkers
	<a href="#">Insulin</a>	 Minor	- <a href="#">See study</a>	Fasting insulin has been noted to be decreased in diabetics given carnitine
	<a href="#">Lean Mass</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in lean mass has been noted in elderly persons. This may not apply to lean healthy individuals, and no research assesses youth
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	A decrease in liver enzymes has been noted in a model of hepatic encephalopathy, a per se reducing effect is uncertain
	<a href="#">Muscle Oxygenation</a>	 Minor	- <a href="#">See study</a>	A decrease in muscle oxygenation has been noted during occlusion, but not during squat exercise; practical significance of these results unknown
	<a href="#">Muscle Soreness</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The decrease in muscle soreness appears to correlate with the reduced muscle damage

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nitric Oxide</a>	 Minor	- <a href="#">See study</a>	An increase in nitric oxide has been noted, thought to be secondary to increases in plasma nitrate
	<a href="#">Plasma Nitrate</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Plasma <a href="#">nitrate</a> appears to be increased following carnitine ingestion, although not to the same degree as nitrate supplementation itself
	<a href="#">Rate of Perceived Exertion</a>	 Minor	- <a href="#">See study</a>	A reduction in the rate of perceived exertion appears to exist following carnitine supplementation
	<a href="#">Symptoms of Fibromyalgia</a>	 Minor	- <a href="#">See study</a>	Fibromyalgic symptoms are reduced with carnitine ingestion
	<a href="#">Symptoms of Hyperthyroidism</a>	 Minor	- <a href="#">See study</a>	Some symptoms of hyperthyroidism are reduced following carnitine supplementation
	<a href="#">Symptoms of Multiple Sclerosis</a>	 Minor	- <a href="#">See study</a>	Some symptoms associated with multiple sclerosis are noted to be reduced with carnitine ingestion.
	<a href="#">Uric Acid</a>	 Minor	- <a href="#">See study</a>	A decrease in uric acid has been noted
	<a href="#">IGF-1</a>	-	- <a href="#">See study</a>	No significant changes in IGF-1 seen with carnitine supplementation; IGF-2 also appears unaffected
	<a href="#">Metabolic Rate</a>	-	- <a href="#">See study</a>	No significant influence on metabolic rate noted with carnitine supplementation
	<a href="#">Subjective Well-Being</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant changes in subjective well being associated with carnitine intake

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	No significant influence on TNF-a
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No significant alterations noted
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	No detectable influence on VO2 max associated with carnitine supplementation
	<a href="#">Erections</a>	 Minor	- <a href="#">See study</a>	One study has noted an improvement in erections in persons thought to have impaired blood flow
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	Reduction in general oxidation seems to be secondary to antioxidant enzyme induction
	<a href="#">Total Iron Binding Capacity</a>	-	- <a href="#">See study</a>	




Back to: [Supplements](#) | [Health Outcomes](#)

# L-DOPA

Also known as: *Levodopa, L-3,4-dihydroxyphenylalanine*

L-DOPA is a direct precursor to dopamine, and its supplementation can increase dopamine levels in the body. It is known as Levodopa and is one component of most Parkinson's treatments, and found in high amounts in *Mucuna Pruriens*.

See [L-DOPA on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Penile Girth</a>	 Minor	- <a href="#">See 2 studies</a>	An increase in penile girth has been noted in the flaccid state at rest, which is no longer present during sexual stimulation.
	<a href="#">Libido</a>	-	- <a href="#">See study</a>	No significant influence on libido

Back to: [Supplements](#) | [Health Outcomes](#)

# L-Threonate

Also known as: *L-Threonic Acid*

---

A metabolite of vitamin C that may have unique effects in the body, it is currently being researched for use as a mineral chelating agent able to greatly enhance bioavailability of minerals (such as Magnesium-L-Threonate).

See [L-Threonate on Examine.com](#)

## How to Take

Not enough information is known at this time to suggest an optimal dose of L-Threonate in isolation. Mineral chelations of L-Threonate should be dosed according to the active mineral content of the chelation.

Back to: [Supplements](#) | [Health Outcomes](#)

# L-Tyrosine

L-Tyrosine is an amino acid that is used to produce noradrenaline and dopamine; it appears to reduce stress during exposure to acute stressors (which tend to deplete noradrenaline) and may help to prevent stress-induced memory deficits.





See [L-Tyrosine on Examine.com](#)

## How to Take

Anecdotally, L-Tyrosine tends to be taken in doses of 500-2000mg approximately 30-60 minutes before any acute stressor (this tends to be exercise) Studies in humans showing most anti-stress promise for acute supplemental L-Tyrosine use a dosage range of 100-150mg/kg bodyweight which can be taken 60 minutes before exercise; this is a dosage range of 9-13.5g for a 200lb person and 7-10g for a 150lb person. If using higher doses and finding digestive issues, this may be split into two doses separated by half an hour (30 and 60 minutes prior to acute stress).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Tyrosine appears to effectively improve cognition during acute stressors (altitude and cold being tested most); this appears reliable if the acute stressor is present, but may not be an inherent increase in cognition and it is unsure if it applies to chronic stress and fatigue.
	<a href="#">Blood Pressure</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	It is possible that Tyrosine can reduce blood pressure during stress, but the one study that noted this also noted a reduction in blood pressure in the stressed placebo; other studies have found no influence.
	<a href="#">Stress</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Perceptions of stress during acute stressors, as well as related symptoms of acute stress, appear to be reduced following tyrosine ingestion
	<a href="#">Subjective Well-Being</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There appears to be an increase in subjective well being during stress when tyrosine is preloaded (perhaps secondary to the antistress effects of tyrosine), although this is not overly reliable
	<a href="#">Working Memory</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Appears to preserve working memory during acute stressors without inherently having a memory boosting effect



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Depression</a>	-	- <a href="#">See study</a>	Depressive symptoms that occur during acute stressors have not been affected by Tyrosine supplementation; chronic depression not yet researched
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	No significant influence has been noted on fatigue from L-Tyrosine supplementation during acute stresses
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influences of Tyrosine on heart rate has been noted
	<a href="#">Noradrenaline</a>	-	- <a href="#">See study</a>	No significant influence on plasma noradrenaline levels (despite increased plasma tyrosine) during rest or during a cold stress test (which increases noradrenaline)









Back to: [Supplements](#) | [Health Outcomes](#)







# Lactobacillus casei

Also known as: Yakult

Lactobacillus casei (usually as Shirota, known as Yakult) is a bacterial strain seen as probiotic.

See [Lactobacillus casei on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	
	<a href="#">Immunity</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Intestinal Permeability</a>	-	- <a href="#">See study</a>	
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Immunoglobulin A</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Raised salivary IgA but not serum IgA in one study.
	<a href="#">Upper Respiratory Tract Infection Risk</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	16 weeks supplementation reduced risk of URTI symptoms in endurance athletes undergoing winter training.
	<a href="#">Immunoglobulin G</a>	-	- <a href="#">See study</a>	No effect on IgG seen in one study.
	<a href="#">White Blood Cell Count</a>	-	- <a href="#">See study</a>	No change in white blood cell count in one study.

Back to: [Supplements](#) | [Health Outcomes](#)

# Lactobacillus reuteri





Also known as: ATCC PTA 6475, ATCC 55730, DSM 17938, NCIMB 30242

Lactobacillus reuteri is a species of probiotic bacteria. It may provide some benefits for cholesterol levels, reducing H. pylori levels (the pathogenic bacterium which contributes to ulcers), female urinary tract and vaginal health, and infant gastrointestinal health.

See [Lactobacillus reuteri on Examine.com](#)

## How to Take

Certain strains of Lactobacillus reuteri are more appropriate for supplementation than others. Lactobacillus reuteri ATCC 55730, DSM 17938, and ATCC 6475 are all known to survive oral supplementation, even without an enteric capsule. Research doses of Lactobacillus reuteri are in the range of  $1 \times 10^9$  to  $1 \times 10^{11}$  (one billion to one hundred billion) colony-forming units (CFU) taken over the course of a day. Both single doses and multiple split doses per day have been found to be effective, though further research is needed to determine whether one is more effective than the other. At least one study suggests that supplementing Lactobacillus reuteri every other day is just as effective as daily dosing. Lactobacillus reuteri can be taken with food. Don't take Lactobacillus reuteri with a hot beverage to allow for the survival of the bacteria. Once supplementation is stopped, intestinal colonization will start to revert to normal. Further research is needed to establish the exact time frame, but it has been observed to occur between half a week to one month after supplementation is stopped. The actual time may depend on whether supplementation took place over the long term or the short term.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Infantile Colic</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	Supplementation of $10^8$ CFU of DSM 17938 (no other strain tested) has been associated with greatly reducing infantile colic within a week and increasing potency for one month, but the available evidence appears to be potentially biased and the lone independent study failed to find a protective effect of supplementation.
	<a href="#">Bilirubin</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">HDL-C</a>	-	- <a href="#">See all 3 studies</a>	


LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Triglycerides</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Weight</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Apolipoprotein A</a>	-	- <a href="#">See study</a>	
	<a href="#">Apolipoprotein B</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">B-Cell Count</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Pressure</a>	-	- <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	
	<a href="#">Constipation</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Diarrhea</a>	-	- <a href="#">See study</a>	
	<a href="#">Fecal Bile Acids</a>	-	- <a href="#">See study</a>	
	<a href="#">Fecal Moisture</a>	-	- <a href="#">See study</a>	
	<a href="#">Fibrinogen</a>	-	- <a href="#">See study</a>	
	<a href="#">Heart Rate</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Helicobacter Pylori Infection</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Hematocrit</a>	-	- <a href="#">See study</a>	
	<a href="#">Hemoglobin</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Immunity</a>	-	- <a href="#">See study</a>	
	<a href="#">Immunoglobulin A</a>	-	- <a href="#">See study</a>	
	<a href="#">Interleukin 1-beta</a>	-	- <a href="#">See study</a>	
	<a href="#">Interleukin 10</a>	-	- <a href="#">See study</a>	
	<a href="#">Interleukin 6</a>	-	- <a href="#">See study</a>	
	<a href="#">Interleukin 8</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Kidney Function</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Lipid Absorption</a>	-	- <a href="#">See study</a>	
	<a href="#">Lymphocyte Count</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Monocyte Count</a>	-	- <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Neutrophil Count</a>	-	- <a href="#">See study</a>	
	<a href="#">Plasma Vitamin D</a>	-	- <a href="#">See study</a>	
	<a href="#">Plasma Vitamin E</a>	-	- <a href="#">See study</a>	
	<a href="#">Plasma <math>\beta</math>-carotene</a>	-	- <a href="#">See study</a>	
	<a href="#">Pulmonary Function</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Red Blood Cell Count</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Risk of Allergic Diseases</a>	-	- <a href="#">See study</a>	
	<a href="#">Serum Platelets</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Symptoms of Cystic Fibrosis</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See 2 studies</a>	



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Upper Respiratory Tract Infection Risk</a>	-	- <a href="#">See study</a>	
	<a href="#">White Blood Cell Count</a>	-	- <a href="#">See 2 studies</a>	

Back to: [Supplements](#) | [Health Outcomes](#)













# Lavender

Lavender is a family of plants known for its anxiety-reducing properties.











See [Lavender on Examine.com](#)

## How to Take

To supplement lavender, take 80 – 160 mg of a supplement containing 25 – 46% linalool. Accurate dosing is difficult to determine during aromatherapy, but most studies use at least 30 minutes in a well-ventilated room. Topical application of lavender is usually done through a lavender oil massage. Topical lavender oil application is not recommended due to the possibility of skin agitation and damage.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anxiety</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	There appears to be a notable decreased in symptoms of generalized anxiety disorder and with oral ingestion of lavender supplements; aromatherapy seems effective and implicated in reducing state anxiety (acute, situation based, anxiety), but has less robust evidence to support it. One study suggesting oral supplementation was comparable to lorazepam
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	A reduction in blood pressure is noted alongside reduced autonomic nervous system activation and increased relaxation; this is likely to not affect the body over the long term
	<a href="#">Body Temperature</a>	 Minor	- <a href="#">See study</a>	A decrease in body temperature is seen with lavender ingestion
	<a href="#">Canker Sores</a>	 Minor	- <a href="#">See study</a>	A reduction in canker sore size and the pain associated with them are observed with topical lavender application
	<a href="#">Dysmenorrhea</a>	 Minor	- <a href="#">See study</a>	Lavender as aromatherapy is able to reduce pain associated with menstruation
	<a href="#">Heart Rate</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in heart rate has been noted at rest over a long period of time (12 weeks in insomniacs) and acutely; both studies have used aromatherapy

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Migraine</a>	 Minor	- <a href="#">See study</a>	Acute inhalation of lavender at the onset of a migraine is associated with less pain symptoms than placebo scent
	<a href="#">Relaxation</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	An increase in the magnitude of self-reported 'relaxation' is noted with lavender aromatherapy more than placebo
	<a href="#">Sedation</a>	 Minor	- <a href="#">See study</a>	An increase in sedation has been noted with aromatherapy, but not with oral usage of lavender supplements
	<a href="#">Sleep Quality</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	Improvements in sleep quality have been noted in insomniacs and persons with generalized anxiety disorder mostly, with some limited evidence suggesting this may benefit generally healthy persons. Both oral supplements and aromatherapy are implicated in these benefits, but overall the quality of the studies is somewhat less than desirable. The parameters that see benefit are less waking up during the night and reduction in insomniac symptoms
	<a href="#">Calmness</a>	-	- <a href="#">See study</a>	Despite the increase in 'relaxation', there does not appear to be an increase in calmness
	<a href="#">Stress</a>	-	- <a href="#">See study</a>	No significant influences on stress
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	A decrease in cortisol has been noted acutely with aromatherapy
	<a href="#">Depression</a>	 Minor	- <a href="#">See study</a>	Depression as a side effect of anxiety appears to be reduced
	<a href="#">Heart Rate Variability</a>	 Minor	- <a href="#">See study</a>	Lavender aromatherapy has once been noted to reduce heart rate variability

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Infantile Colic</a>	 Minor	- <a href="#">See study</a>	Reduction in infantile colic and improvements in mother-child interaction has been noted with adding the aroma of lavender to a bathing period
	<a href="#">Insomnia</a>	 Minor	- <a href="#">See study</a>	May be effective in reducing insomnia when measured
	<a href="#">Restlessness</a>	 Minor	- <a href="#">See study</a>	A decrease in restlessness has been noted, but may be from symptom reduction of neurasthenia
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	An increase in well being has been noted with lavender aromatherapy, possible secondary to the relaxing effects
	<a href="#">Symptoms of Neurasthenia</a>	 Minor	- <a href="#">See study</a>	Both anxiety and restlessness associated with neurasthenia have once been noted to be beneficially influenced with lavender

Back to: [Supplements](#) | [Health Outcomes](#)

# Leucic Acid










Also known as: *Alpha-Hydroxy-isocaproic acid, DL-alpha-Hydroxy-isocaproic acid, HICA*


Leucic acid (also known as  $\alpha$ -hydroxyisocaproic acid or HICA) is a leucine metabolite touted to have anabolic properties. Although it appears to be effective following oral supplementation, comparisons to leucine or HMB do not exist.

See [Leucic Acid on Examine.com](#)

## How to Take

The only human evidence currently uses a daily dose of 1,500mg HICA, split into three divided doses of 500mg. There is not enough evidence to suggest if this is the optimal dose nor is there evidence to assess the comparative potency of HICA against leucine or HMB supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lean Mass</a>	 Minor	- <a href="#">See study</a>	An increase in lean mass has been noted in the legs of soccer players to the degree of 0.4kg over 4 weeks; this study currently stands alone
	<a href="#">Muscle Soreness</a>	 Minor	- <a href="#">See study</a>	A decrease in muscle soreness has been noted in the one study conducted in athletes (when measured at week 4 only) to the degree of around 23%, but muscle soreness was not overly high in the study to begin with
	<a href="#">Weight</a>	 Minor	- <a href="#">See study</a>	The lone study using leucic acid in athletes has noted a minor but statistically significant increase in weight, attributable to lean mass (muscle plus water; bone mass unchanged)
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	No significant influence on anaerobic running capacity
	<a href="#">Bone Mineral Density</a>	-	- <a href="#">See study</a>	No significant alterations in bone mineral density
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	No significant interaction between leucic acid and body fat has yet to be detected

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	Power output as assessed by jumping tasks and weightlifting is unaffected

Back to: [Supplements](#) | [Health Outcomes](#)

# Leucine






Also known as: L-Leucine

Leucine is the primary BCAA, and is the BCAA where most benefit is given to. Supplementing Leucine on its own is still beneficial and may be cheaper than BCAA mixes; they all still taste bitter, however.

See [Leucine on Examine.com](#)

## How to Take

Leucine tends to be supplemented in the 2,000-5,000mg range for acute usage. It tends to be taken either in a fasted state or alongside meals with an inherently low protein content (or protein sources that are low in leucine).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	

# Licorice

Also known as: Licorice, Liquorice, Yashtimadhu, Glycyrrhiza, Glycyrrhiza Uralensis, Glycyrrhiza Glabra









Other uses:

Licorice is the common name for plants of the Glycyrrhiza family. It may contain protective flavanoids. Glycyrrhetic acid (a component of licorice) may decrease testosterone and increase cortisol.

See [Licorice on Examine.com](#)












## How to Take

Prior to supplementing Licorice, please be aware of Glycyrrhizin (the agent that increases cortisol and reduces testosterone) and, if these results are not desired, try to get products with low Glycyrrhizin content (less than 500mg total dose daily). 150mg has been confirmed to not influence these hormones Traditional Chinese Medicine recommends a decoction of 8-15g Licorice for health protection and up to 100g for disease states. Consumption of licorice in these doses as a food product does confer the same properties as supplementation, but the caloric and carbohydrate intake from either the root of confectionaries derived from the root need to be accounted for. With supplementation, intakes of Licorice in the range of 150-300mg daily appear to be most commonly used and intakes of Deglycyrrhizinated (without Glycyrrhizin) up to 1800mg daily for 4 weeks are not associated with toxicity in humans.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Oxidation of LDL</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	The decrease in oxidation of LDL seen with either licorice or isolated Glabridin appears to exceed 20% and is more than other supplements
	<a href="#">Canker Sores</a>	 Minor	- <a href="#">See study</a>	Topical application of licorice is able to reduce canker sore size and pain associated with canker sores
	<a href="#">Cortisol</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Appears to increase cortisol at higher doses (500mg or more), with no significant influence at lower doses; this is related to the glycyrrhizin content, and would not occur in deglycyrrhizinated supplements
	<a href="#">DHEA</a>	 Minor	- <a href="#">See study</a>	An increase in serum DHEA has been noted following licorice consumption



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lipid Peroxidation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in lipid peroxidation is noted with licorice consumption, not to a remarkable degree
	<a href="#">Testosterone</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	There appears to be a testosterone reduction associated with intake of licorice above 500mg, but the magnitude of this reduction is quite variable and there is no robust information on the topic
	<a href="#">Adiponectin</a>	-	- <a href="#">See study</a>	No significant interaction between adiponectin and licorice
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	No significant influence on fat mass
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence of licorice on HDL
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant changes in fasting insulin levels
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No significant changes in insulin sensitivity following licorice ingestion
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant influence on LDL cholesterol seems apparent
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	No significant alterations in lean mass associated with licorice
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol is observed following licorice ingestion

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant interactions with body weight associated with licorice ingestion
	<a href="#">Blood Pressure</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	Has the potential to increase blood pressure secondary to increasing cortisol; this is notable as it seems hypertensives are at greater risk from an adverse reaction to high dose licorice and as such should exert caution when using this herb (related to the glycyrrhizin content, and deglycyrrhizinated supplements should not have the same risk)
	<a href="#">Parathyroid Hormone</a>	 Minor	- <a href="#">See study</a>	An increase in parathyroid hormone has been noted with consumption of licorice
	<a href="#">Estrogen</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in serum estrogen
	<a href="#">Follicle-Stimulating Hormone</a>	-	- <a href="#">See study</a>	No significant alterations in follicle stimulating hormone seen with licorice consumption
	<a href="#">Luteinizing Hormone</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	More evidence than not suggests no significant changes in luteinizing hormone, although limited evidence suggests an increase of minor magnitude.
	<a href="#">Prolactin</a>	-	- <a href="#">See study</a>	Prolactin appears unaffected following licorice consumption
	<a href="#">Sex Hormone Binding Globulin</a>	-	- <a href="#">See study</a>	No significant alterations in SHBG levels following supplementation

# Light Therapy

*Also known as: Light, Sunlight*

---

Light therapy is basically exposure to sunlight or bright lights during the day, and most well known for simply increasing Vitamin D synthesis rates independent of supplementation. It possesses many similarities to Vitamin D, but perhaps some more.

See [Light Therapy on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Limonene

Also known as: *Lemon Extract, D-Limonene*

Other uses:

D-Limonene is a molecule that is found in high levels in lemons (where it derives its name) but also most citrus foods. It holds promise as an anti-cancer agent, and for some reason is marketed as a fat burner despite minimal evidence of fat burning effects. Can be consumed via pulpy lemon juice.

See [Limonene on Examine.com](#)

## How to Take

30-40 liquid oz. of Mediterranean Style (pulp in) lemonade confers approximately 500mg D-Limonene, which can be seen as an active dose. Otherwise, many benefits are seen with 1g of D-Limonene daily.

Back to: [Supplements](#) | [Health Outcomes](#)

# Lutein

*Other uses:*

---

Lutein, as well as the related zeaxanthin, are carotenoid structures similar to pre-vitamin A ( $\beta$ -carotene) and involved in eye health. A dietary component of eggs, lutein appears to be effective for this claim and a general antioxidant.

See [Lutein on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Lysine

*Other uses:*

---

Lysine is an amino acid commonly paired with Vitamin C in many supplements. While an essential amino acid it does not hold much promise as a supplement beyond reducing the symptoms of herpes simplex.

See [Lysine on Examine.com](#)

## How to Take

To supplement Lysine to reduce symptoms of herpes simplex, take up to 2g of lysine daily in divided doses with meals. It should be noted that ingesting supplemental L-arginine at this time will be counterproductive for this purpose and, if the diet is modified to increase lysine intake, then L-arginine should be controlled.

Back to: [Supplements](#) | [Health Outcomes](#)

# Maca

Also known as: *Lepidium meyenii*, Maca root, Peruvian Ginseng







Other uses:

Maca is a vegetable belonging to the Brassicaceae family. It resembles a turnip and has a history of being used as an aphrodisiac.

See [Maca on Examine.com](#)


## How to Take

The standard dose for maca is 1,500-3,000mg. Maca can be supplemented by eating maca root, or through a maca extract. Extracts should be water or ethyl acetate-based. Maca should be taken daily, alongside food. Traditionally, maca is treated as a food product, rather than a dietary supplement. Animal studies use 1,000-2,200mg/kg bodyweight doses of maca, which translates into: 10.9-24g of the maca vegetable for a 150lb person 14.5-32g of the maca vegetable for a 200lb person 18.1-40g of the maca vegetable for a 250lb person

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Libido</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	An increase in libido appears to occur following Maca ingestion, which is notable as it appears to influence all demographics and is not associated with systemic hormones
	<a href="#">Estrogen</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on circulating estrogen noted
	<a href="#">Follicle-Stimulating Hormone</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on follicle stimulating hormone noted
	<a href="#">Luteinizing Hormone</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on luteinizing hormone noted with maca ingestion
	<a href="#">Testosterone</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No significant influences on testosterone in any tested demographic

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anxiety</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	An anxiety reducing effect has been noted in postmenopausal women but not otherwise healthy young men
	<a href="#">Depression</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May reduce depression in postmenopausal women, unlikely to occur in otherwise healthy youth
	<a href="#">Erections</a>	 Minor	- <a href="#">See study</a>	An increase in erection frequency has been noted in men, likely related to the libido enhancing properties
	<a href="#">Sexual Function</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An improvement in SSRI induced sexual dysfunction has been noted with Maca supplementation
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	An increase in well being has been noted
	<a href="#">Symptoms of Menopause</a>	 Minor	- <a href="#">See study</a>	One study noted reduced symptoms associated with menopause; libido was possibly independently increased, but anxiety and depression appear to also be reduced.
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	No significant influence on anaerobic running capacity associated with Maca
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influence on heart rate noted with Maca ingestion
	<a href="#">Prolactin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on prolactin levels
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	No significant influence on the rate of perceived exertion associated with Maca root



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sex Hormone Binding Globulin</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Magnesium









Other uses:








Magnesium is a dietary mineral. Magnesium deficiencies are the second most common deficiency in developed countries, the first being vitamin D. A lack of magnesium will raise blood pressure and reduce insulin sensitivity.









See [Magnesium on Examine.com](#)







## How to Take

The standard dose for magnesium supplementation is 200-400mg. Any form of magnesium can be used to attenuate a magnesium deficiency, except magnesium L-threonate, since it contains less elemental magnesium per dose. Gastrointestinal side-effects, like diarrhea and bloating, are more common when magnesium oxide or magnesium chloride are supplemented, due to the lower absorption rates of these two forms. In general, magnesium citrate is a good choice for supplementation. Magnesium L-threonate can be used for cognitive enhancement. Magnesium should be taken daily, with food. Superloading magnesium, or taking more magnesium than is needed to attenuate a deficiency, should be done with magnesium diglycinate or magnesium gluconate.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Notable	<b>Moderate</b> <a href="#">See all 9 studies</a>	There appears to be a significant reduction in blood pressure assuming one of two conditions is met, either the subject is low in magnesium levels in the body (deficient) or if the subject has elevated blood pressure (140/90 or above), with the latter not requiring a deficiency to precede the blood pressure reducing effects
	<a href="#">Serum Magnesium</a>	 Notable	<b>High</b> <a href="#">See all 6 studies</a>	Has the capacity to increase serum magnesium stores, but this is somewhat unreliable and may be dependent on the person being deficient in magnesium prior to supplementation
	<a href="#">Asthma</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	There appears to be a reduction in asthmatic symptoms associated with magnesium supplementation to a low degree, with the one study using corticosteroids alongside magnesium finding no effect. There may be a role for magnesium in aiding untreated asthma, but already medicated situations are not certain
	<a href="#">Blood Glucose</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	There appears to be some reduction in blood glucose in diabetics and persons with elevated glucose with magnesium supplementation, which may be secondary to better insulin functioning from the pancreas. The reduction in glucose is not overly impressive and is somewhat unreliable, and increases in glucose have been noted to occur during exercise when magnesium is supplemented in healthy persons

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HbA1c</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	More evidence than not suggest no significant effect on HbA1c levels, but one study suggests a decent decrease with the other two studies trending towards a decrease. There may be a role for magnesium in reducing HbA1c levels to a minor degree
	<a href="#">Insulin</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	Decreases in fasting insulin appear to occur over long term supplementation with magnesium in persons at risk for diabetes or already with the disease state; decreases in insulin may not occur in normoglycemic persons
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	There appears to be increases in insulin sensitivity as assessed by HOMA-IR, which is thought to be secondary to aiding pancreatic function
	<a href="#">HDL-C</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	For the most part, there is no significant direct influence of magnesium on HDL-C levels. Some counter evidence suggests it may occur vicariously through betterment of glycemic control in diabetics, but that is not always seen
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	For the most part, no significant influence of magnesium supplementation on triglycerides
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No evidence to support a role for magnesium in inducing alterations in body weight
	<a href="#">Aerobic Exercise</a>	 Notable	- <a href="#">See study</a>	The one study to assess aerobic exercise capacity noted a significant improvement during extreme physical stress (triathletes), which is notable and needs replication
	<a href="#">Muscle Oxygenation</a>	 Notable	- <a href="#">See study</a>	The one study to measure muscle oxygenation in high intensity exercise noted quite a remarkable increase in oxygenation in healthy athletes; this needs to be replicated
	<a href="#">Bone Mineral Density</a>	 Minor	- <a href="#">See study</a>	An increase in bone mineral density has been noted with magnesium supplementation
	<a href="#">C-Reactive Protein</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible reduction in C-Reactive protein, but these changes are unreliable

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Migraine</a>	 Minor	- <a href="#">See study</a>	One study has noted a reduction in symptoms of migraines associated with oral magnesium supplementation
	<a href="#">Osteocalcin</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible but unreliable increases in osteocalcin
	<a href="#">Sleep Quality</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An improvement in sleep quality has been noted in persons with poor sleep quality, no studies assess persons with normal sleep function
	<a href="#">Symptoms of Diabetic Neuropathy</a>	 Minor	- <a href="#">See study</a>	A reduction in symptoms associated with diabetic neuropathy has been noted with magnesium supplementation
	<a href="#">Symptoms of PMS</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A moderate reduction in symptoms of PMS has been noted with magnesium supplementation in most trials, though evidence quality tends to be low and it's difficult to have great confidence in the results. One study found an apparent additive effect of magnesium and vitamin B6.
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant influence on cortisol seen with magnesium supplementation
	<a href="#">Cramps</a>	-	- <a href="#">See study</a>	No evidence to support a reduction in pregnancy related leg cramps
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on LDL cholesterol levels seen with magnesium supplementation
	<a href="#">Testosterone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on testosterone levels noted with magnesium intake
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on total cholesterol levels seen with magnesium supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Depression</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Reduced depressive symptoms have been found in elderly diabetics
	<a href="#">Symptoms of Tinnitus</a>	 Minor	- <a href="#">See study</a>	Decreased symptoms associated with tinnitus have been noted following magnesium supplementation
	<a href="#">Anxiety</a>	-	- <a href="#">See study</a>	
	<a href="#">Oxidation of LDL</a>	-	- <a href="#">See study</a>	No significant influence on oxidation rates of LDL cholesterol

Back to: [Supplements](#) | [Health Outcomes](#)

# Magnolia officinalis



Also known as: Saiboku-to, Magnolia Bark Extract, Honokiol, Magnolol

Magnolia officinalis is a traditional Chinese medicine known for its neuroprotective and relaxing properties, being used to treat depression and anxiety as well as acting as a slight sedative. It may also possess anti-cancer effects in higher doses.

See [Magnolia officinalis on Examine.com](#)

## How to Take

The dosage of magnolia officinalis to take varies on goal. For those related to GABA (including anxiety, sedation, stress, and epilepsy) an oral dose of 0.2mg/kg in mice appears effective and suggests very low doses (5-10 mg) are effective in humans. For those goals related to learning or depression, higher doses may be required. This usually means 15-30mg/kg in rats, and suggests a human dose of: 160-330 mg for a 150lb person 220-440 mg for a 200lb person 270-550 mg for a 250lb person The above doses refer to the total neolignans (usually magnolol plus honokiol), which are usually at 1-10% of a basic bark extract unless otherwise concentrated.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dental Health</a>	 Notable	- <a href="#">See study</a>	An improvement in dental health is noted with gum containing magnolia bark, which outperforms that of Xylitol in regards to reducing acid, plaque, and gum bleeding

Back to: [Supplements](#) | [Health Outcomes](#)

# Manganese

---

Manganese is an essential mineral in the diet that serves primarily as a component of the antioxidant enzyme known as manganese superoxide dismutase.

See [Manganese on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Mangifera indica



Also known as: *Common Mango*

The common mango is thought to be a functional food due to its unique bioactives, most notably mangiferin. Supplements from the leaf also appear to be antioxidants after consumed, but their practical relevance and benefits are not yet confirmed.

See [Mangifera indica on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anti-Oxidant Enzyme Profile</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	
	<a href="#">Food Intake</a>	-	- <a href="#">See study</a>	
	<a href="#">General Oxidation</a>	-	- <a href="#">See study</a>	
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HbA1c</a>	-	- <a href="#">See study</a>	
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	
	<a href="#">Lipid Peroxidation</a>	-	- <a href="#">See study</a>	
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Marijuana

Also known as: *Cannabis Sativa*, *Weed*, *Medical Marijuana*, *Marihuana*, *dope*, *ganja*, *hashish*, *Dronabinol* (medical THC)







Other uses:





















Marijuana is a drug used around the world due to its psychoactive properties. Its major component, known as THC, possesses acute benefits but is subject to rapid tolerance. Additionally, nonpsychoactive components like CBD may have chronic benefits. While therapeutic, the plant is not a panacea.


See [Marijuana on Examine.com](#)





## How to Take



Marijuana is usually inhaled to experience its psychoactive effects but can also be taken orally, sublingually (placed and held under the tongue), or via suppository. The route of consumption will dictate how quickly its effects will be felt with inhalation and suppository acting faster than sublingual or oral consumption. The benefits and side-effects related to marijuana consumption will typically occur at doses large enough to cause a mild to moderate high. The most common dose range used in clinical trials is 2–5 mg per day (although this dose is typically concentrated THC). Most side-effects of marijuana use are associated with frequency, not dosage. Using marijuana more than once a week might result in tolerance. Some people may need to restrict their usage to twice a month to avoid developing a tolerance. Do not increase marijuana doses to overcome tolerance unless directed to do so by a medical professional.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See all 9 studies</a>	A single use in a new user will increase diastolic blood pressure (no real influence on systolic), and this is subject to tolerance. Heavy users will not experience this acute increase anymore and may instead have a decrease in diastolic blood pressure.
	<a href="#">Cerebral Blood Flow</a>	 Minor	- <a href="#">See all 3 studies</a>	Both increases and decreases seem to have been reported over the whole brain, and it seems that in people who do <i>not</i> experience orthostatic hypotension from marijuana it is generally an increase; blood flow to the ACC in particular is increased following THC, but this becomes a decrease during tolerance.
	<a href="#">Heart Rate</a>	 Minor	- <a href="#">See all 10 studies</a>	Similar to the diastolic blood pressure, heart rate modifications are subject to tolerance. New users may experience a reduced heart rate yet increased cardiac output, and heart rate during light exercise may be increased, with chronic users becoming tolerant to these effects.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Motor Control</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Acute usage can reduce motor control and fine coordination, but this appears to be an effect that can be subject to tolerance (with tolerant users not seeing any difference following usage of marijuana).
	<a href="#">Pain</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	There appears to be a reduction in pain associated with the dose of marijuana which confers psychoactive effects.
	<a href="#">Symptoms of Multiple Sclerosis</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	While cognitive symptoms have not yet been found to be treated with marijuana usage, physical symptoms and some parameters secondary to them (fatigue, energy, sleep quality) may be benefited with marijuana usage.
	<a href="#">Relaxation</a>	 Notable	- <a href="#">See study</a>	The dose and time which confer psychoactive effects are associated with reported of relaxation to a larger degree than control.
	<a href="#">Aerobic Exercise</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	It seems that submaximal (light) aerobic exercise performance is not influenced much, but when aerobic exercise is carried to fatigue marijuana usage seems to be associated with less endurance relative to control.
	<a href="#">Dizziness</a>	 Minor	- <a href="#">See study</a>	Dizziness has been reported as a side-effect specifically in users who experience orthostatic hypotension from marijuana; no major influence on dizziness otherwise.
	<a href="#">Ghrelin</a>	 Minor	- <a href="#">See study</a>	An increase in ghrelin has been noted with marijuana usage, likely playing a role in the increase in appetite.
	<a href="#">Incontinence</a>	 Minor	- <a href="#">See study</a>	In a secondary data analysis on subjects with multiple sclerosis, it seems the side effect of incontinence may be reduced with marijuana usage.
	<a href="#">Leptin</a>	 Minor	- <a href="#">See study</a>	An increase in leptin has once been noted with usage of marijuana.
	<a href="#">Lung Function</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	While smoking <i>per se</i> is seen as negative, infusions of THC enhance lung function and acute usage of marijuana as joints seem to confer more benefit to lung function than drawbacks.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Peptide YY</a>	 Minor	- <a href="#">See study</a>	A decrease in serum peptide YY has been noted with marijuana usage, thought to be tied into its interactions with appetite.
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See study</a>	A reduction in reaction time has been noted in acute users of marijuana relative to control. While not directly tested, it is thought that this is attenuated during tolerance.
	<a href="#">Sleep Quality</a>	 Minor	- <a href="#">See study</a>	Secondary to some benefits to physical symptoms in the treatment of multiple sclerosis, sleep quality was noted to be increased relative to placebo.
	<a href="#">Symptoms of Orthostatic Hypotension</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	While not affecting all users, some new users may experience symptoms of orthostatic hypotension associated with a global decrease of blood flow to the brain (rather than the expected increase)
	<a href="#">Working Memory</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Acute working memory is decreased in new users of marijuana while under the influence, but during marijuana tolerance this hindering effect does not appear to persist.
	<a href="#">Attention</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Tolerant users do not experience any attention reduction when inhaling marijuana.
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	Despite alterations in cardiac output and diastolic blood pressure, acute usage of marijuana does not appear to influence the flow of blood relative to control.
	<a href="#">Body Temperature</a>	-	- <a href="#">See study</a>	No significant influence on body temperature.
	<a href="#">Cognition</a>	-	- <a href="#">See study</a>	When used during multiple sclerosis, a general battery of cognitive function does not appear to be greatly influenced (positive or negative) with marijuana therapy.
	<a href="#">Depression</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Depression as a symptom of multiple sclerosis does not appear to be significantly affected by marijuana therapy.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fatigue</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Mixed evidence in regards to physical and mental fatigue in the usage of marijuana for multiple sclerosis, with more studies suggesting the benefits are not statistically significant.
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	Short term marijuana usage does not influence circulating insulin concentrations.
	<a href="#">Irritability</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Irritability as a side effect of multiple sclerosis does not appear to be significantly affected by marijuana therapy.
	<a href="#">Memory</a>	-	- <a href="#">See study</a>	Overall memory formation does not appear to be significantly affected by usage of marijuana.
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	Acute inhalation of marijuana failed to modify grip strength when tested compared to control.
	<a href="#">Intraocular Pressure</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Inhalation of marijuana is able to reduce intraocular blood pressure quite significantly, leading to it being useful in instances of glaucoma.
	<a href="#">Weight</a>	 Minor	- <a href="#">See study</a>	In hospitalized subjects chronic THC has been noted to increase weight; it should be noted this information differs from epidemiological studies on non-hospitalized subjects (either no change or a decrease in weight being observed).
	<a href="#">Breathing Rate</a>	-	- <a href="#">See study</a>	Breathing rate does not appear to be inherently altered with usage of marijuana.
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	There does not appear to be a significant influence of marijuana on urinary cortisol.
	<a href="#">Hydration (Total Body Water)</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	Despite a reduction in endurance (cycling until voluntary failure) the measured VO2 max between groups did not differ.
	<a href="#">Visual Acuity</a>	-	- <a href="#">See study</a>	During treatment of glaucoma with THC, visual acuity did not appear to be hindered.

Back to: [Supplements](#) | [Health Outcomes](#)

# Massularia acuminata

Also known as: *Pako Ijebu, Orin Ijebu*

Massularia Acuminata is a traditionally used herb in Yoruba medicine (Nigeria), used as a chewing stick and aphrodisiac; the chewing stick aspect was researched for being an anti-gingivitis agent, and it appears to increase testosterone and libido in research animals.

See [Massularia acuminata on Examine.com](#)

## How to Take

Based on rat studies, doses of 50mg/kg and 1,000mg/kg appear to increase testosterone while the higher dose is associated with some liver toxicity. Due to this, the estimated human doses based off of 50mg/kg would be: 550mg for a 150lb person 700mg for a 200lb person 900mg for a 250lb person Due to having no human evidence at this moment in time, the above recommendations are naught but estimates.

Back to: [Supplements](#) | [Health Outcomes](#)















# Medium-chain triglycerides

Also known as: MCTs, MCT oil, medium-chain fatty acids

Other uses:

Medium-chain triglycerides are a class of saturated fat composed of fatty acids containing 6-10 carbons. They are found primarily in coconut oil, palm kernel oil, and dairy fat, and they appear to benefit fat loss to a minor extent when consumed in place of other dietary fat.

See [Medium-chain triglycerides on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Metabolic Rate</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Appears to be a short lived and of small magnitude increase in metabolic rate.
	<a href="#">Fat Mass</a>	 Minor	- <a href="#">See study</a>	May decrease fat mass to a greater degree than an isocaloric amount of long chain fatty acids.
	<a href="#">Fat Oxidation</a>	 Minor	- <a href="#">See study</a>	Appears to increase the percentage of calories derived from lipids in obese persons; no comparator.
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	Administration of purified MCTs results in a decrease in HDL-C in diabetics that is minor and likely not practically relevant.
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	May improve insulin sensitivity in diabetics, requires more evidence though as the one study was confounded with fat loss.
	<a href="#">Ketone Bodies</a>	 Minor	- <a href="#">See study</a>	Has been implicated in increasing serum ketones more than other fatty acids.
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	Administering purified MCTs to diabetics results in a non-significant reduction of LDL-C.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	A decrease in total cholesterol (both the LDL and HDL portions) has been noted with purified MCTs to a minor degree, relative to longer chain fatty acids.
	<a href="#">Weight</a>	 Minor	- <a href="#">See study</a>	Appears somewhat effective in reducing weight of obese persons to a greater degree than an isocaloric amount of longer chain fatty acids
	<a href="#">Apolipoprotein A</a>	-	- <a href="#">See study</a>	
	<a href="#">Apolipoprotein B</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	Insufficient evidence to support alterations in blood glucose.
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence detected on fasting insulin levels following coconut oil consumption
	<a href="#">Skeletal Muscle Atrophy</a>		- <a href="#">See study</a>	Was able to attenuate the rate of skeletal muscle loss during a hypocaloric diet in obese persons; unknown if this applies to lean persons and may be related to ketone production.
	<a href="#">Thermic Effect of Food</a>	-	- <a href="#">See study</a>	Insufficient evidence to support alterations in the thermic effect of food compared to other oils
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in serum triglycerides.

# Melatonin











Also known as: *N-Acetyl-5-Methoxytryptamine, Melatonine, Melovine, Melatol, Melatonex, Circadin*

Melatonin is a hormone secreted in the brain that regulates sleep. It appears to be highly sensitive to Light Therapy and Dark Therapy. Oral ingestion of melatonin may be used as a sleep aid. It is non-addictive.

See [Melatonin on Examine.com](#)




















## How to Take

For regulating the sleep cycle, doses of melatonin between 500mcg (0.5mg) and 5mg seem to work. Start with 500mcg, and if it doesn't work, work up to 3-5mg. The benefits of melatonin are not dose-dependent - taking more will not help you fall asleep faster. To help with sleep, take roughly 30 minutes before going to bed. Growth hormone appears to spike slightly better at 5mg than 500mcg, although both doses are fairly effective.






LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insomnia</a>	 Strong	<b>Very High</b> <a href="#">See all 4 studies</a>	Melatonin is the reference drug for insomnia related purposes, and appears to be highly effective at 3mg (time release formulation) or lower concentrations when taken before sleep.
	<a href="#">Plasma Melatonin</a>	 Strong	<b>Very High</b> <a href="#">See all 6 studies</a>	Plasma melatonin is increased at both night and daylight following supplementation of melatonin. Although the degree of increase is a tad unreliable, it seems to always occur and to a fairly large magnitude
	<a href="#">Gastrin</a>	 Notable	<b>High</b> <a href="#">See all 4 studies</a>	There appears to be an increase in serum gastrin levels following ingestion of melatonin in persons with stomach ulceration, this increase is thought to be related to the ulcer healing effects of melatonin
	<a href="#">Stomach Ulcers</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	A notable protective effect against both aspirin and <i>heliobacter pylori</i> induced stomach ulceration is seen with melatonin either alone or with other agents (such as omeprazole) nearing absolute protection in some instances. Although less researched, these may apply to duodenal ulcers as well
	<a href="#">Symptoms of Jet Lag</a>	 Notable	- <a href="#">See study</a>	Insomnia related to jet lag is reliably reduced with melatonin supplementation taken in accordance to the destination's time zone; secondary to better sleep, many other symptoms are reduced

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	An acute decrease in blood pressure occurs following melatonin ingestion, but this decrease is temporary and abolished upon standing; likely not practically relevant in an ambulatory population
	<a href="#">Cancer Mortality</a>	 Minor	- <a href="#">See study</a>	There appears to be a significant protective effect on life in cancer patients with solid tumors, although the protective effect does not reach 'half risk' (RR of 0.50) and fluctuates in the range of quarter risk.
	<a href="#">Leptin</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed influences on leptin, but melatonin may be able to increase leptin levels following acute administration
	<a href="#">Noradrenaline</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	A decrease in noradrenaline appears to reliably occur after melatonin ingestion, but only at rest; this reduction is abolished upon moving
	<a href="#">Sleep Quality</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	An increase in sleep quality can occur following treatment of conditions known to impair sleep quality (insomnia and tinnitus)
	<a href="#">Symptoms of Tinnitus</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Melatonin may reduce symptoms associated with tinnitus in persons who suffer from the state, as assessed by questionnaire
	<a href="#">Adrenaline</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	There do not appear to be any influence of melatonin ingestion on plasma adrenaline, either inherently or from influencing the spike in adrenaline from stress
	<a href="#">Heartburn</a>	 Notable	- <a href="#">See study</a>	A notable decrease in heartburn symptoms occurs after melatonin supplementation, thought to be related to a strengthening of the lower esophageal sphincter
	<a href="#">Lower Esophageal Pressure</a>	 Notable	- <a href="#">See study</a>	Has been noted to increase LES pressure, which is thought to underlie symptoms reduction in GERD
	<a href="#">Symptoms of GERD</a>	 Notable	- <a href="#">See study</a>	Symptoms of GERD, most notably heart burn, are reduced significantly following daily melatonin ingestion at 3mg

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Adiponectin</a>	 Minor	- <a href="#">See study</a>	An increase in adiponectin has been noted following acute ingestion of melatonin
	<a href="#">Alertness</a>	 Minor	- <a href="#">See study</a>	A decrease in alertness has been noted with melatonin supplementation
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on antioxidant enzymes, but there appears to be potential for melatonin to increase their content
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See study</a>	Has been noted to increase blood flow at rest
	<a href="#">Cortisol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed results, a possible increase when measuring whole-day cortisol levels (when taken in the AM) with no augmentation of stress-induced cortisol increases; may reduce cortisol if taken prior to sleep, however
	<a href="#">Dopamine</a>	 Minor	- <a href="#">See study</a>	Serum dopamine has been noted to be slightly reduced (37%) during waking at rest, but this decrease was eliminated upon walking
	<a href="#">Exercise-Induced Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Related to the antioxidative effects, a reduction in exercise-induced oxidation has been noted
	<a href="#">Fibrinogen</a>	 Minor	- <a href="#">See study</a>	An increase in fibrinogen has been noted
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	May decrease biomarkers of oxidation in serum
	<a href="#">Ghrelin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in Ghrelin appears to exist following acute supplementation of melatonin

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Growth Hormone</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Appears to increase circulating levels of growth hormone
	<a href="#">Inflammation</a>	 Minor	- <a href="#">See study</a>	A reduction in inflammatory cytokines is noted with melatonin supplementation
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	An increase in insulin sensitivity has been noted to be secondary to reducing liver fat; an inherent influence on insulin sensitivity is uncertain
	<a href="#">Intraocular Pressure</a>	 Minor	- <a href="#">See study</a>	Oral supplementation of melatonin (500mcg) is able to reduce intraocular pressure in otherwise healthy persons
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A reduction in lipid peroxidation has been noted with melatonin
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	A decrease in liver enzymes has been noted in persons with fatty liver given melatonin supplementation, although not to a remarkable degree
	<a href="#">Memory</a>	 Minor	- <a href="#">See study</a>	An increase in memory retention under periods of stress has been noted
	<a href="#">Muscle Damage</a>	 Minor	- <a href="#">See study</a>	A decrease in muscle damage biomarkers (creatin kinase) has been noted with melatonin supplementation
	<a href="#">Triglycerides</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reduction in triglycerides to a minor degree is noted with melatonin supplementation, but this is not reliable
	<a href="#">Anxiety</a>	-	- <a href="#">See study</a>	No significant influence on state anxiety during stress testing

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Attention</a>	-	- <a href="#">See study</a>	Despite the reduction in alertness, no significant influence on sustained attention tests
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose levels
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant influence on C-reactive protein
	<a href="#">Cerebral Blood Flow</a>	-	- <a href="#">See study</a>	No significant influence on cerebral blood flow rates
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No significant influence on circulating estrogen levels
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influences on HDL-C are noted with melatonin supplementation
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of melatonin on heart rate during waking either at rest or ambulation
	<a href="#">IGF-1</a>	-	- <a href="#">See study</a>	No significant influence on IGF-1 levels
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels noted with melatonin
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant influence on LDL cholesterol is noted with melatonin

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Migraine</a>	-	- <a href="#">See study</a>	No detectable influence of melatonin on migraines that exceeds placebo
	<a href="#">Prolactin</a>	-	- <a href="#">See study</a>	No significant influence on prolactin concentrations
	<a href="#">Resistin</a>	-	- <a href="#">See study</a>	No significant influence on resistin noted
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol levels
	<a href="#">Breast Cancer Risk</a>	-	- <a href="#">See study</a>	Too preliminary to conclude any relation to breast cancer, but urinary melatonin metabolites are positively correlated with breast cancer risk (not applied yet to supplementation)

Back to: [Supplements](#) | [Health Outcomes](#)

# Melissa officinalis











Also known as: *Lemon Balm*, *Melissengeist*, *Bee balm*, *Garden Balm*, *Melissa*, *Erva-cidreira*

Melissa officinalis (Lemon Balm) is a herb/tea traditionally said to induce calmness and improve cognition. It does appear effective at inducing calmness and reducing anxiety, but the cognitive enhancing properties are variable (appears to benefit if stressed, but otherwise it is merely sedative).

See [Melissa officinalis on Examine.com](#)








## How to Take

The lowest active supplemental dose appears to be 300mg, and supplementation above this dose appears to confer dose-dependent effects although it is not very reliable (ie. one study says that 1200mg gives thrice as much benefit as 300mg while another suggests 1.4x benefit) Lemon Balm bioactives may also be consumed via tea or acquired via aromatherapy, although it is much harder to quantify 'the right dose' via these two methods.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Memory</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed influences on memory, with one study noting a decrease in 'total' memory formation and two studies noting improvements in 'quality' of memories formed. There is likely a modulatory effect associated with lemon balm.
	<a href="#">Alertness</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in alertness appears to occur alongside lemon balm ingestion (with or without sedation)
	<a href="#">Calmness</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in self-reported ratings of 'calmness' appears to exist following ingestion of lemon balm single doses
	<a href="#">Symptoms of PMS</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Studies are supportive a notable improvement in symptoms, largely psychological but even physical. However, the current research is of fairly low quality and largely conducted by many of the same authors, thus more research is needed.
	<a href="#">Anxiety</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in anxiety has been noted with lemon balm extract, although not to a remarkable degree



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Processing Speed</a>	 Minor	- <a href="#">See study</a>	A decrease in processing speed appears to occur following lemon balm ingestion, which may be related to the sedation effects
	<a href="#">Stress</a>	 Minor	- <a href="#">See study</a>	A decrease in self-reported stress has been reported with lemon balm
	<a href="#">Attention</a>	-	- <a href="#">See study</a>	Despite the decrease in alertness seen with lemon balm, there does not appear to be any alterations in intentional attention
	<a href="#">Contentment</a>	-	- <a href="#">See study</a>	No significant influence on self-ratings of contentment despite the increase in calmness
	<a href="#">Working Memory</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence appears to exist on working memory associated with lemon balm
	<a href="#">Aggression</a>	 Minor	- <a href="#">See study</a>	A reduction in agitation has been noted with lemon balm in stressed and anxious subjects, perhaps secondary to alleviating anxiety
	<a href="#">Cramps</a>	 Minor	- <a href="#">See study</a>	One study found a small improvement from 1 g of an ethanolic extract compared with placebo. Much more research is needed.
	<a href="#">DNA Damage</a>	 Minor	- <a href="#">See study</a>	A reduction in DNA damage has been noted with lemon balm tea in persons exposed to high levels of radiation
	<a href="#">Fatigue</a>	 Minor	- <a href="#">See study</a>	A decrease in fatigue associated with anxiety has been noted, no research looking at the <i>per se</i> influence of lemon balm on fatigue
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in general oxidation occurs following lemon balm ingestion

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insomnia</a>	 Minor	- <a href="#">See study</a>	A decrease in insomnia has been noted to be to quite a large degree in one open-label trial, but may be secondary to anxiety reduction
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A slight decrease in biomarkers of lipid peroxidation occurs following ingestion of lemon balm
	<a href="#">Relaxation</a>	 Minor	- <a href="#">See study</a>	An increase in self-reports of relaxation occur, which may be related to the increased calmness and sedation ratings also seen
	<a href="#">Depression</a>	-	- <a href="#">See study</a>	One study found somewhat lower depression scores during the premenstrual period as compared with placebo, but it's unclear what the levels were at baseline.

Back to: [Supplements](#) | [Health Outcomes](#)

# Methylsulfonylmethane

Also known as: MSM, dimethyl sulfone, dimethylsulfone











Other uses:


Methylsulfonylmethane (Dimethylsulfone or, more commonly, MSM) is a small DMSO-related sulfur-containing molecule used for its antioxidative and anti-inflammatory properties. It holds potential for joint health (not significantly different than glucosamine sulfate).

See [Methylsulfonylmethane on Examine.com](#)

## How to Take

Supplementation of MSM tends to be taken at up to 3,000mg daily, which seems to be effective for reducing symptoms of osteoarthritis and conferring some antioxidant protection to the body. It is unsure if higher supplemental doses are better than 3,000mg, so sticking to that dose may be prudent.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Exercise-Induced Oxidation</a>	 Notable	- <a href="#">See study</a>	A decrease in exercise induced oxidation is noted with MSM supplementation and thought to be the underlying reason for reductions in muscle damage and soreness. The degree of reduction seems to be notable, as the increase in MDA and protein carbonylation were fully abolished
	<a href="#">Edema</a>	 Minor	- <a href="#">See study</a>	One study that used MSM as a placebo noted that there was an increase in edema relative to baseline; not known why.
	<a href="#">General Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction in oxidative biomarkers has been noted following MSM ingestion
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in exercise-induced lipid peroxidation is noted as assessed by serum MDA
	<a href="#">Muscle Damage</a>	 Minor	- <a href="#">See study</a>	Biomarkers of muscle damage such as creatinine and bilirubin are decreased following exercise with an MSM preload

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscle Soreness</a>	 Minor	- <a href="#">See study</a>	A decrease in muscle soreness has been noted with MSM preloads before exercise
	<a href="#">Protein Carbonyl Content</a>	 Minor	- <a href="#">See study</a>	A decrease in protein carbonylation is noted with MSM supplementation
	<a href="#">Symptoms of Osteoarthritis</a>	 Minor	- <a href="#">See study</a>	A decrease in symptoms of osteoarthritis has been noted and seems to be somewhat comparable in potency to <a href="#">glucosamine sulfate</a>
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	No significant influence on exercise related fatigue
	<a href="#">Pain</a>	-	- <a href="#">See study</a>	No significant influence on pain symptoms in osteoarthritis
	<a href="#">Training Volume</a>	-	- <a href="#">See study</a>	No significant influence on the total training volume able to be conducted
	<a href="#">Allergies</a>	 Minor	- <a href="#">See study</a>	A decrease in pollen-induced allergies has been noted with MSM supplementation, with efficacy within one week
	<a href="#">Nasal Congestion</a>	 Minor	- <a href="#">See study</a>	Decreases upper respiratory symptoms have been noted with MSM supplementation, although not to a remarkable degree.

Back to: [Supplements](#) | [Health Outcomes](#)

# Microlactin

Also known as: *Hyperimmune Milk*

Other uses:


Microlactin (Hyperimmune milk) is a form of milk that is acquired by giving lactating cows immunostimulants, which produces a larger amount of antibodies in their secreted milk. It appears to be effective in reducing symptoms of osteoarthritis and may support the immune system.

See [Microlactin on Examine.com](#)

## How to Take

Microlactin has shown benefit following oral ingestion of both 2,000mg and 9,000mg when taken daily over the course of a few weeks. The optimal dose is currently not known.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	Has been noted to reduce blood pressure in persons with hyperlipidemia
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	A reduction in LDL-C is seen in hyperlipidemics associated with hyperimmune milk consumption
	<a href="#">Pain</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Possible pain reduction associated with reducing symptoms of osteoarthritis, with one study suggesting comparable efficacy to <a href="#">glucosamine</a> sulfate
	<a href="#">Symptoms of Osteoarthritis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to reduce pain symptoms and improve functionality associated with osteoarthritis, with one study suggesting comparable efficacy to <a href="#">glucosamine</a> sulfate
	<a href="#">Total Cholesterol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May be able to reduce total cholesterol by a moderate to low degree (8-10%), but requires more robust evidence
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	Despite reductions in LDL and total cholesterol, there do not appear to be significant influences on HDL-C levels

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on fasting triglycerides noted




Back to: [Supplements](#) | [Health Outcomes](#)

# Milk Protein

Other uses:

Milk protein is a blend of Casein protein and Whey protein, usually in an 80/20 blend. There really is nothing super special about it, but it can be a cheaper way of ingesting Whey and Casein protein when the difference is irrelevant for your goals since processing costs are less.

See [Milk Protein on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Food Intake</a>	 Minor	- <a href="#">See study</a>	Appears to reduce food intake, a phenomena common to all protein sources
	<a href="#">Appetite</a>	-	- <a href="#">See study</a>	Despite the reduction in food intake, no significant influence on perceived appetite



Back to: [Supplements](#) | [Health Outcomes](#)

# Milk Thistle

Also known as: *Marian thistle, Mary thistle, St Mary's thistle, Our Lady's thistle, Holy thistle, Sow thistle, Blessed Virgin thistle, Christ's crown, Venue thistle, Heal thistle, Variegated Thistle, Wild Artichoke, Carduus Marianus, Silybum marianum*

Milk Thistle is a herb that contains a few active ingredients collectively referred to as Silymarins. It is a nice liver therapeutic compound (to be taken after the insult to the liver) and most well known for that, similar in mechanism to TUDCA.

See [Milk Thistle on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Acne</a>	 Notable	- <a href="#">See study</a>	There is a significant decrease in total lesion counts in those who supplement Silymarin daily for at least eight weeks.

Back to: [Supplements](#) | [Health Outcomes](#)



# Minoxidil



Also known as: Rogaine

Commonly known as Rogaine (brand name), Minoxidil is a topical application that enhances hair growth. Less effective in Male Pattern Baldness than 'Bald patches', Minoxidil is the most commonly used topical hair growth compound.

See [Minoxidil on Examine.com](#)

## How to Take

Usage of minoxidil as a topical formulation in the concentration range of 2-5%, with 5% being slightly better than 2% at promoting hair growth. Although oral supplementation technically aids hair growth, it is not advised due to possible complications with blood pressure.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hair Regrowth</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	Topical application of Minoxidil (oral administration as well, but that is associated with more side-effects) appears to be highly effective in increasing the rate of hair regrowth and can reverse hair loss associated with non-androgenic hair loss (bald patch, rather than a receding hair line which is related to androgens)

Back to: [Supplements](#) | [Health Outcomes](#)

# MitoQ

Also known as: {10-(4,5-dimethoxy-2-methyl-3,6-dioxo-1,4-cyclohexadienyl) decyl triphenylphosphonium methanesulfonate}, mitoquinone mesylate

---

MitoQ (mitoquinone mesylate) is a derivative of CoQ10 believed to play a role in mitochondrial function, but without much supporting evidence.

See [MitoQ on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Modafinil

Also known as: 2-[(Diphenylmethyl) sulfinyl]acetamide, Provigil, Modalert, Modapro, Alertex











Other uses:

Modafinil is a prescription medicine for narcoleptics that increases alertness and prevents sleep. It just so happens to also increase cognition and memory, and is a potent and highly regarded supplement in the category of nootropics.










See [Modafinil on Examine.com](#)

## How to Take

Standard dosages are 100-200mg, or perhaps 4mg/kg bodyweight, either taken in a sleep deprived state (if the user desires to not fall asleep) or taken first thing in the morning if the user does not wish to impair sleep.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fatigue</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	Fatigue is notably reduced with modafinil supplementation, particularly during instances of sleep deprivation or hypersomnia.
	<a href="#">Blood Pressure</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	There may be a slight increase in systolic blood pressure with acute usage of modafinil (when measured at its peak blood levels), although it does not appear to modify basal blood pressure values
	<a href="#">Cognition</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Cognition is significantly improved in persons undergoing sleep deprivation or other conditions in which attention processing is highly impaired, while other conditions (cognitive decline or drug dependence) experience minor improvements in cognition that are lesser than those seen in sleep deprivation.
	<a href="#">Reaction Time</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	An improvement in reaction time (decrease) is noted in both healthy and normal persons as well as those undergoing either drug addiction or sleep deprivation. This may be related to the alertness promoting effects of the compound.
	<a href="#">Working Memory</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	An improvement in working memory is noted in most persons tested, even otherwise healthy and nonfatigued controls.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Heart rate and pulse do not appear to be influenced from modafinil supplementation, despite a small increase in systolic blood pressure.
	<a href="#">Sedation</a>	 Strong	<b>Very High</b> <a href="#">See 2 studies</a>	Modafinil (300mg) taken prior to sleep is as potent as 20mg D-amphetamine in reducing the need to sleep and improving cognitive performance during intentional sleep deprivation. Occasionally, this potency manifests itself as the 'side-effect' of insomnia in some persons who take it in the AM
	<a href="#">ADHD in Children</a>	 Notable	- <a href="#">See study</a>	Modafinil appears to be able to reduce symptoms of ADHD in children when taken as a daily preventative at the lowest active dose
	<a href="#">Subjective Well-Being</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Subjective well being and enjoyment during cognitive tasks appears to be significantly improved modafinil supplementation, and this is notable as it has been noted to occur in otherwise healthy persons taking modafinil for nootropic purposes
	<a href="#">Alcohol Dependence</a>	 Minor	- <a href="#">See study</a>	Alcohol dependence, particularly the impulsivity thereof, appears to be slightly reduced with modafinil administration
	<a href="#">Alertness</a>	 Minor	- <a href="#">See study</a>	An increase in alertness has been reported in persons using modafinil supplementation.
	<a href="#">Appetite</a>	 Minor	- <a href="#">See study</a>	Modafinil appears to be able to reduce appetite, and 'loss of appetite' is a common side-effect of modafinil supplementation.
	<a href="#">Attention</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There appears to be somewhat of an increase in subjective attention with modafinil secondary to its arousal promoting effects
	<a href="#">Impulsivity</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Modafinil can decrease impulsivity in studies assessing addiction, although it appears to only significantly affect those with higher baseline impulsivity (more impulsive at the start of the study) rather than all persons.
	<a href="#">Memory</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Memory (usually studies investigate short term) appears to be beneficially influenced with modafinil supplementation, possible secondary to the improvements in working memory and attention.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Motivation</a>	 Minor	- <a href="#">See study</a>	Motivation to complete a cognitive task appears to be improved in persons supplementing modafinil.
	<a href="#">Processing Accuracy</a>	 Minor	- <a href="#">See study</a>	There is a possible improvement in processing accuracy with supplementation of modafinil.
	<a href="#">Symptoms of Multiple Sclerosis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Memory impairment in multiple sclerosis may be attenuated with supplementation of modafinil (250mg armodafinil), although other cognitive impairments associated with MS do not appear significantly affected.
	<a href="#">Calmness</a>	-	- <a href="#">See study</a>	There do not appear to be any significant influences on self-reported ratings of calmness with supplementation of modafinil.
	<a href="#">Processing Speed</a>	-	- <a href="#">See study</a>	There does not appear to be a significant influence on processing speed, with some evidence suggesting a possible reduction thereof.
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	There is currently no evidence to suggest a significant reduction of weight associated with modafinil, although as a trend to reduce weight has been noted alongside appetite reduction it is thought that modafinil could have a role in weight control.

Back to: [Supplements](#) | [Health Outcomes](#)

# Molybdenum

---

Molybdenum is an essential mineral. It is vital for the function of several enzymes, but is easily obtained through the diet. Molybdenum deficiencies are virtually unheard of, and there are no benefits to high doses, making supplementation unnecessary.

See [Molybdenum on Examine.com](#)

## How to Take

Molybdenum supplementation is not recommended because there is no evidence to support any benefits from supplementation, deficiencies are extremely rare, and molybdenum is easily obtained through the diet. More research is needed to determine if long-term supplementation is safe. For this reason, molybdenum doses should not exceed 50 $\mu$ g (0.05mg).

Back to: [Supplements](#) | [Health Outcomes](#)

# Moringa oleifera











Also known as: *Moringa pterygosperma*, Ben Oil Tree, Horse Radish Tree, Tree of Life, Miracle Tree, Drumstick Tree, Jiksna gandha, Akshiva, Mochak, Sahijan, Zogale








Moringa oleifera is an economically important tree and vegetable, and preliminary evidence suggests that it has a respectable antioxidant and antiinflammatory potency. It contains compounds structurally similar to sulforaphane and appears to be protective when orally ingested.

See [Moringa oleifera on Examine.com](#)

## How to Take

There is not a lot of human evidence at this point in time, but the majority of animal evidence uses rats as the models and uses a water extract of the leaves. When those conditions are met, it appears that 150-200mg/kg oral intake is deemed as optimal in these animal models. It is important to note that due to differences in rodent/ human biochemistry, it is often difficult to directly extrapolate human equivalent dose-response on a mg/kg basis. The human studies currently in existence have used either 500mg of the leaf extract or 3 grams of the seeds.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Milk Production</a>	 Notable	- <a href="#">See study</a>	When 250mg of <i>moringa oleifera</i> is taken twice daily, there is a time dependent increase in milk production; the lone study noted that the increase relative to placebo on the third day of supplementation was to 265% of placebo (a 165% increase).
	<a href="#">Asthma</a>	 Minor	- <a href="#">See study</a>	Non-allergic asthmatic symptoms were reduced in a pilot study using the seeds of <i>moringa oleifera</i>
	<a href="#">Blood Glucose</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a decrease in postprandial blood glucose following a meal in type II diabetics (21%), and this hypoglycemia may apply to non-diabetics based on rodent research, and appears to increase with time.
	<a href="#">HbA1c</a>	 Minor	- <a href="#">See study</a>	The reduction of HbA1c noted is minor, from 7.8% down to 7.4% with 90 days supplementation of the leaf extracts
	<a href="#">Lung Function</a>	 Minor	- <a href="#">See study</a>	Respiratory capacity (as assessed by breath testing) in persons with nonallergic asthma (most of whom were smokers) appears to be enhanced following supplementation of the seeds of Moringa

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Skin Moisture</a>	 Minor	- <a href="#">See study</a>	Topical application of a 3% moringa leaf cream for three winter months appeared to increase skin hydration status relative to control cream.
	<a href="#">Wrinkles</a>	 Minor	- <a href="#">See study</a>	Application of a 3% moringa leaf cream for three winter months in young adult males appeared to reduce visual wrinkles on the cheeks relative to control cream.
	<a href="#">Insulin Secretion</a>	-	- <a href="#">See study</a>	The hypoglycemic properties of this supplement do not appear to be related to an increase in insulin secretion from the pancreas following a meal
	<a href="#">Lymphocyte Count</a>	-	- <a href="#">See study</a>	No significant alterations in Lymphocyte count following continued supplementation of the seeds of <i>Moringa oleifera</i>
	<a href="#">White Blood Cell Count</a>	-	- <a href="#">See study</a>	No significant alterations in white blood cell count following ingestion of the seeds of <i>Moringa oleifera</i>

Back to: [Supplements](#) | [Health Outcomes](#)



# Morus alba



Also known as: *White Mulberry*, *Karayamaguwa*, *Sohakuhi*, *Sang-Bai-Pi*, *Ramulus Mori*

Morus Alba (White Mulberry) is a plant where both the fruit and roots have been used traditionally for vitality and immune support; it may have cognitive enhancing properties (mostly unexplored) and anti-cancer effects.

See [Morus alba on Examine.com](#)

## How to Take

For the purpose of reducing carbohydrate absorption and glucose spikes following a meal, morus alba must be consumed alongside said carbohydrate source. The dosage appears to be 500-1,000mg/kg in rat studies (assuming about a 0.11% 1-deoxynojirimicin content) which is an estimated human dose of: 5,400-11,000mg for a 150lb person 7,300-14,500mg for a 200lb person 9,000-18,000mg for a 250lb person Concentrated extracts may reduce the above requirement, so a 10:1 concentrated extract (for the 1-deoxynojirimicin content) would then require 900-1,800mg at the heaviest weight. For inflammation and other health related issues (such as uric acid), the rat dose appears to be in the range of 20-200mg/kg which is an estimated human dose of: 220-2,200mg for a 150lb person 300-2,900mg for a 200lb person 400-3,600mg for a 250lb person

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Melasma</a>	 Minor	- <a href="#">See study</a>	A decrease in symptoms of melasma and subsequent improvement of skin quality has been noted with mulberry oil dissolved in <a href="#">coconut oil</a> relative to coconut oil itself, topical application

Back to: [Supplements](#) | [Health Outcomes](#)

# Mucuna pruriens









Also known as: Velvet Bean, Cowitch, Werepe, Karara, Agbara













Mucuna Pruriens, or Velvet Bean, is a bean that grows from trees and is very itchy to touch due to serotonin on its surface. It is a good source of L-DOPA, and contains some other molecules that may aid the benefits of L-DOPA. The other psychoactives in Mucuna are dosed too low to be relevant.

See [Mucuna pruriens on Examine.com](#)

## How to Take

Supplement-wise, 5g of Mucuna Pruriens dried powder has been used with efficacy in some human studies on Parkinson's Disease and Fertility. This dose or doses upwards of it should be a good starting point. If your supplement is standardized for L-DOPA and you are supplementing for an effect attributed to L-DOPA, then start with about 1/2 the L-DOPA equivalent and work up if needed (this is due to the same amount of L-DOPA in Mucuna being more bioactive relative to isolated L-DOPA without carbidopa). Mucuna Pruriens can be eaten isolated as a food product, but cooking is required to destroy trypsin inhibitors in the beans (so protein absorption is not hindered) yet cooking also destroys L-DOPA. Some supplements use the cotyledon of Mucuna Pruriens, which may have different nutrient profiles relative to the bean or whole root.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sperm Quality</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be an increase in seminal quality and oxidative parameters following 3-month ingestion of Mucuna pruriens, which is thought to be secondary to correcting the hypothalamic-pituitary-testes axis
	<a href="#">Symptoms of Parkinson's Disease</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Possible symptoms reduction in Parkinson's Disease related to the L-DOPA content and theorized (but not proven) peripheral dopamine decarboxylase inhibitor; this is notable as a L-DOPA and carbidopa combination supplement is the reference for reducing parkinson's symptoms
	<a href="#">Adrenaline</a>	 Minor	- <a href="#">See study</a>	The decrease in adrenaline seen in infertility is normalized with mucuna
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	In chronically stressed men, prolonged ingestion of mucuna pruriens appears to be able to reduce cortisol concentrations

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dopamine</a>	 Minor	- <a href="#">See study</a>	The reduction in dopamine seen in infertility seems to be reversed with L-DOPA ingestion; theoretically L-DOPA ingestion should unilaterally increase dopamine
	<a href="#">Noradrenaline</a>	 Minor	- <a href="#">See study</a>	The reduction in noradrenaline levels seen in infertility is normalized following mucuna ingestion
	<a href="#">Prolactin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in prolactin appears to occur following Mucuna or L-DOPA ingestion
	<a href="#">Seminal Motility</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in seminal motility is observed following mucuna ingestion
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	An increase in well being has been noted to be secondary to a reduction in cortisol
	<a href="#">Testosterone</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in testosterone is seen in infertile men. It is unsure if this increase in testosterone occurs in fertile and otherwise healthy men

Back to: [Supplements](#) | [Health Outcomes](#)

# Muirapuama

Also known as: Potency Wood

Muirapuama (Marapuama, Potency Wood) is a traditionally used aphrodisiac and nerve tonic in the Brazil region. Lacking in quality human trials and sexuality trials, it appears to be quite effective as a cognitive enhancer.

See [Muirapuama on Examine.com](#)

## How to Take

The recommended oral dose of muirapuama appears to be 1000-1500mg of a 4:1 concentrated extract (equivalent to 4,000-6,000mg of the basic extract). It is unsure if this is the optimal dose or whether it needs to be taken with a meal. 100-300mg/kg appears to be the active range for anti-stress and anxiolytic effects in rats, which converts to an estimated human equivalent of: 1,100-3,300mg for a 150lb person 1,500-4,400mg for a 200lb person 1,800-5,500mg for a 250lb person These are currently the recommended intakes as the higher end of the recommendation is similar to what is recommended to humans that appears to be effective.

Back to: [Supplements](#) | [Health Outcomes](#)

# Music

*Also known as: Audio*

*Other uses:*

---

Music, in this sense, actually refers to the audio perception from your favorite songs, remixes, or renditions. It can affect the brain significantly, and vicariously through that may influence the body. Euphoria or de-stressing to tunes should be evidence of this.

See [Music on Examine.com](#)

## How to Take

Loud and to your liking, but not enough to destroy your ear drums.

Back to: [Supplements](#) | [Health Outcomes](#)

# Myricetin

*Also known as: 3,3',4',5,5',7-hexahydroxyflavone*

---

One of the many bioflavonoids, usually investigated as being more involved with anti-osteoporotic effects and bone health than other flavonoids like Kaempferol or Quercetin.

See [Myricetin on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)














# N-Acetylcysteine

Also known as: N-Acetyl Cysteine, NAC, N-Ac

Other uses:






N-Acetylcysteine (NAC) is a prodrug for L-cysteine, which is used for the intention of allowing more glutathione to be produced when it would normally be depleted. Through glutathione buffering, NAC provides antioxidative effects and other benefits.

See [N-Acetylcysteine on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Treatment of COPD</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	N-Acetylcysteine may reduce some symptoms of COPD by acting as a mucolytic agent and reducing sputum formation, but it does not appear to be effective at aiding the lungs themselves or reducing disease progression.
	<a href="#">Symptoms of Autism</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Notable	- <a href="#">See study</a>	NAC supplementation is able to reliably increase glutathione concentrations in cells specifically
	<a href="#">Lipofuscin</a>	 Minor	- <a href="#">See study</a>	A decrease in red blood cell (RBC) lipofuscin content has been seen, which is thought to be secondary to reducing lead toxicity and increasing antioxidative defenses
	<a href="#">Mineral Bioaccumulation</a>	 Minor	- <a href="#">See study</a>	NAC supplementation appears to reduce lead bioaccumulation in red blood cells, although the magnitude is statistically significant it is not overly large
	<a href="#">Nicotine Addiction</a>	 Minor	- <a href="#">See study</a>	After about two weeks of 2,400mg NAC supplementation, cigarette usage appears to be reduced voluntarily by around 25%.
	<a href="#">Treatment of Trichotillomania</a>	 Minor	- <a href="#">See study</a>	Preliminary evidence suggests a 31-45% reduction in hair pulling symptoms in persons with trichotillomania when supplementing with 1,200-2,400mg NAC for twelve weeks.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	
	<a href="#">Anxiety</a>	-	- <a href="#">See study</a>	
	<a href="#">Depression</a>	-	- <a href="#">See study</a>	
	<a href="#">Irritability</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Lung Function</a>	-	- <a href="#">See study</a>	
	<a href="#">Neutrophil Activity</a>	-	- <a href="#">See study</a>	
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	
	<a href="#">Subjective Well-Being</a>	-	- <a href="#">See study</a>	
	<a href="#">Symptoms of OCD</a>	-	- <a href="#">See study</a>	
	<a href="#">Acne</a>	 Notable	- <a href="#">See study</a>	There is a significant reduction of total lesion counts in those who supplement N-Acetylcysteine for at least two months.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cocaine Addiction</a>	 Minor	- <a href="#">See study</a>	Self-reported cravings for cocaine during one day of withdrawal appear to be significantly reduced following 12 hours (although acute cravings after 2 hours of supplementation are not affected); this lasts for 24 hours after cessation.
	<a href="#">Marijuana Addiction</a>	 Minor	- <a href="#">See study</a>	Supplementation of 2,400mg appears to reduce symptoms of marijuana addiction, although the reductions in symptoms are not overly prominent based on the limited evidence so far.
	<a href="#">Urinary NOx</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Nardostachys jatamansi

Also known as: *Spikenard*, *Jatamansi*, *Muskroot*, *Nardostachys grandiflora* (synonym)

Nardostachys jatamansi (Jatamansi) is a supposedly calming herb from Ayurveda that has been used for anticonvulsive and antiepileptic properties. It may enhance learning in youth and neuroprotective properties (needs human evidence) and is protective against pancreatitis.

See [Nardostachys jatamansi on Examine.com](#)

## How to Take

Studies in rodents tend to use 250-500mg/kg of the basic root extract, which is an estimated human dose of: 2,700-5,400mg for a 150lb person 3,600-7,200mg for a 200lb person 4,500-9,000mg for a 250lb person These are estimated human dosages based on rat studies, as it is currently not known if these are optimal human dosages.

Back to: [Supplements](#) | [Health Outcomes](#)

# Nattokinase








Also known as: Natto extract, subtilisin NAT, Orokinase, NSK-SD







Nattokinase is one of many enzymes derived from the food product Nattō (boiled soybeans fermented by the bacteria *Bacillus subtilis*) and appears to have some direct fibrinolytic activity (fibrin degrading). It is thought to reduce the risk of cardiovascular events, but is fairly underresearched.

See [Nattokinase on Examine.com](#)

## How to Take

There is not enough evidence to suggest the optimal dose of oral nattokinase, but studies in humans tend to use around 500mg or 5,000 FU (Fibrinolysis Units) daily, usually divided into two separate doses taken with meals. Nattō itself can be used, and some anti-clotting effects have been noted with 12g of nattō daily over 2 weeks.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	A possible blood pressure reducing effect seen with nattokinase, notable but with high variability
	<a href="#">Renin Activity</a>	 Minor	- <a href="#">See study</a>	In hypertensive persons, there is a decrease in renin activity seen with nattokinase ingestion
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C levels
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant influence on LDL cholesterol
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes noted

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol seen with supplementation
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides
	<a href="#">Factor VII</a>	↓ ↓ ↓ Minor	- <a href="#">See study</a>	Factor VII (involved in blood clotting) has been noted to be reduced with nattokinase ingestion
	<a href="#">Factor VIII</a>	↓ ↓ ↓ Minor	- <a href="#">See study</a>	Factor VIII (involved in blood clotting) appears to be reduced following nattokinase ingestion
	<a href="#">Fibrinogen</a>	↓ ↓ ↓ Minor	- <a href="#">See study</a>	A decrease in fibrinogen appears to exist following nattokinase ingestion
	<a href="#">Fibrinolysis</a>	↑ ↑ ↑ Minor	- <a href="#">See study</a>	The rate of degradation of fibrin appears to be enhanced slightly following nattokinase ingestion

Back to: [Supplements](#) | [Health Outcomes](#)

# Nefiracetam




Also known as: DM-9384, N-(2,6-dimethylphenyl)-2-(2-oxopyrrolidine-1-yl)-acetamide

Nefiracetam is a nootropic compound of the racetam family with similarities to Aniracetam. It seems to enhance both GABAergic and cholinergic signalling, and long term usage appears to be both neuroprotective and nootropic in research animals (similar trends in human studies).

See [Nefiracetam on Examine.com](#)

## How to Take

Supplementation of nefiracetam appears to be in the 150-450mg range over the course of a day (usually divided into three even doses). Animal studies using acute doses tend to note most benefits in the 3-10mg/kg range, and this correlates to a human dose of 0.48-1.6mg/kg (for a 150lb person, 33-110mg) which is similar to the aforementioned human doses. Although single doses of nefiracetam do not appear to promote cognition, it is able to affect the brain within 30-60 minutes following oral ingestion. It is not certain whether nefiracetam needs to be taken prior to cognitive training.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Apathy</a>	-	- <a href="#">See study</a>	
	<a href="#">Depression</a>	-	- <a href="#">See study</a>	
	<a href="#">Stroke Recovery Rate</a>	-	- <a href="#">See study</a>	No significant influence on the recovery rates from stroke has been noted.

Back to: [Supplements](#) | [Health Outcomes](#)

# Nelumbo nucifera

*Also known as: Sacred Lotus, Indian Lotus, Bean of India*

*Other uses:*

---

Nelumbo Nucifera (a flower commonly called Indian Lotus or Sacred Lotus) is sometimes used in Asiatic dishes. It is high in phenolics and may be anti-depressant and anti-diabetic; no human studies.

See [Nelumbo nucifera on Examine.com](#)

## How to Take

Not enough information is currently known to suggest an optimal dosage of Nelumbo Nucifera for the purpose of supplementation.

Back to: [Supplements](#) | [Health Outcomes](#)

# Nicotine





Other uses:

Nicotine is the main stimulatory compound found in cigarettes and is now sold in vaporizers and patches in isolation. It works on the acetylcholine system, and is implicated in cognitive enhancement.

See [Nicotine on Examine.com](#)

## How to Take

Nicotine can be administered via several methods (excluding cigarettes, which are not recommended due to risks greatly exceeding benefits): An inhaler, which lets you rapidly feel the effects of nicotine (and inherently carries more risk than other forms due to the speed at which it works) Topical patches, which have about a 1 hour delay between application and absorption and maintain constant serum levels of nicotine but with less cognitive spike (least risk potential, least nootropic potential) Chewing gums, which are sort of an intermediate between the two There is currently insufficient evidence to suggest an 'optimal dose' of nicotine for non-smoking individuals. For non-smoking individuals, it would be prudent to follow stimulant usage guidelines and start with a low dose and work up. This includes buying 2mg gums or cutting a 24mg nicotine patch into quarters to start, then work up to what is seen as the minimum effective dose. There is currently no established 'threshold' for when risk becomes too great as it varies between individuals. If using nicotine as Nicotine Replacement Therapy (to curb smoking cravings), then following the instructions on the product is sufficient. These instructions may be excessive for a non-smoking individual.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	<b>Moderate</b> <a href="#">See all 4 studies</a>	Mixed effects on blood pressure
	<a href="#">Insulin Sensitivity</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Long term insulin sensitivity does not appear to be highly affected, but acutely nicotine exposure can reduce insulin sensitivity
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See 2 studies</a>	Reduced anxiety symptoms have been noted in persons with cognitive decline, where anxiety was relieved as a symptoms of cognitive decline. In otherwise healthy persons prone to anxiety attacks, nicotine may be able to cause them.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	 Minor	- <a href="#">See study</a>	An improvement in cognition has been noted in persons with mild cognitive impairment
	<a href="#">Growth Hormone</a>	 Minor	- <a href="#">See study</a>	An acute suppression of growth hormone has been noted with nicotine to a small degree
	<a href="#">Heart Rate</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in heart rate is present after nicotine ingestion due to the stimulatory properties
	<a href="#">Luteinizing Hormone</a>	 Minor	- <a href="#">See study</a>	An increase in luteinizing hormone has been noted
	<a href="#">Memory</a>	 Minor	- <a href="#">See study</a>	An increase in memory has been noted with ingestion of nicotine in persons with mild cognitive impairment
	<a href="#">Metabolic Rate</a>	 Minor	- <a href="#">See study</a>	Chewing gum containing nicotine can increase the metabolic rate in a dose-dependent manner (3.7-4.9% with 1-2mg nicotine) when measured for the 180 minutes following 20 minutes of chewing.
	<a href="#">Penile Girth</a>	 Minor	- <a href="#">See study</a>	A decrease in penile girth in the flaccid state is noted, which is thought to be secondary to reduced blood flow
	<a href="#">Prolactin</a>	 Minor	- <a href="#">See study</a>	An increase in prolactin has been noted with nicotine ingestion
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See study</a>	A decrease in reaction time is noted with acute nicotine ingestion
	<a href="#">Weight</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible minor weight reducing effects occur in interventions using nicotine, but they are highly unreliable and likely mediated by lesser food intake rather than inherent fat burning effects



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence on fasting glucose levels
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant influence on cortisol levels
	<a href="#">Depression</a>	-	- <a href="#">See study</a>	No significant influence on depressive symptoms
	<a href="#">Fat Oxidation</a>	-	- <a href="#">See study</a>	When nicotine increases metabolic rate, there is no change in rates of fat or glucose oxidation.
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels
	<a href="#">Libido</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There do not appear to be any significant interactions with nicotine and libido
	<a href="#">Self-Control</a>	-	- <a href="#">See study</a>	No significant influence on self control and inhibitions
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No significant influence on testosterone levels
	<a href="#">Attention</a>	-	- <a href="#">See study</a>	No significant influence on attention in otherwise healthy persons

# Nigella sativa

Also known as: *Nigella cretica*, *Black cumin*, *Black seeds*, *Roman coriander*, *Nutmeg flower*, *Fennel flower*, *Ajaji*









Other uses:

Nigella sativa (Black Cumin) is a medicinal spice that appears to be active in the dose used to season food products. It has a potent bioactive known as thymoquinone which shows promise in treating epilepsy, allergies, and boosting the immune system.

See [Nigella sativa on Examine.com](#)













## How to Take










Supplementation of the seeds of nigella sativa usually use the basic seed extract (a crushed powder of the seeds with no further processing or concentration) or the seed oil, both of which do not require a large degree of processing as the medicinal dosage is close to the raw product's natural state. While 1 gram of the seed tends to always underperform relative to 2-3 grams, there is not sufficient evidence to suggest which of those two higher doses is 'better' and thus something within that range is recommended. As the seeds are about a quarter to one third fatty acids (ie. the seed oil) then supplementation of any black seed oil product would be 3-4 times lower than the aforementioned range (giving a recommended range of 250-1,000 mg daily).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	The reduction in blood pressure is only seen in hypertensives and very mild (1-3mmHg), likely not practically relevant at all.
	<a href="#">LDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	Reductions in LDL-C are mild at best and only occur in persons with impaired lipid profiles (high cholesterol or dyslipidemia), but they do appear to occur with ingestion of the seed extract
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	Decreases have been sporadically noted in persons with high cholesterol initially, the cholesterol reductions are mild at best and do not affect persons with normal cholesterol.
	<a href="#">Triglycerides</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	The decreases in triglycerides only affect those with high triglycerides, and the decrease scales with severity of hyperlipidemia (mild elevation of TGs is met with a 1-5% decrease, significantly elevated TGs are met with a 15-20% reduction).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	One study has noted weight loss, but due to the reduction in appetite and no records of food intake the possibility of subjects losing weight due to eating less cannot be ruled out. Other studies have failed to find an influence of treatment.
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	Mild increases have been reported in some cases, but for the most part <i>nigella sativa</i> does not influence HDL cholesterol in the active dosage range.
	<a href="#">Liver Enzymes</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	There may be a reducing effect in instances of liver damage (this curative effect needs to be explored more), and there are no alterations in liver enzymes that would be indicative of liver damage.
	<a href="#">Allergies</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Supplementation of the seed appears to beneficially influence most symptoms associated with allergies and most causes of the allergies (rhinitis, eczema, asthma, etc.), with the magnitude being somewhat notable among supplements.
	<a href="#">Subjective Well-Being</a>	 Notable	- <a href="#">See study</a>	Although only based on one study, in men with central obesity and a wide variety of general health complaints supplementation has outright abolished all measured complaints such as loss of libido, high appetite, pain, and forgetfulness.
	<a href="#">Appetite</a>	 Minor	- <a href="#">See study</a>	The side-effect of 'high appetite' was effectively abolished in men with central obesity, which may underlie the observed weight loss; food intake was not reported in this study.
	<a href="#">Attention</a>	 Minor	- <a href="#">See study</a>	Attention processing on trail making tests appears to be increased.
	<a href="#">Cognition</a>	 Minor	- <a href="#">See study</a>	A slight improvement in cognition has been noted with supplementation of nigella seed extract in older persons
	<a href="#">Memory</a>	 Minor	- <a href="#">See study</a>	There appears to be a small but respectable (15-20% higher than baseline) improvement in logical memory and 30 minute recall in older subjects supplementing the seeds in their daily lifestyle.
	<a href="#">Nasal Congestion</a>	 Minor	- <a href="#">See study</a>	Nasal congestion as a side-effect of allergic rhinitis is slightly reduced following the treatment of rhinitis with <i>nigella sativa</i> seeds

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pain</a>	 Minor	- <a href="#">See study</a>	Pain as a side-effect of rheumatoid arthritis is modestly reduced.
	<a href="#">Processing Speed</a>	 Minor	- <a href="#">See study</a>	Trail making test time in older adult men appears to be reduced modestly with daily supplementation of nigella seed extract
	<a href="#">Pulmonary Function</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	While the magnitude of benefit has not yet been compared to reference drugs, <i>nigella sativa</i> extracts appear to benefit lung function in both asthmatics and persons with otherwise damaged lung function; no studies in otherwise healthy persons.
	<a href="#">Seizure Frequency</a>	 Minor	- <a href="#">See study</a>	Seizure frequency in children with poorly controlled epilepsy is significantly reduced with a seed extract, and while it was quite notable in some children it was variable enough to also be quite modest in others. Needs more research to assess potency.
	<a href="#">Serum Albumin</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	An increase in serum albumin has been noted, and the reason for this currently unknown.
	<a href="#">Symptoms of Rheumatoid Arthritis</a>	 Minor	- <a href="#">See study</a>	A modest reduction in symptoms of rheumatoid arthritis (9%) has been noted with ingestion of the seeds
	<a href="#">Adiponectin</a>	-	- <a href="#">See study</a>	No significant influence on adiponectin concentrations
	<a href="#">Bilirubin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Despite treating the viral load of hepatitis C, no significant changes in serum bilirubin exist.
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	Although the best evidence to date shows no change in blood glucose, these studies were not structured to assess the influence on diabetics; in diabetics, there appears to be a significant reduction in glucose.
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	The alterations in C-reactive protein failed to reach statistical significance, but are otherwise not very well explored.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatinine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on serum creatinine
	<a href="#">Food Intake</a>	-	- <a href="#">See study</a>	No significant alterations in food intake associated with ingestion of <i>nigella sativa</i> .
	<a href="#">Free Testosterone</a>	-	- <a href="#">See study</a>	No significant influence on circulating free testosterone concentrations in men with central obesity
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influence on heart rate or pulse rate.
	<a href="#">Processing Accuracy</a>	-	- <a href="#">See study</a>	No significant improvements in the accuracy of cognitive processing appears to occur with supplementation of <i>nigella sativa</i> seeds.
	<a href="#">Proteinuria</a>	-	- <a href="#">See study</a>	No significant influence on the rate of proteinuria, suggesting no kidney damage associated with supplementation.
	<a href="#">Uric Acid</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No statistically significant alterations in uric acid concentrations in serum
	<a href="#">Working Memory</a>	-	- <a href="#">See study</a>	Despite improvements in logical memory and 30 minute recall, digit span tests are not affected by supplementation of <i>nigella sativa</i> .
	<a href="#">Viral Load</a>	 Notable	- <a href="#">See study</a>	A pilot study in hepatitis C noted that the viral load was reduced to 38.6% of baseline with a modest dosage of the seed oil, a fairly drastic reduction.
	<a href="#">Asthma</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Asthmatic symptoms appear to be reduced with supplementation of <i>nigella sativa</i> seeds, in part due to benefits to lung function and in part due to its anti-allergic properties. Potency has not been adequately assessed

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HbA1c</a>	 Minor	- <a href="#">See study</a>	A mild decrease in HbA1c has been noted in diabetics given the seeds as an adjuvant to standard therapy
	<a href="#">Immunity</a>	 Minor	- <a href="#">See study</a>	Macrophage phagocytic activity and killing potential is increased following oral ingestion of the seed extract.
	<a href="#">Red Blood Cell Count</a>	 Minor	- <a href="#">See study</a>	A normalization of RBC count has been noted in the treatment of hepatitis C with the seed oil of <i>nigella sativa</i>
	<a href="#">White Blood Cell Count</a>	 Minor	- <a href="#">See study</a>	A normalization of WBC count has been noted in persons with hepatitis C being treated with the seed oil.
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant alterations in cortisol concentrations seen with supplementation of the seeds.

Back to: [Supplements](#) | [Health Outcomes](#)

# Nitrate

Also known as: Beetroot extract











Other uses:

Inorganic nitrate (NO<sub>3</sub><sup>-</sup>) is an endogenously produced food product that appears to have a critical role in blood pressure and cardiovascular health management; the main ingredient in beet root, nitrate converts to nitric oxide by various means independent of the NOS enzyme and may aid exercise.

See [Nitrate on Examine.com](#)

## How to Take

The optimal dosage of nitrate supplementation tends to be 0.1-0.2mmol/kg (or 6.4-12.8mg/kg), which is the range of: 440-870mg for a 150lb person 580-1,160mg for a 200lb person 730-1,450mg for a 250lb person Supplementation of nitrates via beet root is equally feasible, and beet root itself is dosed according to its nitrate content. A randomized controlled trial noted that a single 2g dose of commercially available amaranth (red spinach) extract can increase nitrate levels for up to 8 hours.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Notable	<b>Moderate</b> <a href="#">See all 7 studies</a>	Appears to be a fairly potent blood pressure reducing agent during periods of high blood pressure (at rest during disease states or during exercise in healthy persons) without having a reducing effect when blood pressure is normalized. There may be no effect on people on hypertensive medications, though.
	<a href="#">Plasma Nitrate</a>	 Strong	<b>Very High</b> <a href="#">See all 3 studies</a>	Nitrate ingestion strongly and fairly reliably increases plasma nitrate and nitrite.
	<a href="#">Anaerobic Running Capacity</a>	 Notable	- <a href="#">See study</a>	The increase in performance on a sprint test appeared to be fairly significant, and pending more evidence nitrates may be a reference comparator.
	<a href="#">Oxygenation Cost of Exercise</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A notable reduction in the oxygenation cost of exercise associated with nitrate supplementation.
	<a href="#">Aerobic Exercise</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The performance enhancing aspect of nitrate supplementation in prolonged aerobic exercise is less than that seen in shorter duration cardiovascular exercise, and is only somewhat effective for longer periods.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Exercise Performance During Hypoxia</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to preserve exercise performance during insufficient oxygen, but not to a remarkable degree
	<a href="#">Rate of Perceived Exertion</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May reduce the rate of perceived exertion in some instances (prolonged cardiovascular exercise), but is not highly reliable.
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	No significant influence on blood flow in studies that use flow-mediated vasodilation
	<a href="#">Cognitive Decline</a>	-	- <a href="#">See study</a>	Short-term supplementation failed to restore cognitive decline in older persons, no evidence as to whether nitrate exerts a preventative effect.
	<a href="#">Functionality in Elderly or Injured</a>	-	- <a href="#">See study</a>	No significant influence has been noted on functional tests in elderly persons given nitrate supplementation
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Does not appear to significantly influence heart rate
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No significant observed effects on insulin sensitivity.
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	No significant effect on acute power output

Back to: [Supplements](#) | [Health Outcomes](#)



# Noopept



Also known as: *N-phenylacetyl-L-prolylglycine ethyl ester, Noopeptide, Ноопепт, GVS-111*

Noopept is the brand name for N-phenylacetyl-L-prolylglycine ethyl ester, a Nootropic molecule similar to Piracetam. Noopept may alleviate cognitive decline.

See [Noopept on Examine.com](#)

## How to Take

To supplement Noopept, take 10 – 30 mg, once a day, for up to 56 days at a time. More research is needed to determine the optimal human dose for Noopept.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rehabilitation of Cerebral Trauma</a>	 Notable	- <a href="#">See study</a>	The one trial with Noopept suggests surprisingly effective rehabilitative effects, outperforming Piracetam as comparator.

Back to: [Supplements](#) | [Health Outcomes](#)

# Nutmeg

Also known as: *Myristica Fragrans*

---

Nutmeg is a spice believed to benefit libido, the nervous system, the digestive system, and blood circulation.

See [Nutmeg on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)



# Octopamine

Also known as: Norsynephrine, p-hydroxyphenylethanolamine,  $\beta$ -hydroxytyramine, Norphen, Norsympatol, norfenefrine

Other uses:

A metabolite of synephrine, Octopamine is a stimulant compound that is also thought to have minor fat burning effects. Banned by WADA due to its stimulatory properties, the direct fat burning claims may not be relevant and are effectively untested in humans.

See [Octopamine on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Incontinence</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be mild benefit in stress incident female incontinence with thrice daily dosing of octopamine between 15-30mg, with up to a quarter of subjects reporting full continence from supplementation.

Back to: [Supplements](#) | [Health Outcomes](#)

# Oleamide

Also known as: *Cerebrosdiene*

---

Oleamide is a derivative of Oleic Acid (major omega-9 fatty acid form Olive Oil) with a nitrogen group, and appears to be naturally associated with sleep; injections induce sleep and activate the same receptors as Marijuana.

See [Oleamide on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Oleylethanolamide

Also known as: OEA, NOPE (a precursor)

Oleylethanolamide (OEA) is a molecule produced in the body, usually found in the intestines. It is responsible for the feeling of satiety after meals. Further research is needed to determine if oral supplementation of OEA provides benefits for weight loss.

See [Oleylethanolamide on Examine.com](#)

## How to Take

Research on rats has observed effects at a daily dose of 10mg/kg of bodyweight. This is roughly equivalent to the following human dosages: 100mg for a 150lb person 145mg for a 200lb person 180mg for a 250lb person

Back to: [Supplements](#) | [Health Outcomes](#)

# Olive Oil

Also known as: *EVOO (Extra-Virgin Olive Oil)*

Other uses:

---

Olive oil is an oil derived from olives and is used for cooking. Like many cooking oils, it contains a variety of bioactive molecules beyond oleic acid (its fatty acid), such as squalene, and is seen as one of the healthier cooking oils for foods with moderate smoke points.

See [Olive Oil on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Olive leaf extract

Also known as: Olive polyphenols











Other uses:









Olive leaf extract comes from the leaves of olive plants, and is distinct from olive oil; the leaf extract contains phenolics such as oleuropein, and appears to have highly protective effects against LDL oxidation and may also benefit glucose metabolism and skin health.

See [Olive leaf extract on Examine.com](#)









## How to Take

Supplemental olive leaf is taken in the 500-1000 mg range daily, although supplements with even as low as 10 mg (as seen in olive oil products) may confer good protection against LDL oxidation. At least for LDL oxidation, olive food products may suffice rather than supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Notable	<b>High</b> <a href="#">See all 4 studies</a>	One study assessing the potency in hypertensive persons noted it was comparable to Captopril, and olive leaf appears to be potent when it can reduce blood pressure. It does not appear to reduce blood pressure in normotensive persons, however
	<a href="#">Oxidation of LDL</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	The decrease in LDL oxidation seen with olive oil phenolics appears to be of notable potency due to its reliability (occurring in both healthy persons and diseased persons, chronically and acutely) and a reduction in LDL oxidation rates can exceed 25% in some studies with low intakes of olive phenolics (enough from virgin olive oil consumption)
	<a href="#">HDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See all 7 studies</a>	The increase in HDL seen with olive phenolics is somewhat inconsistent and not to a large magnitude when it occurs
	<a href="#">LDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	A decrease in LDL-C seems to be somewhat consistent, but the magnitude of decrease is not overly impressive relative to other agents
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	There appears to be somewhat of a decrease in total cholesterol (mostly due to LDL) with olive leaf consumption; it is not overly reliable

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	The majority of the evidence suggests that there is no impressive effect on triglycerides with olive phenolic consumption
	<a href="#">Cell Adhesion Factors</a>	 Notable	- <a href="#">See study</a>	A decrease was noted in CD40 and MCP1 adhesion factors, and this is notable as this downregulation was dose-dependently related to ingested tyrosol/hydroxytyrosol and may explain the reduced LDL oxidation
	<a href="#">DNA Damage</a>	 Notable	- <a href="#">See study</a>	The one study to measure DNA damage (via 8-oxo-dGF as a biomarker) noted up to 50% reductions in mitochondrial and urine measurements; a fairly significant reduction.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to induce the activity of the enzyme known as glutathione peroxidase
	<a href="#">Blood Glucose</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There appears to be significant interactions with olive leaf and diabetes, and research is too preliminary to come to conclusions. Olive leaf may reduce blood glucose in diabetics only
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	Is able to reduce oxidative parameters in the blood when they are measured.
	<a href="#">HbA1c</a>	 Minor	- <a href="#">See study</a>	A minor decrease in HbA1c has been noted with olive leaf consumption
	<a href="#">IGF Binding Protein</a>	 Minor	- <a href="#">See study</a>	An increase in IGF binding proteins has been noted in one study (which would sequester and reduce the activity of IGF hormones); potency of this interaction unable to be determined (no reference drug)
	<a href="#">Insulin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease of fasted and postprandial insulin with olive leaf consumption has been noted, not to a remarkable degree
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	An increase in insulin sensitivity has been noted in otherwise healthy persons (Matsuda Index and oral glucose tolerance test) and thought secondary to the pancreas; may be relevant to otherwise healthy persons



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lipid Peroxidation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to reduce biomarkers of lipid peroxidation.
	<a href="#">IGF-1</a>	-	- <a href="#">See study</a>	No significant influence on circulating IGF-1 nor IGF-2 levels
	<a href="#">Inflammation</a>	-	- <a href="#">See study</a>	No significant effects on biomarkers of inflammation when measured
	<a href="#">Liver Enzymes</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on liver enzymes have been noted in trials that assess them (safety reasons)
	<a href="#">Weight</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Overall, there does not appear to be a significant effect of olive phenolic consumption on weight
	<a href="#">Carbohydrate Absorption</a>	 Minor	- <a href="#">See study</a>	There appears to be a decrease in either the rate or overall amounts of carbohydrate absorption seen with olive leaf consumption

Back to: [Supplements](#) | [Health Outcomes](#)

# Ophiopogon japonicus

Also known as: *Dragon's Beard*, *Mondo grass*, *Fountain plant*, *Monkey grass*

---

Ophiopogon japonicus is an evergreen perennial used in traditional Chinese medicine mostly for the treatment of cardiovascular complications and inflammation.

See [Ophiopogon japonicus on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Origanum vulgare



Also known as: *Oregano*, *Oil of Oregano*, *Wild Marjoram*

Origanum vulgare (Oregano) is a spice. Its essential oil component, oil of oregano, is sold as an immune booster. The oil has various antimicrobial properties and can preserve food quality during storage. Human evidence for supplementation is lacking.

See [Origanum vulgare on Examine.com](#)

## How to Take

The only study on using oil of oregano for oral supplementation used a dose of 600mg. To make tea, steep 15g of oregano leaves in 250mL of water. The tea is traditionally used to aid digestion, while the oil has antibacterial properties that may boost the immune system. Both the tea and oil is usually supplemented once a day.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Intestinal Parasites</a>	 Notable	- <a href="#">See study</a>	One lone study (potential financial influence) has noted ablation of parasites in infected humans (77% of study group) and a reduction otherwise as assessed by stool samples.

Back to: [Supplements](#) | [Health Outcomes](#)

# Ornithine

Also known as: L-Ornithine







Ornithine is one of the three amino acids involved in the Urea cycle, alongside L-Arginine and L-Citrulline; this amino acid appears to reduce elevated ammonia levels when supplemented, and preliminary evidence suggests an ergogenic role due to this.

See [Ornithine on Examine.com](#)

## How to Take

Ornithine supplementation (as hydrochloride) is taken in the range of 2-6g daily. Most studies use a dose in this range, but despite serum levels being somewhat dose dependent there is a chance of intestinal distress at doses above 10g. Most studies use Ornithine hydrochloride (Ornithine HCl) which appears to be effective. Ornithine HCl is 78% Ornithine by weight, and so for the 2-6g range an equivalent dose for L-Ornithine L-Aspartate (50% Ornithine) would be 3.12-9.36g and an equivalent dose for L-Ornithine  $\alpha$ -ketoglutarate (47% Ornithine) would be 3.3-10g. These two forms are theoretically more effective, but lack sufficient comparative testing.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Heart Rate</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	For the most part there is no significant effect, although one trial did note that after exercise during a recovery period ornithine had a higher heart rate. The reason for this is not known
	<a href="#">Ammonia</a>	 Minor	- <a href="#">See 2 studies</a>	Although supplementation of Ornithine is recommended to reduce ammonia (which it appears to do in both models of hepatic encephalopathy and prolonged physical exercise) at least one study noted that for short term strenuous exercise ornithine caused an increase in ammonia
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	Increases have been noted with intravenous ornithine (not in human trials table) while decreases have been noted following treatment of hangovers. The most practical study of using ornithine as a preworkout supplement failed to find any effect
	<a href="#">Fatigue</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction in fatigue has been noted for both prolonged exercise, hepatic pathology, and for hangovers; all situations characterized by excessive ammonia concentrations in the blood.
	<a href="#">Sleep Quality</a>	 Minor	- <a href="#">See study</a>	The increase in sleep quality was secondary to reducing the adverse effects of excessive drinking, and was measured by self-report

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Urea</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects, but it appears that when ammonia is decreased that urea is also increased but if ammonia is unchanged whatever reason for this also means that urea is unchanged.
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	Performance during short term cardiovascular exercise (assessed by time to exhaustion) does not appear to be significantly affected.
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant interactions with blood pressure
	<a href="#">Oxygen Uptake</a>	-	- <a href="#">See study</a>	Oxygen uptake during exercise does not appear to be significantly altered
	<a href="#">Training Volume</a>	-	- <a href="#">See study</a>	No significant influence on the amount of work that can be conducted on a cycle ergometer during short-term testing

Back to: [Supplements](#) | [Health Outcomes](#)

# Orthosiphon stamineus




Also known as: Java, Misai kucing, Kumis kucing, cats whiskers, rau meo, cay bac, remujung, moustaches de chat, yaa nuat maeo

Orthosiphon stamineus (Java or Cat's Whiskers) is a plant whose leaves make a health tea, used mostly for its antiinflammatory and urinary health properties. It appears to be a large source of both rosmarinic acid and methylated flavonoids.

See [Orthosiphon stamineus on Examine.com](#)

## How to Take

There is not enough information to get an ideal dose, but at this moment it seems that a 70% ethanolic extract would be the most prudent supplemental dosage for the production of leptin in the body. Since this has been noted in a highly variable range (as low as 20mg/kg in mice, as high as 450mg/kg in rats) it is uncertain what the best oral dose to take would be. Nonetheless, human equivalents for the above range are: 110-4,900 mg for a 150lb person 150-6,500 mg for a 200lb person 180-8,100 mg for a 250lb person The diuretic effect has been noted with tea, and thus brewing a tea from the leaves may be sufficient.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Diuresis</a>	-	- <a href="#">See study</a>	Despite both traditional usage and rat studies, the lone study assessing the diuretic effects of 10g of the fresh leaves has failed to find any effect.
	<a href="#">Skin Quality</a>	 Notable	- <a href="#">See study</a>	The lone study in women with oily skin noted that improvements in skin quality with a 2% <i>orthosiphon</i> cream were greater than the reference drug of 1% zinc gluconate on all parameters.

Back to: [Supplements](#) | [Health Outcomes](#)

# Oxaloacetate

*Also known as: OAA, 3-carboxy-3-oxopropanoic acid*

---

Oxaloacetate is an intermediate of the Krebs' cycle that binds to acetyl-CoA in the formation of citrate. A depletion of oxaloacetate relative to acetyl-CoA is the key step for the production of ketone bodies within the liver.

See [Oxaloacetate on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Oxiracetam










Also known as: 4-hydroxy-2-oxo-pyrrolidinoacetamide, ISF-2522

Oxiracetam is one of the three first-tier racetam compounds, being produced after both Piracetam and Aniracetam. Oxiracetam appears to enhance the release of excitatory neurotransmitters and can aid in memory formation, but lacks human studies.


See [Oxiracetam on Examine.com](#)

## How to Take

Supplementation of Oxiracetam tends to be in the dosage range of 1,200-2,400mg taken over the course of a day, either in two to three evenly spread dosing periods (such as three doses of 400mg or 800mg). No studies have assessed whether or not oxiracetam would benefit from being taken with a meal, but it should be taken approximately one hour prior to a learning activity.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognitive Decline</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Appears to reliably reduce the cognitive decline and related symptoms seen in dementia and other organic brain deterioration states, with particular efficacy towards verbal skill in doses above 1,200mg
	<a href="#">Memory</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Although it has mechanisms and animal evidence to support improvements in memory in healthy youth, all human studies are currently in those with cognitive decline
	<a href="#">Quality of Life</a>	 Minor	- <a href="#">See study</a>	The one study to measure subjective quality of life in persons with dementia found a significant improvement with supplementation
	<a href="#">Verbal Fluency</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to favor improvements in verbal fluency in persons with cognitive dementia, despite benefiting most parameters measured
	<a href="#">Functionality in Elderly or Injured</a>	-	- <a href="#">See study</a>	The one study to note functional capabilities in persons with dementia given oxiracetam failed to find a significant treatment effect



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Alzheimer's</a>	-	- <a href="#">See study</a>	The lone study in persons with Alzheimer's rather than organic cognitive decline has failed to find any benefit associated with supplementation

Back to: [Supplements](#) | [Health Outcomes](#)

# Oxytropis falcate

Also known as: *Edaxia*, *Locoweed* (in reference to the Genus)

---

Oxytropis Falcate (Edaxia) is a herb deemed the 'King of Herbs' in Tibetan medicine, but despite its acclaim it is highly underresearched. Appeared to have potential potent painkilling effects and contains phenethylamines.

See [Oxytropis falcate on Examine.com](#)

## How to Take

Not enough evidence currently exists to recommend dosages for human usage

Back to: [Supplements](#) | [Health Outcomes](#)

# PRL-8-53







Also known as: *Methyl 3-(2-(benzyl(methyl)amino)ethyl)benzoate*

PRL-8-53 is a synthetic supplement with potential benefits for short term memory. More evidence is needed for its effects, since all current evidence comes from a study funded by the patent holder.

See [PRL-8-53 on Examine.com](#)

## How to Take

More evidence is needed to determine the ideal dosage for PRL-8-53. The effective dosage may vary, since the only human study on PRL-8-53 used a single dose of 5mg, while patent information on PRL-8-53 suggests a dosage range of 0.01-4mg/kg, with an 'ideal' range of 0.05-1.2mg/kg.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Memory</a>	 Notable	- <a href="#">See study</a>	The lone study noted mild increases in memory (14%) bordering on statistical significance in high performers on a word recollection test, with higher performances in subjects over the age of 30 regardless of initial performance (108-152% increase over placebo performance) and in poor performers (87.5-105%).
	<a href="#">Working Memory</a>	 Minor	- <a href="#">See study</a>	Memory acquisition appears to be mildly increased in the range of 18-31% in persons with poorer performance on a word recollection memory test, but is not improved in high performers.
	<a href="#">Motor Control</a>	-	- <a href="#">See study</a>	Supplementation of 5mg PRL-8-53 has failed to improve hand motor control following supplementation.
	<a href="#">Reaction Time</a>	-	- <a href="#">See study</a>	The dose of PRL-8-53 that improves memory formation does not appear to have any significant influence on reaction time.

Back to: [Supplements](#) | [Health Outcomes](#)

# Paederia foetida

Also known as: *Prasarini, Akar Sekuntut, Gandhali*

Other uses:

Paederia foetida (Prasarini) is a herb traditionally used for some aspects of male vitality. It is currently not well studied, but shows typical antioxidative and antiinflammatory properties with one study suggesting testosterone increasing properties.

See [Paederia foetida on Examine.com](#)

## How to Take

Not enough evidence exists to support an optimal human dose.

Back to: [Supplements](#) | [Health Outcomes](#)

# Palmatine

---

Palmatine is one of the main four protoberberine alkaloids (alongside Berberine) and is commonly found in plants that confer berberine, such as *Berberis Aristata* and *Tinospora cordifolia*.

See [Palmatine on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Panax ginseng

Also known as: True Ginseng, Ginseng, Panax, Mountain Ginseng, Wild Ginseng











Other uses:

Panax Ginseng is commonly referred to as the 'True Ginseng' (being the most researched 'Ginseng' actually belonging to the plant family of 'Ginseng') and appears to be effective for mood, immunity, and cognition; subpar for erections, testosterone, and exercise.

See [Panax ginseng on Examine.com](#)

## How to Take


Panax Ginseng tends to be taken in doses of 200 to 400mg daily for general 'preventative' medicine, although some studies on the inclusion of Panax Ginseng in a multivitamin suggest doses as low as 40mg might be bioactive. The 400mg dose appears to confer most cognitive benefit. These doses refer to standard 'Ginseng Extract' which is around 2-3% total Ginsenosides, and is a once daily dosage. Trials using Korean Red Ginseng extract for erectile health and libido enhancement tend to use 3g of total KRG extract daily, in three doses of 1000mg.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	<b>Moderate</b> <a href="#">See all 10 studies</a>	A decrease in fasting blood glucose has been noted over time with standard supplemental doses of panax ginseng in diabetics, with this dose being ineffective in altering the blood glucose of non-diabetics; high (20g) doses may acutely reduce blood glucose in healthy persons
	<a href="#">Cognition</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	An increase in cognition is seen acutely and thought to be due to anti-fatigue effects, with nonfatigued individuals not experiencing an increase in cognitive performance
	<a href="#">Erections</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	An improvement in erectile dysfunction is seen with 3g of Korean Red Ginseng (fermented panax ginseng, regular panax ginseng not as well tested) which is thought to be secondary to anti-fatigue effects and improved blood flow
	<a href="#">Subjective Well-Being</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	There appears to be an increase in well being and happiness in persons who either have a disease state treated (ie, better glycemic control in diabetes or less erectile dysfunction) and this may also apply to acute usage of 400mg panax ginseng during acute mental stress. In an unstressed and healthy person, panax ginseng is unlikely to have benefit
	<a href="#">Symptoms of Menopause</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	May decrease some symptoms associated with menopause, mostly related to libido, but this is unreliable.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Although there may be a slight blood pressure reducing effect in persons with the highest blood pressure, overall there is not a significant reducing effect of panax ginseng
	<a href="#">Insulin Sensitivity</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	More evidence than not suggests no significant improvement in insulin sensitivity, although it is still a minor possibility
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in all three main antioxidant enzymes (SOD, glutathione peroxidase, and catalase) appear to occur to a small degree following ingestion of Panax ginseng
	<a href="#">Blood Flow</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in blood flow has been noted with panax ginseng supplementation
	<a href="#">Calmness</a>	 Minor	- <a href="#">See study</a>	Has been noted to improve self-reported calmness
	<a href="#">DNA Damage</a>	 Minor	- <a href="#">See study</a>	Can decrease the rates of DNA damage noted in lymphocytes, which may be related to the anticancer effects of panax ginseng
	<a href="#">Depression</a>	 Minor	- <a href="#">See study</a>	Anti-depressive effects may be secondary to reducing menopausal symptoms
	<a href="#">Endothelial Function</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible increase in endothelial reactivity is noted with panax ginseng supplementation
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	Oxidation in the body appears to be reduced, which is thought to be secondary to induction of antioxidant enzymes
	<a href="#">HDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase HDL-C levels, seems unreliable in doing so

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HbA1c</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reduction in HbA1c, but small in magnitude and unreliably seen
	<a href="#">Inflammation</a>	 Minor	- <a href="#">See study</a>	A decrease in IL-6 concentrations has been noted
	<a href="#">LDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May reduce LDL-C levels to a very small degree, seems unreliable in doing so
	<a href="#">Lactate Production</a>	 Minor	- <a href="#">See study</a>	A decrease in lactate has been noted one hour into training in heat, with no significant influence prior to one hour
	<a href="#">Libido</a>	 Minor	- <a href="#">See study</a>	May increase libido as a side-effect of reducing the symptoms associated with menopause, may not work inherently in youth or men
	<a href="#">Muscle Damage</a>	 Minor	- <a href="#">See study</a>	A decrease in biomarkers of muscle damage (creatine kinase) has been noted 72 hours after exercise in which panax ginseng was preloaded
	<a href="#">Oxidation of LDL</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reducing effect on the oxidation of LDL, secondary to reduction of oxidation in general; however, this appears to be unreliable
	<a href="#">Reaction Time</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on reaction time, with a possible decrease occurring
	<a href="#">Sleep Quality</a>	 Minor	- <a href="#">See study</a>	Has been noted to improve the first-night effect (impaired sleep when sleeping in a new location) after a week of supplementation; possibly of interest to frequent travellers
	<a href="#">Testosterone</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase testosterone in infertile men, has also failed in fertile men to influence testosterone; likely a mere antioxidative effect in damaged testicles



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible cholesterol reducing effect, but appears unreliable
	<a href="#">Vaccine Augmentation</a>	 Minor	- <a href="#">See study</a>	Has been noted to increase the antibody response to vaccinations when taken prior
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	Insufficient evidence to support a role of panax ginseng in improving exercise performance
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on C-reactive protein levels
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No significant influence on estrogen levels in women
	<a href="#">Fat Oxidation</a>	-	- <a href="#">See study</a>	Rates of fat oxidation during exercise appear unchanged
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influence on heart rate
	<a href="#">Insulin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fasting insulin levels seen with panax ginseng
	<a href="#">Oxygenation Cost of Exercise</a>	-	- <a href="#">See study</a>	No significant influence on oxygen uptake during exercise
	<a href="#">Prolactin</a>	-	- <a href="#">See study</a>	No significant influence on prolactin in men

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	No significant influence on the rate of perceived exertion during exercise
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in triglycerides and fatty acids in the fasted state or during exercise
	<a href="#">Weight</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Does not appear to have any weight reducing properties, although it has been reported in one study secondary to improving the glycemic profiles of diabetics
	<a href="#">Colorectal Cancer Risk</a>	 Notable	- <a href="#">See study</a>	More than a halving of the risk of colorectal cancer has been noted with panax ginseng daily ingestion
	<a href="#">Ovarian Cancer Risk</a>	 Notable	- <a href="#">See study</a>	More than a halving of ovarian cancer risk has been associated with daily panax ginseng ingestion
	<a href="#">Overall Cancer Risk</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Has been associated with over half the risk of all tested forms of cancer, possibly confounded with a healthy lifestyle in general (as the study in question did not exert many controls)
	<a href="#">Pancreatic Cancer Risk</a>	 Notable	- <a href="#">See study</a>	More than a halving of pancreatic cancer risk has been noted with panax ginseng
	<a href="#">Cognitive Decline</a>	 Minor	- <a href="#">See study</a>	A decrease in symptoms associated with cognitive decline has been noted

Back to: [Supplements](#) | [Health Outcomes](#)

# Patchouli



Also known as: *Pogostemon cablin*, Patchouly, Patchy

Pogostemon cablin, also known as patchouli, is an herb used in aromatherapy and perfumes. It is being investigated for its potential anti-viral and anti-inflammatory properties.

See [Patchouli on Examine.com](#)

## How to Take

The standard dose for patchouli supplementation is based off of animal doses. Approximately 40mg/kg of bodyweight of patchouli, given to rats, is associated with anti-depressant effects. This translates to the following human dosages: • 440mg for a 150lb person • 580mg for a 200lb person • 730mg for a 250lb person A dose of 40-80mg/kg of bodyweight, given to mice, is associated with an anti-flu effect. The estimated human dose equivalent is 3.2-6.4mg/kg of bodyweight.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">CNS activity</a>	 Minor	- <a href="#">See study</a>	The decrease in CNS activity was not overly remarkable with Patchouli aromatherapy

Back to: [Supplements](#) | [Health Outcomes](#)

# Paullinia cupana

Also known as: *Guarana*, *Guaraná*, *Brazilian cocoa*

---

Paullinia cupana, also known as guarana, is a seed that contains more caffeine than coffee beans. It is supplemented for its stimulatory properties.

See [Paullinia cupana on Examine.com](#)

## How to Take

To supplement guarana, take 50 – 75mg once a day, before noon. Two divided dose of 50 mg (once after waking up and once shortly after noon) can also be used, for a total daily dose of 100 mg.

Further study is needed to determine the optimal guarana dose. Guarana is not recommended to be used at night because it contains caffeine and has other stimulatory properties.

Back to: [Supplements](#) | [Health Outcomes](#)

# Pedalium murex

Also known as: *Dakhani Gokhru, Bada Gokhru, Large caltrops, Yenugu palleru*

Other uses:

Pedalium Murex is a herb traditionally used alongside Tribulus Terrestris for male enhancement and urinary/genital health. It has minimal evidence, but appears to have similar bioactivities as Tribulus (although one study suggests Pedalium increases testosterone).

See [Pedalium murex on Examine.com](#)

## How to Take

There is insufficient human evidence to recommend an appropriate dose, but 200mg/kg of the ethanolic fruit extract appears to be effective in rats. This is an estimated human dose of 32mg/kg and thus: 2,200mg for a 150lb person 2,900mg for a 200lb person 3,600mg for a 250lb person It is not known if these are optimal dosages for humans due to lack of testing.

Back to: [Supplements](#) | [Health Outcomes](#)

# Pelargonidin

*Also known as: Strawberry Anthocyanins*

---

Pelargonidin is one of the six anthocyanin compounds, and is both the simplest in structure and is red. It is commonly associated with strawberries, although it is present in all berries. Seems to have its bioactivity saved by Quercetin.

See [Pelargonidin on Examine.com](#)

## How to Take

There is insufficient evidence to recommend pelargonidin as an isolated supplement, and it would be more beneficial to get this anthocyanin through food products in the red pigmentation range; strawberries are the largest known source.

Back to: [Supplements](#) | [Health Outcomes](#)

# Pelargonium sidoides









Also known as: African Geranium, South African Geranium, Kaloban EPs7630, EPs 7630, Umckaloabo, rabas






Pelargonium sidoides, also known as African geranium, is a plant-derived pharmaceutical used to treat acute bronchitis. It may also act as an immune system booster, and provide alleviate symptoms of the common cold and herpes.

See [Pelargonium sidoides on Examine.com](#)






## How to Take

To supplement Pelargonium sidoides, take the patented extract EPS7630, which is an 11% ethanolic root extract. The extract is concentrated to 1:8-10, so there is some variability with the recommended dosages. To supplement the extract, take 4.5mL of the tincture (30 drops) or 30 mg of the capsules. Dosages vary by age: • 10 drops (1.5mL) or 10mg of EPs7630 is taken thrice daily before meals for those under six years of age • 20 drops (3.0mL) or 20mg of EPs7630 is taken thrice daily before meals for those between six and twelve • 30 drops (4.5mL) or 30mg of EPs7630 is taken thrice daily before meals for those above twelve years of age While the vast majority of studies have used EPs7630 specifically, any hydroalcoholic (water and ethanol) extraction equal to 800mg of the plant can be used as an alternative.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Acute Bronchitis</a>	 Strong	<b>Very High</b> <a href="#">See all 11 studies</a>	The standard dose of EPs7630 appears to greatly reduce all symptoms of acute bronchitis, being able to outright eliminate symptoms in as little as 60% of patients (cough and hoarseness related) and up to 95% of persons (sputum and rhonchi related) with efficacy within three days increase over two weeks.
	<a href="#">Cough</a>	 Minor	<b>Very High</b> <a href="#">See all 12 studies</a>	Symptoms of cough, <i>in the context of acute bronchitis</i> , are reduce in most subjects with around 50-60% of subjects reporting remission. There isn't an improvement in other lung disorders though, so this is more reflective of treatment of acute bronchitis.
	<a href="#">Lung Function</a>	 Minor	<b>Very High</b> <a href="#">See all 10 studies</a>	Secondary to treating sickness (bronchitis, URIs, common cold) there is improvement in sputum content, rhonchi, breathing, coughing, and chest pain while coughing relative to placebo; while the improvements are marked, they only occur secondary to treating illness.
	<a href="#">Treatment of Headaches</a>	 Minor	<b>Very High</b> <a href="#">See all 10 studies</a>	Headaches as a side effect of acute bronchitis are pretty much abolished with the treatment of acute bronchitis from this herb; it is doubtful that headaches from other causes aside from sickness are treated in a similar manner.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fever</a>	 Notable	<b>High</b> <a href="#">See all 9 studies</a>	Fever as a side effect of acute bronchitis is reduced quite potently (80-90% of persons reporting elimination of fever) due to the potent treatment of acute bronchitis, but there is no inherent anti-pyretic effect of this herb in other instances.
	<a href="#">Nasal Congestion</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Nasal congestion appears to be decreased with supplementation of this herb, and while this is noted in acute bronchitis (most potently) it also affects other bacterial or viral instances such as the common cold and acute rhinosinitus.
	<a href="#">Rhonchi</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	Rhonchi (coarse rattling sound associated with mucus in the airway, similar to wheezing and crackles) appears to be eliminated in more than 90% of persons (with bronchitis) using the standard dose of this supplement within a week.
	<a href="#">Fatigue</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	Fatigue as a side-effect of acute bronchitis is reduced quite respectably relative to placebo.
	<a href="#">Subjective Well-Being</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Alongside improvements in sickness comes improved well being and vitality associated with supplementation over placebo.
	<a href="#">Immunoglobulin A</a>	 Notable	- <a href="#">See study</a>	The decrease in Immunoglobulin A noted with exercise in one study in marathon runners (60% relative to baseline) was reversed to a large increase (194% relative to baseline) when measured after exercise.
	<a href="#">Symptoms of the Common Cold</a>	 Notable	- <a href="#">See study</a>	All symptoms appear to be reduced with treatment of the standard dose of EPs7630. With symptom reduction after five days and the amount of persons with full resolution of symptoms being more than doubled relative to placebo.
	<a href="#">Appetite</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be an increase in appetite during sickness in those given this supplement, and surprisingly this may not be limited to acute bronchitis.
	<a href="#">Asthma</a>	 Minor	- <a href="#">See study</a>	In children with upper respiratory tract infections <i>and</i> asthma, the amount of asthmatic attacks during sickness appears to be slightly but significantly reduced relative to placebo.
	<a href="#">Exercise-Induced Immune Suppression</a>	 Minor	- <a href="#">See study</a>	Although rates of sickness were not assessed, the alterations in the cytokine/immunoglobulin profile (increase in Immunoglobulin A, suppressing of IL-6 and IL-15) suggest less immunosuppression from exercise.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nausea</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Nausea as a side-effect of acute bronchitis may be reduced, although studies assessing nausea/vomiting outside of acute bronchitis have failed to find an effect despite the subjects being sick.
	<a href="#">Severity of Sickness</a>	 Minor	- <a href="#">See study</a>	In children with upper respiratory tract infections (URTIs), supplementation is effective in reducing symptom severity.
	<a href="#">Aerobic Exercise</a>	-	- <a href="#">See study</a>	There are no improvements in running performance in otherwise healthy athletes given this supplement for one month

Back to: [Supplements](#) | [Health Outcomes](#)

# Peppermint









Also known as: *Menthol*, *Mentha piperita*, *Mentha balsamea*

Peppermint (*Mentha piperita*) is a hybrid plant that is used for its sensory properties (aroma and taste) and the oil is used internally as a carminative and intestinal aid. It appears to be well supported for relaxing the stomach and intestines, and effectively reduces abdominal pain in IBS.





See [Peppermint on Examine.com](#)

## How to Take

Oral supplementation of peppermint oil for the purpose of gastrointestinal health and motility involves consuming anywhere between 450-750mg of the oil daily in 2-3 divided doses, and this is around 0.1-0.2mL of the oil itself per dosage. The exact optimal dosage of peppermint is not known, and the numbers reflect a menthol content somewhere between 33-50%. Usage of peppermint for the treatment of headaches involves having a solution of 10% peppermint oil and applying a relatively thin layer to the front of your head upon the start of a headache, with another application after 15 minutes and 30 minutes (for three applications in total). Usage of peppermint for aromatherapy does not follow any particular dosing, and similar to other forms of aromatherapy it should be used as either an oil or in a diffuser until a pleasant aroma permeates the vicinity. Any form of peppermint oil should be effective although for persons who experience heartburn (acid reflux) and wish to supplement with peppermint oil for their intestines, then an enteric coated capsule would be useful (since the muscle relaxing effects may affect the esophagus if the capsule breaks prematurely).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Irritable Bowel Syndrome</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	In persons with IBS, supplementation of peppermint oil appears to reliably and effectively reduce abdominal pain for as long as it is taken. Benefits are no longer seen two weeks after supplement cessation and abdominal pain is the only symptom notably reduced.
	<a href="#">Nausea</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	There appears to be interactions with peppermint as aromatherapy and reducing nausea, but the best evidence at this point in time is mixed and with some faults. More research is needed to see the potential role of peppermint aromatherapy in nausea reduction
	<a href="#">Treatment of Headaches</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Preliminary evidence suggests that topical application of peppermint oil is effective in reducing tension headache severity when applied at the start of the headache (can work within 15 minutes), and is comparable to 1,000mg acetaminophen in potency
	<a href="#">Colonic Tension</a>	 Minor	- <a href="#">See study</a>	Supplementation of peppermint oil four hours prior to a colonoscopy eases tension in the colon and aids reduces complaints associated with treatment.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Flatulence</a>	 Minor	- <a href="#">See study</a>	Flatulence as a side-effect of IBS is reduced with ingestion of peppermint oil
	<a href="#">Irritability</a>	 Minor	- <a href="#">See study</a>	Irritability as a side-effect of tension headaches is reduced secondary to the treatment of tension headaches
	<a href="#">Nipple Cracks</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Topical application of peppermint oil or water appears to be more effective than placebo in alleviating nipple cracks in breastfeeding women
	<a href="#">Pain</a>	 Minor	- <a href="#">See study</a>	Pain has been noted to be reduced in instances where pain is associated with tightened intestinal tissue (ie. during a colonoscopy) or during tension headaches. No inherent analgesic effect is known
	<a href="#">Rate of Gastric Emptying</a>	 Minor	- <a href="#">See study</a>	A slight increase in the rate of gastric emptying is noted with peppermint oil, which is thought to be of benefit to persons with GERD
	<a href="#">Subjective Well-Being</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Although mood state during cognitive testing is unaffected, quality of life is increased when headaches or abdominal pain is being treated with peppermint oil.
	<a href="#">Treatment of Diffuse Esophageal Spasms</a>	 Notable	- <a href="#">See study</a>	The pilot study on this topic did not have a placebo control, but noted complete resolution of spasms in all persons following a single supplemental dose of peppermint oil; a large amount of promise
	<a href="#">Attention</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although there is no influence acutely in cognitive testing, there appears to be improvements in sustained attention processing with prolonged testing (10-40 minutes) with the aroma of peppermint. Suggesting an anti-fatigue effect.
	<a href="#">Calmness</a>	-	- <a href="#">See study</a>	Subjective ratings of calmness during cognitive testing are not significantly influenced with the aroma of peppermint
	<a href="#">Memory</a>	-	- <a href="#">See study</a>	The aroma of peppermint has been unable to influence memory processing (quantity or quality of memory formation) relative to control

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Processing Accuracy</a>	-	- <a href="#">See study</a>	Processing accuracy does not appear to be significantly influenced with acute inhalation of peppermint extract during cognitive testing
	<a href="#">Processing Speed</a>	-	- <a href="#">See study</a>	Processing speed is not significantly influenced with the aroma of peppermint during cognitive testing
	<a href="#">Sedation</a>	-	- <a href="#">See study</a>	Peppermint aromatherapy does not appear to significantly influence the state of wakefulness
	<a href="#">Working Memory</a>	-	- <a href="#">See study</a>	Working memory does not appear to be influenced with the aroma of peppermint


Back to: [Supplements](#) | [Health Outcomes](#)

# Perilla Oil

Perilla Oil is a nutty oil derived from the seeds of perilla frutescens after roasting, and is supplemented for its high omega-3 fatty acid content and rosmarinic acid content. Benefits are secondary to either of those components, and it may be kidney healthy.

See [Perilla Oil on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	
	<a href="#">Plasminogen Inhibitor 1</a>	-	- <a href="#">See study</a>	
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Phellodendron amurense

Also known as: *Rutaceae*, Amur Cork Tree, Kihada, Nexrutine, Corktree, Huangbai

---

Phellodendron Amurense (PA), also known as CorkTree, is a chinese herb used to historically treat different forms of inflammation and bone pain. There is not too much Western research on this herb.

See [Phellodendron amurense on Examine.com](#)

## How to Take

Although there is not enough evidence to suggest an optimal dosage, a dose of 250-500mg taken twice a day with meals is usually advocated.

Back to: [Supplements](#) | [Health Outcomes](#)

# Phenylethylamine

Also known as: PEA,  $\beta$ -phenylethylamine, phenethylamine,  $\beta$ -phenethylamine, Benzeneethanamine

Other uses:

---

A trace amine and influencer of many of the 'happy hormones' such as dopamine and serotonin,  $\beta$ -phenylethylamine is an important molecule in the brain with limited supplemental usage due to being rapidly broken down into inactive components.

See [Phenylethylamine on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)



# Phenylpiracetam

Also known as: *Phenotropil, Carphedon, (RS)-2-(2-oxo-4-phenylpyrrolidin-1-yl)acetamide*




Phenylpiracetam (Phenotropil) is a racetam drug derived from Piracetam in where the only modification is the addition of a phenyl group to its structure. It appears to require much lower doses for similar properties, and appears to have psychostimulatory effects.

See [Phenylpiracetam on Examine.com](#)

## How to Take

Phenylpiracetam is taken at a dosage of 100-200mg acutely, and this dose is taken 2-3 times per day (totalling a daily range of 200-600mg). The lower range seems effective, but the optimal dosage is not yet known. The R-isomer appears to be more active on the common usages of phenylpiracetam (stimulation and cognition) than does the S-isomer, and while the racemic mixture (commonly sold version) is effective for cognitive decline it is not certain if it works for nootropic purposes in youth.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Cognition is improved in persons suffering from cognitive decline, organic brain lesions, and epilepsy. There are currently no studies conducted in otherwise healthy youth for the purpose of cognitive enhancement
	<a href="#">Functionality in Elderly or Injured</a>	 Minor	- <a href="#">See study</a>	Physical function and activities of daily living in elderly persons after a stroke appear to be benefitted with phenylpiracetam. While it should work in elderly persons without cognitive impairment, this has not been tested
	<a href="#">Stroke Recovery Rate</a>	 Minor	- <a href="#">See study</a>	Symptoms (cognitive and physical) seen after a stroke appear to be more rapidly recovered with daily usage of phenylpiracetam than with placebo
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	Anxiety as a symptom of stroke has been reduced with phenylpiracetam. No studies currently exist in otherwise healthy persons with anxiety symptoms
	<a href="#">Cognitive Decline</a>	 Minor	- <a href="#">See study</a>	The rate of cognitive decline appears to be significantly reduced following usage of phenylpiracetam

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Depression</a>	 Minor	- <a href="#">See study</a>	Depressive symptoms following a stroke appear to be reduced following ingestion of phenylpiracetam. Currently, there are no studies on otherwise healthy persons with depressive symptoms
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	Despite the usage of phenylpiracetam to treat asthenia, the lone study assessing this in persons with traumatic brain injuries failed to find a benefit (which may be a false negative if phenylpiracetam is inactive on brain injuries in the first place).

Back to: [Supplements](#) | [Health Outcomes](#)

# Phosphatidylcholine

Also known as: PC

Phosphatidylcholine is a phospholipid with a choline attachment and is found in soy lecithin.

See [Phosphatidylcholine on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Phosphatidylserine










Also known as: PS

Phosphatidylserine (PS) is an amino acid derivative compound that is fat-soluble and found in high amounts in the brain, where it contributes to cognitive functioning. Found in high amounts in fish, it may improve memory in the elderly and lowers cortisol.

See [Phosphatidylserine on Examine.com](#)

## How to Take

A standard dose of phosphatidylserine (PS) is 100mg, taken 3 times a day to total 300mg daily. This dose seems to be effective as a daily preventative against cognitive decline, and 100mg once daily may provide some degree of benefit (but may be lesser than 300mg). Studies in children and adolescents for the purpose of attention improvement tend to use 200mg, and a dose of 200-400mg has been used in adult non-elderly humans with success. Animal evidence tends to use a dose correlating to 550mg as well.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	The interactions of supplemental PS with cognition in healthy persons is not fully researched, but there appears to be a positive influence; this may be secondary to a reduction in stress and excitation (the latter resulting in an increase in attention) but increased glucose utilization is an unexplored possibility
	<a href="#">Cognitive Decline</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	There appears to be a protective effect against cognitive decline with PS supplementation above 300mg when using the bovine cortex form; usage of the soy based PS is not yet confirmed to have these effects, although it is possible
	<a href="#">Cortisol</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	A decrease in exercise-induced cortisol has been noted with the bovine cortex sourced PS only, soy based supplements (which are usually the only ones sold now due to fear of Creutzfeldt–Jakob disease) have been shown to have outright no effect at doses up to 750mg
	<a href="#">Anaerobic Running Capacity</a>	 Notable	- <a href="#">See study</a>	An increase in time to exhaustion has been noted in cycling at 85% of VO2 max with soy based phosphatidylserine (750mg) to the degree of 29+/-8%, which is quite notable. This is independent of cortisol, and requires further investigation
	<a href="#">ADHD in Children</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be reduced symptoms of both hyperactivity and attention deficit in children given PS, which may be more effective when the PS is complexed with fish oils

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Attention</a>	 Minor	- <a href="#">See study</a>	The improvement in attention is associated with reducing the symptoms of attention deficit, an increase in attention outright has not yet been demonstrated
	<a href="#">Fatigue</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Unreliable effects, but a quite notable reduction in fatigue has been noted during intense exercise (85% VO2 max) which resulted in increased time to exhaustion. This was not present at lower intensities
	<a href="#">Golf Performance</a>	 Minor	- <a href="#">See study</a>	Improved accuracy of golf swings thought to be due to a stress reducing effect
	<a href="#">Memory</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Increases in memory have been noted in persons with cognitive decline. A memory improving effect in otherwise healthy people is theoretical (secondary to reducing stress, has been noted in rodents), but not demonstrated in humans yet
	<a href="#">Processing Accuracy</a>	 Minor	- <a href="#">See study</a>	Increased processing accuracy has been noted in otherwise healthy persons at 400mg PS daily when testing was conducted in a fatigued state (post exercise)
	<a href="#">Processing Speed</a>	 Minor	- <a href="#">See study</a>	Increased processing speed has been noted in otherwise healthy persons at 400mg PS daily when testing was conducted in a fatigued state (post exercise) which coincided with increase accuracy as well.
	<a href="#">Stress</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible stress reducing effects that appear independent of cortisol and heart rate, although these effects are unreliable
	<a href="#">Working Memory</a>	 Minor	- <a href="#">See study</a>	Improvement in working memory may be due to improved attention
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant alterations in blood pressure noted with PS supplementation
	<a href="#">Exercise-Induced Oxidation</a>	-	- <a href="#">See study</a>	No significant influence on oxidation biomarkers that are increased during exercise

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Oxidation</a>	-	- <a href="#">See study</a>	No significant influence on fat oxidation during exercise
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C with PS supplementation
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on heart rate with PS supplementation
	<a href="#">Inflammation</a>	-	- <a href="#">See study</a>	No significant influence on inflammatory cytokines
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant influence on LDL-C with PS supplementation
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes seen with PS supplementation
	<a href="#">Muscle Damage</a>	-	- <a href="#">See study</a>	No significant influence on serum biomarkers of muscle damage such as creatinine
	<a href="#">Muscle Soreness</a>	-	- <a href="#">See study</a>	No significant influence on perceived muscle soreness
	<a href="#">Oxygenation Cost of Exercise</a>	-	- <a href="#">See study</a>	No significant influence on oxygenation cost of exercise
	<a href="#">Reaction Time</a>	-	- <a href="#">See study</a>	No significant alterations in reaction time during treatment of cognitive decline

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Subjective Well-Being</a>	-	- <a href="#">See study</a>	No significant influence on subjective well being noted
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No significant influence on testosterone noted with PS supplementation
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influence with PS supplementation on total cholesterol
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides seen at rest or during exercise with PS supplementation
	<a href="#">Cerebral Glucose Utilization</a>	 Minor	- <a href="#">See study</a>	An increase in glucose utilization has been noted in persons with Alzheimer's to the degree of around 15%; this has not been investigated in otherwise healthy persons
	<a href="#">Forgetting</a>	 Minor	- <a href="#">See study</a>	A reduced rate of forgetting immediate information (results in 'grasping' information easier) has been noted during treatment of cognitive decline with PS; an inherent anti-amnesiac effect is not known
	<a href="#">Growth Hormone</a>	-	- <a href="#">See study</a>	No significant influence on exercise-induced growth hormone
	<a href="#">Lactate Production</a>	-	- <a href="#">See study</a>	No significant influence on exercise-induced lactate production
	<a href="#">Prolactin</a>	-	- <a href="#">See study</a>	No significant influence on exercise-induced prolactin

# Piceatannol

*Also known as: Astringinin*

*Other uses:*

---

Piceatannol is a stilbene similar to resveratrol that is found in limited levels in some of the same foods. They share many properties, and while piceatannol may be a possible alternative there is not enough evidence to suggest it is better than resveratrol.

See [Piceatannol on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)



# Picrorhiza kurroa







Also known as: *Kutki*, *Picrorhiza scrophulariiflora*, *Katuki*, *Kurro*, *Kutkin*, *Picroliv*, *Picrolax*

Picrorhiza kurroa (Kutki or Picroliv) is a liver tonic from Ayurveda that, when used at low doses, appears to exceed milk thistle silymarins in potency. It is underresearched, but its liver protective effects and some other immunomodulatory properties hold potential.

See [Picrorhiza kurroa on Examine.com](#)

## How to Take

Supplementation of picroliv (picroside I plus picroside II) appears to be most effective in at 12mg/kg (the higher dose, 24mg/kg, is not significantly more effective than 12mg/kg in most cases) and this leads to a preliminary human dosage of: 130 mg for a 150lb person 170 mg for a 200lb person 220 mg for a 250lb person Although the above dosage levels are ideal, lower doses also appear to be effective and the lone human study used a total picroside I and II dosage of around 25mg. If using an extract of picrorhiza kurroa, then the above dosage refers to the total picroside I and II content (kutkin or picroliv) rather than the weight of the plant itself. For example, a plant extract that is 1,000 mg and contains 4% picroliv will confer 40 mg picroliv.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Vitiligo</a>	 Notable	- <a href="#">See study</a>	The one study using <i>picrorhiza kurroa</i> for the purpose of treating vitiligo noted that after daily usage that 27% of the subjects experienced complete resolution of symptoms (curative effect)
	<a href="#">Bilirubin</a>	 Minor	- <a href="#">See study</a>	Supplemental <i>picrorhiza kurroa</i> can reduce bilirubin in a model of acute viral hepatitis, although no comparisons to reference drugs have yet been made.
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	Supplementation of <i>picrorhiza kurroa</i> is able to reduce circulating liver enzymes in acute viral hepatitis. While animal research suggests it is more potent than <a href="#">Milk thistle</a> , the human evidence is not yet able to directly compare the two.

Back to: [Supplements](#) | [Health Outcomes](#)

# Pine Pollen

*Also known as: Pinus sylvestris,scots pine,scotch pine,scotch fir*

---

Pine Pollen refers to the pollen of trees in the pinus genera, which are sometimes used as dietary supplements. Scots Pine (*Pinus sylvestris*) contains testosterone at levels unlikely to affect the body, while other species may have antiinflammatory properties based on preliminary evidence.

See [Pine Pollen on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Piracetam










Also known as: Pyracetam, Pyrrolidone acetamide, 2-Oxo-1-pyrrolidine, Memotopril, Fezam (with cinnarizine), UCB6215


Piracetam is the parent compound of the racetam class of nootropic supplements. When supplemented, it provides a mild boost to brain function.

See [Piracetam on Examine.com](#)

## How to Take

The standard piracetam dose for children is between 40-100mg per kilogram of bodyweight. This dose is intended for the treatment of breath-holding spells, though it has also been used for children with dyslexia. The lower end of the range (40-50mg/kg) is used most often. The standard piracetam dose for adults is between 1,200-4,800mg a day. The largest effective dose is 1,600mg, taken three times a day for a total of 4,800mg.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognitive Decline</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	There appears to be a notable reduction in the rate of cognitive decline (or rehabilitation of aged cognition) associated with high dose Piracetam over time and in a general manner. Piracetam is sometimes used as a comparator for cognitive decline.
	<a href="#">Breath Holding Spells</a>	 Strong	<b>Very High</b> <a href="#">See all 3 studies</a>	Remarkably effective in reducing breath holding spells in infants at feasible dosages, nearly absolutely reducing the presence of breath holding spells with no apparent side-effects noted.
	<a href="#">Aggression</a>	 Minor	- <a href="#">See study</a>	In persons with cognitive decline, supplementation of Piracetam was able to reduce aggression and agitation symptoms.
	<a href="#">Memory</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Small increase in backwards recall with piracetam; nothing remarkable and overall very limited evidence in otherwise healthy individuals to draw from.
	<a href="#">Stroke Recovery Rate</a>	-	- <a href="#">See study</a>	Ineffective in the one study where stroke recovery rate was assessed

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognition</a>	-	- <a href="#">See study</a>	No significant influence on cognition and neural functioning has been noted in otherwise healthy persons following piracetam ingestion.

Back to: [Supplements](#) | [Health Outcomes](#)

# Policosanol












Also known as: Cane Sugar Extract






Policosanol is a mixture of oils from Cuban Cane Sugar; touted as a cholesterol lowering agent, it shows potency at this claim in several studies released from Cuba. Other studies undermine the quality of these, however, and it remains controversial.

See [Policosanol on Examine.com](#)

## How to Take

The standard supplemental dosage of policosanol is 5-10mg taken twice daily (for a daily total of 10-20mg), although due to the state of the research on this supplement it is not sure if it is bioactive in this range.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See all 12 studies</a>	Unlikely to be potent, either small or no increases in HDL-C are likely to occur after policosanol ingestion. A good deal of the literature is based upon some highly suspicious past research from Cuba
	<a href="#">LDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See all 13 studies</a>	It is possible that policosanol is either effective or totally ineffective due to older Cuban studies being remarkably different than more recent replications; high probability of publicity bias
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See all 12 studies</a>	There may be some limited efficacy of policosanol on cholesterol (when excluding the studies from cuba, which are highly suspicious, there is still some scattered but unreliable evidence) whereas it does not appear to be potent in any way.
	<a href="#">Triglycerides</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	When excluding older cuban studies (which are highly suspicious) there is no evidence to support a reduction of triglycerides.
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	Possibly a small effect in persons with high blood pressure.
	<a href="#">Oxidation of LDL</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, possibly an effect but needs to be replicated

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See study</a>	Reductions in reaction time were not overly significant.
	<a href="#">Symptoms of Intermittent Claudication</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Possible benefits to intermittent claudication, 'notable' rating is being held until it is replicated outside of Cuba
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	No significant influence detected on blood flow

Back to: [Supplements](#) | [Health Outcomes](#)

# Polygala tenuifolia

Also known as: Yuan Zhi, Chinese Senega

Other uses:

Polygala tenuifolia is a root used in traditional Chinese medicine for its ability to improve memory and protect against cognitive ailments. Limited human evidence suggests Polygala tenuifolia cannot improve memory, but may improve spatial awareness and organization.

See [Polygala tenuifolia on Examine.com](#)

## How to Take

The only human studies on Polygala tenuifolia have used 100mg of an ethanolic extract called BT-11, three times a day, for a total daily dose of 300mg. A traditional Chinese medicine remedy suggests taking 3-9 g (dry weight) of Polygala tenuifolia root through a water decoction, like tea or soup, to reduce forgetfulness.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cognitive Decline</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reduction in cognitive decline as assessed by CEMAD scores, although MMSE scores did not experience a significant benefit with supplementation at this moment in time.
	<a href="#">Spatial Processing</a>	 Minor	- <a href="#">See study</a>	There appears to be an increase in spatial processing seen with supplementation in otherwise healthy humans due to less errors on spatial organizational tasks.
	<a href="#">Working Memory</a>	 Minor	- <a href="#">See study</a>	BT-11 appears to have some efficacy in improving immediate recall in otherwise healthy adults, although it did not have this efficacy in short term recall (cued or free)
	<a href="#">Memory</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There have been no detectable increases in long term (20 minute) recall, either with or without cues, associated with supplementation at this point in time.
	<a href="#">Verbal Fluency</a>	-	- <a href="#">See study</a>	No significant improvements in verbal fluency noted in elderly adults with memory complaints supplementing this herb.

# Polypodium leucotomos










Also known as: *Phlebodium aureum*, Golden Polybody, Cabbage palm fern, Golden serpent fern, Calaguala, Anapsos  
 Other uses:

Polypodium Leucotomos (Calaguala) is the commonly referred to name of a herb that appears to possess moderately potent protective effects against sun-induced skin damage; may also be an immune booster.









See [Polypodium leucotomos on Examine.com](#)

## How to Take

Polypodium leucotomos supplementation has shown benefit in humans with oral supplementation of 7.5mg/kg for skin health (dose based on weight due to correlating with the amount of skin somebody has); this results in a dosage of: 500mg for a 150lb person 700mg for a 200lb person 850mg for a 250lb person Or alternatively, a topical skin cream containing 0.1% polypodium leucotomos appears effective. For supplementation of leucotomos for other purposes (or if you do not wish to calculate the optimal dose) then the dosage range of 360-720mg appears to be used clinically for skin conditions with the lower dose being beneficial for neurology.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Psoriasis</a>	 Notable	- <a href="#">See study</a>	Limited evidence suggests potent anti-psoriatic effects.
	<a href="#">Cell Adhesion Factors</a>	 Minor	- <a href="#">See study</a>	Even in healthy persons, cell adhesion factor expression on immune cells appears to be reduced with supplementation of the herb at 720mg.
	<a href="#">Cerebral Blood Flow</a>	 Minor	- <a href="#">See study</a>	In persons with senile dementia, supplementation of 360mg anapsos may increase blood flow in both hemispheres of the brain (720mg being less effective).
	<a href="#">Cognitive Decline</a>	 Minor	- <a href="#">See study</a>	360mg anapsos daily appears to be somewhat benefit for persons with senile dementia.
	<a href="#">Natural Killer Cell Content</a>	-	- <a href="#">See study</a>	Although it cannot yet be ruled out, the best evidence currently suggests that the increase in NK cell activation seen with this herb does not apply after oral supplementation.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Vitiligo</a>	-	- <a href="#">See study</a>	Currently no evidence to support a role of <i>polypodium leucotomos</i> in the treatment of vitiligo
	<a href="#">T Cell Count</a>	-	- <a href="#">See study</a>	The increase in T cell count does not appear to be statistically significant, although a possibly relevant increase cannot be ruled out.
	<a href="#">Polymorphic Light Eruptions</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Appears to be notably effective against those that are sensitive to sunlight following oral ingestion of Polypodium
	<a href="#">UV Damage</a>	 Notable	- <a href="#">See study</a>	Preliminary evidence suggests that oral supplementation is a bit more effective than other supplements for reducing UV damage
	<a href="#">Upper Respiratory Tract Infection Risk</a>	 Minor	- <a href="#">See study</a>	Appears to reduce infection risk, although it did not appear to be overly remarkable in doing so.

Back to: [Supplements](#) | [Health Outcomes](#)

# Pomegranate

*Also known as: Pomegranates*

---

Pomegranates are a fruit containing 'arils' (small edible seeds) that have recently been linked to a large variety of health benefits; a good source of Punicalagins and Punicic acid, pomegranates are probably a better fruit option than other fruits on a calorie per calorie basis.

See [Pomegranate on Examine.com](#)

## How to Take

Eating pomegranate arils alone or in conjunction with other foods or making a pulpy juice from the rings are both effective methods of self-administration

Back to: [Supplements](#) | [Health Outcomes](#)

# Potassium

*Other uses:*

---

Potassium is an essential mineral found predominately in fruits, vegetables, and beans. It is relatively common not to consume enough potassium to meet daily requirements and modifying the diet seems highly protective against circulatory disorders such as cardiac arrest and stroke.

See [Potassium on Examine.com](#)

## How to Take

Potassium is not commonly found in dietary supplements in doses above 85 mg tablets due to concerns about hyperkalemia (high blood potassium) from too much potassium being taken at once. It can still be found in grocery and nutrition stores as a 'salt substitute' (usually potassium hydrochloride) but doses should be kept minimal and always with food. While most benefit with potassium will come alongside a modified diet to include more fruits, vegetables, and legumes increasing intake via a salt substitute around 500-1,000 mg a day seems to be sufficient for most benefits associated with potassium without posing any risk if taken alongside food.

Back to: [Supplements](#) | [Health Outcomes](#)

# Pramiracetam

Also known as: CI-879, Diisoprop-yl-(2-oxopyrrolidin-1-yl)acetamide, CI879

Pramiracetam is a synthetic racetam derivative for the purpose of cognitive enhancement, with preliminary evidence to support its usage in aiding long-term memory formation. Although the mechanisms are not well known at all, it might enhance acetylcholine synthesis.

See [Pramiracetam on Examine.com](#)

## How to Take

Currently, the evidence using pramiracetam in humans uses either 400mg thrice daily or 600mg twice daily; both of these dosing regiments totals 1,200mg of pramiracetam daily. It is unsure if pramiracetam should be taken with meals, and it is not clear if 1,200mg is the optimal dosage or not. This does, however, does appear effective.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Forgetting</a>	 Minor	- <a href="#">See study</a>	Appears to decrease the influence of amnesiac drugs (scopolamine), and is effective when loaded over a few days rather than relying on acute administration
	<a href="#">Cognition</a>	 Minor	- <a href="#">See study</a>	Cognitive ability in youth who experienced brain trauma is improved with prolonged usage of pramiracetam, suggesting neuroprotective effects
	<a href="#">Memory</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	While it appears effective in promoting memory formation in elderly persons and cognitively injured youth, there is currently no evidence in otherwise healthy use for nootropic purposes

Back to: [Supplements](#) | [Health Outcomes](#)

# Prickly Pear Fruit

Also known as: *Opuntia ficus-indica*, Cactus Pear Fruit, Sicilian Prickly Pear, Prickly pear, Nopal cactus

Other uses:

Prickly Pear is a pear from the cactus family, and the fruit has been used traditionally in South American and Mexico for treating high cholesterol and diabetes; limited studies at this moment in time suggest it may have therapeutic, but not preventative, potential.

See [Prickly Pear Fruit on Examine.com](#)

## How to Take

Recommended dosage of Prickly Pear Fruit is the whole fruit, typically 200g or above. It is unsure what dosage of prickly pear supplements should be at this moment in time.

Back to: [Supplements](#) | [Health Outcomes](#)

# Psoralea corylifolia

Also known as: *Bu Gu Zhi, Babchi, Babechi, Kushtanashini, Fountain bush, West Indian Satinwood, Somaraji, Bakuchi, Ravoli*

Other uses:

Psoralea Corylifolia (Bu Gu Zhi, Kushtanashini) is a plant whose seeds have traditionally been used for menopause and depression (among other claims); it appears to be somewhat effective, based on preliminary evidence, for both bone regeneration and catecholamine-related neural effects.

See [Psoralea corylifolia on Examine.com](#)

## How to Take

Traditional usage of Psoralea Corylifolia is 9-30g of the herb itself. Due to no human evidence, an optimal dosage cannot be determined at this time.

Back to: [Supplements](#) | [Health Outcomes](#)

# Psyllium

Also known as: *Psyllium Husk*, *Psyllium Fiber*, *Metamucil* (brand name), *ispaghula*, *plantago psyllium*, *plantago ovata*, *plantago*

Other uses:

Psyllium (usually as husk or powder) is a fiber derived from the plant *Plantago psyllium* that is able to bind to fatty acids and cholesterol from the diet; it can increase fecal moisture and weight.

See [Psyllium on Examine.com](#)

## How to Take

On the lower end of dosing, 5g of psyllium is taken once with meals alongside some form of liquid (200mL of water or more) and can be taken at every meal if desired; coingestion of psyllium with a meal is not mandatory although coingestion with water is highly advised. Acute doses of up to 30g appear to be well tolerated assuming enough water (in these instances, around 500mL or so) are also coingested. If using psyllium for the fecal forming properties, a daily dose of 15g (thrice daily dosing of 5g) is a good starting point and then the dose can be titrated up or down depending on its effects on fecal formation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Not overly potent reductions of LDL-C, although they seem to reliably occur in persons with high cholesterol
	<a href="#">Blood Glucose</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Reductions in blood glucose seen with psyllium seem to occur reliably in persons with high blood glucose, but are transient benefits and not of a remarkable magnitude.
	<a href="#">HDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Similar to the reductions in LDL-C and total cholesterol, the reduction in HDL-C is seemingly small in magnitude and likely not much to be concerned about
	<a href="#">HbA1c</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Reduction seen in HbA1c was not overly remarkable
	<a href="#">Total Cholesterol</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Not unique to psyllium, but has the standard slight reduction of cholesterol that affects persons with high cholesterol. Not strong enough for monotherapy, can be a nice addition to more potent supplements or drugs

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No real significant effect of psyllium on blood pressure directly, although there may be an insignificant reduction seen with correcting other parameters of metabolic syndrome.
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Currently, it does not seem like there is a significant influence of psyllium on circulating triglycerides
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No convincing evidence for a weight reducing effect of psyllium.
	<a href="#">Fecal Moisture</a>	 Strong	<b>Very High</b> <a href="#">See all 4 studies</a>	Psyllium is the reference drug for increasing water content of stool.
	<a href="#">Fecal Weight</a>	 Strong	<b>Very High</b> <a href="#">See all 4 studies</a>	Psyllium tends to be the reference drug for increasing fecal weight, and due to that and the reliability of which this occurs it gets a strong rating
	<a href="#">Appetite</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Studies that report appetite note that there is a significant reduction after a meal containing psyllium (relative to no fiber ingestion) although it does not appear to be too remarkable in potency as overall food intake does not appear influenced.
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See study</a>	Study noted an improved augmentation index by 22% alongside a reduction in blood pressure, mechanisms unknown and no reference drug for comparison.
	<a href="#">Carbohydrate Absorption</a>	 Minor	- <a href="#">See study</a>	Supplementation of 12g psyllium husk with a test breakfast is able to reduce carbohydrate absorption by around 12% relative to control.
	<a href="#">Fructosamine</a>	 Minor	- <a href="#">See study</a>	A decrease in fructosamine has been noted in diabetics supplementing psyllium husk.
	<a href="#">Insulin</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A minor decrease in diabetics following supplementation, although it is small in magnitude and does not carry over to nondiabetics.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rate of Gastric Emptying</a>	 Minor	- <a href="#">See study</a>	No reference drug to compare it to, and thus the potency in psyllium delaying gastric emptying is not certain.
	<a href="#">Uric Acid</a>	 Minor	- <a href="#">See study</a>	An 11% decrease in uric acid has been noted in diabetics supplementing with psyllium husk.
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No significant alterations of insulin sensitivity in those who are not insulin resistant at baseline
	<a href="#">Iron Absorption</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on iron absorption; it is possible the inhibitory effect of phytates in the small intestine are negated by the reduced pH in the colon that enhances mineral reuptake
	<a href="#">Flatulence</a>	 Notable	- <a href="#">See study</a>	Notably effective as dietary fibers should normally enhance flatus (almost being a 'per se' effect of dietary fiber) yet psyllium has noted the opposite effect.
	<a href="#">Symptoms of Ulcerative Colitis</a>	 Notable	- <a href="#">See study</a>	The potency of psyllium husk in controlling remission of ulcerative colitis is comparable to the reference drug mesalamine.
	<a href="#">Intestinal Motility</a>	 Minor	- <a href="#">See study</a>	Increases intestinal motility due to being a bulk laxative, but is unlikely to have a strong laxative effect.
	<a href="#">Food Intake</a>	-	- <a href="#">See study</a>	Failed to significantly influence food intake
	<a href="#">Lipid Absorption</a>	-	- <a href="#">See study</a>	A significant reduction of lipid absorption (assessed via fecal lipids) is not yet supported.
	<a href="#">Thermic Effect of Food</a>	-	- <a href="#">See study</a>	Failed to modify the thermic effect of food.



# Pterostilbene

Also known as: *trans*-3,5-dimethoxy-4-hydroxystilbene, 3,5-dimethoxy-4-hydroxystilbene

Other uses:







Pterostilbene is a dimethylated derivative of resveratrol that, for some mechanisms, is more potent. It is also much better absorbed, and is commonly referred to as a 'better resveratrol'. It looks promising, but has significantly less research than its predecessor.

See [Pterostilbene on Examine.com](#)

## How to Take

Supplementation of pterostilbene for the purpose of aiding glucose and lipid metabolism tends to be around 20- 40mg/kg oral ingestion in rats, which is an estimated human dosage range of: 215-430mg for a 150lb person 290-580mg for a 200lb person 365-730mg for a 250lb person Possible anxiolytic properties of pterostilbene are seen at 1-2mg/kg in mice, which is an estimated human dose of: 5.5-11mg for a 150lb person 7.3-14.5mg for a 200lb person 9-18mg for a 250lb person Which is notable as 5-10mg/kg in these mice (slightly over double the dose) has failed to have the same anxiolytic effects, suggesting a bell-curve that may favor lower dosages such as is found in food consumption rather than higher dosages from supplementation. Limited human studies have used either 50mg twice a day or 125mg twice a day, and the addition of Grape seed extract (100mg at both dosing times) with the low dose may mitigate some adverse effects on cholesterol seen with pterostilbene in isolation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	Pterostilbene appears to reduce blood pressure in hypercholesterolemic adults, and the addition of grape seed extract (which mitigates adverse cholesterol effects) adds to the benefits to blood pressure.
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	In hypercholesterolemic adults <i>not</i> on cholesterol lowering medication, pterostilbene appears to reduce HDL mildly.
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	An increase in LDL cholesterol has been noted with oral ingestion of pterostilbene in hypercholesterolemic adults, mitigated by grape seed extract
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	An increase in total cholesterol, attributable to LDL, has been seen in hypercholesterolemic adults given pterostilbene.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	 Minor	- <a href="#">See study</a>	A slight decrease in weight has been seen in adults given pterostilbene supplementation alongside an increase in cholesterol; the two appear linked, as the addition of grape seed extract appeared to mitigate both.
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	Supplementation of pterostilbene in hypercholesterolemic adults does not appear to influence blood glucose relative to control.
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	Supplementation of pterostilbene in hypercholesterolemic adults does not appear to influence creatinine relative to control.
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	Supplementation of pterostilbene in hypercholesterolemic adults does not appear to influence liver enzymes (ALP, AST) relative to control.
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	There do not appear to be any interactions on triglycerides in adults with normal triglyceride levels given pterostilbene supplementation.

Back to: [Supplements](#) | [Health Outcomes](#)

# Pueraria lobata









Also known as: Kudzu, Gegen





Pueraria Lobata (Kudzu) is a root plant that appears to have traditional usage in alleviating migraines and hangovers.

See [Pueraria lobata on Examine.com](#)

## How to Take

The lone study on Kudzu root used a product containing 100mg of isoflavone equivalents, which appeared to be slightly effective for promoting cognition in postmenopausal women. It is unsure if this is near the optimal dosage or not.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Attention</a>	 Minor	- <a href="#">See study</a>	Small boost in attention in menopausal women (independent of reductions in symptoms of menopause); needs to be reinvestigated
	<a href="#">Cognition</a>	 Minor	- <a href="#">See study</a>	A small boost in cognition in menopausal women given the supplement; needs to be replicated and uncertain if it applies to otherwise healthy youth.
	<a href="#">Apolipoprotein B</a>	-	- <a href="#">See study</a>	No alterations in Apolipoprotein B have been noted
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No significant influence of Pueraria lobata on circulating estrogen levels (although it itself may be a phytoestrogen; weak)
	<a href="#">Follicle-Stimulating Hormone</a>	-	- <a href="#">See study</a>	No significant alterations have been noted in follicle-stimulating hormone concentrations following pueraria lobata ingestion.
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No detectable influence on HDL-C levels

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant influence on circulating LDL-C has been noted with supplementation
	<a href="#">Luteinizing Hormone</a>	-	- <a href="#">See study</a>	No significant alterations in luteinizing hormone has been detected with pueraria lobata ingestion.
	<a href="#">Symptoms of Menopause</a>	-	- <a href="#">See study</a>	No significant influence detected on symptoms of menopause (as assessed by rating scales)
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influence have been detected on total cholesterol

Back to: [Supplements](#) | [Health Outcomes](#)

# Pueraria mirifica











Also known as: White Kwao Krua



Pueraria Candollei var. Mirifica (White Kwao Krua) is a highly estrogenic herb (main bioactive, Deoxymiroestrol, being more potent than estrogen itself) which is used as herbal estrogen replacement therapy. It appears effective, but lacks blinded studies.

See [Pueraria mirifica on Examine.com](#)

## How to Take

In regards to Pueraria Mirifica (White Kwao Krua), a dose of 20-50mg of the herb is taken daily once in the morning. This appears to be significantly bioactive, and it would be advisable to not exceed this dosage. And if you are a man who wants to take 'Pueraria' for hangovers, ensure you don't get the estrogen replacement therapy (this supplement) by accident. The herb touted to cure hangovers is Pueraria Lobata (Kudzu), and although it is not a common mistake it is indeed a critical one to make.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Menopause</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	The effects of Pueraria Mirifica on menopausal symptoms appear to be potent, with one study suggesting comparable efficacy to estrogen replacement therapy itself. Requires more robust evidence, however.
	<a href="#">Apolipoprotein B</a>	 Minor	- <a href="#">See study</a>	A slight decrease in Apolipoprotein B has been noted with Pueraria Mirifica
	<a href="#">Bone-specific Alkaline Phosphatase</a>	 Minor	- <a href="#">See study</a>	Efficacy has been noted (and suggests long term bone regenerative properties) but requires more evidence to establish overall potency relative to other estrogenic agents
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	Not overly potent, only testing in menopausal women has been conducted
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	Somewhat effective in menopausal women.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vaginal Dryness</a>	 Minor	- <a href="#">See study</a>	Was able to reduce vaginal dryness (due to estrogenic effects, perhaps) although potency cannot be judged well due to no comparator.

Back to: [Supplements](#) | [Health Outcomes](#)



# Punicalagins












Also known as: Pomegranate Extract, Punica Granatum L., Pomegranate Juice


Punicalagins are really big molecules found in pomegranate juice that are somehow absorbed; they are potent anti-oxidants, and alongside punicic acid confer many of the benefits associated with pomegranates, of which many studies conducted with are here.

See [Punicalagins on Examine.com](#)

## How to Take

Anti-oxidant potential of the blood increases at an oral dose of 800mg Pomegranate Extract (318mg punicalagins), which may be a good starting point for a bioactive dose. The optimal dose is currently not known.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Prostate Cancer Risk</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Notable as consumption of pomegranate juice is associated with a prolongation in the time require for PSA (biomarker of prostate cancer) to double, from 15 months to 54 months
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in general oxidation has been noted with punicalagins
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in lipid peroxidation has been noted
	<a href="#">Nitric Oxide</a>	 Minor	- <a href="#">See study</a>	An increase in metabolites of nitric oxide metabolism have been noted and thought to be indicative of increased nitric oxide production
	<a href="#">Prostate Specific Antigen</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Does not appear to be able to reduce PSA levels outright, although it can attenuate the rate of which PSA increases over time (relative to untreated control, this is a reduction)
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No significant influence on estrogen

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No significant influence on testosterone levels in men at risk for prostate cancer

Back to: [Supplements](#) | [Health Outcomes](#)

# Punicic Acid









Also known as: Pomegranate Seed Oil





Punicic Acid is the main fatty acid found in Pomegranate Seed Oil and found in Pomegranates, it may contribute to many of the health benefits associated with Pomegranates.

See [Punicic Acid on Examine.com](#)

## How to Take

Studies that use pomegranate seed oil use 400mg of a 72% punicic acid seed oil. While this appears to be in the bioactive range of punicic acid, it is not known if this is an optimal dosage or not.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although there are possible increases in HDL-C with punicic acid, this has not been noted all the time and may be unreliable
	<a href="#">Triglycerides</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible slight reduction in triglycerides has been noted with pomegranate oil, but this appears to be unreliable
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	No significant influence on fat mass by itself
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No significant alterations in insulin sensitivity noted
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on LDL-C levels

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	No significant influence on lean mass has been noted with puniic acid supplementation
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	No significant influence on serum TNF-a levels
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol levels
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant influence on weight has been noted

Back to: [Supplements](#) | [Health Outcomes](#)

# Pycnogenol

Also known as: Pine Bark Extract, Pine Bark Procyanidins, Procyanidins









Other uses:

Pine Bark Extract; Pycnogenol is investigated for its general health and anti-diabetic properties and its ability to enhance Nitric Oxide, which may have a significant benefit for those with erectile dysfunction. Recent studies have also shown that supplementation may help to limit symptoms associated with chronic inflammation in autoimmune disease.

See [Pycnogenol on Examine.com](#)










## How to Take

Although doses in the range of 40-60mg have been noted to be effective over a prolonged period of time, standard doses of Pycnogenol appear to be in the range of 100-200 mg per day. Studies have used twice daily dosing (dividing the daily total into two even doses to be taken with breakfast and dinner) as well as once daily dosing with breakfast. Both dosing strategies appear to be effective although they haven't been directly compared. It can be absorbed equally well when taken with or without food.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Flow</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	An improvement in nitric oxide dependent blood flow appears to occur following procyanidin supplementation which has been noted in both unhealthy persons as well as healthy controls; there does not appear to be a <b>per se</b> hypotensive effect either.
	<a href="#">Blood Pressure</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Pycnogenol has shown mixed effects on blood pressure in hypertensive subjects. While the majority of trials examined reported modest blood-pressure lowering effects, one randomized controlled trial found no effect on blood pressure. The mixed results suggest that pycnogenol blood-pressure lowering effects may be dependent on the underlying cause of hypertension. More research is needed to determine which individuals with hypertension may benefit from supplementation.
	<a href="#">Leg Swelling</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to reduce leg swelling secondary to the enhancement of blood flow. While the evidence is not overly robust, it is comparable if not better than the reference supplement of <a href="#">Horse Chestnut</a>
	<a href="#">Symptoms of Osteoarthritis</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	The preliminary evidence at this point in time (promising and independent, but limited) support the usage of pycnogenol in reducing all symptoms of osteoarthritis, reaching up to a halving of symptoms but requiring 90 days for effects to occur

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Asthma</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A slight reduction in asthmatic symptoms has been noted with Pycnogenol supplementation
	<a href="#">Attention</a>	 Minor	- <a href="#">See study</a>	An improvement in attention has been noted, possibly secondary to improvements in general cognition, in students during prolonged academic testing
	<a href="#">Cognition</a>	 Minor	- <a href="#">See study</a>	An improvement in cognitive function has been noted in students during academic testing
	<a href="#">General Oxidation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction in general oxidation is noted following prolonged Pycnogenol supplementation
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	May reduce LDL cholesterol for as long as pycnogenol is taken (some evidence to suggest a normalization after supplement cessation)
	<a href="#">Pain</a>	 Minor	- <a href="#">See study</a>	A reduction in pain secondary to improvements in symptoms of osteoarthritis has been noted, and while notable in this certain instance it is not certain if there are inherent analgesic effects
	<a href="#">Skin Elasticity</a>	 Minor	- <a href="#">See study</a>	An improvement in skin elasticity has been noted with Pycnogenol supplementation
	<a href="#">Skin Quality</a>	 Minor	- <a href="#">See study</a>	Oral supplementation of standard doses of procyanidins can improve skin quality in elderly women, other demographics not tested
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	An increase in well being and mood has been noted in students undergoing academic testing, which correlated with improved test scores
	<a href="#">Symptoms of Menopause</a>	 Minor	- <a href="#">See study</a>	A decrease in some symptoms of menopause has been noted with Pycnogenol supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant alterations in C-Reactive protein noted
	<a href="#">Endothelin-1</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">HbA1c</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant alterations in heart rate noted
	<a href="#">Inflammation</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on standard inflammatory cytokines
	<a href="#">Nitric Oxide</a>	-	- <a href="#">See study</a>	Despite one study establishing the blood flow effects are dependent on nitric oxide, there do not appear to be any significant differences in nitric oxide quantities in saliva
	<a href="#">Chronic Venous Insufficiency</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Reduces symptoms of chronic venous insufficiency. Potentially useful as an adjunct to compression therapy.
	<a href="#">Erections</a>	 Minor	- <a href="#">See study</a>	May be proerectile in persons with organic erectile dysfunction (due to poor blood flow)
	<a href="#">HDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase HDL cholesterol, but has mixed evidence to support it and may be unreliable

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">NF-kB Activity</a>	 Minor	- <a href="#">See study</a>	A decrease in nF-kB activity has been confirmed in humans given 200mg pycnogenol daily for five days, to the degree of around 15%
	<a href="#">Symptoms of Irritable Bowel Syndrome</a>	 Minor	- <a href="#">See study</a>	One open-label study (lacks blinding for investigators or subjects and no placebo-control) indicated that pycnogenol efficacy for IBS symptoms was on par with some of the common pharmacological antispasmodic agents. Although the study design was weak, other studies demonstrating that pycnogenol has a relaxing effect on intestinal smooth muscle tissue lends some increased confidence that it may also be effective as a treatment for IBS.
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible cholesterol lowering effects of small magnitude, but these are not wholly reliable
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	
	<a href="#">Insulin Secretion</a>	-	- <a href="#">See study</a>	
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant alterations on triglycerides

Back to: [Supplements](#) | [Health Outcomes](#)





# Pygeum

Pygeum is an extract made from the the bark of the Prunus africana tree. It is commonly sold as a supplement for prostate health.

See [Pygeum on Examine.com](#)

## How to Take

Most prostate health supplements and scientific studies use a dose of 50-100mg of pygeum , taken daily. Additional research is needed to determine the optimal dose of pygeum bark.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Benign Prostatic Hyperplasia</a>	 Minor	- <a href="#">See study</a>	Urinary complications with Benign prostatic hyperplasia appear to be reduced with Pygeum supplementation in the range of 19-23% (including nocturia, residual urine volume, and urinary flow rate).

Back to: [Supplements](#) | [Health Outcomes](#)

# Pyritinol

Also known as: *Pyrithioxine, Encephabol (Brand Name)*

---

Pyritinol (Pyrithioxine) is a molecule that is, structurally, two Vitamin B6 molecules attached to each other. It is touted to be an anti-hangover pill and a brain booster, with subpar evidence for both claims; it is linked to a moderate amount of avoidable side-effects.

See [Pyritinol on Examine.com](#)

## How to Take

A standard dosage of pyritinol used is 600mg taken in divided doses throughout the day with meals, usually 300mg taken with two meals of the day.

Back to: [Supplements](#) | [Health Outcomes](#)

# Pyrrroloquinoline quinone

Also known as: PQQ, Methoxatin











Other uses:

PQQ is a small molecule once thought to be a vitamin, although its actions in the human body are not related to this hypothesized vitamin-like mechanism. Via its actions as a REDOX agent in cells, it can modify signalling and is thought to support mitochondrial function.

See [Pyrrroloquinoline quinone on Examine.com](#)

## How to Take

The optimal dosage of Pyrrroloquinoline quinone (PQQ) to be taken daily is currently not known, but extrapolations from animal studies suggest that doses as low as 2mg are somewhat bioactive while most dietary supplements are sold in the 20-40mg range.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	 Notable	- <a href="#">See study</a>	The decrease in C-reactive protein seen in one study in otherwise healthy humans reached 45% after three weeks of supplementation.
	<a href="#">Fatigue</a>	 Minor	- <a href="#">See study</a>	A decrease in fatigue has been noted in older adults with self-reported energy problems
	<a href="#">Interleukin 6</a>	 Minor	- <a href="#">See study</a>	IL-6 appeared to be significantly reduced in the serum of adults given PQQ supplementation relative to baseline.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	Although a decrease technically exists as assessed by TBARS, the decrease was measured at around 0.2% and is practically irrelevant.
	<a href="#">Pain</a>	 Minor	- <a href="#">See study</a>	In persons with sleep disorders taking PQQ (which improved sleep) there were reductions in pain ratings at the end of the trial

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sleep Quality</a>	 Minor	- <a href="#">See study</a>	An improvement in sleep quality has been noted in persons with impaired sleep; it is not certain how PQQ affects persons with normal sleep cycles
	<a href="#">Stress</a>	 Minor	- <a href="#">See study</a>	A reduction in self-reported stress has been noted after 8 weeks in persons with self-reported sleep problems; this study also noted improvements in sleep
	<a href="#">TMAO</a>	 Minor	- <a href="#">See study</a>	A decrease in urinary TMAO has been noted with supplementation of PQQ, which is thought to be due to increased activity of the FMO3 enzyme.
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	Short term ingestion of PQQ supplementation in otherwise healthy adults has failed to significantly influence serum glucose concentrations.
	<a href="#">General Oxidation</a>	-	- <a href="#">See study</a>	Overall oxidation in serum as assessed by TRAP has failed to be significantly influenced by PQQ supplementation in otherwise healthy adults.
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	Three weeks supplementation of PQQ has failed to significantly influence HDL cholesterol levels in otherwise healthy adults.
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No apparent changes to LDL cholesterol exist in otherwise healthy adults given PQQ supplementation daily for up to three weeks.
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	Serum ALT is not affected by supplementation of PQQ for up to three weeks.
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	Short term supplementation of PQQ has failed to significantly influence triglycerides in otherwise healthy adults









# Pyruvate











Pyruvate is an energy intermediate in cells, derived from both glucose and fatty acids to produce ATP. Despite this importance, human studies are not overly promising and the high doses needed are sometimes limited by intestinal side-effects.

See [Pyruvate on Examine.com](#)

## How to Take

Most studies on pyruvate substituted dietary carbohydrates for pyruvate as pyruvate itself does contain calories. The dose used in studies showing most fat loss is in the range of 20-50g daily, or replacing 10-20% of caloric intake (initially from carbohydrates) with supplemental pyruvate. The lowest effective range noted in the aforementioned studies is replacing 6-12g of carbohydrates with pyruvate, but even then the results seen with pyruvate are variable and lacklustre enough to warrant caution in buying this supplement.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Mass</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	The majority of the evidence currently does not support a role for supplemental Pyruvate in weight loss. The limited evidence to suggest fat loss are in obese women under severe caloric restriction, of which pyruvate was twice linked to increase the already drastic weight loss
	<a href="#">Weight</a>	-	<b>Low</b> <a href="#">See all 5 studies</a>	Most evidence suggests that standard oral doses of Pyruvate supplementation do not have a reducing effect on weight, but the effects of high dose pyruvate during severe caloric restriction cannot be ruled out
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	May reduce blood pressure in hyperlipidemics, relation to weight loss not known
	<a href="#">Fatigue</a>	 Minor	- <a href="#">See study</a>	May reduce fatigue during weight loss periods
	<a href="#">Heart Rate</a>	 Minor	- <a href="#">See study</a>	May decrease heart rate alongside blood pressure in hyperlipidemics according to one trial

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A reducing effect on LDL-C has been noted once during caloric surplus; practical relevance of this information unknown
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	An increase in well being may occur secondary to weight loss, although due to the complications in weight loss with pyruvate this may not be feasible
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	A reduction in total cholesterol has been noted once in response to a high fat hypercaloric diet; practical relevance unknown
	<a href="#">Aerobic Exercise</a>	-	- <a href="#">See study</a>	No significant influence on aerobic exercise performance
	<a href="#">HDL-C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant influence on HDL-C levels
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	No significant influence on power output noted with pyruvate supplementation in healthy athletes
	<a href="#">Training Volume</a>	-	- <a href="#">See study</a>	No significant influence on training volume in otherwise healthy persons given an exercise protocol

# Quercetin










Also known as: Apple extract, 3,4,5,7-pentahydroxyflavone

Quercetin is the most well researched of all bioflavonoids. It is not actually that good of a supplement on its own, but is an interesting research topic. Tons of interactions, and synergistic with other bioflavonoids and increases absorption of Resveratrol and Green Tea Catechins.

See [Quercetin on Examine.com](#)

## How to Take

Dosages of quercetin used are in the range of 12.5 to 25mg per kg body weight, which translates to a range of 1,136-2,272mg daily consumption of quercetin when in isolation. It is suggested to supplement with other bioflavonoids such as resveratrol, genistein, or green tea catechins to increase the potency synergistically and theoretically get the benefits at a reduced level of intake. When looking for quercetin, the form of dihydrate has the apparent best bioavailability followed by glycosides, aglycone, and finally rutinoid.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No acute alterations in blood pressure following Quercetin supplementation
	<a href="#">Exercise-induced Stress Response</a>	 Notable	- <a href="#">See study</a>	The exercise-induced increase in HSP70 expression is abolished with quercetin preloading
	<a href="#">General Oxidation</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May reduce oxidative biomarkers in serum and urine, but is a tad unreliable in doing so.
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See 2 studies</a>	An increase in HDL-C has been noted following quercetin supplementation
	<a href="#">Intestinal Permeability</a>	 Minor	- <a href="#">See study</a>	An increase in the amount of intestinal permeability induced by training in the heat has been noted with quercetin supplementation, which is an adverse event; the influence of quercetin at rest is uncertain

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See 2 studies</a>	A decrease in LDL-C has been noted in persons with high blood lipids, although this decrease is not observed in persons who do not have high LDL-C concentrations.
	<a href="#">8-isoPGF2a</a>	-	- <a href="#">See study</a>	Urinary 8-isoPGF2a is unchanged with prolonged quercetin supplementation.
	<a href="#">Anaerobic Running Capacity</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on anaerobic exercise capacity when preloaded
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant alterations in blood glucose are detected with quercetin supplementation.
	<a href="#">Fat Oxidation</a>	-	- <a href="#">See study</a>	No significant alterations in fat oxidation noted with quercetin supplementation
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	No significant influence on fatigue nor vitality in otherwise healthy persons
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influence on heart rate either acutely or with prolonged supplementation.
	<a href="#">Hydration (Total Body Water)</a>	-	- <a href="#">See study</a>	Hydration during exercise in the heat is unaffected by quercetin supplementation.
	<a href="#">Inflammation</a>	-	- <a href="#">See study</a>	Mixed influence on inflammation, but does not appear to at all be practically significant
	<a href="#">Interleukin 6</a>	-	- <a href="#">See study</a>	The alterations in IL-6 concentrations seen with exercise are unchanged with quercetin supplementation.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Metabolic Rate</a>	-	- <a href="#">See study</a>	No significant influence on metabolic rate following acute Quercetin supplementation
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Sleep Quality</a>	-	- <a href="#">See study</a>	No significant influence on sleep quality
	<a href="#">Training Volume</a>	-	- <a href="#">See study</a>	Training volume does not appear to be significantly influenced with quercetin supplementation.
	<a href="#">Uric Acid</a>	-	- <a href="#">See study</a>	No significant influence on uric acid concentrations
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant alterations detected in body weight with quercetin supplementation.
	<a href="#">vLDL-C</a>	-	- <a href="#">See study</a>	No significant changes in vLDL-C are detected with quercetin supplementation.
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	An increase in total cholesterol has been noted, but mostly attributed to HDL

Back to: [Supplements](#) | [Health Outcomes](#)

# Raspberry Ketone





Also known as: 4-(4-hydroxyphenyl) butan-2-one, p-hydroxybenzyl acetone

Raspberry ketone is a molecule marketed as a fat burning compound. Oral doses of this supplement are not effective.

See [Raspberry Ketone on Examine.com](#)

## How to Take

There is no human evidence for the effects of raspberry ketones. Studies on rats have used a dosage range of .545-2.18g/kg, which correlates to a human estimated dose of 80-340mg/kg for humans. This dose is very high compared to other fat burning compounds, so for that reason the standard supplemental dose of raspberry ketones for humans is in the 100-200mg range. There is no solid evidence for the effectiveness of the doses listed below. Rat dosages correlate to the following human doses: 870-3,700mg for a 150lb person 1,100-5,000mg for a 200lb person 1,500-6,200mg for a 250lb person There is no human evidence for the effectiveness of raspberry ketones. Raspberry ketones cannot be concentrated in the human body the same way they are concentrated during studies done outside the body, on single cells.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hair Regrowth</a>	 Minor	- <a href="#">See study</a>	May induce hair growth when topically applied
	<a href="#">Skin Elasticity</a>	 Minor	- <a href="#">See study</a>	Appears to benefit the skin when topically applied as part of a cream

Back to: [Supplements](#) | [Health Outcomes](#)

# Rauwolscine

*Also known as: Alpha-yohimbine, isoyohimbine*

*Other uses:*

---

Rauwolscine is a molecule which is very similar in structure to yohimbine, and probably similar in its effects as well; may be more potent, but limited evidence exists.

See [Rauwolscine on Examine.com](#)

## How to Take

There is insufficient information for recommending a dosage of rauwolscine, although usually the dosing of yohimbine supplementation is extrapolated onto rauwolscine.

Back to: [Supplements](#) | [Health Outcomes](#)

# Red Clover Extract






Also known as: *trifolium pratense*, biochanin A, Formononetin Promensil (brand name), Menoflavon (brand name)


Red Clover Extract (Promensil or Menoflavon) are isoflavones including the soy isoflavones in low amounts and some similar structures such as Biochanin A; used as a therapy for menopause, red clover appears to have minor yet unreliable benefits in improving health and reducing hot flashes.

See [Red Clover Extract on Examine.com](#)



## How to Take









Supplementation of Red Clover Extract tends to be 40mg of total isoflavones taken once a day, or two doses totalling 80mg a day. This can be reached through: Supplementing pure isoflavones (in which case the range is 40-80mg) Supplementing brand name products such as Promensil, which confer 40mg isoflavones per 500mg capsule (so, around 8% isoflavones by weight) Approximately 5 grams of the whole plant without any particular extraction techniques

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	-	<b>High</b> <a href="#">See all 13 studies</a>	Similar to other lipid parameters, despite an increase (10-20%) being noted in a few studies the best evidence to date does not support this conclusions and the benefits, when they occur, are unreliable.
	<a href="#">LDL-C</a>	-	<b>High</b> <a href="#">See all 11 studies</a>	Although a minor effect may occur in those with high blood cholesterol concentrations, the majority of evidence does not support a role of Red Clover Extract in reducing LDL-C when supplemented.
	<a href="#">Symptoms of Menopause</a>	-	<b>Moderate</b> <a href="#">See all 12 studies</a>	While isolated studies have noted some benefits, the best evidence at this moment in time (Independently conducted and larger, better conducted, studies) tend to note no significant influence on the main climacteric symptoms such as hot flashes with supplementation.
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See all 14 studies</a>	The majority of evidence does not support a role for reducing total cholesterol with supplementation of red clover extract, except perhaps a minor (less than 10%) reduction in overweight postmenopausal women.
	<a href="#">Triglycerides</a>	-	<b>High</b> <a href="#">See all 11 studies</a>	Isolated reports have noted minor (less than 10%) reductions in triglycerides in overweight or hyperlipidemics mostly, but overall there is not a significant reduction in triglycerides noted with Red clover extract.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Apolipoprotein A</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	A large decrease has been noted in one study in overweight postmenopausal women, although three other studies failed to replicate this decrease.
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	The one study in diabetics found a reduction in blood pressure, and due to no studies in hypertensives all other studies have failed to find an influence on blood pressure.
	<a href="#">Bone Mineral Density</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Beyond a small (less than 5%) attenuation in the rate of lumbar bone mineral density losses, standard supplementation does not appear to significantly influence bone mass or the rate of bone loss.
	<a href="#">Estrogen</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	Regardless of any direct estrogenic effects (which also do not appear to occur) there are no changes in circulating estrogen seen with oral supplementation of red clover extract.
	<a href="#">Follicle-Stimulating Hormone</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	No significant influence on FSH seen with oral supplementation of red clover to postmenopausal women
	<a href="#">IGF Binding Protein</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No influence of supplementation on circulating concentrations of any measured IGF binding protein (IGFBP-1, IGFBP-2, IGFBP-3) in any tested population.
	<a href="#">IGF-1</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Supplementation does not appear to significantly influence circulating IGF-1 concentrations, although equol (a possible metabolite of formononetin) has been associated with a reduction not observed to a significant degree in most trials on red clover extract.
	<a href="#">Luteinizing Hormone</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Luteinizing hormone does not appear to be significantly influenced with oral supplementation of red clover extract in postmenopausal women.
	<a href="#">Sex Hormone Binding Globulin</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	There are no significant alterations in the circulating levels of SHBG seen with red clover supplementation.
	<a href="#">Testosterone</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	The majority of evidence has suggested no significant influence of red clover supplementation on the testosterone concentrations in postmenopausal women

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	No studies, even those using up to 120mg total isoflavones for up to a year, have noted significant weight loss associated with Red Clover supplementation in postmenopausal women.
	<a href="#">Anxiety</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A minor reduction in anxiety (associated with menopause) has been noted in one independent trial while it was much more significant (near 80%) in a study with a potential conflict of interest; requires more research.
	<a href="#">Depression</a>	 Notable	- <a href="#">See study</a>	Depression as a side-effect of menopause has been noted to be decreased to quite a significant level (around 80%) which needs to be replicated due to possible funding issues.
	<a href="#">Arterial Stiffness</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Short term supplementation of red clover isoflavones appears to reduce arterial stiffness in a manner independent of changes in blood pressure or flow.
	<a href="#">Cell Adhesion Factors</a>	 Minor	- <a href="#">See study</a>	Isolated formononetin has been noted to reduce circulating VCAM-1 levels by approximately 11% in one study.
	<a href="#">Dry Eyes</a>	 Minor	- <a href="#">See study</a>	The complaint of 'dry eyes' appears to be slightly reduced in postmenopausal women given 80mg of the isoflavones as a supplement.
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	While one study has noted no significant effect, another has noted a minor reduction in sensitivity as assessed by QUICKI; reasons underlying this are unknown.
	<a href="#">Memory</a>	 Minor	- <a href="#">See study</a>	The lone study to assess cognition in older women in menopause has noted an increase in visuospatial processing yet a reduction in digit span and verbal memory tests; uncertain implications.
	<a href="#">Skin Quality</a>	 Minor	- <a href="#">See study</a>	There appears to be an overall increase in skin texture and moisture content associated with oral supplementation of the isoflavones, and a depigmenting activity should also apply (not yet shown in humans)
	<a href="#">Sleep Quality</a>	 Minor	- <a href="#">See study</a>	In post menopausal women, there appears to be an increase in self reported sleep quality that was quite notable, reaching 70-73 points of improvement on a 0-100 rating scale (placebo at 10-16) although this needs to be replicated (independently) to assure quality of data.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Attention</a>	-	- <a href="#">See study</a>	No significant influence on attention processing in older women in a postmenopausal state with supplementation of red clover isoflavones.
	<a href="#">Blood Flow</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	The reduction in arterial stiffness (increase in arterial compliance) sometimes seen with supplementation of red clover extract does not necessarily coincide with improved blood flow.
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fasting blood glucose concentrations are known with supplementation of red clover extract.
	<a href="#">Breast Density</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Breast density, as a measure of estrogenicity, has failed to be significantly influenced with supplementation of red clover extract in postmenopausal women.
	<a href="#">Fibrinogen</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No known changes to circulating fibrinogen concentrations.
	<a href="#">General Oxidation</a>	-	- <a href="#">See study</a>	There does not appear to be a significant influence on oxidative parameters seen with supplementation of red clover isoflavones.
	<a href="#">HbA1c</a>	-	- <a href="#">See study</a>	No significant changes in HbA1c seen with supplementation of red clover in diabetics.
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant influence on resting heart rate is seen with supplementation of red clover extract.
	<a href="#">Homocysteine</a>	-	- <a href="#">See study</a>	There do not appear to be changes to circulating homocysteine in premenopausal women given supplementation of red clover extract.
	<a href="#">Insulin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Fasting blood insulin concentrations do not appear to be significantly influenced with supplementation of red clover extract.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lipid Peroxidation</a>	-	- <a href="#">See study</a>	No known interactions with serum MDA concentrations, a biomarker of lipid peroxidation.
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	Liver function does not appear to be significantly altered with supplementation of red clover.
	<a href="#">Osteocalcin</a>	-	- <a href="#">See study</a>	Circulating osteocalcin does not appear to be influenced with supplementation of red clover extract.
	<a href="#">Plasminogen Inhibitor 1</a>	-	- <a href="#">See study</a>	Circulating levels of PAI-1 (plasminogen activation inhibitor 1) have not been altered with supplementation of red clover isoflavones.
	<a href="#">Serum Folate</a>	-	- <a href="#">See study</a>	There do not appear to be any significant changes to circulating folate seen with supplementation of red clover extract.
	<a href="#">Subjective Well-Being</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Two differing studies have noted either no improvement of well being in menopausal women, or a significant (near 80%) improvement; more research is needed to refine the actual effect, but the study noting no effect is considered higher quality.
	<a href="#">Apolipoprotein B</a>	 Minor	- <a href="#">See study</a>	One preliminary study has noted a reduction in Apolipoprotein B concentrations with supplementation of a Formononetin rich red clover supplement.

Back to: [Supplements](#) | [Health Outcomes](#)



# Red Yeast Rice

*Also known as: RYR*

---

Red Yeast Rice (RYR) is a rice product fermented by bacteria that contains the drug lovastatin, and is currently the most effective naturally occurring statin. It is able, like most statins, to reduce circulating cholesterol levels.

See [Red Yeast Rice on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Resveratrol

Also known as: *Red Wine Extract*, 3,5,4'-trihydroxystilbene











Other uses:

A molecule known for its content in wine, and falsely said to increase lifespan (does not appear to do so in mammals). It appears to be effective at protecting the heart and blood flow, and may be an insulin sensitizer. Does not add years to life, but may add life to years.


See [Resveratrol on Examine.com](#)




## How to Take

The lower end of supplementation tends to be for cardiovascular health, insulin sensitivity, and longevity for somebody who is otherwise unhealthy is 5-10mg daily. For persons who are otherwise healthy, dosages between the range of 150-445mg have been used (with no clear indication for what is the optimal dose). Supplementing for cerebral blood flow requires a dose in the 250-500mg range whereas supplementation for aromatase inhibition requires 500mg as well. Supplementation of resveratrol refers to trans-resveratrol exclusively.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Adaptations to Exercise</a>	 Notable	- <a href="#">See study</a>	Supplementation of resveratrol before exercise can fairly effectively prevent the benefits associated with intense exercise (increases in oxygen capacity and HDL-C, reductions in LDL-C and blood pressure) in otherwise healthy men. Theoretically, the mTOR inhibition of resveratrol may also inhibit muscle protein synthesis.
	<a href="#">Exercise-Induced Oxidation</a>	 Notable	- <a href="#">See study</a>	The oxidation induced by exercise is effectively diminished with resveratrol, which is thought to underlie the inhibitory effects on exercise-induced adaptations.
	<a href="#">Anaerobic Running Capacity</a>	 Minor	- <a href="#">See study</a>	150mg resveratrol taken shortly after a workout appears to hinder the improvements in anaerobic physical performance seen with exercise alone; effects of resveratrol at other times uncertain.
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See study</a>	An improvement in blood flow (secondary to <a href="#">nitric oxide</a> interactions) has been noted with low dose resveratrol, possibly relevant to high wine and grape product consumption
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	A decrease in blood glucose has been noted, practical significance unknown

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	Blood pressure has been reduced with resveratrol in persons with high blood pressure; influence on otherwise healthy persons unknown
	<a href="#">Cerebral Blood Flow</a>	 Minor	- <a href="#">See study</a>	500mg of resveratrol (high dose) has been confirmed to increase cerebral blood flow
	<a href="#">DNA Methylation</a>	 Minor	- <a href="#">See study</a>	A decrease in DNA methylation rates has been noted
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in oxidative biomarkers has been noted following resveratrol supplementation
	<a href="#">Insulin</a>	 Minor	- <a href="#">See study</a>	A decrease in insulin (fasting) has been noted in persons with metabolic syndrome
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be an increase in insulin sensitivity seen with resveratrol at doses low enough to be achieved via wine consumption, all tests currently in obese and unhealthy persons
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	Possible decreases in LDL-C in persons at risk for heart disease, but it does not appear to be of large magnitude
	<a href="#">Left Ventricular Ejection Fraction</a>	 Minor	- <a href="#">See study</a>	10mg resveratrol appears to improve left ventricle function slightly
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	In persons with elevated liver enzymes (not pathological, just metabolic syndrome) there appeared to be a protective effect on the liver from resveratrol supplementation
	<a href="#">Metabolic Rate</a>	 Minor	- <a href="#">See study</a>	A decrease in the metabolic rate has been noted in humans, thought to be related to the caloric restriction mimetic aspect

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Power Output</a>	 Minor	- <a href="#">See study</a>	150mg resveratrol taken shortly after a workout appears to hinder the improvements in power output (assessed via Wingate test) seen with exercise alone; effects of resveratrol at other times uncertain.
	<a href="#">TNF-Alpha</a>	 Minor	- <a href="#">See study</a>	A significant decrease in circulating TNFα levels have been detected with resveratrol supplementation; linked to antiinflammatory effects of resveratrol
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	A decrease in triglycerides has been noted with resveratrol supplementation
	<a href="#">VO2 Max</a>	 Minor	- <a href="#">See study</a>	150mg resveratrol taken shortly after a workout appears to hinder the improvements in VO2 max seen with exercise alone; effects of resveratrol at other times uncertain.
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant effect on C-reactive protein
	<a href="#">Cognition</a>	-	- <a href="#">See study</a>	No significant influence on cognition in otherwise healthy persons (despite an increase in cerebral blood flow)
	<a href="#">Fat Oxidation</a>	-	- <a href="#">See study</a>	Resting fat oxidation does not appear to be altered when 150mg resveratrol is taken shortly after exercise.
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	No significant influence on self-reported ratings of fatigue at rest
	<a href="#">Glycogen Content</a>	-	- <a href="#">See study</a>	150mg resveratrol taken shortly after a workout appears does not appear to influence muscular glycogen content at rest.
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL cholesterol

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant effect on total cholesterol levels
	<a href="#">Acne</a>	 Notable	- <a href="#">See study</a>	Topical application of resveratrol in a cream more than halved the rating scores of acne, and reductions in lesion count were also noted (but only to 10%)

Back to: [Supplements](#) | [Health Outcomes](#)

# Rhamnus nakaharai

---

Rhamnus Nakaharai is a herb that has been used as folk medicine in Taiwan for intestinal distress (mostly constipation) and asthma, it is a good source of Quercetin glycosides but not much research exists on the herb per se.

See [Rhamnus nakaharai on Examine.com](#)

## How to Take

Not enough information is known about Rhamnus Nakaharai to come to a conclusion on proper dosages.

Back to: [Supplements](#) | [Health Outcomes](#)

# Rhaponticum carthamoides

Also known as: *Maral Root*, *Rhaponticum*, *Russian leuzea*, *Leuzea carthamoides*

---

Commonly referred to as either Maral Root or Russian Leuzea, *Rhaponticum carthamoides* is a plant source of ecdysteroids that are thought to promote muscle growth in a non-hormonal manner. Applied human studies on this topic are lacking.

See [Rhaponticum carthamoides on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Rhodiola Rosea

Also known as: Rosavin, Rosenroot, Rhodiola Rhizome, Golden Root, Arctic Root, Rhidola











Other uses:

Rhodiola rosea is an herb that's popular for its "adaptogenic" properties (reducing fatigue and exhaustion in prolonged stressful situations). Preliminary evidence has also looked at neuroprotection, among other possible benefits.

See [Rhodiola Rosea on Examine.com](#)





## How to Take

Supplementation of rhodiola rosea tends to refer to either the SHR-5 extract in particular or an equivalent extract, any that confers both 3% rosavins and 1% salidroside. Usage of rhodiola as a daily preventative against fatigue has been reported to be effective in doses as low as 50mg. Acute usage of rhodiola for fatigue and anti-stress has been noted to be taken in the 288-680mg range. As rhodiola has been shown to have a bell-curve response before, it is recommended to not exceed the aforementioned 680mg dosage as higher doses may be ineffective.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fatigue</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	The decrease in fatigue appears to be quite strong and somewhat reliable when a low dose is given over a prolonged period of time or a high dose is given acutely; there is one study which has noted an increase in fatigue (relative to placebo) that needs to be expanded upon.
	<a href="#">Cognition</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Notably effective assuming fatigue is being reduced. There is insufficient evidence to evaluate rhodiola's effects on cognition without the fatigue reduction aspect
	<a href="#">Subjective Well-Being</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Increases in subjective well being and contentment in fatigued or stressed individuals appears to be greater than other supplements.
	<a href="#">Depression</a>	 Notable	- <a href="#">See study</a>	Limited evidence, but up to a halving of symptoms has been noted with higher doses of Rhodiola
	<a href="#">C-Reactive Protein</a>	 Minor	- <a href="#">See study</a>	A decrease in C-reactive protein has been noted with rhodiola supplementation; practical significance of these results unknown



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactate Production</a>	 Minor	- <a href="#">See study</a>	A decrease in lactate production has been noted with rhodiola supplementation; practical significance unknown
	<a href="#">Muscle Damage</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Able to reduce circulating levels of creatine kinase following exercise
	<a href="#">Processing Accuracy</a>	 Minor	- <a href="#">See study</a>	Increases in processing accuracy are likely secondary to reductions in fatigue
	<a href="#">Rate of Perceived Exertion</a>	 Minor	- <a href="#">See study</a>	Possibly effective if confounded with fatigue (the antifatigue effects may reduce the rate of perceived exertion during submaximal exercise) but there does not appear to be strong effects in maximal effort trials
	<a href="#">Stress</a>	 Minor	- <a href="#">See 2 studies</a>	Might be effective, but the reduction in stress (rating scale) appears to be less than that seen with fatigue
	<a href="#">Attention</a>	-	- <a href="#">See study</a>	No significant influences on attention
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant effects yet noted on blood pressure
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on heart rate found so far
	<a href="#">Lipid Peroxidation</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on lipid peroxidation biomarkers in serum
	<a href="#">Muscle Oxygenation</a>	-	- <a href="#">See study</a>	No significant effects on oxygenation during exercise or simulated altitude tests

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	No significant influences on power output
	<a href="#">Reaction Time</a>	-	- <a href="#">See study</a>	No significant influences on reaction time
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	May slightly improve oxygen consumption during submaximal exercise in untrained persons, but overall the improvement in VO2 max does not appear to be highly potent or reliable.
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	Unable to modify weight over time

Back to: [Supplements](#) | [Health Outcomes](#)

# Rooibos











Also known as: *Aspalathus linearis*, Red Bush Tea











Rooibos (*Aspalathus linearis*) is a semi-sweet tea touted for its potent antioxidant properties; despite being highly palatable and marketed, the poor absorption of the main bioactive (aspalathin) suggests a limit to its health promoting properties.

See [Rooibos on Examine.com](#)

## How to Take

Not enough information is known to evaluate the optimal dosage or Rooibos as a tea or as a supplement, although it appears that the minimum effective dose in humans has been a cup of tea brewed from 750mg of the plant. A daily intake of 750-3,000mg of the tea leaves, preferably in multiple doses with meals, might be optimal

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">General Oxidation</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	A decrease sometimes occurs, although this has not been noted in all instances. The decrease in healthy persons is minor and lasts for about 5 hours, whereas it may be more prominent in persons at risk for cardiovascular disease
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See 2 studies</a>	A decrease may occur in persons at risk of cardiovascular disease with daily ingestion of Rooibos tea, although at least one study noted an inexplicable acute increase in otherwise healthy persons (faded within an hour of ingestion).
	<a href="#">HDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Increases HDL-C in persons at risk for cardiovascular disease to a small amount, does not appear effective in otherwise healthy persons
	<a href="#">LDL-C</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in LDL-C has been noted to a minor degree in persons at risk for cardiovascular disease, but there is no inherent reduction in LDL-C in otherwise healthy persons.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in lipid peroxidation has been noted following oral ingestion of Rooibos tea

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May decrease total cholesterol to a small degree in unhealthy persons
	<a href="#">Triglycerides</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A minor reduction of triglycerides occurs with daily ingestion of Rooibos tea only in unhealthy persons
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	Despite ACE inhibition, Rooibos tea does not appear to significantly reduce blood pressure
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant alteration in C-reactive protein
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	No significant alterations in heart rate are seen with Rooibos ingestion
	<a href="#">Nitric Oxide</a>	-	- <a href="#">See study</a>	No significant alterations in nitric oxide levels with acute ingestion of Rooibos tea to otherwise healthy persons.
	<a href="#">Uric Acid</a>	-	- <a href="#">See study</a>	No significant influence on uric acid is seen with Rooibos tea ingestion.
	<a href="#">Hydration (Total Body Water)</a>	-	- <a href="#">See study</a>	Rooibos tea does not appear to be significantly better than the water it is brewed in at restoring hydration in athletes

Back to: [Supplements](#) | [Health Outcomes](#)

# Rose Essential Oil











Also known as: Rose, Rosa damascena, Rosa alba, Rosa gallica, Rosa centifolia, Rose Oil





Rose oil is an oil derived from roses (plant genus Rosa) used in aromatherapy and romance. The essential oil appears to be rich in Citronellol, and preliminary evidence suggests sedative, stress relieving, and anti-depressive effects from the aroma.

See [Rose Essential Oil on Examine.com](#)

## How to Take

(There is overall a lack of highly quantifiable information regarding the dosing of Rose essential oil) For the purposes of Aromatherapy, rose essential oil should be applied (or rose aromatics lit) to a degree where the aroma is detectable but not adverse. The room should be poorly to moderately ventilated. Topical administration of rose essential oil for large body surfaces (massage) should be diluted (up to 1%) in a cream or lather prior to administration, while pure essential oil may suffice for small body surface areas for the purposes of aromatherapy (if a wafting aroma from the body is desired over having the rose placed somewhere in the room).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	A small reduction in blood pressure was noted, possibly secondary to reductions in CNS activity
	<a href="#">Breathing Rate</a>	 Minor	- <a href="#">See study</a>	A decrease in breathing rate has been noted to be secondary to relaxing effects of rose oil topical application
	<a href="#">CNS activity</a>	 Minor	- <a href="#">See study</a>	A decrease in CNS activity has been noted following topical application of rose oil (in which aroma was controlled with gas masks)
	<a href="#">Calmness</a>	 Minor	- <a href="#">See study</a>	Self-reported ratings of calmness increase following application of rose oil topically
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	A decrease in cortisol appears to result from the anti-stress response of rose oil inhalation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pain</a>	 Minor	- <a href="#">See study</a>	Inhalation of rose may confer pain relieving properties in emergency situations, although potency relative to other agents is not assessed
	<a href="#">Stress</a>	 Minor	- <a href="#">See study</a>	Self-reported ratings of stress are reduced with rose oil inhalation

Back to: [Supplements](#) | [Health Outcomes](#)

# Rose Hip













Also known as: *Rosa canina*, Dog Rose, *Cynosbati fructus*, *Fructae cynosbati*





Rose hip, the fruit of *Rosa canina*, is a dietary supplement for joint health. It can alleviate symptoms of arthritis if taken daily.

See [Rose Hip on Examine.com](#)

## How to Take

The standard dose for rose hip is 5-10g a day, divided into two doses. Rose hip powder is usually the preferred form of the supplement. Rose hip should be taken with meals. Doses as high as 40g have been used in studies. Aside from some intestinal distress, taking this much rose hip is not harmful.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Osteoarthritis</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be benefit to osteoarthritis symptoms with supplementation of rose hip relative to placebo, with benefits more apparent over longer periods of supplementation.
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A mild (3.7%) decrease in systolic blood pressure has been noted in obese persons given supplementation of rose hip.
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A mild reduction in LDL cholesterol levels seen in obese persons with rose hip supplementation explains the reduction in total cholesterol, as HDL-C appears to be unaffected.
	<a href="#">Pain</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Pain is reduced alongside improvements in osteoarthritic and rheumatoid arthritis, and at least one study (cohort) noted benefits in persons without these diseases yet with high labour jobs. No studies in athletes to assess the analgesic properties yet.
	<a href="#">Symptoms of Rheumatoid Arthritis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be mild benefits to joint symptoms in rheumatoid arthritis when rose hip is supplemented over the course of months, and these benefits may be seen at low (5g) dosages. Short term supplementation has not shown much benefit.
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	A decrease in total cholesterol has been noted to a mild degree in obese persons, although a study in rheumatic patients without any abnormalities in cholesterol metabolism failed to find such an effect.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	 Minor	- <a href="#">See 2 studies</a>	Two human trials have found mixed results. One study in obese humans failed to find evidence for weight loss, whereas one study in overweight humans found some effect.
	<a href="#">Adiponectin</a>	-	- <a href="#">See study</a>	No significant modifications in adiponectin concentrations when rose hip supplementation is given to humans.
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Both fasting and postprandial glucose in persons given prolonged rose hip supplementation is not affected relative to placebo.
	<a href="#">C-Reactive Protein</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	Preliminary studies showed marked reductions in C-reactive protein concentrations in healthy persons, although more recently conducted blinded studies have failed to replicate such a large decrease.
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alteration of HDL-C concentrations has been noted with limited evidence investigating rose hip supplementation.
	<a href="#">HbA1c</a>	-	- <a href="#">See study</a>	No significant influence of rose hip on HbA1c concentrations in the blood of non-diabetic yet obese persons relative to placebo
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence on circulating (basal) insulin has been noted with rosehip supplementation.
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No significant influence on insulin sensitivity has been noted in obese humans relative to placebo.
	<a href="#">Liver Enzymes</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on the liver enzymes of otherwise healthy persons subject to rose hip supplementation
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	At this point in time, there is no evidence to suggest modifications in the circulating levels of TNF- $\alpha$ relative to control.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of rose hip on triglyceride concentrations has been noted.
	<a href="#">Chemotaxis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Chemotaxis of immune cells appears to be reduced with oral ingestion of rose hip supplements. This antiinflammatory/ immunosuppressive mechanism is thought to underlie in part the benefits of rose hip against arthritic symptoms
	<a href="#">Creatinine</a>	 Minor	- <a href="#">See study</a>	Creatinine, a biomarker of kidney damage and muscle damage, has been noted to be reduced with rose hip supplementation in one preliminary trial
	<a href="#">Skin Elasticity</a>	 Minor	- <a href="#">See study</a>	One study found 3 g of oral rose hip powder improved cheek skin elasticity over 8 weeks.
	<a href="#">Skin Moisture</a>	 Minor	- <a href="#">See study</a>	3 g of oral rose hip powder over 8 weeks increased the moisture content of the skin of the forehead.
	<a href="#">Wrinkles</a>	 Minor	- <a href="#">See study</a>	3 g of oral rose hip powder decreased the depth of crow's feet wrinkles.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	-	- <a href="#">See study</a>	Limited evidence has failed to find any significant changes in antioxidant enzyme profiles in the red blood cells of those given rose hip extract
	<a href="#">Body Fat</a>	-	- <a href="#">See study</a>	

# Rosmarinic Acid







Also known as: *Rosmarinus Officinalis* Extract, *Rosemary* Extract, *Perilla Frutescens* extract. *Perilla* Extract

Rosmarinic Acid is a polyphenol similar to caffeic acid (found in coffee) and is in high levels in Perilla Oil and Rosemary, from which it draws its name. It is a general anti-oxidant and health compound, and seen as 'healthy'.

See [Rosmarinic Acid on Examine.com](#)

## How to Take

A standard dose is 200-300mg active Rosmarinic acid (check source for extract percentage) for oral ingestion.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Allergies</a>	 Minor	- <a href="#">See study</a>	Rosmarinic acid appears to be effective in suppressing the response to pollen allergies in persons with seasonal rhinitis
	<a href="#">Nasal Congestion</a>	 Minor	- <a href="#">See study</a>	Nasal congestion is reduced secondary to reducing pollen allergies
	<a href="#">Symptoms of Atopic dermatitis</a>	 Minor	- <a href="#">See study</a>	Topical application of rosmarinic acid may aid symptoms of atopic dermatitis

Back to: [Supplements](#) | [Health Outcomes](#)

# Royal Jelly











Other uses:

Royal jelly is a nutritious jelly with a composition similar to pollen, created by worker bees. It is being researched for its effects on testosterone and longevity.






See [Royal Jelly on Examine.com](#)

## How to Take

More research is needed to determine an optimal dosage for royal jelly. Researchers have observed benefits when using 50-300mg doses. A 6g daily dose has also been shown to provide benefits.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in total cholesterol is noted in the range of 10% associated with 50-100mg of Royal Jelly daily; the evidence this conclusion was drawn from (via a meta-analysis) is a bit lacklustre
	<a href="#">Blood Glucose</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May slightly reduce blood glucose in otherwise healthy older persons, but not to a remarkable degree
	<a href="#">Red Blood Cell Count</a>	 Minor	- <a href="#">See study</a>	At least one study has noted an increase in red blood cell count following ingestion of Royal Jelly
	<a href="#">Testosterone</a>	 Minor	- <a href="#">See study</a>	A small increase in testosterone has been noted with 3g Royal Jelly for 6 months in older men and women, no studies in youth currently and practical significance of such a small increase unknown
	<a href="#">Allergies</a>	-	- <a href="#">See study</a>	No detectable benefit to hay fever or pollen allergies in youth
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant alterations in blood pressure observed over long term supplementation with Royal Jelly

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No significant alterations in estrogen seen with Royal Jelly
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influences on HDL-C detectable
	<a href="#">HbA1c</a>	-	- <a href="#">See study</a>	No significant alterations in HbA1c levels following Royal Jelly ingestion for 6 months
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	Despite a slight reduction in blood glucose, no significant influence on insulin sensitivity noted
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Although a reduction in LDL-C cannot be ruled out (due to the reduction in total cholesterol), the best evidence currently suggest no effect while uncontrolled studies confirm a reduction of minor magnitude
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Although there may be a reduction in triglycerides associated with Royal Jelly, currently the best evidence suggests no such change
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant alterations in weight over the long term with Royal Jelly supplementation
	<a href="#">Symptoms of PMS</a>	 Notable	- <a href="#">See study</a>	One study found a notable reduction with 1000 mg, but it needs replication.
	<a href="#">Depression</a>	 Minor	- <a href="#">See study</a>	Reduction in irritability noted with Royal Jelly may be secondary to reducing symptoms associated with menopause
	<a href="#">Irritability</a>	 Minor	- <a href="#">See study</a>	Decrease in irritability seen with Royal Jelly may be secondary to reducing the symptoms of menopause

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Menopause</a>	 Minor	- <a href="#">See study</a>	A decrease in symptoms related to menopause have been noted with Royal Jelly ingestion
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant alterations in serum C-rp levels
	<a href="#">Cell Adhesion Factors</a>	-	- <a href="#">See study</a>	No significant alterations in VCAM-1 levels in menopausal women, although a trend towards reduction was noted
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	In safety testing, supplemental Royal Jelly does not appear to increase liver enzymes

Back to: [Supplements](#) | [Health Outcomes](#)

# Rubus coreanus









Also known as: Korean Black Raspberry, Rubus tokkura, Cha tian pao, bokbunja, Rubi Fructus






Rubus coreanus (Korean Black Raspberry) is a dark berry sometimes brewed as a wine called bokbunja ju; it has a high levels of anthocyanins of the cyanidin type, and other tannin structures that underlie its antioxidant and proerectile properties.

See [Rubus coreanus on Examine.com](#)

## How to Take

The one human study on the subject matter used 30g of the freeze dried berries and noted antioxidative and liver benefits associated with that dose. For the food product it is probably a good starting point, and there is not enough information to assess if one can use bokbunja ju for health reasons. Many other studies in rats use the supplemental doses of 100-500 mg/kg of the unripe berry powder. In human terms, this gives us estimates of (the following is dry weight of the berry): 1,100-5,450 mg for a 150lb person 1,450-7,300 mg for a 200lb person 1,800-9,000 mg for a 250lb person If using unripe berries with a water content, it will need to be recalculated.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	- <a href="#">See study</a>	There appears to be a mild increase in glutathione peroxidase with no significant influence on catalase nor SOD in otherwise healthy men.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	In otherwise healthy men with no apparent health problems, there is a mild decrease in lipid peroxidation associated with consumption of the berries (12% reduction in MDA)
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	In otherwise healthy men with no health problems, the mild reduction in lipid peroxidation seen was associated with a mild reduction in circulating ALP levels (6%) although AST and GST were unaffected.
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant alterations in fasting blood glucose are noted with daily berry consumption in otherwise healthy persons.
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	In otherwise healthy men, there are no changes in C-reactive protein levels seen with berry consumption.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence of the berries on HDL cholesterol levels in men who are otherwise healthy.
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant influence of <i>rubus coreanus</i> on LDL cholesterol levels in otherwise healthy persons.
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	Despite the highly promising evidence in rats, there is no significant influence of the berries on testosterone levels of otherwise healthy men.
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	Currently the only study is in otherwise healthy men with no cholesterol problems, and there was no influence of berry consumption.
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence of this berry on the triglycerides of otherwise healthy men.



Back to: [Supplements](#) | [Health Outcomes](#)

# Rubus suavissimus

Also known as: Chinese sweet leaf tea, Ten-cha

Rubus suavissimus (Chinese sweet leaf) is a plant whose leaves are used to brew a sweetened tea, and it is currently thought to be a decent weight loss aid in part due to suppressing the formation of body fat and in part due to its sweetness helping with food cravings.

See [Rubus suavissimus on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Allergies</a>	-	- <a href="#">See study</a>	Although this tea appears to be a popular tea for the purpose of treating allergic rhinitis, the currently available human evidence does not support this conclusion.
	<a href="#">Nasal Congestion</a>	-	- <a href="#">See study</a>	Due to the lone study failing to find benefit to allergic symptoms with 400mg of the leaf extract, there are no reported benefits to allergic rhinitis

Back to: [Supplements](#) | [Health Outcomes](#)



# Ruscus aculeatus










Also known as: *Butcher's Broom*, *Jew's Myrtle*, *Knee Holly*, *Kneeholm*, *Pettigree*, *Sweet Broom*









An herb more commonly known as Butcher's Broom, *ruscus aculeatus* is traditionally used for circulation and appears to constrict veins. This is thought to reduce pooling of blood in extremities, and the limited evidence appears to be promising.

See [Ruscus aculeatus on Examine.com](#)

## How to Take

Supplementation of *ruscus aculeatus* tends to use the rhizome (vertical root above the ground) of the plant, and when using this extract it tends to be at concentrations above 10-fold (10:1) to 20-fold (20:1), in order to concentrate the main bioactives which are the ruscogenins. In the above extract range, doses of 37.5mg are taken twice daily to total 75mg daily. This equates to approximately 750-1,500mg of the rhizome's unextracted dry weight daily. There is not enough evidence to suggest whether it is better to take *ruscus aculeatus* on an empty stomach or with a meal, and while the above dosing appears effective there is not enough evidence to suggest if it is the optimal dosage.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chronic Venous Insufficiency</a>	 Minor	- <a href="#">See study</a>	<i>Ruscus aculeatus</i> appears to be more effective than placebo for treating chronic venous insufficiency, although the degree of benefit relative to other treatments is not established.
	<a href="#">Leg Swelling</a>	 Minor	- <a href="#">See study</a>	Secondary to its venotropic actions in persons with chronic venous insufficiency, supplementation of <i>ruscus aculeatus</i> appears to reduce leg swelling and edema (thigh and ankle).
	<a href="#">Subjective Well-Being</a>	-	- <a href="#">See study</a>	Despite improving symptoms of chronic venous insufficiency in the afflicted persons, supplementation failed to lead to an increase in quality of life relative to placebo.
	<a href="#">HDL-C</a>	 Notable	- <a href="#">See study</a>	A fairly notable increase in HDL-C (23%) in the lone (but not placebo controlled) study with <i>ruscus aculeatus</i> , requires replication
	<a href="#">HbA1c</a>	 Notable	- <a href="#">See study</a>	The decrease in HbA1c noted in this pilot study (15.6%) was fairly marked and requires replication.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	A reduction reaching 10.2% blood glucose has been noted with continual supplementation of <i>ruscus aculeatus</i> in type II diabetic persons in this non-placebo controlled study; requires replication.
	<a href="#">Fructosamine</a>	 Minor	- <a href="#">See study</a>	A 7.8% reduction in fructosamine has been noted with supplementation of <i>ruscus aculeatus</i> in diabetic persons.
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	A decrease in total cholesterol (9.4%) has been noted in diabetic persons alongside an increase in HDL-C. Requires replication.
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on circulating triglycerides in diabetic persons given <i>ruscus aculeatus</i> supplementation.
	<a href="#">Visual Acuity</a>	-	- <a href="#">See study</a>	The improvement in visual acuity seen with supplementation of this herb failed to reach statistical significance in diabetic persons with retinopathy.

Back to: [Supplements](#) | [Health Outcomes](#)

# S-Adenosyl Methionine

Also known as: SAME, SAmE, Adomethionine, S-adenosyl-L-methionine, Adomet











Other uses:

S-Adenosylmethionine (SAME) is a methyl donating compound that circulates in the blood and provides methyl groups to maintain other metabolic reactions. Lowered SAME levels are associated with depressive symptoms, and supplementation may aid a partial deficiency.



See [S-Adenosyl Methionine on Examine.com](#)

## How to Take

Supplementation of S-adenosylmethionine tends to be in the 600-1,200mg range over the course of a day, divided into two or three separated doses with meals. The higher dosage (1,200mg) tends to be used more often, with the lower dosage (600mg) being used to cut costs. For S-adenosylmethionine to benefit osteoarthritis, it appears to require a few weeks or up to a month of continual usage for benefits to show. Benefits to depressive symptoms may be much more rapid.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Osteoarthritis</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Decreases in symptoms of osteoarthritis appear to be reduced to similar levels with SAME as with pharmaceuticals like Naproxen, although SAME requires a longer period of time for efficacy to occur
	<a href="#">Functionality in Elderly or Injured</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Somewhat of an increase in functionality of elderly persons, most likely secondary to the beneficial effects on joint health.
	<a href="#">Depression</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Has been noted to augment SSRI therapy (similar to <a href="#">creatine</a> ) and monotherapy with SAME appears to be of similar potency to tricyclic antidepressants for some studies.
	<a href="#">Pain</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	The decrease in pain associated with osteoarthritis appears to be similar to the reference drugs Aleve (Naproxen) and Celecoxib, but requires more time to act (up to one month)
	<a href="#">Memory</a>	 Minor	- <a href="#">See study</a>	In persons with SSRIs, adding SAME confers a cognitive promoting effect; it is unsure if this persists in persons without SSRIs, and this augmenting effect with SSRIs is only seen in limited other instances (ie. with <a href="#">creatine</a> )

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Numerical Memory</a>	 Minor	- <a href="#">See study</a>	A decrease in numerical memory has been noted once in elderly subjects, which is thought to be secondary to some sedation rather than indicative of damaging effects
	<a href="#">Symptoms of Fibromyalgia</a>	 Minor	- <a href="#">See study</a>	A decrease in soreness symptoms of fibromyalgia (with no apparent effect on force production) has been noted with SAME supplementation.
	<a href="#">Attention</a>	-	- <a href="#">See study</a>	No significant alterations in attention in persons given SAME in conjunction with their SSRI antidepressant medication
	<a href="#">Bilirubin</a>	-	- <a href="#">See study</a>	No significant alterations in serum bilirubin seen with supplementation
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No significant influence on C-Reactive Protein
	<a href="#">Homocysteine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant alterations in plasma homocysteine occur following supplemental SAME ingestion
	<a href="#">Liver Damage</a>	-	- <a href="#">See study</a>	Supplemental SAME in a study of persons with liver damage failed to confer rehabilitative effects
	<a href="#">Liver Enzymes</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	No significant rehabilitative effects on liver function in persons with impaired liver function, and no significant alterations in serum liver enzymes in otherwise healthy persons
	<a href="#">Motivation</a>	-	- <a href="#">See study</a>	No significant differences in self-reported motivation
	<a href="#">Cholestasis</a>	 Minor	- <a href="#">See study</a>	Cholestasis is somewhat reduced with supplemental SAME

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Early Virologic Response</a>	 Minor	- <a href="#">See study</a>	An increase in the time taken to achieve a virological response was reduced, and SAME is thought to confer an anti-viral effect












Back to: [Supplements](#) | [Health Outcomes](#)





# Safflower Oil

Also known as: *Carthamus tinctorius*

Safflower Oil is a cooking oil that is found in two main forms; high (up to 75%) linoleic (omega-6 fatty acid) and high (up to 75%) oleic, the main fatty acid in Olive Oil, with about 7% saturated fat content. It is a source of Conjugated Linoleic Acid.

See [Safflower Oil on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	 Minor	- <a href="#">See study</a>	A decrease in C-RP has been noted with safflower oil consumption
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	A slight increase in HDL-C has been noted with safflower oil
	<a href="#">HbA1c</a>	 Minor	- <a href="#">See study</a>	A slight decrease in HbA1c has been noted with safflower despite no alterations in any other diabetic biomarker
	<a href="#">Lean Mass</a>	 Minor	- <a href="#">See study</a>	An increase in lean mass relative to control ( <a href="#">CLA</a> ) has been noted in obese menopausal women
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose in diabetics
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	No significant reduction in total fat mass, although in obese diabetic women a slight reduction in abdominal fat mass may exist.
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels in diabetics

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No significant influence on insulin sensitivity in diabetics
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant alterations in LDL-C concentrations
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant alterations in triglyceride concentrations
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant changes in total body weight appear to be visible following ingestion of safflower oil in the diet

Back to: [Supplements](#) | [Health Outcomes](#)

# Saffron











Also known as: *Crocus sativus*

Saffron is typically used as a spice. Low dose supplementation appears to confer antidepressive properties.





















See [Saffron on Examine.com](#)


## How to Take

For chronic supplementation, take 15mg of saffron, twice a day. This is the advised upper limit for constant supplementation. Preliminary evidence suggests that doubling this dose may have a toxic effect after eight weeks of continuous usage. Acute, single doses of saffron, can be as high as 200mg. Saffron can be supplemented by taking water extracts of the stigma (the red part of the plant, used as a spice) or by using the dehydrated stigma itself. Some evidence suggests that the petals of saffron may also be effective. Saffron can be taken twice a day in a supplement form, or at meals as a spice. Doses above 1,200mg may cause nausea and vomiting.





LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Depression</a>	 Notable	<b>Very High</b> <a href="#">See all 9 studies</a>	30mg saffron daily (both petals and stigma) appear to be effective in reducing depressive symptoms in persons with major depressive disorder, and the potency has been noted to be comparable to reference drugs (fluoxetine and imipramine).
	<a href="#">Symptoms of PMS</a>	 Notable	- <a href="#">See study</a>	One study assessing saffron on PMS symptoms noted that supplementation caused 76% of the participants to have more than a halving of overall symptoms (placebo reaching 8%), suggesting relatively potent effects.
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	The aroma of saffron has once been noted to cause a mild (approximately 10%) reduction in state anxiety following 20 minutes of exposure in otherwise healthy women.
	<a href="#">Appetite</a>	 Minor	- <a href="#">See study</a>	High dose (176.5mg) saffron extract appears to be able to reduce snacking and increase self-reported satiety in otherwise healthy overweight women.
	<a href="#">Basophil Count</a>	 Minor	- <a href="#">See study</a>	Basophil count has been noted to mildly decrease following saffron supplementation alongside a reduction in IgM concentrations.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	A decrease in blood pressure was noted in otherwise healthy (normotensive) men following 26 weeks of saffron supplementation at 60mg daily, although this was thought to possibly be related to chronic toxicity of the higher than normal dose.
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	The aroma of saffron has been noted to reduce cortisol concentrations to a mild degree in otherwise healthy women, and this occurred alongside a reduction in state anxiety.
	<a href="#">Estrogen</a>	 Minor	- <a href="#">See study</a>	The aroma of saffron appears to cause a mild increase in circulating estrogen concentrations in otherwise healthy women following 20 minutes of exposure.
	<a href="#">Food Intake</a>	 Minor	- <a href="#">See study</a>	Secondary to reducing snacking (thought to be via increasing satiety from meals) saffron appears to reduce overall food intake.
	<a href="#">Hemoglobin</a>	 Minor	- <a href="#">See study</a>	Hemoglobin has been noted to be decreased in one study and thought to be related to possible toxic effects of moderately high dose saffron (60mg for more than 8 weeks).
	<a href="#">Immunoglobulin G</a>	 Minor	- <a href="#">See study</a>	An increase in IgG concentrations has been noted to occur with saffron supplementation alongside a decrease in IgM and no influence on IgA.
	<a href="#">Immunoglobulin M</a>	 Minor	- <a href="#">See study</a>	A decrease in IgM concentrations has been noted to occur following supplementation of saffron.
	<a href="#">Monocyte Count</a>	 Minor	- <a href="#">See study</a>	Supplementation of saffron appears to be able to cause a mild increase in monocyte concentrations in serum.
	<a href="#">Red Blood Cell Count</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in RBCs has been noted in one study suggesting saffron toxicity with prolonged supplementation of a double dose (60mg).
	<a href="#">Serum Platelets</a>	 Minor	- <a href="#">See study</a>	Supplementation of 60mg saffron was able to reduce platelet counts in serum following eight weeks of exposure (increasing in magnitude until study cessation at 26 weeks) thought to be related to toxicity.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sexual Function</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	SSRI related sexual dysfunction in both men and women appears to be reduced with coingestion of saffron, although saffron does not alter the efficacy of SSRI therapy on depression.
	<a href="#">Symptoms of Alzheimer's</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Mixed evidence on the efficacy of saffron, but it is possible that supplementation could delay an increase in symptoms without a therapeutic effect.
	<a href="#">Visual Acuity</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Supplementation of saffron appears to increase visual acuity in persons with age-related macular degeneration.
	<a href="#">Weight</a>	 Minor	- <a href="#">See study</a>	A reduction in weight has been noted to a very mild degree which may be wholly related to a reduction in snacking that has been observed with saffron supplementation in overweight women.
	<a href="#">White Blood Cell Count</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in white blood cell count has been noted with supplementation of saffron at 60mg for over eight weeks.
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	Creatinine does not appear to be influenced in serum following supplementation of saffron.
	<a href="#">Ejaculate Volume</a>	-	- <a href="#">See study</a>	Saffron does not appear to influence ejaculate volume in men with infertility.
	<a href="#">Eosinophil count</a>	-	- <a href="#">See study</a>	Eosinophil concentrations are not affected by saffron supplementation in otherwise healthy persons.
	<a href="#">Erections</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	The best evidence to date does not support a pro-erectile effect of saffron supplementation <i>per se</i> , although it may have a particular role in combating SSRI related sexual dysfunction that results in erectile dysfunction.
	<a href="#">Follicle-Stimulating Hormone</a>	-	- <a href="#">See study</a>	FSH is unaffected in infertile men given 60mg saffron daily over the course of 26 weeks.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Immunoglobulin A</a>	-	- <a href="#">See study</a>	No significant influence on circulating IgA concentrations following saffron ingestion.
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	Supplementation of 100mg saffron extract for six weeks failed to increase liver enzymes in otherwise healthy persons.
	<a href="#">Luteinizing Hormone</a>	-	- <a href="#">See study</a>	LH concentrations are unaffected by saffron supplementation at 60mg in infertile men.
	<a href="#">Neutrophil Count</a>	-	- <a href="#">See study</a>	Neutrophil concentrations in serum are unaffected by supplementation of saffron.
	<a href="#">Prolactin</a>	-	- <a href="#">See study</a>	Supplementation of 60mg saffron for 26 weeks does not significantly influence prolactin in infertile men.
	<a href="#">Seminal Motility</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The best evidence to date does not support a role for saffron supplementation in increasing seminal motility.
	<a href="#">Sperm Count</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Saffron supplementation does not appear to be effective in increasing sperm count in infertile men.
	<a href="#">Sperm Quality</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	While preliminary evidence suggested benefit to seminal morphology, the best evidence to date does not support a role for saffron in enhancing seminal quality.
	<a href="#">Testosterone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Neither aromatherapy nor oral supplementation appear to significantly influence testosterone concentrations in serum.
	<a href="#">Oxidation of LDL</a>	 Minor	- <a href="#">See study</a>	Supplementation of saffron appears to be capable of reducing LDL oxidation when tested <i>ex vivo</i> in both healthy controls and persons with cardiovascular disease, although to a mild degree.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Penile Girth</a>	 Minor	- <a href="#">See study</a>	In men with erectile dysfunction, saffron appeared to increase nighttime tumescence at both the tip and base.
	<a href="#">Muscle Soreness</a>	-	- <a href="#">See study</a>	
	<a href="#">Skin Moisture</a>	-	- <a href="#">See study</a>	Acute topical application of a cream containing saffron has failed to cause significant changes in skin moisture content over the course of seven hours.

Back to: [Supplements](#) | [Health Outcomes](#)

# Salacia reticulata







Also known as: *Kothala himbutu*

Salacia Reticulata is a medicinal herb from Ayurveda which appears to have anti-diabetic activities, namely by inhibiting carbohydrate uptake from the intestines; it appears quite effective at this, similar to Acarbose in potency.

See [Salacia reticulata on Examine.com](#)

## How to Take

Supplementation of salacia herbs (reticulata or oblonga) seem to be effective in humans when taken at the oral dose of 240-1,000mg, with the higher dose being used more frequently for the purpose of reducing glucose absorption from the intestines. Due to this supplement acting as a carbohydrate absorption inhibitor, it needs to be taken alongside dietary carbohydrates.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	The decrease in blood glucose is acute due to blocking carbohydrate absorption (no studies on long-term glucose influence) and standard supplemental doses range between 20-25% inhibition of carbohydrate absorption, with is quite reliable and significant.
	<a href="#">Insulin</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	A decrease in postprandial insulin has been noted with acute supplementation, which is thought to be secondary to the reduction in glucose absorption (as the two correlate highly). There are currently no studies assessing long term changes in fasting insulin
	<a href="#">HbA1c</a>	 Minor	- <a href="#">See study</a>	A decrease in HbA1c has been noted in diabetics given a tea of Salacia for months, but the decrease was minor in magnitude and outperformed by Glibenclamide

Back to: [Supplements](#) | [Health Outcomes](#)

# Salvia hispanica

Also known as: Chia seeds, Mexican chia, Salba










Other uses:

Salvia hispanica (Chia) are seeds commonly used to supplement dietary fiber and are claimed to have other health promoting properties. Its mechanical properties may provide use during baking and the fiber content good for bowel health with health promoting effects not yet demonstrated.

See [Salvia hispanica on Examine.com](#)

## How to Take

25g of chia tends to be used once daily with a meal for the purposes of general health and intestinal motility. There is no evidence to suggest if this is the optimal dose.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Appetite</a>	 Minor	- <a href="#">See study</a>	The decrease in appetite in one study was notable, but longer term studies do not note weight loss when diet is uncontrolled (which undermines the idea that chia is a potent appetite suppressant)
	<a href="#">Blood Glucose</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Has been implicated in reducing postprandial glucose while having no significant influence on fasting glucose levels.
	<a href="#">C-Reactive Protein</a>	 Minor	- <a href="#">See 2 studies</a>	It is possible that a decrease in C-Reactive protein may exist but evidence is contradictory at this moment in time
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on blood pressure noted with long term chia ingestion
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	HDL-C appears to be unaffected with chia ingestion when compared to similar macronutrient sources
	<a href="#">Inflammation</a>	-	- <a href="#">See study</a>	No significant alteration in serum biomarkers noted with chia seeds

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	LDL-C appears to be unaffected with chia ingestion when compared to similar macronutrient sources
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on total cholesterol levels after inclusion of chia seeds into the diet
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on triglycerides
	<a href="#">Fibrinogen</a>	 Minor	- <a href="#">See study</a>	A decrease in fibrinogen has been noted with chia seed ingestion according to one study
	<a href="#">Skin Moisture</a>	 Minor	- <a href="#">See study</a>	An increase in skin moisture has been noted with topical chia seed application (4% of the solution being chia oil)
	<a href="#">Symptoms of Xerotic Pruritus</a>	 Minor	- <a href="#">See study</a>	Topical application of chia seed oil to the skin appears to confer some symptom reduction in xerotic pruritus
	<a href="#">HbA1c</a>	-	- <a href="#">See study</a>	No significant influence on HbA1c levels of diabetics given chia seeds
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels following chronic consumption of chia seeds in the diet

Back to: [Supplements](#) | [Health Outcomes](#)

# Salvia miltiorrhiza

Also known as: *Danshen*

Salvia Miltiorrhiza (Danshen) is a Traditional Chinese Medicine used for circulatory and heart health; it appears to be somewhat effective at this claim and is one of the best selling Chinese Medicines for heart health.

See [Salvia miltiorrhiza on Examine.com](#)

## How to Take

The Fufang Danshen Dripping pill is most commonly used as 30 pills spread over 3 times a day (10 each) taken either sublingually or orally. Fufang Danshen tablets are taken 3 times a day, with 3 taken each time. The standard therapeutic dose of Danshen is 6.56mg / kg bodyweight

Back to: [Supplements](#) | [Health Outcomes](#)



# Salvia sclarea







Also known as: Clary Sage

Salvia sclarea (Clary Sage) is a herb commonly used as an aromatic. Belonging to the Mint family of plants, the 'relaxing' effects of the aromas may be related to preliminary evidence suggesting anti-depressant effects.

See [Salvia sclarea on Examine.com](#)

## How to Take

If using Clary Sage for aromatherapy, enough should be lit (if using incense) to confer a pleasant aroma. The two studies using combination therapy noted that a cream containing 1 concentration drop of Clary Sage to 2 drops of Lavender in 5cc of volume was rubbed on the abdomen (the scent would remain on the body for a while). Due to the exact bioactives not being known, quantifying the right dose for aromatherapy is difficult. There is insufficient evidence to suggest an optimal oral dose of Clary Sage for any purpose.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	A decrease in systolic blood pressure resulted in response to clary sage aromatherapy, to a small degree and likely not able to exert long-term benefit (probably more indicative of short-term CNS depression)
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	A decrease in cortisol may result following inhalation of clary sage, but the magnitude of reduction (2.5%) is very small
	<a href="#">Heart Rate</a>	 Minor	- <a href="#">See study</a>	A decrease in heart rate has been noted acutely in response to the aroma of clary sage

Back to: [Supplements](#) | [Health Outcomes](#)

# Sarcosine




Also known as: *N*-methylglycine, Methylglycine

Sarcosine is a product of glycine. It can be used as a cognitive enhancer and to treat schizophrenia.

See [Sarcosine on Examine.com](#)

## How to Take

The standard sarcosine dose is 30mg/kg of bodyweight, which correlates to an approximate dosage range of 2,045 – 2,727mg for people between 150 – 200 lbs. Sarcosine is taken daily.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Schizophrenia</a>	 Notable	<b>High</b> <a href="#">See all 4 studies</a>	While the magnitude of benefit seen with Sarcosine is comparable to both D-serine and glycine, it appears to require a much lower (more practical) dose than does glycine and is more reliable than D-serine
	<a href="#">Cognition</a>	-	- <a href="#">See 2 studies</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Saw Palmetto









Also known as: *Serenoa Repens*





Saw Palmetto is a fatty acid mix from *Serenoa repens* that has been touted for its abilities to increase testosterone (not effective) and suppress prostate growth (questionable effectiveness); safe for use in benign prostatic hyperplasia and abnormal urine flow rates in men, but studies have had mixed results in terms of efficacy.

See [Saw Palmetto on Examine.com](#)

## How to Take

While the active compound(s) are not yet known, it is known that they exist in what is known as the 'liposterolic' fraction of the fruits. If using saw palmetto choose a product that discloses the percentage of the supplement which is this fraction. Supplementation of saw palmetto tends to be in the range of 160-320 mg, taken once daily, of a product which is 80-90% liposterolic compounds by weight. While it is not confirmed if saw palmetto needs to be taken with food due to the fat soluble nature of this fraction it is advised.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Benign Prostatic Hyperplasia</a>	 Minor	- <a href="#">See all 7 studies</a>	Smaller, shorter trials have noted some effect, but larger, longer trials have noted no effect. The most recent Cochrane meta-analysis also notes no effect.
	<a href="#">DHT</a>	-	- <a href="#">See study</a>	
	<a href="#">Prostate Specific Antigen</a>		<b>Low</b> <a href="#">See all 4 studies</a>	While observational data suggests a decrease, trials have found no change in PSA levels.
	<a href="#">Testosterone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	
	<a href="#">Quality of Life</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hair Regrowth</a>	 Minor	- <a href="#">See study</a>	Saw palmetto usage over two years (320mg) appears to increase hair growth on the crown in 38% of users with male pattern baldness, a response rate that was less than 1mg finasteride (benefiting 66% of users and also improving hair growth in the frontal region).
	<a href="#">Sexual Function</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	While observational and smaller interventional studies have found some effect, larger and longer trials have not.

Back to: [Supplements](#) | [Health Outcomes](#)

# Sceletium tortuosum










Also known as: Kanna, Channa, Kougoed





Also known as Kanna, scelletium tortuosum is a herb that is traditionally chewed prior to stressing endeavours. It suggest that it may play a role in reducing state anxiety although more evidence is required.

See [Sceletium tortuosum on Examine.com](#)

## How to Take

Currently studies using Kanna have used the brand name Zembrin® at doses of 8-25mg prior to cognitive testing. This brand name is a 2:1 concentration of Kanna based on dry weight and is considered equivalent to 16-50mg of the dry weight of the plant itself. Kanna has been studied as oral administration (capsules) but traditionally the leaves have been chewed and saliva swallowed for similar effects. Optimal frequency of dosing (ie. either only on testing days or daily) is currently not known.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	In high cognitive load tests, there appears to be a reduction in state anxiety (anxiety that arises during the testing) associated with Kanna compared to placebo. This reduction in anxiety does not occur during low load tests, and chronic anxiety has not yet been assessed.
	<a href="#">Cognition</a>	 Minor	- <a href="#">See study</a>	A general increase in cognition has been noted with Kanna usage prior to testing in otherwise healthy middle-aged adults, potentially related to the reduction in state anxiety during testing.
	<a href="#">Executive Function</a>	 Minor	- <a href="#">See study</a>	According to the CNS Vital SignR test in middle aged adults, pre-testing administration of Kanna appeared to increase executive function when compared to placebo.
	<a href="#">Sleep Quality</a>	 Minor	- <a href="#">See study</a>	There appeared to be a barely significant increase in self-reported sleep quality with Kanna usage compared to placebo when taken prior to a cognitive test.
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	Three weeks Kanna usage does not appear to influence blood pressure compared to placebo.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	Three weeks Kanna usage does not appear to influence heart rate when compared to placebo.
	<a href="#">Memory</a>	-	- <a href="#">See study</a>	Acute supplementation of Kanna prior to testing does not appear to influence acute memory formation or retention when compared to placebo.
	<a href="#">Reaction Time</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In response to cognitive testing involving reaction time, administration of Kanna prior to testing does not appear to outperform placebo in improving reaction time.
	<a href="#">Subjective Well-Being</a>	-	- <a href="#">See study</a>	While there are isolated instances of increased well-being, they do not appear to occur frequently enough in otherwise healthy adults to cause a whole-group increase in well-being.

Back to: [Supplements](#) | [Health Outcomes](#)

# Schisandra chinensis

Also known as: Omija, Omija Cha, Gomishi, Repnihat, Wuweizi, Lemonwood, Northern Magnolia Vine, Chinese Magnolia Vine, Matsbouza





Other uses:

Schizandra berries have been used traditionally as performance enhancers and as an adaptogen. Lots of human evidence from many decades ago in Russia that cannot be accessed, and limited Western evidence. Appears to also reduce anxiety and cortisol, with a tart taste.

See [Schisandra chinensis on Examine.com](#)

## How to Take

Clinical trials done in the West are lacking or confounded, and thus optimum doses cannot really be extrapolated from these. The best estimate at this moment in time may be falling back on traditional preparation methods, which are various: Dried fruit extract in a 1:6 w/v ratio against liquid (95% ethanol) and administered at 20-30 drops daily Dried fruit extract in a 1:20 w/v ratio against water, 150mL drank twice a day with meals Eating the powdered fruit or fruit extract (this is what is usually found in pills) at 1-3g daily, with meals Schisandra Chinensis fruits can be brewed into wines or teas as well.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	Conditional influences on cortisol, with an apparent increase in cortisol of beginner athletes at rest with decreases in exercise-induced cortisol in beginners and lower overall cortisol exposure in trained athletes
	<a href="#">Nitric Oxide</a>	 Minor	- <a href="#">See study</a>	An increase in serum nitric oxide has been detected in one study in elite athletes

Back to: [Supplements](#) | [Health Outcomes](#)

# Schizonepeta tenuifolia

Also known as: *Japanese Catnip*, *Schizonepeta*, *Jing Jie*, *Hyung-gae*

Other uses:

Schizonepeta tenuifolia (Japanese Catnip) is a medicinal herb from China and Korea that appears to be selectively anti-inflammatory (to a moderate degree), and suppress allergic responses. It is a different herb from Common Catnip (The genera Nepeta).

See [Schizonepeta tenuifolia on Examine.com](#)

## How to Take

Traditional usage of Japanese Catnip, for fighting colds and reducing skin eruptions, was 3-10g of a decoction. There are no human studies to confirm if this is the optimal dosage range, and the animal studies (200-500mg/kg in rats) suggest dosage ranges of: 2,200-5,400mg for a 150lb person 2,900-7,200mg for a 200lb person 3,600-9,000mg for a 250lb person Which are the estimated human dosages for inflammation. They appear to parallel traditional recommendations somewhat.

Back to: [Supplements](#) | [Health Outcomes](#)



# Scutellaria baicalensis

Also known as: *Skullcap*, *Huang qin*, *Scutellariae radix*, *goldenroot*, *oroxylin A*, *baicalin*

Other uses:

Scutellaria baicalensis (Chinese Skullcap) is a traditional chinese medicine for the purposes of cardiovascular and cognitive health as well as longevity. It appears to be a good source for flavonoid compounds, and some components are quite potent.

See [Scutellaria baicalensis on Examine.com](#)

## How to Take

Although there is a lack of human evidence to support the optimal dosage of scutellaria baicalensis for supplementation purposes, the doses that appear optimal in rat and mouse models suggest that an oral dose of around 500mg of the root extract should be efficacious.

Back to: [Supplements](#) | [Health Outcomes](#)

# Sea Buckthorn









Also known as: *Hippophae rhamnoides*










Sea buckthorn (*Hippophae rhamnoides*) is a plant whose leaves are sometimes supplemented (or the berries consumed as juice) for general antiinflammatory and antioxidative purposes. Though healthy, it does not appear to have any unique literature on it to support supplementation.

See [Sea Buckthorn on Examine.com](#)

## How to Take

Sea buckthorn is supplemented as either a dry plant extract (of which both the berries and the leaves are viable options) or as an oil made from the berries. When supplementing dry extracts, the range of 500-2,000mg is used for both the berry extracts and the leaf extracts. For the oil, slightly higher dosage ranges (2,000-5,000mg) are used daily.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	An increase in glucose has been noted with sea buckthorn, but it was from one study which had the control group (coconut oil) also raise blood glucose; this may just be due to added calories.
	<a href="#">Dry Eyes</a>	 Minor	- <a href="#">See study</a>	2g of the oil daily is able to reduce symptoms of dry eyes, particularly reddening and the actual perceived dryness
	<a href="#">Platelet Aggregation</a>	 Minor	- <a href="#">See study</a>	5g of the oil daily is able to reduce platelet aggregation in otherwise healthy persons.
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	2,000mg of the sea buckthorn supplement has failed to significantly influence C-reactive protein concentrations in serum
	<a href="#">DNA Damage</a>	-	- <a href="#">See study</a>	DNA damage as measured in lymphocytes does not appear to be significantly affected by supplementation of sea buckthorn

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on circulating HDL-C levels
	<a href="#">Inflammation</a>	-	- <a href="#">See study</a>	Supplementation of sea buckthorn in persons on hemodialysis has failed to significantly influence any inflammatory biomarker measured at the standard supplemental dosage.
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No significant influence on LDL-C levels in otherwise healthy men
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	Total cholesterol does not appear to be affected with supplementation of sea buckthorn in otherwise healthy persons.
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	Although it may attenuate postprandial lipidemia (spikes in triglycerides following a meal), supplementation does not appear to significantly affect fasting triglyceride concentrations.
	<a href="#">Carbohydrate Absorption</a>	 Minor	- <a href="#">See study</a>	Carbohydrate absorption appears to be attenuated with oral ingestion of sea buckthorn berries alongside a meal, which is thought to be due to the fiber component.
	<a href="#">Insulin Secretion</a>	 Minor	- <a href="#">See study</a>	Secondary to reducing the absorption of carbohydrates from a test meal, insulin secretion is attenuated

Back to: [Supplements](#) | [Health Outcomes](#)







# Selenium

An Essential Mineral that is heralded for its anti-oxidant capabilities, it forms a part of some anti-oxidant enzymes such as glutathione to confer protective effects. Taking more than needed, however, can cause oxidative damage and may be pro-diabetic.

See [Selenium on Examine.com](#)

## How to Take

An overall intake (foods and supplements) in the range of 200-300ug daily should be the goal for general health and well being with an emphasis on anti-carcinogenic properties.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pre-Eclampsia Risk</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Supplementation with selenium significantly reduces the incidence of pre-eclampsia.
	<a href="#">Prostate Cancer Risk</a>	 Minor	- <a href="#">See study</a>	A small decrease in prostate cancer risk is seen when comparing areas with high soil selenium (indicative of dietary intake of selenium) against areas with low soil selenium.
	<a href="#">Acne</a>	 Minor	- <a href="#">See study</a>	There seems to be a notable decrease in the total number of lesion counts after nearly two months of selenium supplementation in those suffering from acne vulgaris.

Back to: [Supplements](#) | [Health Outcomes](#)

# Senna alexandrina





Also known as: *Senna alexandrina*, *Daio*

Senna Alexandria is a plant containing Sennosides, which are laxatives. Nothing more special about Senna root or Sennosides, they just are very effective at clearing your bowels and are at a level of potency where they are sometimes given before a colonoscopy.

See [Senna alexandrina on Examine.com](#)

## How to Take

In accordance with clinical usage, the correct dose is the "lowest dose required to produce the desired effects (soft-formed and comfortable stool)". This is either 1-2g of the powdered extract or fruit usually standardized to 10-30mg active Sennosides. Higher doses are used only if the aforementioned lower dose is not effective (it should be noted that senna alexandria is a delayed laxative unlike the immediate effects of caffeine and it may take a few hours to assess whether a dose is effective or not). Senna alexandria tends to be taken prior to bed in order to time its laxative effect with a morning bowel movement.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Constipation</a>	 Strong	<b>Very High</b> <a href="#">See all 6 studies</a>	Due to the strong laxative effect, constipation is greatly reduced with supplemental Senna Alexandria. Has been noted effective against regular, postpartum, and opioid-induced constipation and appears to not require a context-specific cause of constipation (ie. reliable) but appears to be associated with more cramping than placebo.
	<a href="#">Intestinal Motility</a>	 Strong	<b>Very High</b> <a href="#">See all 10 studies</a>	Senna Alexandria is a reference drug for its laxative effects, with comparable efficacy to oral polyethylene glycol (PEG; used before colonoscopies) and lactulose, but more cost-effective than the latter

Back to: [Supplements](#) | [Health Outcomes](#)

# Serrapeptase











Also known as: *Serratiopeptidase, Serratia E-15, serralysin, serratiaprotease, Serratiopeptidase, Silk worm enzymes*





Serrapeptase is an enzyme derived from silkworms. It has anti-inflammatory effects and can help prevent blood clots, but these effects are somewhat unreliable.

See [Serrapeptase on Examine.com](#)

## How to Take

The standard dose for serrapeptase is 10-60mg. Serrapeptase should be supplemented on an empty stomach, which is 30 minutes before a meal or two hours after a meal, three times a day. Most studies use 10mg of serrapeptase taken every eight hours. More human evidence is needed to determine the optimal dose of serrapeptase. 10mg of serrapeptase is equal to approximately 20,000 enzymatic units.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Inflammation</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Appears to reduce swelling and inflammation following surgery or trauma, although to a lesser degree than corticosteroids. There is a lack of practical evidence for the claims behind serrapeptase (instead, studies tend to only look at post-surgery inflammation)
	<a href="#">Pain</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	When a decrease in inflammation occurs post surgery, there appears to be a concomitant reduction in pain; it tends to hover around a 1 point reduction on a VAS scale (scale of 1-10).
	<a href="#">Mucus Production</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	A somewhat notable decrease in mostly the viscosity of mucus (elasticity is somewhat unreliably decreased), due to the mucolytic properties of serrapeptase. This may be of use for both nasal discharge and lung sputum (cystic fibrosis)
	<a href="#">Breast Tenderness</a>	 Minor	- <a href="#">See study</a>	A decrease in breast tenderness and soreness has been noted with serrapeptase treatment in one study.
	<a href="#">Edema</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Related to the antiinflammatory effects, swelling and edema post surgery appear to be reduced.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Carpal Tunnel</a>	 Minor	- <a href="#">See study</a>	A decrease in symptoms has been noted, but the study was not structurally a good one; requires replication
	<a href="#">Symptoms of Superficial Thrombophlebitis</a>	 Minor	- <a href="#">See study</a>	There appears to be a small decrease in symptoms, which is thought to be due to fibrinolytic properties of serrapeptase

Back to: [Supplements](#) | [Health Outcomes](#)



# Sesamin

Sesamin is a lignan derived from sesame seeds (*Sesamum indicum*) that appears to inhibit vitamin E metabolism, which causes a relative increase in circulating levels of  $\gamma$ -tocopherol and  $\gamma$ -tocotrienol; it shows most promise in augmenting the efficacy of vitamin E supplements.

See [Sesamin on Examine.com](#)

## How to Take

There are limited human studies on sesamin, but it appears that oral ingestion of around 100-150mg of sesamin is sufficient to raise bodily sesamin stores to the level where it can preserve Vitamin E in the body; this indirect antioxidative effect may be the most practical reason to supplement sesamin. If using sesame seeds to get your sesamin from, human studies have used 50-75g of sesame seeds with some success and rat studies tend to use 100-fold the oral dose of sesame seeds relative to sesamin (which would make the aforementioned dose of 100-150mg as minimum being 10-15g of sesame seeds).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	A small decrease in blood pressure has been noted with sesamin supplementation

Back to: [Supplements](#) | [Health Outcomes](#)



# Shilajit

Also known as: Mineral Pitch, Jew's Pitch, Mineral Wax, Salajeet, Brag-shun, Shilajita, Moomio, Mumie, Mumijo, Mumiyo










Shilajit is a mixture of minerals used traditionally in Ayurveda, with the main bioactive of Fulvic Acid. It appears to be heralded, but is currently in the preliminary stages of research in the West.

See [Shilajit on Examine.com](#)

## How to Take

Currently, the only human study conducted used 200mg of Shilajit with 50% Fulvic acid content in two divided doses with meals for a period of 90 days.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	- <a href="#">See study</a>	An increase in superoxide dismutase has been noted with Shilajit consumption
	<a href="#">Follicle-Stimulating Hormone</a>	 Minor	- <a href="#">See study</a>	An increase in follicle-stimulating hormone has been detected with shilajit consumption
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	Minor increase in HDL-C has been detected in persons after shilajit consumption
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	Minor decrease in LDL has been noted with shilajit
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in lipid peroxidation (assessed by MDA) has been noted in serum and semen following oral ingestion of shilajit
	<a href="#">Sperm Quality</a>	 Minor	- <a href="#">See study</a>	Sperm quality (and thought to apply to fertility) has been improved with Shilajit supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Testosterone</a>	 Minor	- <a href="#">See study</a>	A 23.5% increase has been noted in infertile men, it is not certain if this applies to fertile men.
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	Minor decrease in triglycerides has been noted with shilajit
	<a href="#">vLDL-C</a>	 Minor	- <a href="#">See study</a>	Minor decreases in vLDL concentrations have been noted
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant effect has been detected on blood pressure
	<a href="#">Luteinizing Hormone</a>	-	- <a href="#">See study</a>	No significant influence on luteinizing hormone
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant influence detected on weight

Back to: [Supplements](#) | [Health Outcomes](#)

# Silica

---

Back to: [Supplements](#) | [Health Outcomes](#)

# Silk Amino Acids

Also known as: *Sericin*, SAA, SAAa

---

SAAa are amino acids derived from the Silkworm cocoon, containing the peptide compounds Sericin-S and Sericin-L (small and large). Hydrolyzed SAAa are needed to be digested, and SAAa appear to be very nice compounds for skin, hair, and nail health when orally ingested.

See [Silk Amino Acids on Examine.com](#)

## How to Take

There is insufficient evidence to recommend an optimal dosage of silk amino acids for human supplementation, although it is known that for any purpose where silk amino acids need to be absorbed a hydrolyzed form of the supplement is required. Hydrolyzed silk amino acids are not required if the target are the intestines or colon.

Back to: [Supplements](#) | [Health Outcomes](#)

# Simmondsia chinensis

*Also known as: Jojoba*

---

Simmondsia chinensis (Jojoba) is a commonly used skin health supplement that may have appetite suppressing effects.

See [Simmondsia chinensis on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Sodium Bicarbonate



Also known as: *Baking Soda, Bicarb, Bicarbonate*


Sodium Bicarbonate (baking soda) is a molecule that acts as a buffering agent against acidity in the human body, and appears to enhance physical performance in elite and novice athletes. It also may have health benefits and intestinal side effects.

See [Sodium Bicarbonate on Examine.com](#)

## How to Take












Supplemental sodium bicarbonate can be baking soda bought from the grocery store; they are the same molecule, so store-bought baking soda will work. Supplemental dosages of sodium bicarbonate are in the 200-300 mg/kg range when used before exercise. Although 500 mg/kg is slightly more effective, it tends to be associated with a higher degree of intestinal side effects if taken all at once. If taking sodium bicarbonate acutely for exercise, a dose should be taken 60-90 minutes before anaerobic activities associated with metabolic acidosis (i.e.. “the burn”) for maximum benefit. For other activities that might be longer in duration, sodium bicarbonate should be taken 45-60 minutes before. Sodium bicarbonate can be taken with meals rather than acutely before exercise, and should be similarly effective. In this case, up to 500 mg/kg can be well tolerated if divided into three doses throughout the day (just over 150 mg/kg per dose) with no inherent need to take bicarbonate on the day of activity. Some health effects (increase in metabolic rate or attenuation of metabolic acidosis) can be achieved at more reasonable doses, such as 5-10g, and may be more practical for nonathletes. Additionally, as 27.3% of sodium bicarbonate's weight is due to sodium, every 100 mg/kg confers about 27 mg/kg sodium to the diet; this needs to be accounted for, and severely limits usage by persons with salt-sensitive hypertension. As the doses are measured in reference to body weight, obesity may result in a falsely high oral dose. If you are not within a normal or overweight BMI range, estimate your oral dose based on your “ideal weight” instead. The means of consuming bicarbonate is important, as excessively high doses or rapid ingestion can cause gastric upset due to a reaction between bicarbonate and stomach acid. Bicarbonate should be sipped slowly over a period of a few minutes with a moderate amount of water (500 mL), and the first time bicarbonate is used a half-dose should be ingested to assess tolerance. Rapidly ingesting the drink, or taking too much, is likely to induce stomach pain and nausea within an hour followed by increased diarrhea and flatulence; sticking to 200 mg/kg may alleviate the risk of these side effects. Independent of the dose taken, caution should be exercised with the manner by which sodium bicarbonate is ingested, so as to minimize intestinal and gastric side effects; these side effects occur with rapid or excessive consumption of bicarbonate, and include nausea and diarrhea.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum Bicarbonate</a>	 Strong	<b>Very High</b> <a href="#">See all 47 studies</a>	For the purpose of increasing serum bicarbonate concentrations, orally ingested bicarbonate is the reference compound for it. The increases tend to be around a 30% increase from baseline values (as there is always a circulating bicarbonate concentration)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Acidity</a>	 Notable	<b>Very High</b> <a href="#">See all 46 studies</a>	Although the magnitude of decrease is somewhat minor, this is due to blood pH being highly regulated in the body. acidity appears to be reliably reduced following supplementation of 300mg/kg sodium bicarbonate
	<a href="#">Lactate Production</a>	 Notable	- <a href="#">See all 37 studies</a>	Increases of lactate production are noted in short intense exercises (due to allowing more work to be conducted, and the work produces more lactate) while prolonged exercise is associated with a decrease in lactate concentrations relative to placebo
	<a href="#">Anaerobic Running Capacity</a>	 Minor	<b>Moderate</b> <a href="#">See all 34 studies</a>	Cardiovascular exercise where failure is associated with metabolic acidosis (ie. 'the burn') appear to get benefit with bicarbonate supplementation to a small degree but reliably. For other exercises (rowing, sprinting, swimming) not characterized by the burn, the benefits are much less reliable
	<a href="#">Power Output</a>	-	<b>Moderate</b> <a href="#">See all 28 studies</a>	Although <i>technically</i> an increase in average power output may occur during exercise associated with the 'burn' (metabolic acidosis) to the degree of 1-2%, saying this is an inherent or reliable increase in power would be misleading; it is an attenuation of the decrease in power that acidosis is able to induce
	<a href="#">Teeth Whitening</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be a time dependent benefit on stain reduction when gum containing sodium bicarbonate is used, with efficacy at 4 weeks (around 30-50% stain reduction) but more at 12 weeks (around 70%)
	<a href="#">Aerobic Exercise</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	For cardiovascular exercise that is prolonged in nature (45m or greater) and not exceeding the lactate threshold, there appears to be a small beneficial effect of sodium bicarbonate supplementation on improving time to fatigue or time to complete a test
	<a href="#">Neuromuscular Function</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Sports requiring hand-eye coordination (boxing and tennis) appear to be enhanced with supplemental sodium bicarbonate, with improved punch and tennis swing accuracy
	<a href="#">Training Volume</a>	 Minor	<b>Moderate</b> <a href="#">See all 10 studies</a>	There might be an increase in work output conducted in tests that are anaerobic (high intensity) and associated with metabolic acidosis ('the burn') but may not extend to other contexts
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	There is no significant effect of sodium bicarbonate on heart rate at rest or during exercise
	<a href="#">Rate of Perceived Exertion</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	Although there is some limited evidence that sodium bicarbonate can increase 'perceived readiness' for a task and ample evidence that it can reduce the rate of neuromuscular decline (seen with fatigue), the actual rate of perceived exertion (how hard an exercise feels) is wholly unaffected.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">VO2 Max</a>	-	<b>High</b> <a href="#">See all 7 studies</a>	For the most part, peak VO2 consumption is not significantly influenced by supplemental sodium bicarbonate (although VO2 kinetics that are not referring to VO2 <i>max</i> may be influenced somewhat)
	<a href="#">Plasma Endorphins</a>	 Notable	- <a href="#">See study</a>	The exercise-induced spike in endorphins appears to be related to the spike in acidity, and supplementation of bicarbonate is able to potently suppress the spike (although not abolish it)
	<a href="#">Fat Oxidation</a>	 Minor	- <a href="#">See 2 studies</a>	An increase in fat oxidation has been noted at rest with supplemental sodium bicarbonate which contributed solely to the increase in metabolic rate
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on insulin sensitivity in persons who may be suffering from metabolic acidosis, with one positive and one null result
	<a href="#">Judo Performance</a>	 Minor	- <a href="#">See study</a>	During a simulated throwing test (throwing one of two partners for time), sodium bicarbonate ingestion is able to improve the amount of throw conducted in a set time
	<a href="#">Lipid Absorption</a>	 Minor	- <a href="#">See study</a>	One study in menopausal women with a modest dose of sodium bicarbonate (less than 100mg) noted a reduction in lipid absorption from a meal.
	<a href="#">Muscle Oxygenation</a>	 Minor	- <a href="#">See study</a>	The rate of muscle <i>de</i> oxygenation is reduced with attenuation of acidosis (which can be achieved with sodium bicarbonate), and in later stretches of exercise this can be manifest as a relative increase in oxygenation
	<a href="#">Noradrenaline</a>	 Minor	- <a href="#">See study</a>	A decrease in exercise-induced noradrenaline has been noted before, but it is unsure if this is correct information (as this was the lone study to measure noradrenaline, three studies have measured adrenaline and are split with the only one noting a decrease in adrenaline also being this study)
	<a href="#">Adrenaline</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects, but one intravenous study (not in the human effect matrix) that also noted no significant differences suggest that the increase in catecholamines during exercise is not associated with acidity and thus not suppressed by sodium bicarbonate
	<a href="#">Ammonia</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant effects on plasma ammonia detected with supplemental bicarbonate



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant effect on blood glucose concentrations at rest or during exercise is seen with sodium bicarbonate supplementation
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure
	<a href="#">Hydration (Total Body Water)</a>	-	- <a href="#">See study</a>	The addition of sodium bicarbonate to a pre-testing rehydration protocol does not enhance hydration more than the protocol itself (mostly water and carbohydrates)
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	Fasting insulin concentrations are not affected with sodium bicarbonate supplementation
	<a href="#">Oxygen Uptake</a>	-	- <a href="#">See study</a>	
	<a href="#">Ketone Bodies</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	During fasting or ketogenic diets, sodium bicarbonate supplementation may be able to increase ketone body production. This appears to be of somewhat small magnitude and was not associated with additional fat loss
	<a href="#">Metabolic Rate</a>	 Minor	- <a href="#">See study</a>	An increase in metabolic rate has been noted and calculated (extrapolated) to be approximately 0.5% extra over the course of 24 hours, associated with a low dose of sodium bicarbonate (17mg/kg)
	<a href="#">Insulin Secretion</a>	-	- <a href="#">See study</a>	No significant influence of supplementaion sodium bicarbonate on insulin secretion
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	Despite the potential increase in metabolic rate and increase in ketone body production, there is currently no evidence to support more fat loss with sodium bicarbonate over placebo

# Sophora flavescens

*Also known as: Ku Shen, Kushen, Ku-Shen*

*Other uses:*

---

Sophora Flavescens (Ku Shen) is a medicinal herb from China that appears to possess mostly anti-cancer properties. It may also inhibit the 5-Alpha Reductase enzyme and PDE5 potentially, promoting hair growth and erectogenesis.

See [Sophora flavescens on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Soy Isoflavones

Also known as: *Genistein, Genistin, Daidzein, Daidzin, Equol, Dihydrogenistein, Dihydroglycitein, Glycitein, Glycitin*

Soy Isoflavones, usually Genistein and Daidzein, are bioflavonoids found in soy products and other plants that are able to interact with various hormones such as estrogen. They appear to be healthy, and are not anathema to young men and testosterone levels.

See [Soy Isoflavones on Examine.com](#)

## How to Take

Many anti-carcinogenic effects of genistein are seen in the range of 10-20mg/kg bodyweight a day. Epidemiologically, this dose is also associated with reduced lipoprotein levels. In vitro studies on glucose and muscle cell metabolism showing a nutrient partitioning effect at 20-30uM correlate to a dietary intake of 200-300mg/kg bodyweight (assuming the 1uM circulating serum levels per 10mg/kg BW intake noted.[1])

Back to: [Supplements](#) | [Health Outcomes](#)











# Soy lecithin


Soy lecithin is a lecithin (a structural term for a triglyceride with one fatty acid replaced by phosphatic acid conjugates) which delivers a high level of phosphatidylserine (PS), phosphatidylcholine (PC), and phosphatidylinositol (PI).

See [Soy lecithin on Examine.com](#)

## How to Take

Supplementation of soy lecithin seems to be in the range of 500-2,000mg. While it does not require to be taken with a meal, it is usually recommended to do so out of prudence. Alternatively, soy lecithin can be dosed in accordance with phosphatidylcholine dosing.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	 Notable	- <a href="#">See study</a>	A decrease in LDL-C has been noted with soy lecithin ingestion to the degree of 42.05-56.15% in hypercholesterolemics, which is a remarkable decrease. Requires replication.
	<a href="#">Total Cholesterol</a>	 Notable	- <a href="#">See study</a>	A decrease in total cholesterol, mostly due to LDL-C, has been noted to the magnitude of 40.66-42.00% which is astounding; requires replication.
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	May reduce cortisol during a social stress test at 2g
	<a href="#">Stress</a>	 Minor	- <a href="#">See study</a>	May reduce perceived stress during stressful situations
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C levels
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	Despite the reduction in perceived stress, heart rate does not appear to be affected by supplemental soy lecithin

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides

Back to: [Supplements](#) | [Health Outcomes](#)

# Sphaeranthus indicus

Also known as: *East Indian Globe Thistle*, *Mundi*, *Gorakhmundi*, *Kottakaranthai*, *Mahamundi*

Sphaeranthus indicus (also known as East Indian Globe Thistle) is a herb with a wide range of reported benefits but minimal research on it. Some studies suggest it to be a potent immunomodulatory and anti-diabetic agent; otherwise under-researched.

See [Sphaeranthus indicus on Examine.com](#)

## How to Take

There is no human evidence at this moment in time for an optimal dose of sphaeranthus indicus, but based on rat evidence using 200mg/kg then an estimated human dose is: 2,200mg for a 150lb person 2,900mg for a 200lb person 3,600mg for a 250lb person

Back to: [Supplements](#) | [Health Outcomes](#)

# Spilanthes acmella

Also known as: *Jambu Oleoresin*, *Acmella oleracea*, *Spilanthes oleracea*, *toothache plant*, *paracress*

---

Spilanthes Acmella is a traditional medicine for toothache, fever, and as an aphrodisiac; one study in rats suggests that it may increase testosterone, but it is an understudied herb.

See [Spilanthes acmella on Examine.com](#)

## How to Take

Based on the evidence in rats using 150mg/kg of an ethanolic extract, an estimated human dose is: 1,600mg for a 150lb person 2,200mg for a 200lb person 2,700mg for a 250lb person

Back to: [Supplements](#) | [Health Outcomes](#)

# Spirulina









Other uses:

Spirulina is a non-toxic blue-green algae. It is a source of phycocyanobilin. Preliminary evidence suggests spirulina is remarkably potent at protecting the brain and reducing liver fat.

See [Spirulina on Examine.com](#)

## How to Take










The dose of spirulina used in studies examining its effects vary greatly. In general, 1-8 g per day of spirulina has been shown to have some effect. The specific doses depend on the condition its being used for: For cholesterol, doses in the range of 1-8 g per day may be impactful For muscle performance, doses of 2-7.5 g per day have been used For blood glucose control, very mild effects have been seen with 2 g per day Blood pressure may be affected at doses of 3.5-4.5 g per day Effects for fatty liver have been seen at doses of 4.5 g per day Spirulina is about 20% C-phycocyanin by weight, and about 1% phycocyanobilin by weight. The dosage range of 200mg/kg C-phycocyanin (1g/kg spirulina) in rats is approximately: 10.9g for a 150lb person 14.5g for a 200lb person 18.2g for a 250lb person Further research is needed to determine whether spirulina should be taken once a day, or in smaller doses, multiple times per day. It is not recommended to exceed the highest dose mentioned above, as no clear benefits have been noted beyond that level.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lipid Peroxidation</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Although there is no reference drug to compare the effects of Spirulina against, the decrease in lipid peroxidation as assessed by serum MDA is quite notable and is likely stronger than other supplements. A comparative study would be needed
	<a href="#">Triglycerides</a>	 Notable	<b>Moderate</b> <a href="#">See all 8 studies</a>	In populations with metabolic syndrome or related morbidities (diabetes, hyperlipidemia, hypertension, etc.) spirulina in a variety of doses between 1-8g daily is able to reduce triglycerides up to 10-15%.
	<a href="#">HDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	A positive influence of spirulina on HDL-C appears to be present, but the magnitude of benefit is not overly remarkable and varies depending on the disease state (with states associated with fatty liver having a much greater increase in HDL-C seen with spirulina)
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Degree of efficacy seems variable and correlated with disease state (more drastic improvements when LDL-C is much higher) but currently does not appear to be overly remarkable unless fatty liver exists.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscular Endurance</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Studies currently assessing the effects of spirulina on muscular endurance are too heterogeneous to properly assess potency thereof. However, a positive effect does appear to exist
	<a href="#">Total Cholesterol</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Reductions in cholesterol seen are positive, but not overly remarkable
	<a href="#">Allergies</a>	 Strong	- <a href="#">See study</a>	The lone study suggests that spirulina is strongly effective in controlling allergies, with the symptoms of nasal discharge, sneezing, nasal congestion and itching being time-dependently reduced. According to self-reports, more than twice as many subjects in the spirulina group reported more than a 2-fold increase in satisfaction with treatment.
	<a href="#">Nasal Congestion</a>	 Strong	- <a href="#">See study</a>	The decrease in nasal congestion seen in the one study was remarkably strong relative to placebo in a model of allergic rhinitis; it is not sure if this applies to other causes of nasal congestion.
	<a href="#">Blood Pressure</a>	 Notable	<b>Moderate</b> <a href="#">See all 3 studies</a>	Insufficient evidence to fully evaluate the effects on blood pressure, but given how 6 weeks supplementation reduced both systolic and diastolic in <i>nonhypertensive</i> persons by about 11/6 points it is notable
	<a href="#">General Oxidation</a>	 Notable	- <a href="#">See study</a>	Notable due to mechanisms, but requires studies with reference drugs and more biomarkers measured.
	<a href="#">HbA1c</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	Lone study noted a decrease from 9% to 8% with 2g spirulina, which is somewhat notable but requires more evidence to establish this.
	<a href="#">Power Output</a>	 Notable	- <a href="#">See study</a>	Notable as acute power output (leg extension measurement) increased by 20-30% (more efficacy in untrained persons, some efficacy in trained persons) after 8 weeks whereas placebo failed to have an increase. Needs more research to fine-tune the efficacy.
	<a href="#">Symptoms of Oral Cancer</a>	 Notable	- <a href="#">See study</a>	The lesions were fully healed in 44% of the 1g spirulina group relative to 7% of the placebo; although no reference drug was used.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Although increases have been noted in glutathione peroxidase and superoxide dismutase, it is difficult to assess potency thereof as there are no active controls and the two studies heterogenous.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Arsenic Poisoning</a>	 Minor	- <a href="#">See study</a>	Somewhat effective, but requires more evidence; no reference drug was used to compare
	<a href="#">Blood Glucose</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Reductions in blood glucose seen are not overly remarkable or noteworthy
	<a href="#">Fat Oxidation</a>	 Minor	- <a href="#">See study</a>	Nothing remarkable in the one study on fat oxidation rates during exercise.
	<a href="#">Inflammation</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Some various and uncertain changes in cytokines that are seen as indicators of inflammation; not enough human interventions to draw conclusions.
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	Requires more evidence to establish its potency
	<a href="#">Risk of Anemia</a>	 Minor	- <a href="#">See study</a>	Although there was some promising evidence, it did not appear overly remarkable and requires further evidence.
	<a href="#">White Blood Cell Count</a>	 Minor	- <a href="#">See study</a>	Minor increase, needs more evidence in a non-aged cohort to assess potency
	<a href="#">Red Blood Cell Count</a>	-	- <a href="#">See study</a>	Currently insufficient evidence to support a change in RBC count.
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Currently not enough evidence to support any significant interaction with weight
	<a href="#">Liver Fat</a>	 Strong	- <a href="#">See study</a>	Although only based on a series of case studies at this moment in time, the reduction of liver fat seen after 3 months was remarkably effective

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Liver Enzymes</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	Preliminary evidence suggests the reduction of liver enzymes correlates with the degree of liver damage somewhat, and this is notable since the reduction of liver fat seen is strongly effective at this moment in time.
	<a href="#">Natural Killer Cell Activity</a>	 Notable	- <a href="#">See study</a>	NK cell activity against a tumor cell line (K562) increased 40% following a week ingestion of fairly reasonable oral dosing, suggesting that this is a notable increase of possible interest.
	<a href="#">Natural Killer Cell Content</a>	 Notable	- <a href="#">See study</a>	The increases in mRNA content of natural killer cell content increased 37-55% (NKG2D) and 75% (perforin) which appeared to be dose-dependent, a possibly potent immunostimulatory effect.
	<a href="#">Sustained Virologic Response</a>	 Notable	- <a href="#">See study</a>	Notably effective as it trended to outperform <a href="#">Milk Thistle</a> , which is a good reference supplement in regards to a sustained virologic response (not the best comparison, however)
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	Currently no evidence to support an improvement in fatigue symptoms

Back to: [Supplements](#) | [Health Outcomes](#)

# Squalene

---

Squalene is a compound found in Olive Oil and in high amounts in shark oil. It was touted as the reason sharks don't get cancer, until it was found that sharks can get cancer. Squalene however, remains an anti-cancer compound, is fairly healthy, and benefits cholesterol levels.

See [Squalene on Examine.com](#)

## How to Take

A typical preventative dose to alleviate cancer risk would be in the range of 300mg a day, to mimic the dosages found in the mediterranean diet. Dosages above this are well-tolerated.







Back to: [Supplements](#) | [Health Outcomes](#)

# Stephania tetrandra

Also known as: hangfangji, Fangchi, Hang Fang Chi

Stephania tetrandra (Fang Ji) is a medicinal herb from Traditional Chinese Medicine that is sometimes used alongside Astragalus membranaceus for kidney protection and diabetes prevention; it is moderately antiinflammatory.

See [Stephania tetrandra on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A minor decrease in levels of lipid peroxidation in serum were noted, to the tune of 17%.
	<a href="#">Serum Elastase</a>	 Minor	- <a href="#">See study</a>	A decrease in serum neutrophil elastase has been noted, and this is thought to be related to symptoms of rheumatoid arthritis
	<a href="#">Lymphocyte Count</a>	-	- <a href="#">See study</a>	Lymphocytes (both B and T cells) are unchanged in their overall quantity with 12 weeks of supplementation.
	<a href="#">White Blood Cell Count</a>	-	- <a href="#">See study</a>	No significant alterations in white blood cell count are noted with oral supplementation of this plant.

Back to: [Supplements](#) | [Health Outcomes](#)

# Stevia

Also known as: *Rebiana*, *rebaudioside A*, *stevioside*, *steviol*, *steviol glycosides*, *sweetleaf*, *sugarleaf*










Other uses:






Stevia rebaudiana (Stevia) is a herb where either the leaf extract or isolated 'steviosides' are used for sweetening. Unlike other sweeteners, stevia is 'natural' (rather than artificial) and associated with both beneficial pharmacological effects and some toxicity.

See [Stevia on Examine.com](#)

## How to Take

Preferentially, stevia is dosed according to taste (as it is used as a sweetener). For prudence, and due to some toxicological data on this herb, an estimated upper daily intake of around 8mg/kg should be used (for a 150lb human, this is 540mg). This dose is within the current recommended intake limits, and is sufficient for anti-inflammatory and anti-oxidant effects but insufficient for any observed toxic or infertility inducing effects of stevia. That being said, some human studies using prolonged intake of up to 1.5g daily show no adverse effects.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	There may be a very small glucose reducing effect of stevia consumption, but it does not appear to apply to everybody and is unreliable. Requires more evidence.
	<a href="#">Blood Pressure</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	There appears to be a reduction in blood pressure associated with stevia only in persons with high blood pressure, this may be a transient effect that is normalized upon supplement cessation.
	<a href="#">Cardiac Mass</a>	 Minor	- <a href="#">See study</a>	A reduction of cardiac mass has been detected over long term usage with stevia, which is thought to be secondary to a reduction in blood pressure
	<a href="#">Food Intake</a>	 Minor	- <a href="#">See study</a>	Stevia, in place of caloric sweeteners, has been associated with reducing whole-day food intake.
	<a href="#">Appetite</a>	-	- <a href="#">See study</a>	No significant influence on appetite have been detected with stevia (in isolation)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C has been detected with stevia
	<a href="#">HbA1c</a>	-	- <a href="#">See study</a>	No significant influence on HbA1c serum levels has been detected
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on heart rate detected with stevia consumption
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant effect on total cholesterol levels have been detected with stevia consumption
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on circulating triglycerides has been noted with stevia consumption

Back to: [Supplements](#) | [Health Outcomes](#)

# Stinging Nettle

Also known as: *Urtica dioica*, *Radix Urticae*, Common Nettle, Greater Nettle, Ortica, Tsuknida











Other uses:

Stinging Nettle is quite a nasty plant to touch, but oral ingestion of pills without spikes results in a moderately potent anti-inflammatory that can reduce the sniffles. Does not boost testosterone despite being claims to, although it can help Benign Prostatic Hyperplasia and urine abnormalities.









See [Stinging Nettle on Examine.com](#)

## How to Take

120mg of Stinging Nettle (root) taken three times a day (totalling 360mg) is associated with benefit in Benign Prostate Hyperplasia. For allergies, the studied dosage is 300 mg twice a day of freeze-dried nettle leaf. The evidence is much better for nettle root and prostatic enlargement than for nettle leaf and allergies.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Allergies</a>	 Minor	- <a href="#">See study</a>	A small decrease in allergic symptoms with oral stinging nettle consumption
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	- <a href="#">See study</a>	An increase in glutathione peroxidase has been detected
	<a href="#">C-Reactive Protein</a>	 Minor	- <a href="#">See study</a>	Minor decrease in C-reactive protein concentrations
	<a href="#">Inflammation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to reduce LPS-stimulated proinflammatory cytokine release, and thus is likely to have anti-inflammatory effects. The potency of this is not overly remarkable
	<a href="#">Nasal Congestion</a>	 Minor	- <a href="#">See study</a>	A slight decrease in nasal congestion seen with stinging nettle



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Benign Prostatic Hyperplasia</a>	 Minor	- <a href="#">See study</a>	Appears to increase urinary flow rate in persons with benign prostatic hyperplasia
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No significant interactions between insulin sensitivity and stinging nettle yet detected
	<a href="#">Lipid Peroxidation</a>	-	- <a href="#">See study</a>	No significant effect on lipid peroxidation has been noted.
	<a href="#">Prostate Hypertrophy</a>	-	- <a href="#">See study</a>	No significant influence on prostatic hypertrophy despite reducing symptoms
	<a href="#">Symptoms of Osteoarthritis</a>	-	- <a href="#">See all 4 studies</a>	Highly difficult to assess the efficacy of stinging nettle on osteoarthritic symptoms due to a wide degree of variance in study methodology
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	No apparent effect on circulating TNF-a at baseline (may reduce TNF-a secretion from proinflammatory signals, see inflammation)
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No detectable influence on testosterone levels
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant influence on body weight with consumption of stinging nettle

# Sulbutiamine




Also known as: Arcalion, Enerion, Bisibuthiamine, Youvitan

Sulbutiamine is a synthetic molecule which consists of two Thiamine (Vitamin B1) molecules bound together by a sulfur group, and appears to be somewhat useful in alleviating fatigue; especially that associated with infection.

See [Sulbutiamine on Examine.com](#)

## How to Take

Human studies using sulbutiamine supplementation have used 400mg daily. It is not clear if this is near the optimal dosage, and an ideal dosing regimen (with or without meals and how many divided doses a day) is not currently known.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose in diabetics detected
	<a href="#">HbA1c</a>	-	- <a href="#">See study</a>	No significant influence of sulbutiamine on HbA1c
	<a href="#">Symptoms of Diabetic Neuropathy</a>	-	- <a href="#">See study</a>	Insufficient evidence to support a role in diabetic neuropathy associated with sulbutiamine supplementation

Back to: [Supplements](#) | [Health Outcomes](#)

# Sulforaphane

*Also known as: Broccoli extract*

*Other uses:*

Sulforaphane is an anti-cancer compound in cruciferous vegetables, mostly commonly credited to Broccoli. It appears to have general but potent antioxidant and possible anti-inflammatory actions, with the former similar to curcumin.

See [Sulforaphane on Examine.com](#)

## How to Take

Although an ideal dosage is not known, supplementation of 0.1-0.5mg/kg sulforaphane to rats has been noted to be bioactive. This is an estimated human dose of: 7-34 mg for a 150lb person 9-45 mg for a 200lb person 11-57 mg for a 250lb person These low quantities are likely attainable via raw broccoli or cruciferious vegetable products, while higher doses may be further beneficial. The optimal supplemental dose of sulforaphane is unknown.

Back to: [Supplements](#) | [Health Outcomes](#)

# Sunifiram

Also known as: *DM-235*

---

Sunifiram (DM-235) is an AMPAkinic drug (acting via AMPA receptors) that exerts anti-amnesiac properties. With similar actions as nefiracetam, it holds promise as a cognitive enhancer but is relatively understudied currently.

See [Sunifiram on Examine.com](#)

## How to Take

It is very hard to determine an optimal dose for sunifiram due to such limited evidence, but since 1mg/kg has been determined to be good for both mice and rats this gives a preliminary human dose of 0.08-0.16mg/kg (for a 150lb person, 5.4-11mg). It is not clear if higher doses are better.

Back to: [Supplements](#) | [Health Outcomes](#)

# Synephrine

Also known as: Bitter Orange, p-synephrine, Citrus Aurantium


Other uses:


A molecule that is similar to ephedrine in mechanism, but less potent. Commonly referred to as 'bitter orange', synephrine appears to be a less potent fat-burner relative to ephedrine. It may exert some minor health effects on digestion and circulation.

See [Synephrine on Examine.com](#)

## How to Take

A recommended dosage is 10-20mg, taken thrice a day. Acute dosages of 50mg are also frequently used, although not thrice a day.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alertness</a>	-	- <a href="#">See study</a>	
	<a href="#">Anxiety</a>	-	- <a href="#">See study</a>	
	<a href="#">Appetite</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	
	<a href="#">Metabolic Rate</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sedation</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Syzygium aromaticum

*Also known as: Clove*

---

Cloves (Syzygium aromaticum).

See [Syzygium aromaticum on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# T3

Also known as: *Triiodothyronine, Liothyronine*

Other uses:

T3, or triiodothyronine, is one of the two circulating Thyroid Hormones and is the more metabolically active one (relative to T4). Used as therapy for hypothyroidics, T3 may hold some promise as being a short-term fat burner and cognitive enhancer vicariously through the effects of thyroid hormones.

See [T3 on Examine.com](#)

## How to Take

Studies done in humans with T3 supplementation have been done with ranging dosages of 40mcg daily up to 150mcg daily. Doses tend to be taken every 8 hours, which ends up being three times daily in even intervals. The related compound T4, when taken fasted rather than during meals, may result in higher blood levels of T4 and less of a spike in TSH.[1] Additionally, taking a dose before bed seems to cause a greater increase relative to a dose before meals.[2] One study does note that despite these higher C<sup>max</sup> values, that overall there really isn't a huge difference in treatment.[3]

Back to: [Supplements](#) | [Health Outcomes](#)



# Taraxacum officinale



Also known as: *Dandelion, Dandelion extract, Pisselent, Piss-in-bed, priest's crown, lion's teeth, lion's tooth, milk daisy, huang hua di ding, dumble-dor, white endive, wild endive*

Taraxacum officinale, also known as dandelion, is a vegetable occasionally used as a salad green. Dandelion has a diuretic effect when ingested. It is a good source of potassium.

See [Taraxacum officinale on Examine.com](#)

## How to Take

About 100 g of dandelion can be using in a salad to provide 10-15% of your daily potassium requirement. The dose above is equivalent to approximately 10g of the dry weight of the plant, assuming water content of 87-90%. Supplementation of dandelion cannot be recommended at this time due to a lack of human evidence for its effects. Consuming wild dandelions is not recommended, especially those grown in urban and suburban settings, as they will have been exposed to pesticide.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Diuresis</a>	 Minor	- <a href="#">See study</a>	A pilot study has been conducted with dandelion showing efficacy, but overall urine output and comparisons to other drugs have not been undergone.

Back to: [Supplements](#) | [Health Outcomes](#)

# Taurine

Also known as: 2-aminoethane sulphonic acid, L-Taurine

Other uses:

Taurine is an organic acid with a sulfur in it. It is found in foods, in highest amounts in meats, and is a heart and blood healthy agent that can confer a wide variety of health benefits. Its most well known usage is to reduce cramping caused by fat burners like ephedrine.

See [Taurine on Examine.com](#)

## How to Take

Dosages between 500mg-2,000mg have shown efficacy, although the upper limit for toxicity is placed at a much greater level and high doses are well-tolerated. The upper limit for which one can be relatively assured no side effects will occur over a lifetime has been suggested to be 3g a day.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Flow</a>	 Notable	- <a href="#">See study</a>	The improvement in blood flow seen in type 1 diabetics was sufficient to normalize to a non-diabetic control group
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Despite the improvement in blood flow, no significant influence on blood pressure
	<a href="#">Fat Oxidation</a>	-	- <a href="#">See study</a>	
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on heart rate following Taurine supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscle Damage</a>	-	- <a href="#">See study</a>	
	<a href="#">Muscle Soreness</a>	-	- <a href="#">See study</a>	
	<a href="#">Rate of Perceived Exertion</a>	-	- <a href="#">See study</a>	
	<a href="#">Exercise Capacity (with Heart Conditions)</a>	 Minor	- <a href="#">See study</a>	An improvement in walking distance has been noted
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant influence on weight noted with supplementation

Back to: [Supplements](#) | [Health Outcomes](#)

# Tauroursodeoxycholic Acid

Also known as: TUDCA









Other uses:









TUDCA is a water soluble bile acid. It shows great potency in treating cholestasis (bile acid backup in the liver) as the water soluble bile acids counteract the toxicity of regular bile acids. Can also protect and rehabilitate the liver, and general protects cells; very promising molecule.

See [Tauroursodeoxycholic Acid on Examine.com](#)

## How to Take

10-13mg daily has once been shown to improve liver regeneration rates in a clinically ill population, and may be the lowest estimate of an active oral dose. When looking at improving bile salt composition, a dose around 15-20mg/kg bodyweight TUDCA seems best according to one study. Benefits have been seen at 1,750mg daily for muscle and liver insulin sensitivity, which is the highest dose used for treatment of fatty liver disease.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Liver Enzymes</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	The decrease in liver enzymes associated with cholestasis is quite strong, and TUDCA is a reference drug for these effects
	<a href="#">Cholestasis</a>	 Notable	- <a href="#">See study</a>	Is either comparable or exceeds the potency of ursodeoxycholic acid, the reference drug for cholestasis
	<a href="#">Insulin Sensitivity</a>	 Notable	- <a href="#">See study</a>	Notable due to reaching near 30% improvement in obese persons and only being localized to muscle tissue and the liver, but not adipose tissue
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence on fasting glucose levels
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	No significant influence on fat mass in obese persons

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels
	<a href="#">Weight</a>	-	- <a href="#">See study</a>	No significant influence on weight in obese persons
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	A decrease in HDL-C has been noted to be secondary to treating cholestasis
	<a href="#">Liver Cell Content</a>	 Minor	- <a href="#">See study</a>	An increase in hepatocyte regeneration has been noted with TUDCA in persons with liver disease
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	A decrease in total cholesterol in serum has been noted secondary to treating cholestasis

Back to: [Supplements](#) | [Health Outcomes](#)

# Tea (Camellia Sinensis)

*Also known as: Green Tea, Black Tea, White Tea, Oolong Tea*

---

Tea is a drink that is made by steeping leaves of a plant in hot water to flavor it. Teas made from the plant *Camellia sinensis* are a common source of Green Tea Catechins and based on processing can become green, white, black, oolong or pu-erh teas.

See [Tea \(Camellia Sinensis\) on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Terminalia arjuna

Also known as: Arjuna, Dhavala, Kakubha, Nadisarja, Veeravriksha, Partha, Indradru











Other uses:


Terminalia arjuna (Arjuna) is a tree that has its bark used medicinally, usually for the purposes of cardioprotection. It appears to reduce pressure and pulse rate, and may increase aerobic exercise capacity.

See [Terminalia arjuna on Examine.com](#)

## How to Take

A standard dose for the purposes of cardiac health appears to be 500mg of the bark (water extract) taken daily in the morning without food (no evidence exists to suggest that taking it with food is bad or anything). For persons who suffered cardiac trauma (such as Myocardial Infarction), this dose tends to be taken thrice a day every 8 hours. The leaf extracts and ethanolic extracts appear to be more related to the cytotoxic and anti-tumor effects, but not enough evidence exists to recommend an active dose of these extracts for human consumption.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anaerobic Running Capacity</a>	 Minor	- <a href="#">See study</a>	Able to increase intermittent sprint performance
	<a href="#">Left Ventricular Ejection Fraction</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to increase LVEF in person suffering from cardiovascular ailments; preliminary evidence suggests that this is not limited to myocardial infarction
	<a href="#">Mitral Regurgitation</a>	 Minor	- <a href="#">See study</a>	Appears to reduce mitral regurgitation in persons with cardiac complications
	<a href="#">Power Output</a>	 Minor	- <a href="#">See study</a>	Power output has been noted to be increased in sprint tests, which is thought to be secondary to pulmonary effects of terminalia
	<a href="#">Cardiac Mass</a>	 Minor	- <a href="#">See study</a>	A decrease in cardiac mass has been noted in persons who suffered heart failure and were given Terminalia Arjuna

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes during standard testing of safety

Back to: [Supplements](#) | [Health Outcomes](#)



# Tetradecyl Thioacetic Acid

Also known as: TTA

Technically an Omega-3 fatty acid, TTA is a non-metabolizable fatty acid that cannot be used for energy and may be able to burn fat via mechanisms similar to Conjugated Linoleic Acid. Lacking studies in humans at the moment, TTA appears to be a promising future candidate for fat loss and health.







See [Tetradecyl Thioacetic Acid on Examine.com](#)

## How to Take

Not much evidence currently exists in human, but the standard dose appears to be 1g of TTA daily taken in divided dosages with meals.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	The one trial using TTA to reduce triglycerides noted a reduction of around 15%, which is notable and requires replication
	<a href="#">Cell Adhesion Factors</a>	 Minor	- <a href="#">See study</a>	Expression of VCAM-1 has been noted to be decreased
	<a href="#">TNF-Alpha</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in serum levels of TNF-a has been noted with supplemental TTA
	<a href="#">Total Cholesterol</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Possible reductions in total cholesterol with supplementation of TTA
	<a href="#">Blood Pressure</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A slight reduction in blood pressure has been noted in dyslipidemic obese men with TTA supplementation
	<a href="#">HDL-C</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	An increase in HDL cholesterol has been noted with TTA consumption

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Possible reductions in LDL cholesterol seen with TTA consumption
	<a href="#">Apolipoprotein B</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on C-Reactive Protein levels
	<a href="#">HbA1c</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in HbA1c concentrations
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	
	<a href="#">Kidney Function</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Liver Enzymes</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on liver enzymes in preliminary testing for possible toxicity
	<a href="#">Red Blood Cell Count</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum T4</a>	-	- <a href="#">See study</a>	
	<a href="#">Thyroid-Stimulating Hormone</a>	-	- <a href="#">See study</a>	
	<a href="#">Uric Acid</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in serum uric acid seen with supplemental TTA
	<a href="#">Viral Load</a>	-	- <a href="#">See study</a>	
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although increased mitochondrial fat oxidation was created for underlying the reductions in lipids and blood pressure, no significant influence on body weight was noted in obese men
	<a href="#">White Blood Cell Count</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Theacrine

*Also known as: 1,3,7,9-tetramethyluric acid*

---

Theacrine is an alkaloid structurally similar to caffeine, and preliminary evidence suggests that it activates similar signalling pathways. The preliminary evidence also suggests less tolerance with theacrine, but research is too sparse to draw any conclusions.

See [Theacrine on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)









# Theaflavins




Theaflavins are a group of molecules that are found in black tea (due to an additional fermentation process from green tea) that are said to be the bioactives of black tea.

See [Theaflavins on Examine.com](#)

## How to Take

Theaflavins for purposes that do not require absorption (oral health, stomach ulceration, intestinal or colonic interactions) can have bioactivity in the doses found in Black Tea (this may also be advisable as the capsule of a supplement would need to break for it to influence the stomach or oral cavity) There is currently no evidence to support the best oral dose of supplementation, although studies tend to use 700mg of Theaflavins once a day (this is said to be 30 cups of Black Tea, but that is a variable claim due to varying levels of Theaflavins in Black Tea to start) Currently no evidence to support the best time of day or manner to take Theaflavin supplementation, although if using it for the purposes of hindering fat or carbohydrate absorption it would need to be taken alongside a meal containing those nutrients.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	A decrease in exercise-induced cortisol secretions has been noted with theaflavin consumption in high doses (above 1,800mg daily)
	<a href="#">Muscle Soreness</a>	 Minor	- <a href="#">See study</a>	May decrease muscle soreness at high doses, with the efficacy of lower doses uncertain.
	<a href="#">Power Output</a>	 Minor	- <a href="#">See study</a>	An increase in power output on a Wingate test has been noted with theaflavins supplementation above 1,800mg daily; efficacy of lower doses is uncertain
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence of theaflavins on HDL-C
	<a href="#">Inflammation</a>	-	- <a href="#">See study</a>	No significant influence on inflammatory cytokines noted with theaflavins supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No detectable influence on LDL-C levels following theaflavin consumption
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol levels with theaflavins supplementation
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence of theaflavins on triglycerides (hypercholesterolemic persons)

Back to: [Supplements](#) | [Health Outcomes](#)

# Theanine












Also known as: *L-Theanine, 5-N-Ethyl-Glutamine*






L-Theanine is one of the main active ingredients found in green tea, alongside caffeine and green tea catechins. It helps promote relaxation without drowsiness, making it synergistic with caffeine.

See [Theanine on Examine.com](#)

## How to Take

L-Theanine tends to be taken in the dosage of 100-200mg, usually alongside caffeine

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Relaxation</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	A notable increase in relaxation (usually without sedation) appears to occur, as assessed by neural measurements (such as alpha-waves) or self-report surveys. Occurs within 30 minutes to an hour
	<a href="#">Anxiety</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Possible anxiety reducing effects, although anticipatory anxiety appears to be unaffected.
	<a href="#">Attention</a>	 Notable	- <a href="#">See study</a>	A single study that used 200 mg of Suntheanine® observed a notable improvement in attentional task performance in subjects with high anxiety, whereas subjects with low anxiety didn't see a notable improvement.
	<a href="#">Sleep Quality</a>	 Minor	- <a href="#">See study</a>	Sleep quality has been noted to improve in persons with hyperactivity during sleep (such as ADHD). Sleep duration and latency do not appear to be affected
	<a href="#">Symptoms of Schizophrenia</a>	 Minor	- <a href="#">See study</a>	Activation and anxiety symptoms of schizophrenia appear to be reduced with high dose (400mg) Theanine
	<a href="#">Heart Rate</a>	-	- <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Reaction Time</a>	-	- <a href="#">See study</a>	
	<a href="#">Sedation</a>	-	- <a href="#">See study</a>	
	<a href="#">Stress</a>	-	- <a href="#">See study</a>	
	<a href="#">Subjective Well-Being</a>	-	- <a href="#">See study</a>	No significant influence on subjective well being and mood state per se
	<a href="#">Depression</a>	-	- <a href="#">See study</a>	
	<a href="#">Insomnia</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)



# Tinospora cordifolia










Also known as: Guduchi, makabuhay, Amrita, Giloya, Giloe











Tinospora cordifolia, also known as Guduchi or Amrita, is an immune system boosting herb that can potentially reduce the symptoms of allergic rhinitis. It is a promising anti-cancer herb and may provide benefits for people with diabetes.

See [Tinospora cordifolia on Examine.com](#)

## How to Take

To supplement Tinospora cordifolia, take 1g of a 5% bitters water extract of the stem. The standard dose is 300mg, taken three times a day. To supplement Amrita Ghrita (Tinospora cordifolia with ghee and ginger), take 10 – 15 g, once a day. This is the traditional Ayurveda dosage. Tinospora cordifolia should be taken with a meal.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Neutrophil Count</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although there was a reduction in neutrophils in the nasal mucosa, the two studies measuring neutrophils in serum failed to find any benefit.
	<a href="#">Allergies</a>	 Strong	- <a href="#">See study</a>	At least in regards to allergic rhinitis, oral ingestion of <i>tinospora cordifolia</i> appears to abolish symptoms in 61-83% of persons (depending on symptom) extending to nasal blockage, mucus, pruritis, and sneezing.
	<a href="#">Nasal Congestion</a>	 Strong	- <a href="#">See study</a>	In persons suffering from allergic rhinitis, nasal congestion is completely resolved in around two-thirds of persons. Currently no studies in nasal congestion for persons without allergies.
	<a href="#">Eosinophil count</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a reduction in eosinophils in the range of 30% or greater, somewhat notable
	<a href="#">Lymphocyte Count</a>	 Minor	- <a href="#">See 2 studies</a>	Variable effects on Lymphocytes, with both increases and decreases being noted in persons with allergic rhinitis and no effect being observed in those with HIV.





LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Macrophage Activity</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Macrophage activity (phagocytosis and intracellular killing capacity) appears to be preserved when preloaded to surgery, which normally suppresses these parameters.
	<a href="#">Symptoms of HIV</a>	 Minor	- <a href="#">See study</a>	Quite modest reductions in the reported symptoms of HIV when <i>tinospora cordifolia</i> is used as adjuvant therapy
	<a href="#">CD4 Lymphocytes</a>	-	- <a href="#">See study</a>	Limited studies looking into CD4+ Lymphocytes have failed to find a stimulatory effect.
	<a href="#">Diabetic Foot Ulceration</a>	-	- <a href="#">See study</a>	Although there were trends for improvement, they failed to be statistically significant and there doesn't seem to be a strong therapeutic effect of <i>tinospora cordifolia</i>
	<a href="#">T Cell Count</a>	-	- <a href="#">See study</a>	Overall concentrations of T-cells (including CD4+ Lymphocytes) do not appear to be significantly influenced
	<a href="#">Scabies</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Topical application of a <i>tinospora cordifolia</i> lotion to youth infected with scabies appears to be comparable in potency to a 5% permethrin lotion as well as Crotamiton (two reference drugs).
	<a href="#">Bilirubin</a>	-	- <a href="#">See study</a>	The reduction in bilirubin seen with this herb failed to reach statistical significance when used in a clinical setting.

# Trametes versicolor

Also known as: Turkey Tail Mushroom, Coriolus versicolor, Polyporus versicolor

Turkey Tail Mushroom (*Trametes versicolor*) is a mushroom that is a source of a polysaccharide, known as polysaccharide K, that is established as a cancer adjunct therapy for the immune system.

See [Trametes versicolor on Examine.com](#)



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lymphocyte Count</a>	 Notable	- <a href="#">See study</a>	In women with breast cancer, a very large preservation of lymphocytes is noted with polysaccharide K
	<a href="#">Natural Killer Cell Activity</a>	-	- <a href="#">See study</a>	No significant alterations in NK cell activity
	<a href="#">Natural Killer Cell Content</a>	-	- <a href="#">See study</a>	No significant influence on NK cell count

Back to: [Supplements](#) | [Health Outcomes](#)

# Trehalose

Trehalose is a sugar which, on a cellular level, appears to have therapeutic mechanisms by regulating protein unfolding. Practically, its low oral absorption in its intact form paired with rapid digestion may preclude any benefits of oral intake.

See [Trehalose on Examine.com](https://www.examine.com/supplements/trehalose)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dry Eyes</a>	 Strong	<b>Very High</b> <a href="#">See 2 studies</a>	The benefits of trehalose containing eye drops appears to be greater than not only placebo (saline) eye drops, but also eye drops containing either hyaluronan (Hyalain) or hydroxyethylcellulose (Mytear) which are proven commercial products for dry eyes.

Back to: [Supplements](#) | [Health Outcomes](#)

# Tribulus terrestris

Also known as: Trib,puncturevine,protodioscin








Other uses:

Tribulus terrestris is a plant from Ayurveda where the root and fruits are used for male virility and general vitality, respectively. The roots enhance libido and sexual well being without affecting testosterone while the fruits appear to be potently protective of organ function.

See [Tribulus terrestris on Examine.com](#)







## How to Take

Given a 60% saponin extract, a dose of between 200-450mg a day is typically used for libido enhancement and sexuality. If rodent research applies to humans, then the dosage of 5mg/kg of tribulus terrestris saponins which is seen as the optimal dose would correlate to a human dose of: 55 mg saponins (90 mg of a 60% extract) 70 mg saponins (120 mg of a 60% extract) 90 mg saponins (150 mg of a 60% extract) Which suggests low doses are better. If a concentrated extract is not used, traditional dosages of the basic root powder are in the 5-6g range while the fruits are in the 2-3g range.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Testosterone</a>	-	<b>High</b> <a href="#">See all 8 studies</a>	In otherwise healthy males, testosterone is not influenced with supplementation of <i>tribulus terrestris</i> . There may be an increase in infertile men, but this is weak. There may be a small effect in postmenopausal women with low libido, however, the difference wasn't statistically significant.
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in blood pressure has been noted in hypertensive subjects in one study. Another larger study in normotensive subjects failed to find a significant change. More studies in hypertensive subjects are needed before confidence in the effect is warranted.
	<a href="#">Diuresis</a>	 Minor	- <a href="#">See study</a>	3g of the fruits or a water extract thereof appears to increase overall urine volume after a month of supplementation by around 200mL daily.
	<a href="#">Erections</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	1.5 and 2.25 of tribulus extract or 6 g of tribulus root seems to modestly improve erections in infertile men, men with partial androgen deficiency, and men with erectile dysfunction. The effect is reliable across all studies so far, however, research is still in its early stage and great confidence in these results would be unwarranted.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Heart Rate</a>	 Minor	- <a href="#">See study</a>	A decrease in heart rate has been observed in hypertensive persons given tribulus supplementation
	<a href="#">Libido</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Most studies found an improvement in sexual desire in women reporting a general loss of libido. One study in men found an improvement. The research is still in its early stage and great confidence in these results would be unfounded.
	<a href="#">Fat Mass</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influences on fat mass are noted with tribulus terrestris
	<a href="#">Fatigue</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Exercise related fatigue and vigor is unaffected by tribulus supplementation in trained men
	<a href="#">Lean Mass</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Insufficient evidence to support a consistent increase of lean mass associated with tribulus relative to placebo during training or in general.
	<a href="#">Luteinizing Hormone</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	A consistent influence on luteinizing hormone hasn't been detected with supplemental tribulus
	<a href="#">Power Output</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in power output associated with tribulus supplementation.
	<a href="#">Sperm Count</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Only one uncontrolled trial has found an increase in sperm count with supplementation of 2.25 g of Tribulus extract daily. One study found an increase but it wasn't significant, and one that used 6g of tribulus root didn't find a significant increase compared with control.
	<a href="#">Sperm Quality</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The increase in sperm quality seen with 6g tribulus root has failed to outperform placebo in infertile men. Another uncontrolled study that used 2.25 g per day of a tribulus extract found significant improvements in multiple measures of semen/sperm quality.
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See all 3 studies</a>	A decrease in cholesterol levels has been noted with tribulus supplementation in some studies. However, the largest study found no significant decrease, and none of the studies have made cholesterol their primary endpoint.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Seminal Motility</a>	 Notable	- <a href="#">See study</a>	One uncontrolled study found a notable improvement in seminal motility relative to baseline
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	One randomized, controlled trial found a modest reduction in fasting and 2 hour postprandial glucose when taking 1 g/d of a Tribulus extract
	<a href="#">DHT</a>	 Minor	- <a href="#">See study</a>	An increase of DHT has been noted in one study.
	<a href="#">HbA1c</a>	 Minor	- <a href="#">See study</a>	One randomized, controlled trial found a modest reduction, accompanied by reduced fasting and postprandial glucose levels.
	<a href="#">Prostate Specific Antigen</a>	 Minor	- <a href="#">See study</a>	One study found a significant increase relative to placebo with 2.25 g of a tribulus extract per day.
	<a href="#">Sexual Function</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	There may be a small improvement in overall sexual function in premenopausal women with libido taking 2.25 g/d of a tribulus extract. Effects on postmenopausal women are unclear.
	<a href="#">DHEA</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	One study found an increase with 2.25 g of Tribulus per day for 12 weeks, however, a larger study found no significant difference.
	<a href="#">Follicle-Stimulating Hormone</a>	-	- <a href="#">See study</a>	No change in one uncontrolled study
	<a href="#">Free Testosterone</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	One uncontrolled study found a small but significant increase from baseline, but the other studies found no significant difference.
	<a href="#">HDL-C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No apparent effect

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">LDL-C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	One study found a modest, significant reduction relative to placebo. Another study found a small, non-significant reduction
	<a href="#">Liver Enzymes</a>		- <a href="#">See study</a>	One study found a small increase in AST but not ALT
	<a href="#">Prolactin</a>	-	- <a href="#">See study</a>	One study found a reduction in Prolactin relative to baseline, however, this isn't statistically significant
	<a href="#">Sex Hormone Binding Globulin</a>	-	- <a href="#">See study</a>	No significant change in men taking 1.5 g/d of a Tribulus extract
	<a href="#">Triglycerides</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	While a modest reduction is possible, the results of two studies didn't find significant differences relative to placebo.

Back to: [Supplements](#) | [Health Outcomes](#)



# Trichopus zeylanicus

Also known as: *Arogyappacha*, *Kerala Ginseng*

Other uses:

Trichopus Zeylanicus is a berry and plant that is referred to as Kerala Ginseng. It does not have much evidence behind it at this time but appears to be a performance enhancer, adaptogen, and aphrodisiac as well as generally healthy.

See [Trichopus zeylanicus on Examine.com](#)

## How to Take

Aphrodisiac properties were noted (in mice) at 200mg/kg bodyweight a day, and performance enhancing properties were noted at 250mg-500mg/kg bodyweight a day (again, in mice). These mice studies lead to estimated human doses of: 1,100-2,700mg for a 150lb person 1,400-3,600mg for a 200lb person 1,800-4,500mg for a 250lb person

Back to: [Supplements](#) | [Health Outcomes](#)

# Trimethylglycine







Also known as: Betaine, TMG, Glycine betaine, oxyneurine


Betaine (trimethylglycine) is an active metabolite of Choline in the body and a component of beetroot. It serves a vital role in methylation in the body alongside folate, and is an osmoregulator like Creatine. Betaine is also a possible ergogenic aid.

See [Trimethylglycine on Examine.com](#)


## How to Take

The lowest active dose of betaine is 500mg taken throughout the course of the day. This is a dose that appears to be minimally active in reducing homocysteine and may be healthy to take, and doses of this up to 1,000mg seem to be in the range of being minimally active but also able to be gained through food consumption (so supplementation may not be needed). The standard doses that seem to be used for dietary supplementation are in the range of 2,500-6,000mg taken in two divided doses daily, and taking said doses alongside a meal does not appear to be required. This is the dosage range which reliably reduces homocysteine, and is the dosage range where (unreliable and minimal) benefits to physical performance have been noted. Studies on liver fat and fibrosis, and in some clinical settings on homocysteine reduction where the subject appears to be resistant to the 6g dose, the dosage can be increased up to 20g daily; this does appear to be moderately well tolerated (like any osmolyte, it may cause diarrhea in this high of a dose).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Homocysteine</a>	 Strong	<b>Very High</b> <a href="#">See all 9 studies</a>	Betaine (3g or more) appears to potently and reliably reduce homocysteine concentrations following a single dose and maintaining this reduction for as long as supplementation is continued. The magnitude is around 10% in persons with normal homocysteine levels, and greater (20-40%) in those with high homocysteine, and (unlike folate) works in instances of methionine loading tests. 500mg betaine can reduce homocysteine after a methionine load, but it too low to influence fasting homocysteine.
	<a href="#">LDL-C</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Similar to total cholesterol, one study noted a stasis in LDL when placebo decreased (a relative increase). Reasons for this unknown and the data needs to be replicated, and HDL was unaffected.
	<a href="#">Liver Enzymes</a>	 Minor	<b>Low</b> <a href="#">See all 5 studies</a>	Similar to liver fat and damage, the levels of liver enzymes in serum appears to be reduced potently in preliminary evidence with the currently largest trial showing no significant influence; there may be a role, but it needs to be further elucidated.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	One study noted a stasis in total cholesterol when placebo decreased (a relative increase). Reasons for this unknown and the data needs to be replicated.
	<a href="#">Anaerobic Running Capacity</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Studies assessing distance, time, or other parameters of performance during cycling tests have failed to find any significant benefit with betaine supplementation (one positive study measuring power output is pooled in that parameter).
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No known alterations in fasting blood glucose concentrations or glucose concentrations during exercise seen with betaine supplementation.
	<a href="#">Fat Mass</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Fat mass does not appear to be significantly influenced with either short term (2 week) or long term supplementation.
	<a href="#">Fatigue</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	One study noted a reduced <i>rate of change</i> in fatigue (no overall differences in fatigue outright though) seen with betaine, whereas the other two studies have failed to find benefit with betaine.
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant alterations in circulating HDL-C are seen with prolonged supplementation of betaine in persons with metabolic impairment.
	<a href="#">Lactate Production</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	An attenuation in the rise of lactate seen in more endurance based exercise may need to be replicated, since two other studies (majority of evidence) have failed to find an interaction with betaine ingestion and lactate.
	<a href="#">Muscular Endurance</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	There may be a small benefit in prolonged and exhaustive resistance training with betaine relative to placebo, but at this moment in time most evidence assessing muscular endurance has failed to find a statistically significant increase (trends to improve do seem apparent).
	<a href="#">Power Output</a>	-	<b>High</b> <a href="#">See all 7 studies</a>	There appear to be isolated cases of power output being increased which fail to be replicated elsewhere under similar experimental conditions, and the majority of evidence suggests that the power output increase seen is no greater than placebo; a potential ergogenic effect is either due to a currently unknown prerequisite (ie. parameter of the study population) or is not present.
	<a href="#">Rate of Perceived Exertion</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence of betaine (acute or two weeks of supplementation) on the rate of perceived exertion.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum Folate</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	<i>Chronically</i> there are no changes to serum folate due to the body normalizing folate levels, but acute supplementation can reduce folate concentrations in serum sharply for a short time.
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No significant alterations in weight are seen with supplementation of betaine, which is different than what is seen with another popular sports osmolyte (creatine).
	<a href="#">Apolipoprotein A</a>	 Minor	- <a href="#">See study</a>	An increase in Apolipoprotein A1 has been noted with supplementation of betaine relative to placebo in otherwise healthy persons.
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See study</a>	Cortisol appears to be minimally (6.1%) decreased with two weeks betaine supplementation when measured after exercise in a fasted state.
	<a href="#">Dry Mouth</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Symptoms of dry mouth either caused by a disease state (Sjögren's syndrome) or as a side-effect of pharmaceuticals appears to be significantly reduced when betaine is formulated into a toothpaste at 4%. Studies currently have a potential industry influence (financing).
	<a href="#">IGF-1</a>	 Minor	- <a href="#">See study</a>	IGF-1 appears to be minimally increased relative to placebo (7.8%) following two weeks supplementation of betaine and when tested after exercise in a fasted state.
	<a href="#">Liver Damage</a>	 Minor	- <a href="#">See all 3 studies</a>	Preliminary evidence showed a large decrease in fibrotic area and inflammation in the livers of persons with NAFLD given high dose (20g) betaine, but the best evidence failed to find a significant influence. An interaction is apparent, but the exact role is not known as this time.
	<a href="#">Liver Fat</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Preliminary evidence showed a major decrease in liver fat (normalization in over half of persons with fatty liver) but currently the best evidence suggests that this does not occur as potentially; there may still be a role, but this requires more research.
	<a href="#">Muscle Oxygenation</a>	 Minor	- <a href="#">See study</a>	There appears to be a minor increase in overall oxygen consumption during physical training (anaerobic) to fatigue associated with betaine supplementation, although this was alongside increased work volume (which may be the causative factor).
	<a href="#">Plasminogen Inhibitor 1</a>	 Minor	- <a href="#">See study</a>	An increase in PAI-1 concentrations has been noted with 4g of betaine supplementation daily over the course of six months in otherwise healthy adults.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum Methionine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Secondary to reducing homocysteine (since betaine gives a methyl group to homocysteine to convert it into L-methionine) there is an increase in serum methionine seen with supplementation acutely; this is normalized somewhat after prolonged supplementation.
	<a href="#">Training Volume</a>	 Minor	- <a href="#">See study</a>	One study noted an increase in overall training volume (6.5%) when the whole workout was assessed, and this was without any apparent changes in the volume conducted in any individual set or any changes in the rate of perceived exertion.
	<a href="#">Adiponectin</a>	-	- <a href="#">See study</a>	No significant influence on adiponectin concentrations in persons with fatty liver seen with betaine supplementation.
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant influence of betaine supplementation on blood pressure is currently known.
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	No significant influence on circulating creatinine is seen with supplementation of betaine.
	<a href="#">Fibrinogen</a>	-	- <a href="#">See study</a>	No significant alterations in fibrinogen concentrations seen with supplementation of betaine.
	<a href="#">Growth Hormone</a>	-	- <a href="#">See study</a>	The minor increase in growth hormone seen with betaine (6.1%), relative to placebo, failed to reach statistical significance and is too low of magnitude to consider it practically appreciable.
	<a href="#">Heart Rate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on heart rate in subjects who are rehydrated and then subject to exercise.
	<a href="#">Hematocrit</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on hematocrit is noted with supplementation of betaine.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hydration (Total Body Water)</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Betaine supplementation does not appear to be significantly beneficial in improving hydration status of users either outright or after prior dehydration relative to water alone.
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	Similar to blood glucose, there is currently no known influence of betaine supplementation on fasting insulin concentrations.
	<a href="#">Kidney Function</a>	-	- <a href="#">See study</a>	No significant alterations of kidney function in healthy persons given betaine (4g) for six months.
	<a href="#">Lean Mass</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In studies assessing lean mass, there are no apparent changes with supplementation of betaine.
	<a href="#">Lipid Peroxidation</a>	-	- <a href="#">See study</a>	No significant alterations have been noted in circulating biomarkers of lipid peroxidation.
	<a href="#">Metabolic Rate</a>	-	- <a href="#">See study</a>	No significant influence of betaine on the metabolic rate of obese persons subject to chronic supplementation.
	<a href="#">Muscle Creatine Content</a>	-	- <a href="#">See study</a>	Betaine (2g) has failed to increase phosphocreatine levels in skeletal muscle and failed to augment the increase caused by 20g of creatine.
	<a href="#">Muscle Soreness</a>	-	- <a href="#">See study</a>	No significant influence of betaine supplementation of subjective ratings of muscular soreness nor the pump relative to placebo.
	<a href="#">Nitric Oxide</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	A potent increase in nitric oxide seen in a pilot study has failed to be replicated in a controlled intervention.
	<a href="#">Oxidation of LDL</a>	-	- <a href="#">See study</a>	No significant alterations in the overall oxidation of LDL cholesterol associated with supplementation of betaine.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Oxygen Uptake</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	A minor increase in oxygen uptake was noted in selective testing (final sprint of one, but not both, betaine conditions) which did not manifest over the whole study period and is likely practically insignificant.
	<a href="#">Serum Cobalamin</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	Mixed evidence as to whether B12 is influenced with supplementation of betaine, but the higher quality study appears to show no effect (since the other study noted a decline in B12 in placebo).
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	No significant influence on TNF-a concentrations following supplementation of betaine to persons with fatty liver.
	<a href="#">Thyroid-Stimulating Hormone</a>	-	- <a href="#">See study</a>	No significant influence of betaine on circulating TSH concentrations in serum.
	<a href="#">Triglycerides</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant alterations in serum triglycerides are noted with prolonged supplementation of betaine supplementation.
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	Although a minor increase in oxygen uptake was noted in certain situations (final sprint of testing), overall VO <sub>2</sub> max is not significantly affected.
	<a href="#">Salivation</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Betaine containing toothpaste, in persons with xerostomia (dry mouth), can reduce symptoms of dry mouth possibly related to an increase in salivation (basal salivation, not in response to stimuli)

# Tripterygium wilfordii

Also known as: *Thunder God Vine*

Other uses:

Tripterygium wilfordii (Thunder God Vine) is a Traditional Chinese Medicine that appears to be effective for the treatment of inflammatory and autoimmune diseases, but has toxicity associated per se and a low therapeutic threshold.

See [Tripterygium wilfordii on Examine.com](#)

## How to Take

It should be noted that this plant has a very low therapeutic index (difference between the effective dose and the toxic dose) and that overdosing is both easy to do and critical; supplementation is usually avoided for this reason.

Back to: [Supplements](#) | [Health Outcomes](#)



# Tulbaghia violacea

Also known as: *Wild Garlic*, *Sweet Garlic*, *Society Garlic*, *Wildecknoffel*, *Isihaqa*

Other uses:

---

An African herb traditionally used for its anti-infectious effects, it may be heart healthy and has some preliminary testicular effects suggesting it might increase testosterone levels; not enough evidence currently though.

See [Tulbaghia violacea on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Turmeric

*Also known as: Indian Curry, Curry extract*

---

Turmeric is a spice commonly used in Curry, which has Curcumin and the Curcuminoids as the main bioactive compounds. Turmeric itself is fairly healthy and has other bioactives in it.

See [Turmeric on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Type-II Collagen

Also known as: hydrolyzed collagen, solubilized collagen, CII, shark gelatin, gelatin, collagen







Other uses:






Type II collagen (CII) is a peptide and component of joint cartilage. Its oral ingestion appears to reduce autoimmunity to the body's own CII, resulting in less inflammation in instances of osteoarthritis and rheumatism and benefits to joint health.

See [Type-II Collagen on Examine.com](#)

## How to Take

Collagen supplements are taken in one of two different forms, either in the form of hydrolyzed collagen or in the form of an undenatured type II collagen; both forms have different dosing strategies and while their benefits may share some similarities can be considered two different supplements. Hydrolyzed collagen is taken in doses of around 10g a day for skin health and some benefits to joints, and can be taken with meals. It should not be taken in higher doses as a protein supplement (for muscle gain and fat loss) due to having less efficacy than other protein sources and a lackluster amino acid profile. Undenatured collagen is taken at a lower dose of approximately 40mg once daily for the treatment of osteoarthritis and rheumatoid arthritis when there is an autoimmune component to it, and while it doesn't need to be taken at any particular time of the day it may be ideal to take it on an empty stomach before breakfast.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pain</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	Limited research suggests a small benefit for osteoarthritis patients and a modest benefit for those with rheumatoid arthritis. It's unclear what the optimal dose is, and it may depend on the form. 1 mg of solubilized collagen, 10 g of hydrolyzed collagen, and 40 mg of undenatured collagen are all supported by research, while 20 mcg of native collagen actually coincided with a greater reduction in rheumatoid arthritis pain than higher doses in one study.
	<a href="#">Exercise-induced Joint Pain</a>	 Minor	- <a href="#">See study</a>	One study in healthy people with joint discomfort during exercise found that those taking 40 mg of undenatured collagen could exercise somewhat longer without getting sore than the placebo group. Notable effects were only seen after taking collagen for 2-3 months but persisted for up to 6 months.
	<a href="#">Symptoms of Osteoarthritis</a>	 Minor	- <a href="#">See 2 studies</a>	Limited research suggests a reduction in pain, but the studies available don't provide evidence for an improvement in the other symptoms.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of Rheumatoid Arthritis</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Limited research suggested an improvement in pain, swelling, stiffness, and tenderness.
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	One study in rheumatoid arthritis patients reported that collagen didn't seem to influence c-reactive protein, but they didn't provide the data.
	<a href="#">Immunoglobulin A</a>	-	- <a href="#">See study</a>	No apparent effect in one study on rheumatoid arthritis.
	<a href="#">Immunoglobulin G</a>	-	- <a href="#">See study</a>	No apparent effect in one study on rheumatoid arthritis.

Back to: [Supplements](#) | [Health Outcomes](#)

# Uncaria rhynchophylla

Also known as: *Uncariae uncis cum ramulus*, *Choto-ko*, *Choto-san*, *pulvis uncariae*, *Diao-teng-san*, *Gou-teng*,

Uncaria rhynchophylla (Gou-Teng or Chotoko) is an antiepileptic eastern medicine and major component of 'Yokukansan' for the treatment of agitation in elderly persons. It appears to be neuroprotective, anticonvulsive, and has antipsychotic properties like Aripiprazole.

See [Uncaria rhynchophylla on Examine.com](#)

## How to Take

There is currently no evidence in humans to recommend an ideal human dose, but based on the rat studies conducted noting efficacy with the water extract at 250-1,000 mg/kg oral intake a preliminary guess at the dosages would be: 2,700-11,000 mg for a 150lb person 3,600-14,500 mg for a 200lb person 4,500-18,000 mg for a 250lb person The formulation known as Yokukansan (one serving is 20.5 grams) which is given to humans contains three grams of uncaria rhynchophylla, and this may be a prudent starting dose even if using it in isolation.

Back to: [Supplements](#) | [Health Outcomes](#)

# Uncaria tomentosa



Also known as: *Cat's Claw*, *Vincaria*

Uncaria Tomentosa (Cat's Claw) is an Amazonian vine that has been traditionally recommended for antiinflammatory and fatigue syndromes.

See [Uncaria tomentosa on Examine.com](#)

## How to Take

Studies using Cat's Claw tend to use 250-350mg of the ethanolic extract once a day. This is usually standardized to a Pentacyclic Oxindole Alkaloid content.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">White Blood Cell Count</a>	 Minor	- <a href="#">See study</a>	An increase in white blood cell count has been noted with Cat's Claw by 9% over 9 weeks with a water extract, which is thought to be related to the immunoenhancing properties. The white blood cells that were increased were not assessed

Back to: [Supplements](#) | [Health Outcomes](#)

# Uridine





Also known as: UDP,UMP

Uridine is a nucleotide base found in high levels in beer which is used for increasing synthesis of cellular membranes and for other neurological properties. It appears to have potentially cognitive enhancing properties, and is synergistic with fish oil.

See [Uridine on Examine.com](#)

## How to Take

Supplementation of uridine seems to be in the 500-1,000mg range, with the lone human study using the higher end of this range. It is recommended to take uridine with food out of prudence, but this has not been noted to be an absolute requirement.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Depression</a>	 Minor	- <a href="#">See study</a>	Depressive symptoms in bipolar disorder have been noted to be reduced
	<a href="#">Symptoms of Bipolar Disorder</a>	 Minor	- <a href="#">See study</a>	Depressive symptoms of bipolar disorder are fairly strongly reduced with uridine supplementation, but currently only open label studies are in existence

Back to: [Supplements](#) | [Health Outcomes](#)

# Ursolic Acid

Also known as: *Apple peel extract*









Other uses:

Ursolic Acid is a molecule found in apple peels, and in the Ayurveda herb known as Holy Basil. No human interventions exist right now, but ursolic acid appears to be a promising body recomposition agent; able to increase muscle mass and decrease fat mass. May be anti-fertility, however.



See [Ursolic Acid on Examine.com](#)

## How to Take

Animal studies have found benefits with ursolic acid in the diet at 0.05-0.2% of the diet, which is around 10-40mg/kg (based on their weight and food intake) and the estimated human dose equivalent to this is 1.6-6.4mg/kg bodyweight; for a 150lb adult it would be the range of 110-440mg. The lone human study used the higher end of this range, 150mg three times a day with meals totalling 450mg each day, and found some biological activity. Until further research arises, thrice daily dosing of 150mg with meals is recommended.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">IGF-1</a>	 Minor	- <a href="#">See study</a>	An increase in IGF-1 concentrations has been noted with supplementation of ursolic acid three times daily (150mg) in exercising subjects.
	<a href="#">Irisin</a>	 Minor	- <a href="#">See study</a>	An increase in serum Irisin has been noted with 150mg ursolic acid three times a day in exercising individuals.
	<a href="#">Power Output</a>	 Minor	- <a href="#">See study</a>	As measured by peak torque (isokinetically), ursolic acid supplementation may increase power output in trained individuals.
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	Ursolic acid with meals in athletic subjects has failed to alter fasting glucose concentrations relative to placebo.
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	No significant reductions in fat mass were noted when ursolic acid (150mg thrice daily over 16 weeks) was used, when compared to placebo.



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	No alterations in insulin concentrations are noted with chronic ursolic acid supplementation.
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	The increase in power output and IGF-1 seen with ursolic acid over 16 weeks was not accompanied by an increase in lean mass relative to control (resistance training was included).

Back to: [Supplements](#) | [Health Outcomes](#)

# Uva ursi

Also known as: *Arctostaphylos uva-ursi*, bearberry, bear's grape, foxberry, crowberry, kinnikinnick, tinnick

*Arctostaphylos uva-ursi*, also known as uva ursi or bear's grape, is a plant that grows in cool climates. The leaves of the plant are used in the treatment of urinary tract infections, but more human studies are needed before it can be recommended for supplementation.

See [Uva ursi on Examine.com](#)

## How to Take

The standard uva ursi dose for the treatment of urinary ailments is determined by the arbutin content of the supplement. The recommended dose is between 420-600mg, taken once a day in three doses throughout the day (140-220mg, three times). Uva ursi tea and capsules are both effective for delivering arbutin to the urinary tract. Uva ursi supplementation is usually recommended in response to a specific ailment, rather than as a daily preventative. The leaf does not need to be taken with a meal. Supplementation should not last longer than one to two weeks.

Back to: [Supplements](#) | [Health Outcomes](#)

# Valeriana officinalis

Also known as: Valerian









Other uses:












Valeriana officinalis, also known as valerian, is an herbal tea and supplement. It is commonly used for its sedative and anxiety-reducing effects.

See [Valeriana officinalis on Examine.com](#)

## How to Take

A standard dose of valerian is 450mg. Daytime supplementation should consist of 2 to 3 doses of 300mg. Valerian supplements consist of the root, which is standardized to contain 0.8-1% valerenic acid. Valerian should be taken an hour before bed. If valerian is being supplemented during the daytime, it should be taken with meals.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sleep Latency</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	There are isolated cases of minor reductions in the time taken to fall asleep (improvements in sleep latency), but the majority of the evidence and the only meta-analysis to date suggest no significant influence of valerian.
	<a href="#">Sleep Quality</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	At least according to an overall meta-analysis on the topic, valerian does not appear to be much greater than placebo for aiding sleep in otherwise healthy persons. This may differ in persons with insomnia but that is not yet tested adequately
	<a href="#">Fatigue</a>	 Minor	- <a href="#">See study</a>	One study assessing valerian in persons with cancer on chemotherapy (of which insomnia may be a side effect of chemotherapy) found reductions in sleep disturbances which manifested as less fatigue during the day; no other evidence at this point in time.
	<a href="#">Insomnia</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, with benefit to insomnia in menopausal women yet no apparent benefit in those with restless leg syndrome. Overall, a lack of evidence to conclude efficacy for this particular disorder.
	<a href="#">Pain</a>	 Minor	- <a href="#">See study</a>	Menstrual pain appears to be reduced with supplementation of low dose valerian extracts.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sedation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Doses above 750mg may be associated with the 'morning hangover' side effect (sleepiness upon waking) whereas lower doses of 400mg have not been associated with such.
	<a href="#">Symptoms of Menopause</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Limited evidence suggests efficacy in the treatment of menopausal symptoms with valerian extract, with one study measuring benefits to hot flash frequency and the other insomniac symptoms.
	<a href="#">Symptoms of OCD</a>	 Minor	- <a href="#">See study</a>	The lone study assessing the effects of valerian and OCD found a benefit with treatment relative to placebo.
	<a href="#">Symptoms of PMS</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Abdominal pain associated with menstruation appears to be reduced relative to placebo in women who complained of above average levels of pain during their menstrual cycles. Another study found a notable reduction in PMS symptoms broadly, though much more research is needed to confirm this.
	<a href="#">Symptoms of Restless Leg Syndrome</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There may be benefits to restless leg syndrome, although this was found only in persons with excessive daytime sleepiness; over the whole group, there was no significant benefit.
	<a href="#">Anxiety</a>	-	- <a href="#">See study</a>	Valerian does not appear to be effective for the treatment of generalized anxiety disorder in the one study assessing its effects.

Back to: [Supplements](#) | [Health Outcomes](#)

# Valine

*Other uses:*

---

Valine is one of the three branched chain amino acids, although infrequently tested in isolation and possibly the least important BCAA for body composition and does not appear to have any known unique benefits associated with it.

See [Valine on Examine.com](#)

## How to Take

There is currently insufficient evidence to suggest an optimal dose of valine supplementation and for what purposes valine supplementation might actually be useful for.

Back to: [Supplements](#) | [Health Outcomes](#)

# Vanadium









Other uses:






Vanadium is a mineral that is not one of the Essential Mineral compounds, but is sometimes ingested in the diet. Can be found in bone tissues, Vanadium may influence glucose metabolism in an anti-diabetic manner.

See [Vanadium on Examine.com](#)

## How to Take

The majority of research on vanadium uses an oral dose of 100mg as a once daily supplement in persons with poor glucose tolerance. It is unsure if this is the optimal dose, but it appears to be effective.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A slight increase in triglycerides has been noted with vanadium supplementation
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on HDL-C levels in serum of obese subjects
	<a href="#">Insulin Sensitivity</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	Although an insulin sensitizing effect cannot be fully ruled out at this point in time, the more robust evidence currently does not support this insulin sensitizing effect in obese persons with impaired glucose tolerance. It may be only in diabetics
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Mixed effects on LDL-C, likely no direct influence on LDL but may reduce overall LDL levels secondary to improving the diabetic state (which normally increases LDL)
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in the levels of total cholesterol <i>per se</i> , but a decrease has been noted to be secondary to attenuating diabetic symptoms
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	A decrease in blood glucose has been noted in type II diabetics which is thought to be secondary to reducing hepatic synthesis of glucose

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Glycogen Resynthesis</a>	 Minor	- <a href="#">See study</a>	An increase in glycogen content has been noted in diabetic persons given vanadium, no studies in athletes currently
	<a href="#">HbA1c</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in HbA1c has been noted with vanadium supplementation
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure noted

Back to: [Supplements](#) | [Health Outcomes](#)

# Velvet Antler







Also known as: Deer Velvet Antler, Deer Antler, Elk Velvet Antler, Cervus, Lu Jiao Pan

Velvet Antler (usually from deer) is crushed antler that is orally consumed for preventative health purposes. Hailing from Traditional Chinese Medicine, velvet antler does not appear to influence hormones and is currently unsupported for muscle repair (although it may aid skin regeneration rates).

See [Velvet Antler on Examine.com](#)



## How to Take

Due to a lack of human evidence to support benefits of this supplement, an optimal dosage cannot yet be ascertained. Two possible options exist: 500 mg once daily, which is what seems to be used in most dietary supplements 1,000-2,000 mg daily, which appears to be the recommendation from traditional chinese medicine

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Testosterone</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Repeated trials have failed to find an increase in testosterone associated with velvet antler supplementation
	<a href="#">Power Output</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A lone study noted an increase in muscle torque associated with Velvet Antler supplementation, which needs to be replicated to see if it is a true effect.
	<a href="#">Aerobic Exercise</a>	-	- <a href="#">See study</a>	No benefit of velvet antler on aerobic cardiovascular exercise
	<a href="#">Anaerobic Running Capacity</a>	-	- <a href="#">See study</a>	No significant influence on anaerobic cardiovascular exercise capacity
	<a href="#">Aphrodisia</a>	-	- <a href="#">See study</a>	Velvet Antler has failed to alter libido in otherwise healthy older men



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Erythropoietin</a>	-	- <a href="#">See study</a>	No influence on erythropoietin with velvet antler supplementation
	<a href="#">Follicle-Stimulating Hormone</a>	-	- <a href="#">See study</a>	No alterations in FSH levels have been noted with velvet antler supplementation
	<a href="#">Free Testosterone</a>	-	- <a href="#">See study</a>	Free testosterone was unaltered with velvet antler relative to placebo
	<a href="#">Growth Hormone</a>	-	- <a href="#">See study</a>	No significant influence on growth hormone levels
	<a href="#">IGF-1</a>	-	- <a href="#">See study</a>	No significant influence of velvet antler on IGF-1
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	No interaction between velvet antler and lean mass accrual
	<a href="#">Libido</a>	-	- <a href="#">See study</a>	There does not appear to be a significant influence of velvet antler supplementation on the libido
	<a href="#">Luteinizing Hormone</a>	-	- <a href="#">See study</a>	No significant influence on luteinizing hormone levels
	<a href="#">Prolactin</a>	-	- <a href="#">See study</a>	No significant interactions with prolactin and velvet antler noted
	<a href="#">Red Blood Cell Count</a>	-	- <a href="#">See study</a>	No influence of this supplement on red blood cell count following prolonged supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sexual Function</a>	-	- <a href="#">See study</a>	No discernible effect on sexual function in older, healthy men.
	<a href="#">Symptoms of Rheumatoid Arthritis</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of velvet antler on symptoms of rheumatoid arthritis

Back to: [Supplements](#) | [Health Outcomes](#)

# Vinpocetine

Also known as: Vincamine, Vinca Minor, Periwinkle Extract, Cavinton (Brand Name), ethyl apovincamine







Vinpocetine is a compound from the Periwinkle plant that is used as a cognitive protective and anti-aging agent. One of the more common of the nootropics, Vinpocetine may enhance blood flow and is touted to increase memory; this latter claim has not been investigated.

See [Vinpocetine on Examine.com](#)

## How to Take

Vinpocetine is taken in the daily dosage range of 15-60mg, divided into three daily doses with meals. The standard low dose is 5mg at each of these three meals, with 20mg at each meal being seen as the higher end of efficacy. These doses are taken for the purposes of neuroprotection, enhancing cerebral blood flow, and reducing the rate of cognitive decline. Doses in the higher end of that range (30-45mg acute dosages) may be useful for promoting cognition and memory formation in otherwise healthy persons, but there is not a lot of evidence looking at this claim. Warning: for pregnant women, the equivalent of doses above 10 mg/d have been linked to fetal toxicity in animal studies. 10 mg/d may also be risky, especially when taking throughout an entire pregnancy.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Memory</a>	 Minor	- <a href="#">See study</a>	An increase in acute memory formation has been noted in female volunteers given 40mg Vinpocetine
	<a href="#">Pulse Rate</a>	 Minor	- <a href="#">See study</a>	A decrease in pulse rate has been noted with vinpocetine
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See study</a>	High doses (40mg) may reduce reaction time during tested, with lower doses not being potent enough to influence reaction time
	<a href="#">Processing Accuracy</a>	-	- <a href="#">See study</a>	
	<a href="#">Cognitive Decline</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The rate of cognitive decline appears to be attenuated with vinpocetine administration, this may be related to blood flow

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Functionality in Elderly or Injured</a>	 Minor	- <a href="#">See study</a>	An improvement in balance has been noted with vinpocetine ingestion in the elderly, which may be related to the attenuation of cognitive decline
	<a href="#">Isaac Speech Activity Test</a>	 Minor	- <a href="#">See study</a>	Improvements in speech performance have been noted in the elderly, which may be more indicative of the reductions in cognitive decline
	<a href="#">Subjective Well-Being</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in well being has been noted to be secondary to the reduced rate of cognitive decline

Back to: [Supplements](#) | [Health Outcomes](#)

# Vitamin A

Also known as: *retinol, retinal, retinoic acid, tretinoin, beta-carotene*








Other uses:



Vitamin A refers to a group of compounds that serve important roles in modulating skin health, vision, gene transcription, and immune system functioning. Deficiencies, which are common in developing countries, can lead to impaired vision, dry skin and poor immunity.

See [Vitamin A on Examine.com](#)

## How to Take

For topical application, the form of all-trans retinoic acid (Tretinoin) should be used in a facial cream/ lotion containing it in the range of 0.01-0.10%, with the lowest concentration having low side-effects but less efficacy and 0.025-0.05% being the sweet spot. Topical application is once nightly.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Wrinkles</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	The appearance of fine (small) wrinkles appears to be reliably reduced with topical application of a nightly vitamin A cream, with efficacy in all ages assuming fine wrinkles are present.
	<a href="#">Skin Dryness</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Skin dryness is a side-effect of topical application in some persons, increasing in frequency with higher doses; it is mild in severity and, while it may be associated with flaking, rarely causes dropouts.
	<a href="#">Skin Pigmentation</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Skin Quality</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Collagen Content</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Skin Elasticity</a>	-	- <a href="#">See study</a>	
	<a href="#">Skin Thickness</a>	-	- <a href="#">See 2 studies</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Vitamin B1

Also known as: *Thiamine*

Other uses:



Thiamine (Vitamin B1) is an essential vitamin involved heavily in glucose production. While not a common deficiency in an otherwise healthy diet and limited benefits when taken by a healthy subject, instances of high blood glucose and/or alcoholism can increase the need for this vitamin drastically.

See [Vitamin B1 on Examine.com](#)

## How to Take

Thiamine supplements are usually taken at doses well above the RDA, such as 100-300mg, in instances where thiamine is considered to be deficient such as high blood sugar or high alcohol intake. When using thiamine at this dose timing does not matter much and either one dose can be taken in the morning or multiple doses throughout; thiamine does not need to be ingested with food to be absorbed.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of PMS</a>	 Strong	<b>Very High</b> <a href="#">See 2 studies</a>	One study found a staggering reduction in symptoms with 100 mg of vitamin B1 daily. It wasn't clear what the baseline vitamin B1 status of the participants was. Another study found a notable benefit of 100 mg daily over 2 months, and also that the improvement was additive with calcium, with the combination being notably more potent than either separately. Much more research is needed.
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See study</a>	In instances where thiamine is deficient, replenishment of thiamine appears to cause a modest decrease in blood pressure.
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No changes of note in people with high blood sugar
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant changes in people with hyperglycemia
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	No change noted in those with high blood sugar

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No change noted in people with high blood sugar
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No observed changes in a population with hyperglycemia

Back to: [Supplements](#) | [Health Outcomes](#)



# Vitamin B2

Also known as: Riboflavin








Other uses:





Riboflavin is an essential vitamin that is required for some enzymes in the body to act normally. Supplementation of riboflavin is not outright required with a good diet, but may serve some benefits for cardiovascular health in genetically susceptible people.

See [Vitamin B2 on Examine.com](#)

## How to Take

Riboflavin, for the purpose of maintaining a sufficient riboflavin status in the body, can be supplemented at a relatively low dose of 1-2mg daily to support riboflavin stores in the body. Higher dose (4mg) may increase stores more rapidly but may perform equally over the long term, and these doses are also what should be taken for the purpose of reducing homocysteine concentrations. For the purpose of reducing migraines, while the optimal dose is not yet confirmed many studies use a total daily dose of 400mg riboflavin divided into various doses throughout the day; riboflavin at these doses (50mg or more) should be taken with food, a dosing modification which does not apply to lower dose supplementation which is fine on an empty stomach.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Homocysteine</a>	 Notable	<b>Moderate</b> <a href="#">See all 5 studies</a>	Homocysteine appears to be reduced to a large degree at 1.6mg, but this effect is exclusive to subjects with a specific genetic mutation known as MTHFR 677TT (two copies of MTHFR 677C->T).
	<a href="#">Migraine</a>	 Notable	<b>Moderate</b> <a href="#">See all 7 studies</a>	Riboflavin supplementation appears to be quite effective in reducing migraine frequency based on preliminary research. The effect of riboflavin on intensity is still undetermined, and the optimal dose is not known as while most studies use 400mg one found similar benefits with 25mg.
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be a reduction in blood pressure in the same subjects who have a reduction in homocysteine, those with the MTHFR 677TT genetic mutation.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	-	- <a href="#">See study</a>	Antioxidant enzymes do not appear to be increased in red blood cells in response to 10mg riboflavin supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	C-reactive protein concentrations in serum do not appear to be affected with supplementation of riboflavin.
	<a href="#">Ferritin</a>	-	- <a href="#">See study</a>	Despite the benefits of riboflavin supplementation towards hemoglobin content in people who have low riboflavin status, ferritin concentrations are not affected.
	<a href="#">Symptoms of Multiple Sclerosis</a>	-	- <a href="#">See study</a>	Symptoms of multiple sclerosis do not appear to be affected by supplementation of 10mg riboflavin relative to placebo.
	<a href="#">Uric Acid</a>	-	- <a href="#">See study</a>	The uric acid/urate balance is not affected by supplementation of riboflavin.

Back to: [Supplements](#) | [Health Outcomes](#)

# Vitamin B3 (Niacin)

Also known as: Niacin, B3, Vitamin B3

Other uses:

Niacin is an essential B-vitamin. Supplementation results in improved cholesterol and triglyceride levels. However, since a side-effect of supplementation is increased insulin resistance, niacin supplementation only provides benefits for cardiovascular health if precautions are taken.




















See [Vitamin B3 \(Niacin\) on Examine.com](#)


## How to Take










Most of the benefits from niacin supplementation occur after doses of at least one gram. This is approximately 5,000% the recommended daily intake.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	 Strong	<b>Very High</b> <a href="#">See all 6 studies</a>	Niacin supplementation is currently the major reference for increasing HDL cholesterol concentrations rapidly and reliably, at times being called the Golden Standard for HDL increasing pharmaceuticals.
	<a href="#">Acne</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Topical application of 4% nicotinamide gel rivals 1% clindamycin gel in reducing acne severity and tends to work better than clindamycin in oily skin types.
	<a href="#">LDL-C</a>	 Notable	<b>High</b> <a href="#">See all 5 studies</a>	Most evidence suggests that in subjects with dyslipidemia that supplemental niacin at the pharmacological dose results in a decrease in circulating LDL-C, although to a lesser magnitude than it influences HDL-C
	<a href="#">Triglycerides</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	There appears to be a large decrease of triglycerides in subjects with dyslipidemia given pharmacological doses of niacin; the magnitude being greater than most supplements (but lesser than fish oil)
	<a href="#">Blood Glucose</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	There appears to be an increase in fasting glucose concentrations among users of pharmacological doses of niacin when compared to controls, thought to be related to insulin resistance.
	<a href="#">Coronary Heart Disease Risk</a>	 Minor	- <a href="#">See study</a>	One meta-analysis found a decrease in the risk of developing coronary heart disease when compared to control.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insulin</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Chronic supplementation of pharmacological doses of niacin appears to increase fasting insulin concentrations when compared to control subjects.
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Subjects given pharmacological doses of niacin appear to experience a decrease (worsening) of insulin sensitivity; the mechanisms behind this are not currently established.
	<a href="#">Risk of Myocardial Infarction</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Mixed evidence, but a possible decrease in the risk of myocardial infarction rates with niacin supplementation (overall mortality from cardiovascular diseases doesn't seem to be altered).
	<a href="#">Risk of Stroke</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There may be a decrease in the rates of strokes among subjects (dyslipidemics) using pharmacological doses of niacin when compared to controls
	<a href="#">Cardiovascular Disease Mortality</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Despite the benefits towards circulating lipids, overall mortality from cardiovascular disease does not appear to be significantly altered with niacin usage in pharmacological doses.
	<a href="#">Adiponectin</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in circulating adiponectin has been noted in subjects with health ailments (NAFLD or metabolic syndrome) to a moderate degree
	<a href="#">Leptin</a>	 Notable	- <a href="#">See study</a>	An increase in circulating leptin has been noted with supplementation of pharmacological doses of niacin in subjects with metabolic syndrome.
	<a href="#">vLDL-C</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Alongside decreases in triglycerides and LDL-C, the concentrations of vLDL-C also appear to be decreased in response to niacin supplementation.
	<a href="#">Apolipoprotein A</a>	 Minor	- <a href="#">See all 4 studies</a>	Mixed evidence, including null evidence, in different populations as to whether apolipoprotein AI is increased or decreased; one study in subjects with low HDL-C noted an increased (which would be cardioprotective).
	<a href="#">Burn Healing</a>	 Minor	- <a href="#">See study</a>	When subjects with acne applied a nicotinamide metabolite to their face via a topical cream, subjects with burns appear to experience an increased rate of healing.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Oxidation</a>	 Minor	- <a href="#">See study</a>	There may be a reduction in fat oxidation rates when pharmacological doses of niacin are consumed by otherwise healthy subjects, although no changes in the metabolic rate occur due to an increase in the rate of glucose oxidation.
	<a href="#">Hepatic Glucose Production</a>	 Minor	- <a href="#">See study</a>	An increase in hepatic glucose production has been noted in healthy subjects alongside a general state of insulin resistance.
	<a href="#">Insulin Secretion</a>	 Minor	- <a href="#">See study</a>	Insulin secretion (in response to glucose) appears to be hindered with chronic supplementation of pharmacological doses of niacin
	<a href="#">Reddening of the Skin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Topical application of nicotinamide and its analogues (not including niacin) appears to reduce reddening of the skin.
	<a href="#">Skin Elasticity</a>	 Minor	- <a href="#">See study</a>	Topical application of nicotinamide (not niacin) appears to increase elasticity of skin
	<a href="#">Skin Pigmentation</a>	 Minor	- <a href="#">See study</a>	In subjects with hyperpigmented spots, topical application of nicotinamide cream (5%) was able to reduce the discoloration more than control.
	<a href="#">Skin Quality</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Overall skin quality appears to be increased with topical application of nicotinamide containing creams and lotions; mildly but beneficially influencing most measured parameters.
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Total cholesterol is decreased with pharmacological doses of niacin owing to decreases of LDL and vLDL cholesterol, although the overall reduction is lesser due to a concomitant increase in HDL cholesterol.
	<a href="#">Wrinkles</a>	 Minor	- <a href="#">See study</a>	Topical application of nicotinamide appears to slightly reduce the appearance of fine wrinkles (crow's feet).
	<a href="#">Apolipoprotein B</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	While a decrease in apolipoprotein B has been noted, most research suggests that it is not appreciably influenced.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Flow</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	While one study noted an increase in blood flow in subjects on medication who were given additional niacin, other studies do not find an interaction with niacin and blood flow.
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	In otherwise healthy subjects, niacin does not appear to influence blood pressure.
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In otherwise healthy subjects as well as dyslipidemics, C-reactive protein does not appear to be altered in its concentration relative to control.
	<a href="#">Cell Adhesion Factors</a>	-	- <a href="#">See study</a>	Select cellular adhesion factors (iCAM and vCAM) do not appear to be influenced in their quantity when niacin is supplemented.
	<a href="#">Fat Mass</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Pharmacological doses of niacin in obese dyslipidemics does not appear to confer fat loss properties.
	<a href="#">Interleukin 6</a>	-	- <a href="#">See study</a>	The inflammatory cytokine IL-6 does not appear to be influenced by supplementation of niacin.
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	Pharmacological doses of niacin in obese dyslipidemic men do not appear to increase circulating liver enzymes, suggesting no hepatotoxicity.
	<a href="#">Metabolic Rate</a>	-	- <a href="#">See study</a>	Despite alterations in fat and glucose oxidation rates (favoring the latter), there does not appear to be any influence of pharmacological doses of niacin on the metabolic rate of healthy subjects.
	<a href="#">Plasma Nitrate</a>	-	- <a href="#">See study</a>	Plasma nitrate concentrations do not appear to be altered with supplementation of niacin.
	<a href="#">Resistin</a>	-	- <a href="#">See study</a>	Circulating resistin concentrations do not appear to be influenced with supplementation of niacin.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	No significant influence of niacin supplementation on circulating TNF-a concentrations.
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Supplementation of pharmacological doses of niacin does not appear to influence body weight in any significant manner.
	<a href="#">Bilirubin</a>	 Minor	- <a href="#">See study</a>	One study in dyslipidemics found an increase in bilirubin associated with niacin supplementation.
	<a href="#">Ketone Bodies</a>	 Minor	- <a href="#">See study</a>	Supplementation of low dose niacin (100mg) repeatedly while in the fasted state appears to be associated with an increase in blood ketone levels.
	<a href="#">Adrenaline</a>	-	- <a href="#">See study</a>	Circulating adrenaline concentrations during a fasting period do not appear to be altered when niacin is supplemented.
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	Supplementation of niacin during a fasting period does not appear to influence circulating cortisol concentrations.
	<a href="#">Glucagon</a>	-	- <a href="#">See study</a>	Circulating glucagon concentrations do not appear to be altered when niacin (100mg every hour) is supplemented during a fasting period.

Back to: [Supplements](#) | [Health Outcomes](#)

# Vitamin B5

*Also known as: Pantothenic acid, Panthenol, Pantothenate, Dexpanthenol, Pantothenylalcohol*

*Other uses:*

---

Pantothenic acid is one of the B-vitamins which is critical in the formation of Co-enzyme A, a molecule which helps a large amount of enzymes function in the body, and for energy production in general. While it is important, it is rare to be deficient and further supplementation shows little promise.

See [Vitamin B5 on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)












# Vitamin B6


Also known as: pyridoxine, pyridoxamine, pyridoxal, pyridoxal phosphate, pyridoxal-5'-phosphate, PLP

Other uses:

Vitamin B6 is one of the B-vitamins, used in producing a necessary coenzyme in the body. While essential and with many small benefits, there appear to be no highly effective unique reasons to use this supplement.

See [Vitamin B6 on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of PMS</a>	 Minor	<b>Very High</b> <a href="#">See all 10 studies</a>	Many studies have found reductions in symptoms, both physical and psychological, with doses of 50 to 100 mg daily. While most studies have found a reduction, the reduction in symptoms tends to be small, and evidence quality is frequently low. As usual with a vitamin, any potential benefits will depend on the degree of deficiency.
	<a href="#">Symptoms of Hand-Foot Syndrome</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Breast Tenderness</a>	 Notable	- <a href="#">See study</a>	One study found a notable reduction in cyclic mastalgia pain as compared with baseline, though there was no placebo group, only a comparator group that received vitamin E, and the true effect is unknown.
	<a href="#">Adrenocorticotrophic Hormone</a>	-	- <a href="#">See study</a>	
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	
	<a href="#">Dream Salience</a>	-	- <a href="#">See study</a>	
	<a href="#">Growth Hormone</a>	-	- <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Prolactin</a>	-	- <a href="#">See 2 studies</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Vitamin B<sub>12</sub>

Also known as:

Cyanocobalamin, cobalamin, methylcobalamin, 5-deoxyadenosylcobalamin, adenosylcobalamin, cobamamide, dibenzocozide, hydroxycobalamin

Other uses:

Cobalamin (Vitamin B12) is a water-soluble essential vitamin that is known to play roles in neurology.

See [Vitamin B<sub>12</sub> on Examine.com](#)

## How to Take

Supplementation of vitamin B12 tends to be around 1,000mcg (1mg) of supplemental vitamin B12 to persons who are at risk for B12 insufficient or deficiency, mostly older individuals and vegans.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Homocysteine</a>	-	- <a href="#">See study</a>	
	<a href="#">Stroke Recovery Rate</a>	 Minor	- <a href="#">See study</a>	A slight improvement in verbal learning associated with 1,000mcg of B12 supplementation in persons with lacunar stroke, according to at least one pilot study
	<a href="#">Depression</a>	-	- <a href="#">See study</a>	
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Vitamin C

Also known as: Ascorbic Acid, Ascorbate, 2-oxo-L-threo-hexono-1,4-lactone-2,3-enediol, L-ascorbic acid











Other uses:

Vitamin C is an essential vitamin with antioxidant properties. It is frequently supplemented to ward off the common cold.

See [Vitamin C on Examine.com](#)

## How to Take

The Recommended Daily Intake (RDI) of vitamin C is 100-200mg. This is easily attained through the diet, so supplementation of such low doses is usually unnecessary. Higher doses of vitamin C, up to 2,000mg, are used to support the immune system (for athletes) or reduce the duration of the common cold. Most studies on vitamin C prescribe one dose per day. The claim that taking 2,000mg up to five times a day to optimally reduce cold symptoms is not sufficiently tested and requires more evidence.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Plasma Vitamin C</a>	 Strong	<b>Very High</b> <a href="#">See all 11 studies</a>	For the purpose of increasing plasma Vitamin C concentrations, orally supplemented Vitamin C appears to be the best decision (second only to intravenous vitamin C).
	<a href="#">Blood Flow</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	An increase in blood flow is seen in instances of impaired blood flow (smoking, obesity, etc.) which may be due to preservation of nitric oxide function (via reducing oxidation thereof); this is a phenomena general to antioxidants and not unique to Vitamin C
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See all 20 studies</a>	Studies are very mixed, however, there appears to be a modest benefit to fasting glucose in type 2 diabetics. More research is needed before having great confidence in this effect. The vast majority of studies don't treat this outcome as their primary outcome and more glucose-specific research is needed.
	<a href="#">Cortisol</a>	 Minor	- <a href="#">See all 7 studies</a>	Vitamin C (500-1,500mg daily) appears to be associated with both increases and decreases in exercise-induced cortisol spikes, depending on whether it acts as a prooxidant or antioxidant (respectively). There is no influence on resting cortisol concentrations.
	<a href="#">General Oxidation</a>	 Minor	<b>Moderate</b> <a href="#">See all 7 studies</a>	Surprisingly mixed influences on biomarkers of oxidation, with either a decrease or no significant influence the majority of the time (with limited evidence to hint at an increase being possible)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lipid Peroxidation</a>	 Minor	<b>Low</b> <a href="#">See all 8 studies</a>	Mixed and weak influences on lipid peroxidation, but a possible reduction exists
	<a href="#">Muscle Damage</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Although not acute, a possible reduction in biomarkers of muscle damage is sometimes noted with antioxidative supplementation which applies to Vitamin C; results are unreliable
	<a href="#">Exercise-Induced Immune Suppression</a>	-	<b>High</b> <a href="#">See all 6 studies</a>	More evidence suggests no significant effect than a possible protective effect, although the latter is possible
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	No significant influence on HDL cholesterol
	<a href="#">HbA1c</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	No significant influence of Vitamin C supplementation on HbA1c levels
	<a href="#">Inflammation</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No significant alterations seen in inflammatory cytokines associated with Vitamin C supplementation
	<a href="#">Insulin</a>	-	- <a href="#">See all 11 studies</a>	Mixed evidence across studies. Overall, there may be a modest reduction in fasting insulin levels, though more evidence is needed.
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See all 9 studies</a>	No significant alterations in LDL cholesterol seen with Vitamin C supplementation
	<a href="#">Protection from Smoking</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	There do not appear to be any inherent protective effects of Vitamin C against the oxidative and inflammatory changes associated with cigarette smoking, although the reduction in blood flow may be attenuated somewhat with antioxidants and this applies to Vitamin C
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See all 13 studies</a>	No significant influence on total cholesterol seems apparent with vitamin C supplementation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 12 studies</a>	No significant influence on fasting or postprandial triglycerides seems apparent with Vitamin C
	<a href="#">Adaptations to Exercise</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	It is thought that, secondary to reducing the rate of muscular damage, that adaptations gained from exercise are attenuated; there is mixed evidence to support this, but it seems possible with antioxidants
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in antioxidant enzymes have been noted in elderly persons
	<a href="#">Blood Pressure</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	May attenuate the increase due to acute hyperglycemia or over the course of 4 months in type 2 diabetics, though the evidence is mixed and more research is needed.
	<a href="#">Bone Mineral Density</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The rate of bone mineral density loss over time in elder women appears to be reduced with dietary antioxidants, and as such applies to Vitamin C supplementation. The protective effect is not remarkably large
	<a href="#">C-Reactive Protein</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A possible reduction in C-Reactive Protein exists with Vitamin C supplementation
	<a href="#">Fatigue</a>	 Minor	- <a href="#">See study</a>	A decrease in fatigue has been noted in obese adults given Vitamin C in conjunction with exercise
	<a href="#">Frequency of Intercourse</a>	 Minor	- <a href="#">See study</a>	Supplementation of 3,000mg Vitamin C appeared to increase sexual frequency from 4 times monthly to 14 times in non-cohabitating subjects. There was no significant effect on cohabitating subjects. No influence on masturbation frequency.
	<a href="#">Heart Rate</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	A decrease in heart rate has been noted in exercising obese adults, a per se effect of Vitamin C on heart rate (rather than secondary to the rate of perceived exertion) seems unlikely.
	<a href="#">Microcirculation</a>	 Minor	- <a href="#">See study</a>	An increase in microcirculation has been noted secondary to increased blood flow, thought to be a general property of antioxidants

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Muscle Soreness</a>	 Minor	- <a href="#">See study</a>	A possible reduction in muscle soreness the day after exercise may result when preloading exercise with Vitamin C
	<a href="#">Rate of Perceived Exertion</a>	 Minor	- <a href="#">See study</a>	The rate of perceived exertion in obese adults appears to be attenuated with Vitamin C supplementation
	<a href="#">Subjective Well-Being</a>	 Minor	- <a href="#">See study</a>	An improvement in mood has been noted in hospitalized persons
	<a href="#">Symptoms of Bacterial Vaginosis</a>	 Minor	- <a href="#">See study</a>	Vaginal bacterial infections are somewhat treatable with directly applied (via silicon coated tablets), as Vitamin C exerts some antioxidant effects against those bacterial strains
	<a href="#">Aerobic Exercise</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No significant influence on aerobic exercise performance
	<a href="#">DNA Damage</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on DNA damage
	<a href="#">Depression</a>	-	- <a href="#">See study</a>	
	<a href="#">Exercise-Induced Oxidation</a>	-	- <a href="#">See 2 studies</a>	Highly mixed interactions with the exercise:oxidation axis with Vitamin C, with both increases and decreases being noted. Unlikely to have a reliable role
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	Does not appear to significantly influence fat mass
	<a href="#">Fat Oxidation</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fat oxidation

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Glycemic Control</a>	-	- <a href="#">See study</a>	No significant influence on glycemic control in diabetics with Vitamin C supplementation
	<a href="#">Heart Palpitations</a>	-	- <a href="#">See study</a>	No significant influence on heart palpitations
	<a href="#">Insulin Sensitivity</a>	-	- <a href="#">See study</a>	No significant influence on insulin sensitivity
	<a href="#">Interleukin 6</a>	-	<b>Low</b> <a href="#">See all 4 studies</a>	Mixed evidence. One study found a significant reduction compared with placebo after 8 weeks supplementation, one study found a non-significant increase in response to ultramarathon running, and one study found no change.
	<a href="#">Length of Sickness</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed influences on the length one is sick for, with possibly no effect
	<a href="#">Mineral Bioaccumulation</a>	-	- <a href="#">See study</a>	
	<a href="#">Oxidation of LDL</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on the oxidation rates of LDL cholesterol
	<a href="#">Oxygenation Cost of Exercise</a>	-	- <a href="#">See study</a>	
	<a href="#">Pre-Eclampsia Risk</a>	-	- <a href="#">See study</a>	No significant influence on pre-eclampsia risk
	<a href="#">Risk of Cataracts</a>	-	- <a href="#">See study</a>	No significant influence on the risk of cataracts



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Seminal Motility</a>	-	- <a href="#">See study</a>	
	<a href="#">Sperm Quality</a>	-	- <a href="#">See study</a>	
	<a href="#">Spontaneous Birth Risk</a>	-	- <a href="#">See study</a>	No significant influence on spontaneous birthing
	<a href="#">Symptoms of Charcot-Marie-Tooth Disease</a>	-	- <a href="#">See study</a>	Insufficient evidence to support a role
	<a href="#">Upper Respiratory Tract Infection Risk</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on the rate of acquiring sickness
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	Does not appear to have a role in altering VO2 max
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Vitamin C does not appear to have a weight reducing effect
	<a href="#">Resistin</a>	 Notable	- <a href="#">See study</a>	There was a notable decrease in one study, but more research is needed to tell how reliable this effect is.
	<a href="#">Endothelial Function</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Attenuation of impairment due to either acute hyperglycemia or elevated free fatty acid levels
	<a href="#">Vascular Function</a>	 Minor	- <a href="#">See study</a>	Seemed to attenuate the impairment due to acute hyperglycemia, but more research is needed.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Adiponectin</a>	-	- <a href="#">See study</a>	No statistically significant effect of 200, 500 and 1000 mg/d for 14 days on postprandial levels.
	<a href="#">Adrenocorticotrophic Hormone</a>	-	- <a href="#">See study</a>	Higher than control group at some points post-surgery, but not statistically significant.
	<a href="#">Asymmetric dimethylarginine (aka ADMA)</a>	-	- <a href="#">See study</a>	
	<a href="#">Body Fat</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No apparent effect on body weight over the course of 4 months.
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	No difference from 500 mg/d after 3 months of supplementation in type 2 diabetes patients (within-group).
	<a href="#">Fructosamine</a>	-	- <a href="#">See study</a>	Unclear effect after taking 1 g/d for 4 months.
	<a href="#">Glomerular Filtration Rate</a>	-	- <a href="#">See study</a>	No difference compared with placebo after taking 6 g/d for 4 weeks.
	<a href="#">Glycemic Control / Insulin Sensitivity</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence. Significant improvement with 1 g/d in type 2 diabetics, though not accompanied by changes in fasting blood glucose. The other study didn't find a change.
	<a href="#">IL-1Ra</a>	-	- <a href="#">See study</a>	Unclear if there was an effect of vitamin C compared with placebo in ultramarathon runners.
	<a href="#">Interferon Gamma</a>	-	- <a href="#">See study</a>	No apparent difference compared with placebo in response to ultramarathon running.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Interleukin 10</a>	-	- <a href="#">See study</a>	Nonsignificant increase compared with placebo in response to ultramarathon running.
	<a href="#">Interleukin 2</a>	-	- <a href="#">See study</a>	Possible large reduction due to 7 days of taking 1.5 g/d, however, pre-supplementation measurements weren't taken.
	<a href="#">Interleukin 8</a>	-	- <a href="#">See study</a>	1.5 g/d didn't lead to a significant difference compared with placebo in response to ultramarathon running.
	<a href="#">Kidney Function</a>	-	- <a href="#">See study</a>	No notable change in estimated glomerular filtration rate (eGFR) in type 2 diabetics over the course of 4 months.
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	1 g/d for 4 months showed no effect in type 2 diabetic patients.
	<a href="#">Liver Enzymes</a>	-	- <a href="#">See study</a>	No notable change in AST, ALT, GGT, or ALP in type 2 diabetics over the course of 4 months.
	<a href="#">Lymphocyte Count</a>	-	- <a href="#">See study</a>	1.5 g/d didn't lead to a significant difference compared with placebo in response to ultramarathon running.
	<a href="#">Monocyte Count</a>		- <a href="#">See study</a>	1.5 g/d didn't lead to a significant difference compared with placebo in response to ultramarathon running.
	<a href="#">Natural Killer Cell Content</a>	-	- <a href="#">See study</a>	1.5 g/d didn't lead to a significant difference compared with placebo in response to ultramarathon running.
	<a href="#">Neutrophil Count</a>	-	- <a href="#">See study</a>	Supplementation of 1.5 g/d didn't alter the increase in response to ultramarathon running compared with placebo.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Osteocalcin</a>	-	- <a href="#">See study</a>	No notable change in response to surgery-induced cortisol increases.
	<a href="#">Plasma Vitamin E</a>	-	- <a href="#">See study</a>	Two weeks of 2 g per day didn't alter plasma vitamin E levels.
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	No apparent effect when used acutely before exercise with a cycle ergometer.
	<a href="#">Rate of Perceived Exertion</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	High dose vitamin C didn't have an effect in two exercise studies.
	<a href="#">Symptoms of Osteoarthritis</a>	-	- <a href="#">See study</a>	No significant influence on the symptoms of osteoarthritis
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	
	<a href="#">Urea</a>	-	- <a href="#">See study</a>	It's simply not clear from one study and a small, non-significant reduction.
	<a href="#">Uric Acid</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Possibly attenuates an increase from extreme exercise but it's unclear and especially unclear for other circumstances.

Back to: [Supplements](#) | [Health Outcomes](#)

# Vitamin D

Also known as: Cholecalciferol (Vitamin D3), Ergocalciferol (Vitamin D2)









Other uses:



















Vitamin D is a fat-soluble essential vitamin that our skin synthesizes when exposed to the sun. It benefits us in many ways, from bone health to mood.

See [Vitamin D on Examine.com](#)

## How to Take

The recommended daily allowance for Vitamin D is currently set at 400-800IU/day, but this is too low for adults. The safe upper limit in the United States and Canada is 4,000IU/day. Research suggests that the true safe upper limit is 10,000IU/day. For moderate supplementation, a 1,000-2,000IU dose of vitamin D3 is sufficient to meet the needs of most of the population. This is the lowest effective dose range. Higher doses, based on body weight, are in the range of 20-80IU/kg daily. Vitamin D3 supplementation (cholecalciferol) is recommended over D2 supplementation (ergocalciferol), since D3 is used more effectively in the body. Vitamin D should be taken daily, with meals or a source of fat, like fish oil.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Risk of Falls</a>	 Notable	<b>Moderate</b> <a href="#">See all 4 studies</a>	The risk of falls in the elderly (and subsequently, rate of bone fractures) appears to be significantly reduced with Vitamin D supplementation at 700 IU or greater, with most research in the 700-1000 IU range. Lower doses do not appear effective, and a greater protective effect appears to exist alongside calcium supplementation (and possibly Vitamin K supplementation)
	<a href="#">Cardiovascular Disease Risk</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	There appears to be less risk of cardiovascular disease and related cardiovascular complications with supplementation of 1,000 IU of Vitamin D or higher serum levels of Vitamin D, although studies using less have had null results. The degree of prevention found in positive trials is of borderline clinical significance.
	<a href="#">Parathyroid Hormone</a>	 Strong	<b>Very High</b> <a href="#">See all 4 studies</a>	Vitamin D supplementation is the reference drug for reductions in parathyroid hormone due to directly negatively regulating its secretion
	<a href="#">Colorectal Cancer Risk</a>	 Notable	- <a href="#">See study</a>	The association between serum Vitamin D at 37ng/mL and colorectal cancer is approximately a halving of risk according to one meta-analysis, which is a notable risk reduction

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Some correlational and intervention studies note that higher serum vitamin D is associated with mildly lower blood pressure, although the evidence is somewhat conflicted and effects that have been found are rather small.
	<a href="#">Bone Fracture Risk</a>	 Minor	- <a href="#">See study</a>	A decrease in bone fracture risk (nonvertebral and hip) appears to exist when supplemental doses of Vitamin D3 are taken above 800 IU, with this protective effect being highly correlated with the improvement in functionality and fall reduction risk
	<a href="#">Fat Mass</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	Mixed effects on overweight/obese persons, but it appears that normalizing a deficiency may aid fat loss in persons of higher body weight. Insufficient evidence to suggest the role of Vitamin D in lean persons
	<a href="#">Functionality in Elderly or Injured</a>	 Notable	- <a href="#">See study</a>	An improvement in muscular and neural functionality in the elderly is thought to underlie the reductions of fall risk and reduced bone fracture rate seen in elderly cohorts
	<a href="#">All-Cause Mortality</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Cohorts of people with higher serum Vitamin D appear to die less frequently than cohorts with less serum Vitamin D; this may be heavily influenced by reducing falls in the elderly (reduction of falls and subsequent hospitalizations reducing death rates)
	<a href="#">Asthma</a>	 Minor	- <a href="#">See study</a>	Appears to be somewhat effective at reducing the occurrence of asthma attacks in youth
	<a href="#">Height</a>	 Minor	- <a href="#">See study</a>	A higher vitamin D level in serum during growth spurts in children is associated with greater heights during adulthood; currently no evidence to support the role of Vitamin D in inducing height growth in adults
	<a href="#">Influenza</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May reduce the risk of catching the flu
	<a href="#">Insulin Secretion</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	An improvement in insulin secretion is noted in diabetics (type II mostly) and in persons at risk for diabetes, which is thought to be secondary to protective effects at the level of the pancreas.
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Improvements in insulin sensitivity can occur secondary to increasing pancreatic insulin secretion








LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Interleukin 5</a>	 Minor	- <a href="#">See study</a>	An increase in IL-5 has been noted with Vitamin D supplementation
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Either no significant influence on LDL cholesterol or a slight increase (around 5%) has been noted; practical significance of this information unknown
	<a href="#">Lean Mass</a>	 Minor	- <a href="#">See 2 studies</a>	An increase in lean mass has been noted in dieting obese women relative to control (2,000IU) and a trend to reduce lean mass relative to control has been noted in exercising healthy persons (4,000IU); there appears to be potential for both effects with Vitamin D supplementation, but there is insufficient evidence to draw conclusions
	<a href="#">Symptoms of PMS</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Most studies have found a decrease in general symptoms when given to women with vitamin D deficiency, some finding notable reductions and some finding small reductions. It's currently not known why studies differ, and more research is needed.
	<a href="#">Symptoms of Systemic Lupus Erythematosus</a>	 Minor	- <a href="#">See study</a>	Inflammatory symptoms associated with Lupus appear to be reduced with Vitamin D ingestion
	<a href="#">Symptoms of Tuberculosis</a>	 Minor	- <a href="#">See study</a>	A decrease in symptoms associated with tuberculosis are noted with Vitamin D
	<a href="#">TNF-Alpha</a>	 Minor	- <a href="#">See study</a>	A decrease has been noted over time relative to placebo, of relatively minor magnitude
	<a href="#">Testosterone</a>	 Minor	- <a href="#">See study</a>	An increase in testosterone has been noted in men with 3,332 IU of Vitamin D over the course of a year
	<a href="#">Triglycerides</a>	 Minor	- <a href="#">See study</a>	The decrease in triglycerides is present after long term ingestion of Vitamin D, although it isn't to a highly significant degree
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence on fasting blood glucose levels

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Bone Mineral Density</a>	-	- <a href="#">See study</a>	
	<a href="#">Calcium Absorption</a>	-	- <a href="#">See study</a>	Superloading Vitamin D (rather than staying sufficient) does not appear to further increase absorption rates of calcium, although normalizing a deficiency can aid in absorption which is hindered.
	<a href="#">Collagen Content</a>	-	- <a href="#">See study</a>	
	<a href="#">Endothelial Function</a>	-	- <a href="#">See study</a>	No significant influence on endothelial function
	<a href="#">Food Intake</a>	-	- <a href="#">See study</a>	No significant alterations in food intake noted with Vitamin D supplementation
	<a href="#">HbA1c</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The decrease in HbA1c is statistically insignificant and very small in magnitude, likely not a concern.
	<a href="#">Hip Fracture Risk</a>	-	- <a href="#">See study</a>	
	<a href="#">Inflammation</a>	-	- <a href="#">See study</a>	No significant influence on select inflammatory cytokines
	<a href="#">Insulin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fasting insulin levels
	<a href="#">Metabolic Rate</a>	-	- <a href="#">See study</a>	No detectable influence on metabolic rate over time



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pain</a>	-	- <a href="#">See study</a>	
	<a href="#">Power Output</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although a trend to increase power output has been noted, most research suggest no benefit, although recovery times may improve.
	<a href="#">Symptoms of Osteoarthritis</a>	-	- <a href="#">See study</a>	
	<a href="#">Upper Respiratory Tract Infection Risk</a>	-	- <a href="#">See study</a>	Lack of efficacy in reducing rate of sickness
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations noted in weight, even when fat mass is lost, in obese persons
	<a href="#">Risk of Multiple Sclerosis</a>	 Notable	- <a href="#">See study</a>	The risk of developing MS is significantly reduced by both sunlight, latitude, and supplemental Vitamin D
	<a href="#">Arthralgia</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May reduce symptoms of athralgia
	<a href="#">Breast Cancer Risk</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There is less risk of breast cancer associated with Vitamin D supplementation
	<a href="#">Cramps</a>	 Minor	- <a href="#">See study</a>	There was a small reduction in the rate and severity of menstrual cramps from 50,000 IU weekly in vitamin D deficient girls. More research is needed.
	<a href="#">Hematocrit</a>	 Minor	- <a href="#">See study</a>	Small drops in hematocrit were noted in vitamin D-insufficient healthy people supplemented with 800 IU over 12 weeks.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hemoglobin</a>	↓↓↓ Minor	- <a href="#">See study</a>	Small drops in hemoglobin were noted in vitamin D-insufficient healthy people supplemented with 800 IU over 12 weeks.
	<a href="#">Incidence of Type 1 Diabetes</a>	↓↓↓ Minor	- <a href="#">See study</a>	May reduce the incidence of type 1 diabetes in offspring and adults when supplemented (for the former, but the mothers)
	<a href="#">Pancreatic Cancer Risk</a>	↓↓↓ Minor	- <a href="#">See study</a>	Appears to be associated with less risk of pancreatic cancer
	<a href="#">Red Blood Cell Count</a>	↓↓↓ Minor	- <a href="#">See study</a>	Small drops in red blood cell count were noted in vitamin D-insufficient healthy people supplemented with 800 IU over 12 weeks.
	<a href="#">Symptoms of Multiple Sclerosis</a>	↓↓↓ Minor	- <a href="#">See study</a>	There appears to be a lower relapse rate in multiple sclerosis patients when Vitamin D is present at higher concentrations
		-	- <a href="#">See study</a>	
	<a href="#">Antioxidant Potential</a>	-	- <a href="#">See study</a>	
	<a href="#">Anxiety</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Depression</a>	↓↓↓	<b>Very High</b> <a href="#">See 2 studies</a>	One randomized, controlled trial in 40 depressed patients found a modest but non-significant (p=0.06) reduction in Beck-II score compared with placebo after supplementation of 50,000 IU of vitamin D once at the start of an 8 week period.
	<a href="#">Fatigue</a>	-	- <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Glycemic Control / Insulin Sensitivity</a>	-	- <a href="#">See study</a>	
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No change in HDL-C was seen in vitamin D-insufficient healthy people supplemented with 800 IU over 12 weeks.
	<a href="#">Interleukin 10</a>	-	- <a href="#">See study</a>	
	<a href="#">Interleukin 12</a>	-	- <a href="#">See study</a>	
	<a href="#">Sleep Duration</a>	-	- <a href="#">See study</a>	
	<a href="#">Sleep Latency</a>	-	- <a href="#">See study</a>	
	<a href="#">Sleep Quality</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Vitamin E

Also known as: *Tocopherols, Tocotrienols*







Other uses:

Vitamin E is a group of eight different compounds which, collectively, help support antioxidation in the body. Benefits of high doses have uncertain safety, and lower doses seem effective in boosting immunity in the elderly.

See [Vitamin E on Examine.com](#)

## How to Take

Maintaining adequate levels of vitamin E in the body can be achieved through very low daily doses of 15mg (22.4 IU) or less. This dose of vitamin E can be acquired through the diet, making supplementation unnecessary in many cases. An elderly person supplementing vitamin E to improve immunity should take a 50-200mg dose. Vitamin E supplements should contain  $\alpha$ -tocopherol. Avocados, olives, vegetable oils and almonds are all high in vitamin E. Vitamin E's antioxidant properties are improved when taken with unsaturated dietary fat. The minimum intake of vitamin E is 1 IU per gram of unsaturated fat. The ideal range is between 2-4 IU per gram of unsaturated fat. In regards to an upper limit, while doses above 400IU  $\alpha$ -tocopherol (268mg) are well tolerated in the short term it is the smallest dose associated with potential long-term adverse effects. If taking vitamin E as a daily supplement for no specific purpose (ie. as part of a multivitamin) then 150mg could be seen as a prudent upper limit.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">All-Cause Mortality</a>	 Minor	- <a href="#">See all 7 studies</a>	Minor increases in all cause mortality have been noted in mostly unhealthy cohorts with doses of vitamin E above 400IU (alpha-tocopherol) whereas lower doses exert a mild protective effect in the same cohorts. The magnitude is approximately 33-34 deaths per 10,000 subjects (both for the increase in mortality seen with vitamin E multinutrient supplements and the decrease seen with vitamin E alone), and it is unsure how this information applies to otherwise healthy persons.
	<a href="#">Liver Enzymes</a>	 Notable	Low <a href="#">See all 9 studies</a>	There appears to be a notable decrease in both ALT and $\gamma$ -GPT in persons with non-alcoholic fatty liver (NAFLD) which may exceed 50% when vitamin E is supplemented above 300mg for half a year; there does not appear to be any influence whatsoever in healthy controls.
	<a href="#">Blood Flow</a>	 Minor	- <a href="#">See all 3 studies</a>	Similar to blood pressure, blood flow is differentially affected by vitamin E supplementation thought to be due to whether it is acting as a prooxidant or an antioxidant.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Pressure</a>	 Minor	- <a href="#">See all 3 studies</a>	Blood pressure has been differentially affected by vitamin E supplementation, thought to be associated with whether it is an antioxidant or a prooxidant.
	<a href="#">Cardiovascular Disease Mortality</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	A possible protective effect on overall cardiovascular disease mortality (not development of the disease states or incidences) has been reported with supplementation of 600 IU vitamin E every other day.
	<a href="#">Dysmenorrhea</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Primarily research has consistently found an improvement and 400-500 IU per day.
	<a href="#">General Oxidation</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	Supplementation of vitamin E appears to reduce oxidation in plasma, requiring over 500mg (if not more) α-tocopherol in states where there is abnormal elevations of oxidation. Vitamin E is without effect at lower doses or in persons without abnormal oxidation levels.
	<a href="#">Immunity</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	There appears to be an increase in T-cell mediated immunity in older subjects when supplementing low dose (50-200mg) vitamin E; this immunity enhancement does not appear to occur in youth due to it alleviating an age-related immune suppression.
	<a href="#">Interferon Gamma</a>	 Minor	- <a href="#">See all 3 studies</a>	IFN $\gamma$ is increased when vitamin E is taken alongside a vaccination, and decrease in the elderly (alongside improvements in immunity) with no significant changes if neither of the above contexts are considered.
	<a href="#">Interleukin 4</a>	 Minor	- <a href="#">See all 3 studies</a>	IL-4 is increased when taken alongside a vaccination and decrease when supplemented in the elderly (alongside immune enhancement) with no significant influence in persons outside of both scenarios.
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See all 7 studies</a>	Vitamin E tends to reduce lipid peroxidation in instances where there is elevated oxidation, and tends to have no effect in otherwise healthy persons. In instances where vitamin E is thought to greatly exceed the activity of co-antioxidants (vitamin C or ALA) it can exert a prooxidant effect.
	<a href="#">Prostate Cancer Risk</a>	 Minor	- <a href="#">See all 4 studies</a>	Low doses of vitamin E (50mg) in smokers has been associated with significant decreases in prostate cancer risk, whereas moderate doses (400IU) of vitamin E in otherwise healthy older men is associated with a mild but significant increase in prostate cancer risk.
	<a href="#">Bleeding Time</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	When supplemented by itself, vitamin E does not appear to significantly influence bleeding time. This differs from a combination of vitamin E and coumarin based anticoagulants (such as warfarin) where an adverse interaction may occur.










LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	Vitamin E does not appear to influence blood glucose in otherwise healthy persons nor in diabetics (type I or type II) relative to placebo.
	<a href="#">Breast Cancer Risk</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant protective effect of 600 IU vitamin E every other day in otherwise healthy women for preventing the development of breast cancer.
	<a href="#">C-Reactive Protein</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Most studies assessing C-reactive protein (an inflammatory biomarker) have failed to find a significant influence of vitamin E supplementation.
	<a href="#">Cell Adhesion Factors</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	While a decrease in P-selectin has been noted with low dose (100mg) γ-tocopherol, most studies have failed to find an influence of vitamin E supplementation on adhesion factors.
	<a href="#">Colon Cancer Risk</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	600 IU vitamin E every other day for a decade does not appear to reduce the risk of developing colon cancer in otherwise healthy women.
	<a href="#">DNA Damage</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	While most evidence suggests no influence on DNA damage, it is possible based on some studies that when vitamin E turns prooxidative that it may damage DNA.
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	The majority of evidence has failed to find any influence of vitamin E supplementation on HDL total levels or particulates relative to placebo.
	<a href="#">LDL-C</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	Vitamin E supplementation does not appear to alter the overall levels of LDL cholesterol.
	<a href="#">Red Blood Cell Count</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	The overall amount of red blood cells does not appear to be significantly altered with supplemental vitamin E.
	<a href="#">Risk of Stroke</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	There does not appear to be a protective effect of vitamin E on the development of stroke relative to placebo.











LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum T3</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	The majority of evidence has failed to find any significant interaction with vitamin E supplementation and circulating levels of T3.
	<a href="#">Serum T4</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	Although one study noted a decrease with 600 IU, future studies in similar persons with multiple doses have failed to replicate these observations.
	<a href="#">Subjective Well-Being</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Studies assessing well being in otherwise healthy persons or those with disease states not associated with depression have failed to find any interaction with vitamin E supplementation.
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	There does not appear to be a significant influence of vitamin E supplementation on cholesterol levels whether used by a healthy person or one with elevated cholesterol.
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	No evidence to support changes in triglycerides associated with vitamin E supplementation in any tested person.
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	There does not appear to be any influence of vitamin E supplementation at any tested dose in any subject on weight loss nor gain.
	<a href="#">White Blood Cell Count</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	Supplementation of vitamin E does not appear to alter overall content of white blood cells relative to placebo.
	<a href="#">Risk of Thromboembolism</a>	 Notable	- <a href="#">See study</a>	There appears to be a large (27%) reduction in thromboembolism associated with vitamin E supplementation at 600 IU every other day, more pronounced in those who reported such an event previously (44%).
	<a href="#">Symptoms of Alzheimer's</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Very high dose Vitamin E supplementation in the form of $\alpha$ -tocopherol (2,000 IU) appears to reduce the rate of cognitive decline in persons with moderate to severe Alzheimer's Disease with a potency comparable to selegiline. Currently no research on lower (more standard) doses, and there appears to be no influence on minor AD or cognitive decline not characterized by AD.
	<a href="#">Arterial Stiffness</a>	 Minor	- <a href="#">See study</a>	Mixed evidence, but vitamin E has been implicated in improving arterial stiffness (thought to underlie decreased cardiovascular mortality)










LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Erythema</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Topical application of vitamin E to scar tissue has, in some participants, caused significant increases in redness of the tissue associated with itching.
	<a href="#">Hair Regrowth</a>	 Minor	- <a href="#">See study</a>	One study noted that 100mg of mixed tocopherol was able to promote hair growth in persons with alopecia (androgen dependence not specified) relative to placebo.
	<a href="#">Immunoglobulin G</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	IgG has been noted to be increased when vitamin E is used as a vaccination adjuvant, but not in otherwise healthy persons not subject to a vaccination.
	<a href="#">Interleukin 2</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in interleukin 2 (IL-2) concentrations has been noted in the elderly given supplementation of vitamin E alongside immunity enhancements.
	<a href="#">Leukotriene B4</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence as to whether leukotriene B4 can be reduced in diabetics with vitamin E supplementation.
	<a href="#">Liver Cirrhosis</a>	 Minor	- <a href="#">See 2 studies</a>	Fibrotic scores may be slightly improved in persons with fatty liver associated with inflammation (steatohepatitis) although there may not be an effect in persons with NAFLD without evidence of inflammatory damage.
	<a href="#">Liver Fat</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	In persons with steatohepatitis, there may be a reduction in liver fat over time when taking vitamin E supplements; currently there is no evidence assessing otherwise healthy persons on this parameter
	<a href="#">Menstrual Flow</a>	 Minor	- <a href="#">See study</a>	One study found a reduction with 400 IU daily. More research is needed.
	<a href="#">Muscle Damage</a>	 Minor	- <a href="#">See study</a>	In athletes who experienced a reduction in lipid peroxidation from vitamin E supplementation during exercise, there is also a reduction in biomarkers of muscle damage.
	<a href="#">Oxidation of LDL</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	While vitamin E appears to retain the potential to reduce LDL oxidation, it requires high doses as lower doses are not significantly effective.















LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Prolactin</a>	 Minor	- <a href="#">See study</a>	May decrease prolactin in instances of uremia, but there is currently no evidence in otherwise healthy controls.
	<a href="#">Prostaglandin E2</a>	 Minor	- <a href="#">See study</a>	There may be a minor reduction in PGE2 concentrations following supplementation of vitamin E.
	<a href="#">Risk of Heart Failure</a>	 Minor	- <a href="#">See study</a>	Supplementation of 400 IU vitamin E, despite not increasing overall cardiovascular mortality, increased the risk of heart failure in older persons with preexisting medical conditions (from 443 instances in placebo over seven years to 519 in supplemental).
	<a href="#">Upper Respiratory Tract Infection Risk</a>	 Minor	- <a href="#">See study</a>	Supplementation of 200 IU vitamin E in elderly persons has been noted to reduce overall occurrence of upper, but not lower, respiratory tract infections.
	<a href="#">Vaccine Augmentation</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be an increased antibody response to vaccinations in otherwise healthy persons who supplement with a low dose of vitamin E relative to those receiving placebo with their vaccination; this applies to both youth and the elderly.
	<a href="#">Aerobic Exercise</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Performance during aerobic exercise does not appear to be significantly altered with supplementation of vitamin E relative to placebo.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The levels of antioxidant enzymes in red blood cells (glutathione, superoxide dismutase, catalase) does not appear to be influenced with supplementation of vitamin E.
	<a href="#">Asthma</a>	-	- <a href="#">See study</a>	Supplementation of vitamin E in medicated asthmatics failed to exert any appreciable benefits to symptoms.
	<a href="#">B-Cell Count</a>	-	- <a href="#">See study</a>	Vitamin E does not appear to influence B cell count relative to placebo.
	<a href="#">Bilirubin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Serum bilirubin does not appear to be influenced with supplementation of vitamin E relative to placebo.










LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">CD4 Lymphocytes</a>	-	- <a href="#">See study</a>	No known influence of vitamin E supplementation on the overall count of CD4+ lymphocytes relative to placebo.
	<a href="#">CD8 Lymphocytes</a>	-	- <a href="#">See study</a>	CD8+ Lymphocytes do not appear to be significantly influenced with supplementation of vitamin E relative to placebo.
	<a href="#">Cancer Mortality</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Despite a small reduction in prostate cancer mortality seen in smokers with low dose (50mg) vitamin E, this does not appear to hold true as a general statement for all cancer types in most persons.
	<a href="#">Cardiovascular Disease Risk</a>	-	- <a href="#">See study</a>	In general, the development of various cardiovascular diseases is not prevented with supplementation of vitamin E.
	<a href="#">Cognitive Decline</a>	-	- <a href="#">See study</a>	When supplemented by otherwise healthy elderly persons, the development of organic cognitive decline does not appear to be attenuated relative to placebo.
	<a href="#">Cortisol</a>	-	- <a href="#">See study</a>	No significant reduction in cortisol seen with supplementation of vitamin E relative to placebo.
	<a href="#">Creatinine</a>	-	- <a href="#">See study</a>	In otherwise healthy elderly person, creatinine does not appear to be significantly altered relative to placebo.
	<a href="#">Endothelin-1</a>	-	- <a href="#">See study</a>	Endothelin-1 has failed to be influenced with supplementation of vitamin E in diabetics.
	<a href="#">Esophageal Cancer Risk</a>	-	- <a href="#">See study</a>	400IU of vitamin E does not appear to mitigate the risk of developing esophageal cancer relative to placebo.
	<a href="#">Follicle-Stimulating Hormone</a>	-	- <a href="#">See study</a>	FSH does not appear to be influenced following supplementation of vitamin E.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Free Testosterone</a>	-	- <a href="#">See study</a>	Vitamin E does not appear to alter the concentrations of free testosterone in serum following supplementation.
	<a href="#">Glomerular Filtration Rate</a>	-	- <a href="#">See study</a>	In type II diabetics, there is no influence of vitamin E supplementation on glomerular filtration rate.
	<a href="#">HbA1c</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	HbA1c does not appear to be influenced in type II diabetics given supplementation of vitamin E.
	<a href="#">Heart Rate</a>	-	- <a href="#">See study</a>	Heart rate during exercise in elite athletes is unaltered by supplementation of vitamin E.
	<a href="#">Hematocrit</a>	-	- <a href="#">See study</a>	Hematocrit does not appear to be significantly influenced with supplementation of vitamin E relative to placebo.
	<a href="#">Hemoglobin</a>	-	- <a href="#">See study</a>	No significant influence of vitamin E supplementation on hemoglobin.
	<a href="#">Homocysteine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There does not appear to be a significant influence of vitamin E supplementation on homocysteine concentrations.
	<a href="#">Immunoglobulin A</a>	-	- <a href="#">See study</a>	Supplementation of vitamin E does not appear to significantly influence circulating concentrations of IgA relative to placebo in otherwise healthy elderly adults.
	<a href="#">Immunoglobulin E</a>	-	- <a href="#">See study</a>	IgE concentrations in asthmatics has failed to be influenced with supplementation of vitamin E.
	<a href="#">Immunoglobulin M</a>	-	- <a href="#">See study</a>	IgM concentrations in the blood of older persons do not appear to be influenced with supplementation of vitamin E.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Incidence of Type 2 Diabetes</a>	-	- <a href="#">See study</a>	Supplementation of vitamin E by otherwise healthy persons does not appear to influence the rates of developing type II diabetes.
	<a href="#">Insulin</a>	-	- <a href="#">See study</a>	Basal insulin concentrations (fasted state) do not appear to be influenced by supplementation of vitamin E.
	<a href="#">Insulin Sensitivity</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There does not appear to be improvements in insulin sensitivity associated with vitamin E supplementation relative to placebo, even in instances where NAFLD is being treated therapeutically.
	<a href="#">Interleukin 6</a>	-	- <a href="#">See study</a>	IL-6 concentrations do not appear to be influenced relative to placebo.
	<a href="#">Kidney Function</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Biomarkers of kidney function are not significantly altered with supplementation of vitamin E relative to placebo.
	<a href="#">Lactate Production</a>	-	- <a href="#">See study</a>	Lactate production during exercise does not appear to be influenced with supplementation of vitamin E.
	<a href="#">Left Ventricular Ejection Fraction</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Supplementation of vitamin E has failed to influence the activity of the cardiac tissue itself.
	<a href="#">Luteinizing Hormone</a>	-	- <a href="#">See study</a>	Vitamin E supplementation does not appear to influence circulating levels of luteinizing hormone (LH).
	<a href="#">Lymphocyte Count</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Vitamin E supplementation does not appear to influence overall lymphocyte count or its subdivisions.
	<a href="#">Memory</a>	-	- <a href="#">See study</a>	Supplementation of vitamin E by otherwise healthy women has failed to significantly improve memory formation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Natural Killer Cell Content</a>	-	- <a href="#">See study</a>	The overall amount of NK cells do not appear to be altered with supplementation of vitamin E.
	<a href="#">Neutrophil Activity</a>	-	- <a href="#">See study</a>	Similar to neutrophil count, there does not appear to be a significant influence of vitamin E on the activity of neutrophils.
	<a href="#">Neutrophil Count</a>	-	- <a href="#">See study</a>	The overall amount of neutrophils in the blood does not appear to be influenced with supplementation of vitamin E.
	<a href="#">Platelet Aggregation</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	While 100mg of $\gamma$ -tocopherol has been once implicated in reducing platelet aggregation, higher doses and all tested dose of $\alpha$ -tocopherol by themselves do not appear to have an effect (there is still an interaction with warfarin, however).
	<a href="#">Risk of Alzheimer's Disease</a>	-	- <a href="#">See study</a>	Vitamin E supplementation taken by otherwise healthy older adults does not appear to reduce the risk of developing Alzheimer's relative to placebo.
	<a href="#">Risk of Cataracts</a>	-	- <a href="#">See study</a>	Vitamin E in isolation at tested doses of 500 IU has failed to show any protective effect on cataract formation or continued pathology, despite multinutrient formulations showing benefit (likely due to other compounds in the formulation).
	<a href="#">Risk of Lung Cancer</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In otherwise healthy women, supplementation of vitamin E does not appear to reduce the rate of developing lung cancer.
	<a href="#">Risk of Melanoma</a>	-	- <a href="#">See study</a>	Supplementation of 400IU vitamin E in older adults with preexisting medical conditions has failed to interact with the risk of developing melanoma.
	<a href="#">Risk of Myocardial Infarction</a>	-	- <a href="#">See study</a>	Vitamin E does not appear to reduce the incidence rates of myocardial infarctions despite a reduction in cardiovascular disease mortality.
	<a href="#">Risk of Rheumatoid Arthritis</a>	-	- <a href="#">See study</a>	Supplementation of vitamin E does not appear to reduce the risk of developing rheumatoid arthritis.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Scar Healing</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Topical application of vitamin E to scar tissue has failed to promote healing of scar tissue relative to placebo gels.
	<a href="#">Serum Cobalamin</a>	-	- <a href="#">See study</a>	Serum levels of cobalamin (vitamin B12) do not appear to be influenced with supplementation of vitamin E.
	<a href="#">Serum Folate</a>	-	- <a href="#">See study</a>	Serum folate does not appear to be modified with supplementation of vitamin E.
	<a href="#">Serum Platelets</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The overall content of platelets is not affected by supplementation of vitamin E.
	<a href="#">Sexual Function</a>	-	- <a href="#">See study</a>	Vitamin E does not appear to influence sexual function or satisfaction in otherwise healthy persons with no known sexuality disorders.
	<a href="#">TNF-Alpha</a>	-	- <a href="#">See study</a>	TNF- $\alpha$ does not appear to be influenced with supplementation of vitamin E relative to placebo.
	<a href="#">Thromboxane B2</a>	-	- <a href="#">See study</a>	The production of thromboxane B2 does not appear to be significantly altered in type II diabetic adults.
	<a href="#">Verbal Fluency</a>	-	- <a href="#">See study</a>	Verbal fluency does not appear to be significantly altered with vitamin E supplementation relative to placebo.
	<a href="#">Symptoms of Ulcerative Colitis</a>	 Notable	- <a href="#">See study</a>	Rectal administration of high doses of vitamin E appears to be effective in reducing symptoms of ulcerative colitis, with preliminary research noting remission in the majority of patients.
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	One study found a reduction in PMS-associated anxiety with 100 mg of vitamin E daily.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Breast Tenderness</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A small amount of low-quality evidence suggests an improvement in cyclic mastalgia pain when taking vitamin E. More research is needed.
	<a href="#">Depression</a>	 Minor	- <a href="#">See study</a>	One study found a reduction in PMS-related depression with 100 mg daily.
	<a href="#">Liver Damage</a>	 Minor	- <a href="#">See study</a>	In those with inflammatory liver damage, supplementation of vitamin E appears to be capable of reducing damage over a long period of time.
	<a href="#">Serum TGF-<math>\beta</math></a>	 Minor	- <a href="#">See study</a>	A decrease in serum TGF- $\beta$ has been noted in persons with fatty liver given supplementation of 300mg vitamin E (as $\alpha$ -tocopherol)
	<a href="#">Symptoms of PMS</a>	-	<b>Low</b> <a href="#">See all 3 studies</a>	Mixed evidence. Some research suggests an improvement from daily supplementation, but another study didn't, and the negative study was more reliable. More research is needed.

Back to: [Supplements](#) | [Health Outcomes](#)

# Vitamin K

Also known as: *Phylloquinone, Menaquinone, MK-4, MK-7, Menatetrenone, Phytonadione*







Other uses:

Vitamin K is an essential vitamin found in plants or produced from intestinal bacteria. It plays an essential role in bone health and regulates blood clotting.





See [Vitamin K on Examine.com](#)








## How to Take

Vitamin K comes in a variety of different forms, known as vitamers. Forms of vitamin K are either phyloquinones (vitamin K1) or menaquinones (vitamin K2). There are different vitamers within the vitamin K2 class, abbreviated as MK-x. The minimum effective dose for phyloquinone (vitamin K1) is 50mcg, which is enough to satisfy the Recommended Daily Intake (RDI) for vitamin K. The maximum dose for vitamin K1 is 1,000mcg. The minimum effective dose for short chain menaquinones (MK-4) is 1,500mcg. Doses of up to 45mg (45,000mcg) have been safely used in a superloading dosing protocol. The minimum effective dose for longer chain menaquinones (MK-7, MK-8, and MK-9) is between 90-360mcg. Further research is needed to determine the maximum effective dose for MK-7. A topical application of vitamin K should contain at least 5% phyloquinone. Vitamin K should be supplemented alongside fatty acids, even if the vitamin is coming from a plant-based source, so consider taking vitamin K at meal time. Microwaving plant-based sources of vitamin K will increase the absorption rate of the vitamin.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Bone Mineral Density</a>	 Notable	<b>Moderate</b> <a href="#">See all 15 studies</a>	There appears to be a <i>relative</i> increase in bone mineral density associated with vitamin K supplementation, due to attenuating the rate of bone loss in older individuals. Although it is significant overall in meta-analyses, it is quite unreliable and similar in potency to vitamin D when it occurs (less than estrogen replacement therapy)
	<a href="#">Bruising</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although there may be a role for topical vitamin K in reducing the severity of bruising, currently the evidence is too unreliable to draw conclusions and is not looking promising. Menaquinones have not been tested yet
	<a href="#">Weight</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	In studies that measure weight changes over time (usually as a secondary piece of data), there do not appear to be any significant alterations associated with vitamin K supplementation.
	<a href="#">Bone Fracture Risk</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	The decrease in fracture risk seen with vitamin K supplementation in susceptible cohorts appears to be greater than seen with other supplements



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cancer Mortality</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Although the studies have used superloading of vitamin K (40mg or more) and only in hepatic cancers, the reduction in mortality risk and prolongation of survival times appears to be quite notable
	<a href="#">Recurrence of Hepatocellular Carcinoma</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Recurrence rates of hepatocellular carcinoma appears to be significantly less than placebo when using vitamin K in a superloading scheme (40mg or more daily)
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	An improvement of insulin sensitivity has been noted with 30mg of MK-4 supplementation over 4 weeks in otherwise healthy individuals, with the influence of lower doses of vitamin K not ascertained
	<a href="#">Reddening of the Skin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	It appears that for conditions with reddened skin (purpura or bags under the eyes) that vitamin K may have a role in removing the blood from the skin and reducing redness when 5% phylloquinone is applied to the skin. Mechanisms are not known, and study quality at the moment is lacklustre
	<a href="#">Adiponectin</a>	-	- <a href="#">See study</a>	No significant alterations seen in adiponectin concentrations in serum with 4 weeks supplementation of 30mg MK-4
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	Despite an improvement in insulin sensitivity, the lone study failed to note any significant changes in blood glucose concentrations in a fasted state
	<a href="#">C-Reactive Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on C-reactive protein (an inflammatory biomarker) seen with vitamin K supplementation
	<a href="#">Estrogen</a>	-	- <a href="#">See study</a>	No significant interactions with estrogen noted with vitamin K supplementation
	<a href="#">Food Intake</a>	-	- <a href="#">See study</a>	Studies that happen to measure dietary intake fail to note any influence of supplemental Vitamin K
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	Vitamin K does not appear capable of influencing HDL cholesterol

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Interleukin 6</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant effect of vitamin K on circulating levels of IL-6, an inflammatory marker
	<a href="#">LDL-C</a>	-	- <a href="#">See study</a>	LDL-C appears to be unaffected by supplemental vitamin K
	<a href="#">Osteoprotegerin</a>	-	- <a href="#">See study</a>	No significant alterations noted with vitamin K supplementation on osteoprotegerin
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant interactions with total cholesterol concentrations in persons given vitamin K supplementation
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	No significant influence on circulating triglycerides seen with MK-4 supplementation
	<a href="#">Insulin</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A relative deficiency of vitamin K seems to be associated with higher post-meal insulin spikes (over 120 minutes), and this abnormal elevation is normalized upon supplementation of vitamin K

Back to: [Supplements](#) | [Health Outcomes](#)

# Vitex agnus castus













Also known as: Chaste Tree, VAC, Chasteberry







Vitex agnus-castus, also called Chaste Tree, is a flowering plant often used to alleviate premenstrual syndrome.

See [Vitex agnus castus on Examine.com](#)

## How to Take

Vitex agnus-castus supplements are based on the dry weight of the plant's fruit. The standard dose is between 150-250mg. There are also two extractions of Vitex agnus-castus: BNO 1095 is a 10:1 extraction and provides benefits at doses as low as 4 mg. Ze 110 is a 6-12:1 extraction and provides benefits at doses of 20mg.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Symptoms of PMS</a>	 Strong	<b>Very High</b> <a href="#">See all 11 studies</a>	It appears to be quite potent in numerous placebo-controlled trials, and studies are overwhelmingly in agreement. However, the studies are generally at notable risk for bias, and publication bias was found in one meta-analysis from 2017, suggesting the possibility that its efficacy is inflated.
	<a href="#">Breast Tenderness</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	The increase in breast tenderness during PMS is ameliorated with vitex supplementation; the degree of benefit correlating with general reductions in PMS symptoms. Notable as supplements catering to breast tenderness are rare.
	<a href="#">Migraine</a>	 Notable	- <a href="#">See study</a>	Seems to reduce symptoms of migraines a bit more than other PMS related symptoms, but for the most part the reduction seen in migraines is solely a reduction of PMS symptoms.
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	Can reduce PMS related anxiety but may not have any inherent anxiolytic effects; the potency correlates to the severity of anxiety during a menstrual cycle.
	<a href="#">Cramps</a>	 Minor	- <a href="#">See study</a>	Efficacy against cramps appears to correlate both with how severe the cramps are during PMS and the response to Vitex supplementation; potency seems variable.
	<a href="#">Depression</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Can attenuate depressive symptoms that occur during PMS secondary to reducing PMS symptoms in general.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Insomnia</a>	 Minor	- <a href="#">See study</a>	Can reduce insomnia that is a side-effect of PMS, although the influence on insomnia in other scenarios is not known.
	<a href="#">Irritability</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Can reduce irritability as a side effect of PMS, no evidence as to whether this reduction in irritability applies to other persons (males) or periods that are not PMS.
	<a href="#">Fatigue</a>	-	- <a href="#">See study</a>	
	<a href="#">Sleep Quality</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Watercress





Also known as: *Nasturtium officinale*

Watercress is a peppery vegetable in the family Brassicaceae, which includes broccoli. Eating watercress may help protect against carcinogens and chemotherapy drugs.

See [Watercress on Examine.com](#)

## How to Take

Between 85-100g of watercress a day (referring to the wet weight of the plant) is associated with the benefits commonly seen with watercress. Further research is needed to determine the optimal dose and timing for supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There appears to be an influence on the enzymes superoxide dismutase and glutathione peroxidase, but this requires a certain genotype to occur
	<a href="#">DNA Damage</a>	 Minor	- <a href="#">See study</a>	DNA damage biomarkers have been reduced following watercress consumption

Back to: [Supplements](#) | [Health Outcomes](#)

# Whey Protein

Also known as: whey, whey concentrate, whey isolate, whey hydrolysate, hydrolyzed whey, whey protein powder








Other uses:


Whey and casein protein are both derived from milk. Whey protein powder is extremely popular due to its high digestibility and well-researched muscle-supporting benefits.

See [Whey Protein on Examine.com](#)

## How to Take

The amount of whey protein to supplement depends on individual daily protein goals. For example: If you are an athlete or highly active person attempting to lose body fat while preserving lean muscle mass, a daily intake of 1.5-2.2g/kg bodyweight (0.68-1g/lb bodyweight) is a good goal. If you are an athlete or highly active person, or you are attempting to lose body fat while preserving lean mass, then a daily intake of 1.0-1.5g/kg bodyweight (0.45-0.68g/lb bodyweight) is a good goal. If you are sedentary and not looking to change body composition, a daily target of 0.8g/kg bodyweight (0.36g/lb bodyweight) is a good goal. If daily protein targets are achieved through dietary protein alone, supplementation is unnecessary. Obese individuals should not follow the above recommendations, as bodyweight calculations would result in very high dosages. Obese people should calculate their protein targets based off of what their weight would be, assuming an overweight BMI.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Mass</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	Inclusion of dietary protein in the diet above the recommended daily intake appears to aid the process of fat loss during hypocaloric diets (eating less than required to sustain body weight). There is currently no demonstrated benefit with whey protein over other protein sources.
	<a href="#">Insulin</a>	 Minor	<b>Low</b> <a href="#">See all 5 studies</a>	Mixed effects on insulin, as there is an acute increase due to whey being a protein source (although whey increases insulin more than other proteins). Fasting insulin (chronically) tends to either be not affected or reduced, although the latter is usually confounded with weight loss.
	<a href="#">Lean Mass</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Protein in general increases lean mass, but there is not a significant body of evidence to support whey protein as being more effective than other protein sources
	<a href="#">Power Output</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	There doesn't seem to be an inherent effect of protein on power output, although it may augment training-induced power accrual (an inherent effect of protein supplementation).

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Weight</a>	-	<b>Moderate</b> <a href="#">See all 8 studies</a>	The influence of whey protein on weight <i>per se</i> is highly unreliable, and is subject to the overall context of the diet. Protein in general can aid weight loss attempts and is required to build lean mass, with whey not having any demonstrated benefit over other protein sources.
	<a href="#">Muscle Protein Synthesis</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Whey protein appears to increase muscle protein synthesis to a higher degree than other protein sources <i>acutely</i> , although over the prolonged supplementation it seems comparable in potency.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Increased levels of glutathione are secondary to the Cysteine content and can be mimicked with all dietary sources of L-cysteine or supplemental N-acetylcysteine
	<a href="#">Ghrelin</a>	 Minor	- <a href="#">See study</a>	A decrease in Ghrelin has been observed with whey protein supplementation.
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Has been noted to increase insulin sensitivity to a larger degree than casein when consumed by obese persons in a part of a fat loss diet; has not yet demonstrated an insulin sensitizing effect in lean athletes
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	Possible LDL-C lowering effect, but has not yet been shown to be better than other protein sources.
	<a href="#">Triglycerides</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Possible reductions in triglycerides, but it is not sure if this is exclusive to whey protein or due to protein in general.
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	Insufficient evidence to support a role of whey protein in improving blood flow
	<a href="#">Blood Glucose</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No significant influence on fasted blood glucose levels, may decrease postprandial glucose levels (relative to no protein ingestion) due to the release of insulin
	<a href="#">Blood Pressure</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Insufficient evidence to support the blood pressure reducing effects of whey protein

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Bone Mineral Density</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Currently no demonstrated benefit to bone mineral density, although protein in general appears to have a protective effect
	<a href="#">C-Reactive Protein</a>	-	- <a href="#">See study</a>	No demonstrated effects on C-Reactive Protein
	<a href="#">HDL-C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant evidence to support an increase in HDL-C with whey protein
	<a href="#">IGF-1</a>	-	- <a href="#">See study</a>	Does not appear to inherently alter circulating IGF-1 levels
	<a href="#">Inflammation</a>	-	- <a href="#">See study</a>	Insufficient evidence to support whey protein as interacting with inflammation and biomarkers of inflammation
	<a href="#">Total Cholesterol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on circulating cholesterol has been demonstrated with whey protein
	<a href="#">Appetite</a>	 Minor	- <a href="#">See study</a>	Appears to reduce appetite (common to all protein sources), but its superiority over other protein sources is not yet demonstrated.
	<a href="#">Intestinal Permeability</a>	 Minor	- <a href="#">See study</a>	Appears to decrease intestinal permeability, which is due to the <a href="#">glutamine</a> content of whey protein.
	<a href="#">Liver Enzymes</a>	 Minor	- <a href="#">See study</a>	Has been associated with a decrease in liver enzymes (in steatohepatitis) but not to a remarkable degree; may simply be due to the L-cysteine content.
	<a href="#">Liver Fat</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Reductions in liver fat have been noted with whey protein supplementation, which is thought to be more effective than other protein sources due to the high L-cysteine content.





# White Kidney Bean Extract

Also known as: *Phaseolus Vulgaris*, Phase 2 (Brand name)

White Kidney Bean extract, or Phase 2, is a dietary carbohydrate blocker similar to chlorogenic acid and is sometimes used alongside carb containing meals to reduce the absorption of carbohydrates. It does appear to work, but its potency is quite unreliable and relatively subpar.

See [White Kidney Bean Extract on Examine.com](#)

## How to Take

Phase 2 tablets (800mg in weight comprised of 445mg phaseolus vulgaris) appear to be effective in reducing carbohydrate absorption. These tablets must be taken alongside a carbohydrate containing meal. It is unsure if higher doses are significantly better at blocking intestinal absorption of carbohydrates or not.

Back to: [Supplements](#) | [Health Outcomes](#)

# Wine

*Also known as: Red Wine, White Wine*

*Other uses:*

---

Wine is a fermented grape product, commonly ingested as a source of alcohol, that is seen as healthier due to its high stilbene and resveratrol content. There are a variety of other antioxidants in wine that can benefit health.

See [Wine on Examine.com](#)














Back to: [Supplements](#) | [Health Outcomes](#)




# Yacon

Also known as: *Smallanthus sonchifolius*, Yacon Syrup, Aicama, Jicama, Diet potato, yacon potato, yacon strawberry

Yacon (*Smallanthus sonchifolius*) is a tuber, whose syrup contains a large amount of fructooligosaccharides (FOS), which are carbohydrates that are partially absorbed and prebiotic in nature. Yacon may have benefits for intestinal health and may reduce appetite, but studies on it are limited.

See [Yacon on Examine.com](#)

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Intestinal Motility</a>	 Notable	- <a href="#">See study</a>	The one study to assess intestinal motility (speed of food transit from stomach to anus) has noted a near halving of time, suggesting that yacon increases intestinal motility.
	<a href="#">Fecal Moisture</a>	 Minor	- <a href="#">See study</a>	A mild increase in fecal moisture and consistency has been reported with consumption of yacon syrup, thought to be related to prebiotic effects and a reduction in intestinal motility.
	<a href="#">Insulin</a>	 Minor	- <a href="#">See study</a>	A minor reduction in fasting insulin levels has been noted in obese women given supplementation, but this is confounded with weight loss.
	<a href="#">Insulin Sensitivity</a>	 Minor	- <a href="#">See study</a>	A minor increase in insulin sensitivity has been noted in a lone study in obese women that is also confounded with weight loss (ie. the weight loss could explain the increase observed)
	<a href="#">LDL-C</a>	 Minor	- <a href="#">See study</a>	A respectable decrease in LDL has been reported once, although this reduction in LDL is confounded with weight loss that occurred with yacon syrup.
	<a href="#">Weight</a>	 Minor	- <a href="#">See study</a>	A decrease in weight has been noted in obese women given Yacon, although this study could potentially be explained by a reduction in food intake (due to an increase in self-reported satiety and no tracking of calories noted).
	<a href="#">Blood Glucose</a>	-	- <a href="#">See study</a>	No significant influence on fasting blood glucose in nondiabetic obese women who consume Yacon relative to placebo, despite weight loss.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HDL-C</a>	-	- <a href="#">See study</a>	No significant influence on HDL cholesterol has been noted with Yacon syrup, despite weight loss occurring.
	<a href="#">Total Cholesterol</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol has been noted despite changes in LDL and accompanying weight loss.
	<a href="#">Triglycerides</a>	-	- <a href="#">See study</a>	Despite a triglyceride reducing effect of fructooligosaccharides in rats, the limited evidence in humans (with mildly elevated triglycerides) failed to find any appreciable effect despite weight loss.

Back to: [Supplements](#) | [Health Outcomes](#)

# Yamabushitake

Also known as: *Hericium erinaceus*, Lion's Mane, Monkey's Head, Houtou (infrequent), Igelstachelbart, Pom Pom Blanc, Hedgehog Mushroom, Satyr's Beard










Other uses:

Yamabushitake, known as the Lion's Mane Mushroom, is a dietary mushroom that can be a supplement. It appears to be a promising cognitive enhancer and immunomodulator (thought to stimulate or suppress inflammation depending on context).

See [Yamabushitake on Examine.com](#)

## How to Take

Currently, the only human study has used an oral dose of 1,000mg Yamabushitake (96% purity extract) thrice daily for a cumulative total of 3,000mg extract. While it is unknown if this is the optimal dose or not, it appeared to be effective.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anxiety</a>	 Minor	- <a href="#">See study</a>	Decreases in anxiety noted, this may be secondary to menopausal symptom reduction
	<a href="#">Cognitive Decline</a>	 Minor	- <a href="#">See study</a>	The rate of cognitive decline seen with oral supplementation of yamabushitake appears to be significantly reduced in older persons, although there are no direct comparisons to reference drugs at this time to assess potency.
	<a href="#">Depression</a>	 Minor	- <a href="#">See study</a>	Decrease in depressive symptoms has been noted, which may be secondary to attenuating menopausal symptoms
	<a href="#">Symptoms of Menopause</a>	 Minor	- <a href="#">See study</a>	Menopausal symptoms have been reduced, but this was mostly due to the reported antidepressant and anxiolytic properties of the mushroom.
	<a href="#">Sleep Quality</a>	-	- <a href="#">See study</a>	No significant effects on sleep quality

# Yerba mate









Also known as: *Ilex paraguariensis*, Mate plant, St. Hilaire, Aquifoliaceae


*Ilex paraguariensis*, also known as yerba mate, is a tea brewed from a plant native to South America. It is a good source of caffeine and contains bioactive compounds like quercetin and ursolic acid.

See [Yerba mate on Examine.com](#)


## How to Take

Studies typically use a dose of 3 cups (330mL each) of yerba mate a day, for up to 60 days. It's safe to drink up to 1.5 liters of yerba mate a day, though toxicity has not been shown to occur from higher doses either. A daily supplemental dose of isolated yerba mate in a powdered supplemental form is between 1,000-1,500mg of yerba mate leaf.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fat Oxidation</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There is a possible increase in fat oxidation rates seen during rest, with one study confirming it during exercise; this may not coincide with an increase in metabolic rate.
	<a href="#">Heart Rate</a>	 Minor	- <a href="#">See study</a>	A decrease has been noted with Yerba Mate consumption, which is somewhat notable as stimulants tend to increase heart rate
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	No significant influences on blood pressure have been noted (although this may be due to it being underresearched; Mate may follow the same motifs as caffeine ingestion)
	<a href="#">Lactate Production</a>	-	- <a href="#">See study</a>	At rest and during exercise there does not seem to be any major modification of lactate levels in serum.
	<a href="#">Metabolic Rate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on metabolic rate has been noted
	<a href="#">VO2 Max</a>	-	- <a href="#">See study</a>	Supplementation of yerba mate prior to a VO2 max test does not appear to have any effect relative to placebo.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to increase the primary three antioxidant enzymes (glutathione, catalase, and SOD) in both healthy and diseased persons
	<a href="#">Apolipoprotein B</a>	 Minor	- <a href="#">See study</a>	Somewhat of a decrease in hyperlipidemic patients consuming Mate tea
	<a href="#">Blood Glucose</a>	 Minor	- <a href="#">See study</a>	A slight decrease in blood glucose has been noted with Mate consumption in type II diabetics; no evidence in otherwise healthy persons
	<a href="#">Bone Mineral Density</a>	 Minor	- <a href="#">See study</a>	An <i>association</i> has been noted with increased bone mineral density and Mate consumption; insufficient evidence to suggest a causative role as no interventions exist
	<a href="#">General Oxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in serum oxidative parameters tends to be noted following Mate consumption
	<a href="#">HDL-C</a>	 Minor	- <a href="#">See study</a>	An increase in HDL-C has been noted with Mate consumption
	<a href="#">HbA1c</a>	 Minor	- <a href="#">See study</a>	A decrease in HbA1c levels has been detected in type II diabetics consuming Mate tea, although not to a remarkable degree
	<a href="#">LDL-C</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Decreases in LDL cholesterol have been noted in metabolically unwell persons following moderate Mate consumption (as brewed tea)
	<a href="#">Lipid Peroxidation</a>	 Minor	- <a href="#">See study</a>	A decrease in lipid peroxidation has been noted with Mate consumption over 7 days
	<a href="#">Total Cholesterol</a>	 Minor	- <a href="#">See study</a>	A decrease of total cholesterol has been noted with Mate consumption



LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Esophageal Cancer Risk</a>	-	- <a href="#">See study</a>	Although associations exist between mate consumption and esophageal cancer risk, this appears to apply to any (scalding) hot beverage and is not associated with cooled mate. The increased risk is associated with the heat rather than the drink constituents.

Back to: [Supplements](#) | [Health Outcomes](#)

# Yohimbine

Also known as: Yohimbe, Corynanthe Yohimbe, Yohimbe Bark, Pausinystalia Yohimbe







Other uses:




Yohimbine is a fat burning compound. Although effective, it may cause anxiety, it adversely interacts with many pharmaceuticals, and the labeled dose of supplements that contain it often does not match the actual dose.








See [Yohimbine on Examine.com](#)

## How to Take

Dosages of 0.2mg/kg bodyweight have been successfully used to increase fat burning without significant implications on cardiovascular parameters like heart rate and blood pressure. This results in a dosage of: 14 mg for a 150lb person 18 mg for a 200lb person 22 mg for a 250lb person. Supplementation is most effective between meals or during short term fasting. Caution should be exercised at higher body weight, since the cardiovascular system may not be prepared to handle a stimulatory agent such as yohimbine. When supplementing yohimbine for the first time, always start with a half-dose and assess tolerance before proceeding. Caution should also be exercised since many supplements containing yohimbine either do not list how much yohimbine is included, or if they do, the actual dose ranges from 25-150% of the dose listed. Since the dosage may be higher than listed, this is extra reason to start with a lower dose. When pairing yohimbine with other stimulatory agents, half-dose both supplements and work up to the recommended dose cautiously, as two supplements can interact negatively.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Erections</a>	 Minor	- <a href="#">See study</a>	Erections are increased following yohimbine ingestion which is thought to be a combination of alpha-2-adrenergic antagonism (enhancing relaxation of the penile tissue so engorgement of blood can ensure) and increasing blood pressure (which would increase the amount of force in an erection). However, may not be able to overcome organic erectile dysfunction associated with poor blood flow
	<a href="#">Fat Mass</a>	 Notable	- <a href="#">See study</a>	Fat mass is reduced with yohimbine ingestion and appears to affect both obese and lean individuals
	<a href="#">Alcohol Dependence</a>	 Minor	- <a href="#">See study</a>	Injections of yohimbine have been noted to increase cravings for alcohol, which although not demonstrated with oral intake is thought to be related to the reduction in inhibition

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anxiety</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although unreliable, an increase in anxiety may occur following yohimbine ingestion
	<a href="#">Blood Pressure</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to increase blood pressure, which may aid the proerectile effects (as it is an acute increase) but is a cardiovascular risk factor
	<a href="#">Cortisol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to increase cortisol following ingestion
	<a href="#">Diuresis</a>	 Minor	- <a href="#">See study</a>	There appears to be an increased urge to urinate following supplementation of yohimbine
	<a href="#">Heart Rate</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Due to stimulatory effects, an increase in heart rate follows yohimbine ingestion
	<a href="#">Symptoms of Phobia</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Thought to decrease symptoms of phobia via noradrenaline release (causing desensitization to the stress response) but studies looking at its efficacy are mixed.
	<a href="#">Lean Mass</a>	-	- <a href="#">See study</a>	No significant influence on lean mass detected with yohimbine ingestion
	<a href="#">Plasma Melatonin</a>	-	- <a href="#">See study</a>	Despite increased rates of melatonin elimination from the body (via urination), there does not appear to be a significant influence on plasma melatonin concentrations.
	<a href="#">Power Output</a>	-	- <a href="#">See study</a>	No significant influence on power output noted with yohimbine
	<a href="#">Rate of Gastric Emptying</a>	-	- <a href="#">See study</a>	No significant effect on gastric emptying rate

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cerebral Blood Flow</a>	 Minor	- <a href="#">See study</a>	A decrease in cerebral blood flow has been noted to be independent of cognitive impairment
	<a href="#">Penile Girth</a>	 Minor	- <a href="#">See study</a>	An increase in penile girth has been noted (similar to <a href="#">L-DOPA</a> ) which was not to a large degree, only detectable when dividing the group into responders and nonresponders
	<a href="#">Symptoms of Orthostatic Hypotension</a>	 Minor	- <a href="#">See study</a>	Orthostatic hypotension (light headedness upon rapidly standing up) appears to have reduced symptoms associated with yohimbine usage
	<a href="#">Testosterone</a>	-	- <a href="#">See study</a>	No significant influence on testosterone seen with yohimbine supplementation

Back to: [Supplements](#) | [Health Outcomes](#)

# ZMA

*Also known as: Zinc Magnesium Aspartate*

*Other uses:*

---

ZMA stands for zinc, magnesium, and aspartate. ZMA is an easy way to supplement these two minerals and vitamin B6.

See [ZMA on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Zeaxanthin

---

Zeaxanthin is a carotenoid commonly used alongside lutein for preserving retinal health.

See [Zeaxanthin on Examine.com](#)

Back to: [Supplements](#) | [Health Outcomes](#)

# Zinc







Other uses:

Zinc is an essential mineral involved in numerous enzymes. It plays a role in antioxidant enzymes, brain function, and the immune system, among many other biological roles. Zinc is most commonly taken to reduce the frequency of illness and to support optimal levels of testosterone.

See [Zinc on Examine.com](#)

## How to Take

Zinc has two standard dosages. The low dosage is 5-10mg, while the high dosage is 25-45mg. The low dose works well as a daily preventative, while the high dosage should be taken by anyone at risk for a zinc deficiency. Different forms of zinc contain different amounts of elemental zinc, which refers to the weight of the zinc molecule by itself (Note: Product labels tend to mark the elemental weight) Zinc citrate is approximately 34% zinc by weight. For a dose of 50mg elemental zinc, take 146 mg zinc citrate. Zinc sulfate is approximately 22% zinc by weight. For a dose of 50mg elemental zinc, take 220 mg zinc sulfate. Zinc gluconate is approximately 13% zinc by weight. For a dose of 50mg elemental zinc, take 385 mg zinc gluconate. Zinc monomethionine is approximately 21% zinc by weight. For a dose of 50mg elemental zinc, take 238 mg zinc monomethionine. Zinc should be supplemented daily. Superloading zinc by taking up to 100mg zinc a day is confirmed to be safe in the short term (2-4 months), but because this dose is higher than the 40mg Tolerable Upper Limit (TUL) of zinc, prolonged superloading is not advised. Zinc's intestinal uptake is hindered by other minerals, including calcium, magnesium, and iron, since they all use the same transporter. If the transporter's uptake limit (800mg) is exceeding between these four minerals, absorption rates will fall. Taking less than 800mg of these four minerals at the same time is fine.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Depression</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	The reduction in depression is notable <i>only for</i> treatment resistant depression alongside a pharmaceutical antidepressant; there does not appear to be a benefit to persons who respond to antidepressants and the inherent antidepressant effects without a pharmaceutical add-on are modest at best.
	<a href="#">Acne</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Orally supplemented zinc (in the dosage range of 30-130mg elemental zinc) appears to be effective in reducing symptoms of acne, although the effects are modest at best.
	<a href="#">Blood Glucose</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	A reduction in blood glucose has been observed alongside improvements in insulin sensitivity in obese persons who may have been zinc deficient.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">C-Reactive Protein</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	Supplementation of zinc in persons who may be zinc deficient is able to reduce C-reactive protein
	<a href="#">IGF-1</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There is an increase in IGF-1 concentrations if the subject is deficient in zinc, but no increase otherwise.
	<a href="#">Insulin</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Basal insulin concentrations appear to be reduced following supplementation of zinc.
	<a href="#">LDL-C</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	A decrease in LDL cholesterol may occur when a zinc deficiency in obese persons is being normalized.
	<a href="#">Lipid Peroxidation</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	A slight decrease in lipid peroxidation has been noted with supplementation of zinc in persons who may be deficient.
	<a href="#">Mucositis</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Decreases in the severity but not occurrence of mucositis have been reported in cancer patients undergoing both radiotherapy and chemotherapy, although the benefits seem unreliable
	<a href="#">Testosterone</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	Both chronic/excessive exercise as well as a zinc deficiency are associated with abnormally low testosterone concentrations, and in these states supplementation of zinc increases testosterone. There is no inherent increase in testosterone with zinc if either of those two conditions are not met
	<a href="#">Pneumonia</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	In regards to pneumonia in particular, zinc does not appear to have any appreciable benefit either when superloaded by itself or taken as an adjuvant alongside antibiotics
	<a href="#">Psoriasis</a>	 Notable	- <a href="#">See study</a>	Topical application of a 0.25% zinc pyrithione cream is associated with highly significant reductions in psoriasis symptoms (twice daily application for three months reducing them by over 70%)
	<a href="#">Viral Warts</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Although the evidence is very preliminary right now, supplementation of high dose zinc (up to 132mg elemental zinc) is able to abolish viral warts by 50-60% while topical application (10% zinc sulphate solution) can abolish viral warts in 80% of persons. Nonviral warts have less of a response to treatment.




LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Aggression</a>	 Minor	- <a href="#">See study</a>	Secondary to an improvement in overall mood, aggressive symptoms have been noted to be reduced with low dose zinc supplementation.
	<a href="#">Anti-Oxidant Enzyme Profile</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be an increase in superoxide dismutase and glutathione peroxidase after supplementation of zinc in otherwise healthy persons.
	<a href="#">Apolipoprotein A</a>	 Minor	- <a href="#">See study</a>	A slight increase in apolipoprotein A has been reported in obese persons who may have been zinc deficient, but then supplemented to alleviate said deficiency.
	<a href="#">Apolipoprotein B</a>	 Minor	- <a href="#">See study</a>	Apolipoprotein B may be abnormally elevated during zinc deficiency as it is reduced upon supplementation of zinc.
	<a href="#">Cell Adhesion Factors</a>	 Minor	- <a href="#">See study</a>	In persons who were probably zinc deficient, supplementation of zinc is able to reduce cellular adhesion factors and the risk for atherosclerosis.
	<a href="#">Cognition</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An improvement in cognition has been seen in stroke patients given zinc to complement their zinc insufficient diet.
	<a href="#">DHT</a>	 Minor	- <a href="#">See study</a>	An increase in DHT has been noted in infertile men
	<a href="#">Dental Health</a>	 Minor	- <a href="#">See study</a>	Supplementation of zinc in children who were probably deficient is able to reduce the formation of plaque and is thought to then reduce risk of dental cavities; gingivitis risk was not affected.
	<a href="#">Dysgeusia</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Although there may be an improvement in symptoms of persons who are specifically deficient in carbonic anhydrase VI (zinc dependent enzyme) which occurs with zinc deficiency, dysgeusia and hypogeusia associated with chemotherapy seem unaffected
	<a href="#">Fertility</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Zinc can increase the fertility of men who are infertile <i>and</i> have low circulating testosterone, and appears ineffective in men who have normal testosterone levels with infertility. This is related to an increase in sperm count seen in the former group.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Free Testosterone</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Free testosterone follows the same trends as testosterone, and may be increased following supplementation in persons who are deficient in zinc
	<a href="#">Functionality in Elderly or Injured</a>	 Minor	- <a href="#">See study</a>	An increase in functionality of elderly frail persons has been seen with zinc supplementation, thought to be related to the increase in IGF-1 also observed.
	<a href="#">Insulin Sensitivity</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in insulin sensitivity has been noted with supplementation of zinc in insulin resistant persons who were likely zinc deficient.
	<a href="#">Interleukin 6</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Alongside other proinflammatory cytokines, IL-6 appears to be reduced following supplementation of zinc.
	<a href="#">Iron Absorption</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Iron absorption is decreased when both iron and zinc exceed 10mg in a supplement given on an empty stomach. The inhibition does not appear to be relevant if the same ratio is at lower doses (500mcg) or if the minerals are ingested via food products.
	<a href="#">Leptin</a>	 Minor	- <a href="#">See 2 studies</a>	Normalizing a zinc deficiency increases leptin (which is suppressed during deficiency), but elsewhere the abnormal elevation of zinc seen in morbid obesity has been reduced alongside weight loss and insulin sensitization from zinc.
	<a href="#">Liver Cirrhosis</a>	 Minor	- <a href="#">See study</a>	Supplementation of zinc in persons with liver cirrhosis appears to be mildly therapeutic, possibly related to reducing hepatic copper concentrations.
	<a href="#">Oxidation of LDL</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although there may not be an inherent protective effect and normalizing a deficiency does not <i>per se</i> reduce oxidation of LDL, if the body becomes more insulin sensitivity when restoring a deficiency then zinc may indirectly reduce oxidation.
	<a href="#">Rate of Sickness</a>	 Minor	- <a href="#">See study</a>	In regards to the common cold and infections, the rate of catching sickness with daily supplementation of zinc in persons who may be deficient is reduced.
	<a href="#">Reaction Time</a>	 Minor	- <a href="#">See study</a>	A slight decrease in reaction time has been noted in persons who are zinc deficient and then supplemented with zinc.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum BDNF</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Supplemental zinc (30mg) has been noted to increase serum BDNF in depressed subjects in one study, which did not occur in study; there were differences in the study demographic and more research is needed.
	<a href="#">Serum T3</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The decline in T3 hormone levels during prolonged exercise is abolished with supplementation of zinc.
	<a href="#">Serum T4</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The decline in T4 hormone levels during prolonged exercise is abolished with supplementation of zinc.
	<a href="#">Sperm Count</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	An increase in sperm count has been noted in infertile men who also had low testosterone; it was ineffective in infertile men with normal testosterone.
	<a href="#">Stroke Recovery Rate</a>	 Minor	- <a href="#">See study</a>	In zinc deficient persons who recently suffered a stroke, supplementation of zinc appears to accelerate the rate of recovery.
	<a href="#">Subjective Well-Being</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although the evidence is mixed currently, zinc has been previously associated with an improvement in mood state and has mechanisms by which it can work. It likely has a small but positive influence.
	<a href="#">Symptoms of OCD</a>	 Minor	- <a href="#">See study</a>	High dose zinc (220mg twice daily) may have a minor additive role to standard OCD therapy (fluoxetine), although the small magnitude of benefit and the high dose used suggest that it is not the best supplemental option.
	<a href="#">Symptoms of Pruritus</a>	 Minor	- <a href="#">See study</a>	High dose (440mg) zinc sulphate appears to be effective in hemodialysis patients in reducing pruritus.
	<a href="#">Symptoms of Tinnitus</a>	 Minor	- <a href="#">See study</a>	Zinc supplementation at higher levels (50mg) appears to be able to reduce subjective symptoms of tinnitus in most persons supplemented with zinc.
	<a href="#">TNF-Alpha</a>	 Minor	- <a href="#">See 2 studies</a>	A zinc deficiency is associated with reduced circulating TNF- $\alpha$ concentrations, which are normalized upon zinc sufficiency.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Total Cholesterol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in cholesterol, due to LDL-C being reduced, seems to occur following oral supplementation of zinc in persons who are obese and likely zinc deficient
	<a href="#">Weight</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	In children who are likely deficiency, zinc supplementation can reduce body weight.
	<a href="#">ADHD in Children</a>	-	- <a href="#">See study</a>	No significant influence of zinc supplementation on symptoms of ADHD in children.
	<a href="#">Blood Flow</a>	-	- <a href="#">See study</a>	Blood flow does not appear to be modified with supplementation of zinc.
	<a href="#">Blood Pressure</a>	-	- <a href="#">See study</a>	Blood pressure does not appear to be modified with zinc supplementation.
	<a href="#">General Oxidation</a>	-	- <a href="#">See study</a>	No significant interaction with biomarkers of general oxidation
	<a href="#">HDL-C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on HDL-C, even when normalizing a zinc deficiency associated with weight loss.
	<a href="#">Plasma Nitrate</a>	-	- <a href="#">See study</a>	No significant influence of zinc supplementation on plasma nitrate or nitrite levels, suggesting no interaction with nitric oxide metabolism
	<a href="#">Symptoms of Rosacea</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Although efficacy cannot yet be ruled out, the best evidence currently does not support a role for zinc supplementation in the treatment of rosacea
	<a href="#">Triglycerides</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant reduction in circulating triglycerides has been detected with zinc supplementation.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Upper Respiratory Tract Infection Risk</a>	-	- <a href="#">See study</a>	Despite having lower sickness rates overall, the reduction seen in URTIs specifically does not appear to reach significance.
	<a href="#">Anxiety</a>	↓ ↓ ↓ Minor	- <a href="#">See study</a>	One study found an improvement in women with PMS. This might not translate to other cases, and much more research is needed.
	<a href="#">Fatigue</a>	↓ ↓ ↓ Minor	- <a href="#">See study</a>	One study found an improvement in women with PMS. This might not translate to other cases, and much more research is needed.
	<a href="#">Insomnia</a>	↓ ↓ ↓ Minor	- <a href="#">See study</a>	One study found an improvement in women with PMS. This might not translate to other cases, and much more research is needed.
	<a href="#">Interleukin 2</a>	↑ ↑ ↑ Minor	- <a href="#">See study</a>	Interleukin 2 (IL-2) appears to be reduced during zinc deficiency, and this is normalized upon zinc sufficiency.
	<a href="#">Luteinizing Hormone</a>	↑ ↑ ↑ Minor	- <a href="#">See study</a>	In persons who are deficient in zinc, an increase in LH occurs following zinc replenishment.
	<a href="#">Symptoms of PMS</a>	↓ ↓ ↓ Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Preliminary research suggests notable improvements in psychological symptoms, and possibly physical symptoms, but more detailed evaluation of specific physical symptoms is needed.
	<a href="#">Fat Mass</a>	-	- <a href="#">See study</a>	No known significant interactions with zinc supplementation on fat mass.
	<a href="#">Follicle-Stimulating Hormone</a>	-	- <a href="#">See study</a>	No detectable influence of zinc supplementation of FSH concentrations in zinc deficient persons.
	<a href="#">Prolactin</a>	-	- <a href="#">See study</a>	No detectable increase in prolactin in persons who are deficient in zinc and then supplemented to restore levels.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serum DHEA</a>	-	- <a href="#">See study</a>	No significant influence on serum DHEA sulfate

Back to: [Supplements](#) | [Health Outcomes](#)

# Ziziphus jujuba



Also known as: Ziziphus Jujuba, Chinese Date, Da Zao, Jujube

Ziziphus Jujuba (Chinese/Korean Date, Jujube) is a plant which bears fruits and seeds that are used for medicinal purposes in Traditional Chinese Medicine. It may possess anxiety-reducing and sedative properties.

See [Ziziphus jujuba on Examine.com](#)

## How to Take

Traditional usage of Jujube is taking 50g of the fruits (20 individual 2-2.5cm diameter fruits) and doing a hot water extract, either a soup or a beverage. There currently is not enough evidence in humans to establish an effective oral dose of Ziziphus Jujube supplements but estimating from animal studies finding benefits with 500mg/kg for anxiety reduction, an estimated human dose would be: 5,500 mg for a 150lb person 7,300 mg for a 200lb person 9,000 mg for a 250lb person ...for an ethanolic extract with a 23.34% extract yield.

LEVEL OF EVIDENCE	OUTCOME	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Constipation</a>	 Minor	- <a href="#">See study</a>	A decrease in the symptoms of constipation has been seen with the water extract of jujubes; which may apply to fruit consumption but may not apply to isolated supplements (due to the polysaccharides being the active ingredients)

Back to: [Supplements](#) | [Health Outcomes](#)

# List of Health Outcomes

---

- [8-isoPGF2a](#)
- [ADHD in Children](#)
- [Acne](#)
- [Adiponectin](#)
- [Adrenaline](#)
- [Adrenocorticotrophic Hormone](#)
- [Aerobic Exercise](#)
- [Aggression](#)
- [Alertness](#)
- [All-Cause Mortality](#)
- [Allergies](#)
- [Ammonia](#)
- [Anaerobic Running Capacity](#)
- [Anti-Oxidant Enzyme Profile](#)
- [Antioxidant Potential](#)
- [Anxiety](#)
- [Apolipoprotein A](#)
- [Apolipoprotein B](#)
- [Appetite](#)
- [Arterial Stiffness](#)
- [Asthma](#)
- [Asymmetric dimethylarginine \(aka ADMA\)](#)
- [Attention](#)
- [B-Cell Count](#)
- [Bilirubin](#)
- [Bleeding Time](#)
- [Blood Acidity](#)
- [Blood Flow](#)
- [Blood Glucose](#)
- [Blood Pressure](#)
- [Body Fat](#)
- [Body Temperature](#)
- [Bone Mineral Density](#)
- [Breast Cancer Risk](#)
- [Breast Tenderness](#)
- [C-Peptide](#)
- [C-Reactive Protein](#)
- [CD4 Lymphocytes](#)
- [CD8 Lymphocytes](#)
- [Calmness](#)
- [Cancer Mortality](#)
- [Canker Sores](#)
- [Carbohydrate Absorption](#)
- [Cardiovascular Disease Mortality](#)
- [Cardiovascular Disease Risk](#)
- [Cell Adhesion Factors](#)
- [Cerebral Blood Flow](#)
- [Chronic Venous Insufficiency](#)
- [Cocaine Addiction](#)
- [Cognition](#)
- [Cognitive Decline](#)
- [Colon Cancer Risk](#)
- [Colorectal Cancer Risk](#)
- [Constipation](#)
- [Cortisol](#)
- [Cough](#)



- [Cramps](#)
- [Creatinine](#)
- [DHEA](#)
- [DHT](#)
- [DNA Damage](#)
- [Depression](#)
- [Diarrhea](#)
- [Diuresis](#)
- [Dopamine](#)
- [Dry Eyes](#)
- [Dry Mouth](#)
- [Dysmenorrhea](#)
- [Edema](#)
- [Endothelial Function](#)
- [Endothelin-1](#)
- [Eosinophil count](#)
- [Erections](#)
- [Erythema](#)
- [Estrogen](#)
- [Executive Function](#)
- [Exercise Capacity \(with Heart Conditions\)](#)
- [Exercise-Induced Immune Suppression](#)
- [Exercise-Induced Oxidation](#)
- [Fat Mass](#)
- [Fat Oxidation](#)
- [Fatigue](#)
- [Fatigue \(non-anemic\)](#)
- [Fatigue Resistance](#)
- [Fecal Moisture](#)
- [Fecal Weight](#)
- [Fertility](#)
- [Fever](#)
- [Fibrinogen](#)
- [Follicle-Stimulating Hormone](#)
- [Food Intake](#)
- [Forgetting](#)
- [Free Fatty Acids](#)
- [Free Testosterone](#)
- [Fructosamine](#)
- [Functionality in Elderly or Injured](#)
- [Gastrin](#)
- [General Oxidation](#)
- [Ghrelin](#)
- [Glomerular Filtration Rate](#)
- [Glucagon](#)
- [Glycemic Control](#)
- [Glycemic Control / Insulin Sensitivity](#)
- [Glycogen Content](#)
- [Glycogen Resynthesis](#)
- [Growth Hormone](#)
- [HDL-C](#)
- [Hair Regrowth](#)
- [HbA1c](#)
- [Heart Rate](#)
- [Helicobacter Pylori Infection](#)
- [Hematocrit](#)






- [Hemoglobin](#)
- [Homocysteine](#)
- [Hydration \(Total Body Water\)](#)
- [IGF Binding Protein](#)
- [IGF-1](#)
- [Immunity](#)
- [Immunoglobulin A](#)
- [Immunoglobulin G](#)
- [Immunoglobulin M](#)
- [Incontinence](#)
- [Infantile Colic](#)
- [Inflammation](#)
- [Insomnia](#)
- [Insulin](#)
- [Insulin Secretion](#)
- [Insulin Sensitivity](#)
- [Interferon Gamma](#)
- [Interleukin 1-beta](#)
- [Interleukin 10](#)
- [Interleukin 2](#)
- [Interleukin 6](#)
- [Interleukin 8](#)
- [Intestinal Motility](#)
- [Intestinal Parasites](#)
- [Intestinal Permeability](#)
- [Intraocular Pressure](#)
- [Iron Absorption](#)
- [Irritability](#)
- [Ketone Bodies](#)
- [Kidney Function](#)
- [LDL-C](#)
- [Lactate Production](#)
- [Lean Mass](#)
- [Left Ventricular Ejection Fraction](#)
- [Leg Swelling](#)
- [Length of Sickness](#)
- [Leptin](#)
- [Leukotriene B4](#)
- [Libido](#)
- [Lipid Absorption](#)
- [Lipid Peroxidation](#)
- [Liver Damage](#)
- [Liver Enzymes](#)
- [Liver Fat](#)
- [Lung Function](#)
- [Luteinizing Hormone](#)
- [Lymphocyte Count](#)
- [Memory](#)
- [Metabolic Rate](#)
- [Microcirculation](#)
- [Migraine](#)
- [Monocyte Count](#)
- [Motor Control](#)
- [Mucositis](#)
- [Mucus Production](#)
- [Muscle Creatine Content](#)

- [Muscle Damage](#)
- [Muscle Oxygenation](#)
- [Muscle Protein Synthesis](#)
- [Muscle Soreness](#)
- [Muscular Endurance](#)
- [Nasal Congestion](#)
- [Natural Killer Cell Activity](#)
- [Natural Killer Cell Content](#)
- [Nausea](#)
- [Neutrophil Activity](#)
- [Neutrophil Count](#)
- [Nitric Oxide](#)
- [Noradrenaline](#)
- [Ocular Blood Flow](#)
- [Osteocalcin](#)
- [Oxidation of LDL](#)
- [Oxygen Uptake](#)
- [Oxygenation Cost of Exercise](#)
- [Pain](#)
- [Parathyroid Hormone](#)
- [Penile Girth](#)
- [Photoprotection](#)
- [Plasma Arginine](#)
- [Plasma Glutamine](#)
- [Plasma Melatonin](#)
- [Plasma Nitrate](#)
- [Plasma Vitamin C](#)
- [Plasminogen Inhibitor 1](#)
- [Platelet Aggregation](#)
- [Pneumonia](#)
- [Postpartum Depression](#)
- [Power Output](#)
- [Pre-Eclampsia Risk](#)
- [Processing Accuracy](#)
- [Processing Speed](#)
- [Prolactin](#)
- [Prostate Cancer Risk](#)
- [Prostate Hypertrophy](#)
- [Prostate Specific Antigen](#)
- [Protection from Smoking](#)
- [Protein Carbonyl Content](#)
- [Proteinuria](#)
- [Pulmonary Function](#)
- [Quality of Life](#)
- [Rate of Gastric Emptying](#)
- [Rate of Perceived Exertion](#)
- [Reaction Time](#)
- [Red Blood Cell Count](#)
- [Reddening of the Skin](#)
- [Relaxation](#)
- [Resistin](#)
- [Rhonchi](#)
- [Risk of Falls](#)
- [Risk of Myocardial Infarction](#)
- [Risk of Stroke](#)
- [Sedation](#)

- [Seizure Frequency](#)
- [Seminal Motility](#)
- [Serum Albumin](#)
- [Serum BDNF](#)
- [Serum Bicarbonate](#)
- [Serum Cobalamin](#)
- [Serum DHEA](#)
- [Serum Folate](#)
- [Serum Magnesium](#)
- [Serum Platelets](#)
- [Serum T3](#)
- [Serum T4](#)
- [Severity of Sickness](#)
- [Sex Hormone Binding Globulin](#)
- [Sexual Function](#)
- [Skeletal Muscle Atrophy](#)
- [Skin Dryness](#)
- [Skin Elasticity](#)
- [Skin Moisture](#)
- [Skin Pigmentation](#)
- [Skin Quality](#)
- [Sleep Latency](#)
- [Sleep Quality](#)
- [Sperm Count](#)
- [Sperm Quality](#)
- [Stomach Ulcers](#)
- [Stress](#)
- [Stroke Recovery Rate](#)
- [Subjective Well-Being](#)
- [Swimming Performance](#)
- [Symptoms of Acute Bronchitis](#)
- [Symptoms of Acute Mountain Sickness](#)
- [Symptoms of Alzheimer's](#)
- [Symptoms of Autism](#)
- [Symptoms of Benign Prostatic Hyperplasia](#)
- [Symptoms of Bipolar Disorder](#)
- [Symptoms of Crohn's Disease](#)
- [Symptoms of Diabetic Neuropathy](#)
- [Symptoms of Fibromyalgia](#)
- [Symptoms of Intermittent Claudication](#)
- [Symptoms of Irritable Bowel Syndrome](#)
- [Symptoms of Menopause](#)
- [Symptoms of Multiple Sclerosis](#)
- [Symptoms of OCD](#)
- [Symptoms of Orthostatic Hypotension](#)
- [Symptoms of Osteoarthritis](#)
- [Symptoms of PMS](#)
- [Symptoms of Parkinson's Disease](#)
- [Symptoms of Peripheral Vascular Disease](#)
- [Symptoms of Rheumatoid Arthritis](#)
- [Symptoms of Schizophrenia](#)
- [Symptoms of Systemic Lupus Erythematosus](#)
- [Symptoms of Tinnitus](#)
- [Symptoms of Ulcerative Colitis](#)
- [Symptoms of Vitiligo](#)
- [Symptoms of the Common Cold](#)

- [T Cell Count](#)
- [TNF-Alpha](#)
- [Testosterone](#)
- [Thermic Effect of Food](#)
- [Thromboxane B2](#)
- [Thyroid-Stimulating Hormone](#)
- [Total Cholesterol](#)
- [Training Volume](#)
- [Treatment of Amyotrophic Lateral Sclerosis \(ALS\)](#)
- [Treatment of COPD](#)
- [Treatment of Headaches](#)
- [Treatment of Hepatic Encephalopathy](#)
- [Treatment of PCOS](#)
- [Triglycerides](#)
- [Upper Respiratory Tract Infection Risk](#)
- [Urea](#)
- [Uric Acid](#)
- [VO2 Max](#)
- [Vaccine Augmentation](#)
- [Verbal Fluency](#)
- [Viral Load](#)
- [Visual Acuity](#)
- [Weight](#)
- [White Blood Cell Count](#)
- [Working Memory](#)
- [Wrinkles](#)
- [vLDL-C](#)












# 8-isoPGF2a

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cocoa Extract</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	This biomarker of inflammation has been noted to be reduced in two studies where the subjects were prooxidative at rest (PAD and smokers), with no influence in other studies of otherwise healthy subjects.
	<a href="#">Conjugated Linoleic Acid</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	8-isoPGF(2)a is normally a biomarker of lipid peroxidation, but CLA may be causing a false positive (as fatty acids are known to interact with the enzymes in question and other markers of lipid peroxidation are unchanged).
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	Urinary 8-isoPGF2a is unchanged with prolonged quercetin supplementation.

Back to: [Supplements](#) | [Health Outcomes](#)

# ADHD in Children

Attention deficit hyperactive disorder (ADHD) in children is currently being investigated from a nutraceutical perspective, and these supplements are thought to confer similar (but perhaps lesser in magnitude) benefits as methylphenidate.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See all 9 studies</a>	Supplemental DHA above 300mg appears to be effective in reducing ADHD symptoms in children when supplemented
	<a href="#">Modafinil</a>	 Notable	- <a href="#">See study</a>	Modafinil appears to be able to reduce symptoms of ADHD in children when taken as a daily preventative at the lowest active dose
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	Ginkgo appears to reduce symptoms of ADHD, but 80-120mg of the EGb-761 extract has been confirmed to be less potent than 20-30mg Ritalin
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	At least one study has noted reduction in ADHD symptoms in children
	<a href="#">Phosphatidylserine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be reduced symptoms of both hyperactivity and attention deficit in children given PS, which may be more effective when the PS is complexed with fish oils
	<a href="#">Zinc</a>	-	- <a href="#">See study</a>	No significant influence of zinc supplementation on symptoms of ADHD in children.

Back to: [Supplements](#) | [Health Outcomes](#)
















# Acne

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin B3 (Niacin)</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Topical application of 4% nicotinamide gel rivals 1% clindamycin gel in reducing acne severity and tends to work better than clindamycin in oily skin types.
	<a href="#">Zinc</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Orally supplemented zinc (in the dosage range of 30-130mg elemental zinc) appears to be effective in reducing symptoms of acne, although the effects are modest at best.
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	One study assessing the blinded intake of chocolate in subjects who reported to be acne prone found an increase in acne when chocolate was given relative to placebo.
	<a href="#">Inositol</a>	 Notable	- <a href="#">See study</a>	Although this may only apply to acne in women with PCOS, supplementation of normal doses of <i>myo</i> -inositol can abolish acne in over half of subjects within 3-6 months.
	<a href="#">Milk Thistle</a>	 Notable	- <a href="#">See study</a>	There is a significant decrease in total lesion counts in those who supplement Silymarin daily for at least eight weeks.
	<a href="#">N-Acetylcysteine</a>	 Notable	- <a href="#">See study</a>	There is a significant reduction of total lesion counts in those who supplement N-Acetylcysteine for at least two months.
	<a href="#">Resveratrol</a>	 Notable	- <a href="#">See study</a>	Topical application of resveratrol in a cream more than halved the rating scores of acne, and reductions in lesion count were also noted (but only to 10%)
	<a href="#">Chromium</a>	 Minor	- <a href="#">See study</a>	Decreased acne symptoms in women with PCOS.
	<a href="#">Selenium</a>	 Minor	- <a href="#">See study</a>	There seems to be a notable decrease in the total number of lesion counts after nearly two months of selenium supplementation in those suffering from acne vulgaris.



# Adiponectin

Adiponectin is an adipokine (signalling molecule secreted from fat cells, like leptin) which positively influences glucose metabolism and fat loss. Increasing adiponectin levels are thought to result in fat loss and improved health.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No alterations in adiponectin has been noted with CLA supplementation
	<a href="#">Vitamin B3 (Niacin)</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in circulating adiponectin has been noted in subjects with health ailments (NAFLD or metabolic syndrome) to a moderate degree
	<a href="#">Arginine</a>	 Minor	- <a href="#">See study</a>	At least in persons with impaired glucose tolerance, an increase in adiponectin (and the adiponectin:leptin ratio) has been noted with supplemental L-arginine
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Curcumin has been implicated in increasing adiponectin concentrations.
	<a href="#">Garlic</a>	 Minor	- <a href="#">See study</a>	There appears to be an increase in adiponectin associated with 1,200mg of aged garlic supplementation despite no other influence on the body of persons with metabolic syndrome.
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	Possible increase in adiponectin associated with green tea ingestion
	<a href="#">Inositol</a>	 Minor	- <a href="#">See study</a>	An increase in adiponectin has been noted in women with PCOS
	<a href="#">Irvingia gabonensis</a>	 Minor	- <a href="#">See study</a>	An increase in adiponectin is noted with irvingia gabonensis, but this result is somewhat unreliable due to being confounded with both weight loss and industry influence

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	An increase in adiponectin has been noted
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	An increase in adiponectin has been noted following acute ingestion of melatonin
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on adiponectin concentrations in the blood relative to placebo.
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	No significant influence on circulating adiponectin concentrations when compared to control.
	<a href="#">Coenzyme Q10</a>	-	- <a href="#">See study</a>	No detectable interaction of CoQ10 and adiponectin
	<a href="#">Fish Oil</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant influence on Adiponectin concentrations
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant interaction between adiponectin and licorice
	<a href="#">Nigella sativa</a>	-	- <a href="#">See study</a>	No significant influence on adiponectin concentrations
	<a href="#">Rose Hip</a>	-	- <a href="#">See study</a>	No significant modifications in adiponectin concentrations when rose hip supplementation is given to humans.





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant influence on adiponectin concentrations in persons with fatty liver seen with betaine supplementation.
	<a href="#">Vitamin K</a>	-	- <a href="#">See study</a>	No significant alterations seen in adiponectin concentrations in serum with 4 weeks supplementation of 30mg MK-4
	<a href="#">Coffee</a>	 Minor	- <a href="#">See study</a>	An increase in adiponectin has been associated with coffee consumption
	<a href="#">Ketogenic diet</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Studies have found notable increases in studies where calories are matched and when they're's more weight loss in the ketogenic group. On the other hand, another calorically matched study found a reduction. One found no real effect despite weight loss.
	<a href="#">Blueberry</a>	-	- <a href="#">See study</a>	No significant influence on adiponectin concentrations in obese individuals
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No statistically significant effect of 200, 500 and 1000 mg/d for 14 days on postprandial levels.

Back to: [Supplements](#) | [Health Outcomes](#)

# Adrenaline





Adrenaline is a catecholamine that mediates the 'fight or flight' response, and also possesses fat burning properties. Increases in serum adrenaline are known to improve focus and fat oxidation, and supplements that increase adrenaline are thought to retain these effects.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Caffeine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Serum catecholamines (adrenaline, noradrenaline) are increased in naive users of caffeine following acute ingestion
	<a href="#">Melatonin</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	There do not appear to be any influence of melatonin ingestion on plasma adrenaline, either inherently or from influencing the spike in adrenaline from stress
	<a href="#">Cocoa Extract</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence as to whether serum adrenaline can be reduced in serum following cocoa ingestion prior to an acute stressor.
	<a href="#">Mucuna pruriens</a>	 Minor	- <a href="#">See study</a>	The decrease in adrenaline seen in infertility is normalized with mucuna
	<a href="#">Alcohol</a>	-	- <a href="#">See study</a>	Serum adrenaline appears unaltered following alcohol ingestion
	<a href="#">Branched Chain Amino Acids</a>	-	- <a href="#">See study</a>	No significant influence on adrenaline concentrations
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	No significant alterations in plasma adrenaline are seen with creatine supplementation during sleep deprivation.
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No significant influence on serum adrenaline

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sodium Bicarbonate</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects, but one intravenous study (not in the human effect matrix) that also noted no significant differences suggest that the increase in catecholamines during exercise is not associated with acidity and thus not suppressed by sodium bicarbonate
	<a href="#">Ketogenic diet</a>	 Minor	- <a href="#">See study</a>	One study found somewhat lower levels than on a medium or high carbohydrate diet.
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	Circulating adrenaline concentrations during a fasting period do not appear to be altered when niacin is supplemented.

Back to: [Supplements](#) | [Health Outcomes](#)

# Adrenocorticotrophic Hormone

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	ACTH does not appear to be differentially affected by alanylglutamine compared to water
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Serum ACTH concentrations do not appear to be influenced by supplementation of cocoa.
	<a href="#">Vitamin B6</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	Higher than control group at some points post-surgery, but not statistically significant.

Back to: [Supplements](#) | [Health Outcomes](#)








# Aerobic Exercise

Aerobic exercise refers to cardiovascular exercise that does not fall under the anaerobic exercise category, and can be conducted for a prolonged period of time. Supplements that improve endurance significantly can benefit aerobic performance.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Branched Chain Amino Acids</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	An increase in time to exhaustion appears to exist in prolonged endurance exercise, but this benefit may only exist in untrained or lightly trained individuals. Several studies have noted that the anti-fatigue effects and increased time to exhaustion do not really occur in advanced athletes
	<a href="#">Caffeine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	An increase in aerobic exercise capacity is noted with caffeine, possibly secondary to increased free fatty acids and adrenaline
	<a href="#">Sodium Bicarbonate</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	For cardiovascular exercise that is prolonged in nature (45m or greater) and not exceeding the lactate threshold, there appears to be a small beneficial effect of sodium bicarbonate supplementation on improving time to fatigue or time to complete a test
	<a href="#">Colostrum</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	For the most part colostrum influenced aerobic exercise similar to whey protein (ie. not much benefit) although in specific instances of high endurance stressors in elite cyclists there may be a small ergogenic benefit thought to be due to reducing the rate of immunosuppression.
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	Does not appear to confer any apparent benefit to prolonged cardiovascular exercise.
	<a href="#">L-Carnitine</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	More evidence than not suggest no significant influence on low intensity and high duration cardiovascular exercise
	<a href="#">Magnesium</a>	 Notable	- <a href="#">See study</a>	The one study to assess aerobic exercise capacity noted a significant improvement during extreme physical stress (triathletes), which is notable and needs replication
	<a href="#">Marijuana</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	It seems that submaximal (light) aerobic exercise performance is not influenced much, but when aerobic exercise is carried to fatigue marijuana usage seems to be associated with less endurance relative to control.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nitrate</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The performance enhancing aspect of nitrate supplementation in prolonged aerobic exercise is less than that seen in shorter duration cardiovascular exercise, and is only somewhat effective for longer periods.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	No significant influence on a treadmill test to exhaustion nor oxygen kinetics during this test
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	The performance of soccer players is unaltered in response to cocoa flavanol ingestion.
	<a href="#">Cordyceps</a>	-	- <a href="#">See study</a>	No significant improvements in prolonged aerobic exercise have been noted with cordyceps supplementation
	<a href="#">Kaempferia parviflora</a>	-	- <a href="#">See study</a>	No significant influence on aerobic exercise when taken acutely before exercise in youth
	<a href="#">Pelargonium sidoides</a>	-	- <a href="#">See study</a>	There are no improvements in running performance in otherwise healthy athletes given this supplement for one month
	<a href="#">Pyruvate</a>	-	- <a href="#">See study</a>	No significant influence on aerobic exercise performance
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	No benefit of velvet antler on aerobic cardiovascular exercise
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No significant influence on aerobic exercise performance















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Performance during aerobic exercise does not appear to be significantly altered with supplementation of vitamin E relative to placebo.
	<a href="#">Grape juice</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A very small amount of evidence suggests an increase in aerobic exercise capacity through increased time to exhaustion.
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to increase time to exhaustion on a treadmill test when given to athletes; the increase in endurance is mild but present. It has also been observed to slightly improve performance in long-distance running in untrained but athletic subjects.
	<a href="#">Blueberry</a>	-	- <a href="#">See study</a>	Chronic loading of blueberries with an acute dose prior to prolonged exercise (2.5 hours) in trained men does not improve physical performance.
	<a href="#">Iron</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	It's unclear if iron supplementation consistently improves aerobic exercise in people without anemia but deficient or low iron levels. This is not a systematic evaluation of studies.

Back to: [Supplements](#) | [Health Outcomes](#)

# Aggression














Aggression (the opposite of calmness) is a confrontational behaviour that may be affected by supplementation or drugs.


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	A decrease in aggression has been noted, which is thought to be secondary to improvements in mood state and general well being
	<a href="#">Kava</a>	 Minor	- <a href="#">See study</a>	Aggressive symptoms of anxiety have been noted to be decreased following kava ingestion, an outright reduction of anxiety (without treating anxiety) is uncertain
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	Secondary to reducing symptoms of ADHD, L-carnitine may reduce aggression in children.
	<a href="#">Piracetam</a>	 Minor	- <a href="#">See study</a>	In persons with cognitive decline, supplementation of Piracetam was able to reduce aggression and agitation symptoms.
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	Secondary to an improvement in overall mood, aggressive symptoms have been noted to be reduced with low dose zinc supplementation.
	<a href="#">Melissa officinalis</a>	 Minor	- <a href="#">See study</a>	A reduction in agitation has been noted with lemon balm in stressed and anxious subjects, perhaps secondary to alleviating anxiety

Back to: [Supplements](#) | [Health Outcomes](#)

# Alertness





Alertness is an aspect of wakefulness with hints of attention, and is the ability to interpret and maintain attention on different targets. Supplements that increase alertness tend to be anti-sleep or stimulatory agents.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melissa officinalis</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in alertness appears to occur alongside lemon balm ingestion (with or without sedation)
	<a href="#">Centella asiatica</a>	 Minor	- <a href="#">See study</a>	An increase in the self-rated sensation of alertness is noted in older healthy adults supplementing with <i>centella asiatica</i>
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	A decrease in alertness has been noted with melatonin supplementation
	<a href="#">Modafinil</a>	 Minor	- <a href="#">See study</a>	An increase in alertness has been reported in persons using modafinil supplementation.
	<a href="#">Synephrine</a>	-	- <a href="#">See study</a>	
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	One small study noted a possible effect with 1,00 mg of an ashwagandha daily for 14 days.
	<a href="#">Creatine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Increases in alertness tend to be during sleep deprivation or stress, rather than outright increases in alertness. Not overly potent
	<a href="#">Iron</a>	 Minor	- <a href="#">See study</a>	One study found a small increase in iron-deficient but non-anemic participants. This isn't a systematic assessment of studies.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	Unclear effect in one study.

Back to: [Supplements](#) | [Health Outcomes](#)

# All-Cause Mortality

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See all 7 studies</a>	Minor increases in all cause mortality have been noted in mostly unhealthy cohorts with doses of vitamin E above 400IU (alpha-tocopherol) whereas lower doses exert a mild protective effect in the same cohorts. The magnitude is approximately 33-34 deaths per 10,000 subjects (both for the increase in mortality seen with vitamin E multivitamin supplements and the decrease seen with vitamin E alone), and it is unsure how this information applies to otherwise healthy persons.
	<a href="#">Vitamin D</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Cohorts of people with higher serum Vitamin D appear to die less frequently than cohorts with less serum Vitamin D; this may be heavily influenced by reducing falls in the elderly (reduction of falls and subsequent hospitalizations reducing death rates)

Back to: [Supplements](#) | [Health Outcomes](#)

# Allergies

Allergies refers to the ability of a stressor (antigen) to overstimulate the body's immune system and cause a reaction, and some supplements are able to generally suppress this response and then reduce the reaction to antigens.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Spirulina</a>	 Strong	- <a href="#">See study</a>	The lone study suggests that spirulina is strongly effective in controlling allergies, with the symptoms of nasal discharge, sneezing, nasal congestion and itching being time-dependently reduced. According to self-reports, more than twice as many subjects in the spirulina group reported more than a 2-fold increase in satisfaction with treatment.
	<a href="#">Tinospora cordifolia</a>	 Strong	- <a href="#">See study</a>	At least in regards to allergic rhinitis, oral ingestion of <i>tinospora cordifolia</i> appears to abolish symptoms in 61-83% of persons (depending on symptom) extending to nasal blockage, mucus, pruritis, and sneezing.
	<a href="#">Nigella sativa</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Supplementation of the seed appears to beneficially influence most symptoms associated with allergies and most causes of the allergies (rhinitis, eczema, asthma, etc.), with the magnitude being somewhat notable among supplements.
	<a href="#">Rosmarinic Acid</a>	 Minor	- <a href="#">See study</a>	Rosmarinic acid appears to be effective in suppressing the response to pollen allergies in persons with seasonal rhinitis
	<a href="#">Stinging Nettle</a>	 Minor	- <a href="#">See study</a>	A small decrease in allergic symptoms with oral stinging nettle consumption
	<a href="#">Royal Jelly</a>	-	- <a href="#">See study</a>	No detectable benefit to hay fever or pollen allergies in youth
	<a href="#">Rubus suavissimus</a>	-	- <a href="#">See study</a>	Although this tea appears to be a popular tea for the purpose of treating allergic rhinitis, the currently available human evidence does not support this conclusion.
	<a href="#">Methylsulfonylmethane</a>	 Minor	- <a href="#">See study</a>	A decrease in pollen-induced allergies has been noted with MSM supplementation, with efficacy within one week



# Ammonia

Ammonia is a metabolic byproduct of amino acids, with increases in serum ammonia being associated with some disease states (hepatic encephalopathy) or prolonged exercise; its reduction may improve endurance.















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-Carnitine</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	A decrease in ammonia has been noted, and appears to influence both hepatic encephalopathy as well as persons with no significant liver damage
	<a href="#">Glutamine</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	Differential effects on ammonia, with decreases being present when glutamine is taken as part of a daily supplement routine and measured during prolonged exercise with a possible increase with high acute doses (which fades with time)
	<a href="#">Branched Chain Amino Acids</a>	 Minor	- <a href="#">See study</a>	Human studies suggest time-dependent influences on ammonia (increase after exercise up until 2 hours, a reduction the next day) while animal studies suggest that overdosing BCAAs can reverse a reduction into an increase
	<a href="#">Ornithine</a>	 Minor	- <a href="#">See 2 studies</a>	Although supplementation of Ornithine is recommended to reduce ammonia (which it appears to do in both models of hepatic encephalopathy and prolonged physical exercise) at least one study noted that for short term strenuous exercise ornithine caused an increase in ammonia
	<a href="#">Arginine</a>	-	- <a href="#">See study</a>	Although it is plausible that arginine could decrease ammonia (secondary to ornithine), it does not appear to reliably occur
	<a href="#">Sodium Bicarbonate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant effects on plasma ammonia detected with supplemental bicarbonate











Back to: [Supplements](#) | [Health Outcomes](#)











# Anaerobic Running Capacity

Anaerobic capacity refers to cardiovascular exercise that is short in duration and high in intensity, more prolonged than resistance training yet too intense to be maintained for more than a few minutes.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Minor	<b>High</b> <a href="#">See all 19 studies</a>	Appears to increase anaerobic cardiovascular capacity, not to a remarkable degree however.
	<a href="#">Sodium Bicarbonate</a>	 Minor	<b>Moderate</b> <a href="#">See all 34 studies</a>	Cardiovascular exercise where failure is associated with metabolic acidosis (ie. 'the burn') appear to get benefit with bicarbonate supplementation to a small degree but reliably. For other exercises (rowing, sprinting, swimming) not characterized by the burn, the benefits are much less reliable
	<a href="#">Caffeine</a>	 Notable	<b>Moderate</b> <a href="#">See all 7 studies</a>	Appears to benefit anaerobic cardiovascular exercise, perhaps due to combination antifatigue effects and increasing power output
	<a href="#">Beta-Alanine</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	A mildly positive effect, possibly secondary to an increase in muscular endurance and to a reduction in fatigue, rather than being due to any cardiopulmonary interaction.
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	There does not appear to be any benefit of dietary colostrum, relative to whey protein, in improving cardiovascular performance in anaerobic instances such as Wingate testing, resisted treadmill tests, or rowing.
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Studies assessing distance, time, or other parameters of performance during cycling tests have failed to find any significant benefit with betaine supplementation (one positive study measuring power output is pooled in that parameter).
	<a href="#">Nitrate</a>	 Notable	- <a href="#">See study</a>	The increase in performance on a sprint test appeared to be fairly significant, and pending more evidence nitrates may be a reference comparator.
	<a href="#">Phosphatidylserine</a>	 Notable	- <a href="#">See study</a>	An increase in time to exhaustion has been noted in cycling at 85% of VO2 max with soy based phosphatidylserine (750mg) to the degree of 29+/-8%, which is quite notable. This is independent of cortisol, and requires further investigation

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Arginine</a>	 Minor	- <a href="#">See study</a>	May be able to increase anaerobic physical performance, but this is unreliable due to arginine not reliably increasing nitric oxide concentrations.
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	Supplementation of 500mg of the water extract has been noted to improve intermittent sprint performance in otherwise untrained persons then subject to a training protocol.
	<a href="#">Eleutherococcus senticosus</a>	 Minor	- <a href="#">See study</a>	Possibly effective at increasing cardiovascular exercise performance, likely secondary to fatigue reduction (although similarly unreliable)
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in anaerobic cardiovascular exercise has been noted with carnitine ingestion
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	150mg resveratrol taken shortly after a workout appears to hinder the improvements in anaerobic physical performance seen with exercise alone; effects of resveratrol at other times uncertain.
	<a href="#">Terminalia arjuna</a>	 Minor	- <a href="#">See study</a>	Able to increase intermittent sprint performance
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	In a 75% VO2 max cycle until fatigue, rehydration with alanylglutamine failed to outperform water rehydration in overall time until exhaustion
	<a href="#">Arachidonic acid</a>	-	- <a href="#">See study</a>	
	<a href="#">Branched Chain Amino Acids</a>	-	- <a href="#">See study</a>	No significant performance enhancing effect on short-term cardiovascular exercise
	<a href="#">Choline</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on anaerobic cardiovascular capacity independent of choline depletion







LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No apparent influence of chromium supplementation on anaerobic cardiovascular exercise performance relative to placebo.
	<a href="#">Coenzyme Q10</a>	-	- <a href="#">See study</a>	No significant influence on anaerobic cardiovascular exercise has been detected with CoQ10 (although an anti-fatigue effect has been noted)
	<a href="#">HMB</a>	-	- <a href="#">See study</a>	No significant improvement in sprint capacity in trained persons supplementing HMB
	<a href="#">Leucic Acid</a>	-	- <a href="#">See study</a>	No significant influence on anaerobic running capacity
	<a href="#">Maca</a>	-	- <a href="#">See study</a>	No significant influence on anaerobic running capacity associated with Maca
	<a href="#">N-Acetylcysteine</a>	-	- <a href="#">See study</a>	
	<a href="#">Ornithine</a>	-	- <a href="#">See study</a>	Performance during short term cardiovascular exercise (assessed by time to exhaustion) does not appear to be significantly affected.
	<a href="#">Panax ginseng</a>	-	- <a href="#">See study</a>	Insufficient evidence to support a role of panax ginseng in improving exercise performance
	<a href="#">Quercetin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on anaerobic exercise capacity when preloaded
	<a href="#">Taurine</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	No significant influence on anaerobic cardiovascular exercise capacity
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Anaerobic exercise does not appear to be beneficially influenced by pre-exercise supplementation of cocoa flavanols in otherwise healthy subjects.
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	No change in anaerobic threshold after a month of grape juice supplementation.

Back to: [Supplements](#) | [Health Outcomes](#)










# Anti-Oxidant Enzyme Profile

Antioxidant enzymes (usually glutathione, superoxide dismutase, and catalase) are known to protect the body from oxidative damage, and increasing their levels or activity can confer protection from oxidative damage.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Curcumin</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	Although the exact enzyme that increases is not overly reliable (SOD, glutathione, and catalase), all three enzymes have individually been noted to be increased and they tend to do so to a large degree.
	<a href="#">Chromium</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	A lone study noted an increase in glutathione peroxidase, but the majority of the evidence finds no significant influence on antioxidant enzymes in the body (glutathione, SOD, or catalase).
	<a href="#">Kaempferia parviflora</a>	 Notable	- <a href="#">See study</a>	The lone study to assess superoxide dismutase found a doubling after 8 weeks of supplementation (in older individuals); needs replication in youth
	<a href="#">N-Acetylcysteine</a>	 Notable	- <a href="#">See study</a>	NAC supplementation is able to reliably increase glutathione concentrations in cells specifically
	<a href="#">Arginine</a>	 Minor	- <a href="#">See study</a>	At least in persons with impaired glucose tolerance and/or type II diabetes, L-arginine appears to have an indirect antioxidant role and increase superoxide dismutase concentrations
	<a href="#">Chlorella</a>	 Minor	- <a href="#">See study</a>	No remarkable effects following oral ingestion of chlorella, although some may be present
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase levels of antioxidant enzymes, does not appear to be reliable
	<a href="#">Garlic</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	There appears to be an increase in glutathione related enzymes in red and white blood cells following ingestion of garlic supplements.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See 2 studies</a>	Superoxide dismutase and glutathione have been noted to be increased with supplementation of ginkgo (240mg EGb-761) in persons with metabolic syndrome, while the abnormal elevation of these enzymes in schizophrenia is attenuated; essentially, a beneficial modulation appears to exist
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in all three main enzymes (SOD, glutathione peroxidase, catalase) has been detected following ingestion of carnitine
	<a href="#">Melatonin</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on antioxidant enzymes, but there appears to be potential for melatonin to increase their content
	<a href="#">Olive leaf extract</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to induce the activity of the enzyme known as glutathione peroxidase
	<a href="#">Panax ginseng</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in all three main antioxidant enzymes (SOD, glutathione peroxidase, and catalase) appear to occur to a small degree following ingestion of Panax ginseng
	<a href="#">Shilajit</a>	 Minor	- <a href="#">See study</a>	An increase in superoxide dismutase has been noted with Shilajit consumption
	<a href="#">Spirulina</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Although increases have been noted in glutathione peroxidase and superoxide dismutase, it is difficult to assess potency thereof as there are no active controls and the two studies heterogenous.
	<a href="#">Stinging Nettle</a>	 Minor	- <a href="#">See study</a>	An increase in glutathione peroxidase has been detected
	<a href="#">Vitamin C</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in antioxidant enzymes have been noted in elderly persons
	<a href="#">Watercress</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There appears to be an influence on the enzymes superoxide dismutase and glutathione peroxidase, but this requires a certain genotype to occur







LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Whey Protein</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Increased levels of glutathione are secondary to the Cysteine content and can be mimicked with all dietary sources of L-cysteine or supplemental N-acetylcysteine
	<a href="#">Zinc</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be an increase in superoxide dismutase and glutathione peroxidase after supplementation of zinc in otherwise healthy persons.
	<a href="#">Alpha-Lipoic Acid</a>	-	- <a href="#">See 2 studies</a>	Mixed effects on antioxidant enzymes, with decreases in glutathione peroxidase and increases in catalase with no effect on SOD
	<a href="#">Astaxanthin</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	
	<a href="#">Ganoderma lucidum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on superoxide dismutase or glutathione peroxidase are noted with ganoderma polysaccharide ingestion
	<a href="#">Glutathione</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin B2</a>	-	- <a href="#">See study</a>	Antioxidant enzymes do not appear to be increased in red blood cells in response to 10mg riboflavin supplementation.
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The levels of antioxidant enzymes in red blood cells (glutathione, superoxide dismutase, catalase) does not appear to be influenced with supplementation of vitamin E.
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	One study noted a modest increase in superoxide dismutase in healthy participants.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	An increase in seminal glutathione has been noted to reach 26.7% in otherwise infertile men.
	<a href="#">Rubus coreanus</a>	 Minor	- <a href="#">See study</a>	There appears to be a mild increase in glutathione peroxidase with no significant influence on catalase nor SOD in otherwise healthy men.
	<a href="#">Yerba mate</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to increase the primary three antioxidant enzymes (glutathione, catalase, and SOD) in both healthy and diseased persons
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	One study failed to note a meaningful effect on catalase, but other components of the antioxidant enzyme profile weren't assessed.
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Rose Hip</a>	-	- <a href="#">See study</a>	Limited evidence has failed to find any significant changes in antioxidant enzyme profiles in the red blood cells of those given rose hip extract

Back to: [Supplements](#) | [Health Outcomes](#)



# Antioxidant Potential

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Grape juice</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Most studies have found at least modest increases in the antioxidant capacity of tested blood after consumption of grape juice.
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	Does not appear to influence oxidative status in the body.
	<a href="#">Curcumin</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Some studies note a small increase in antioxidant capacity, but much more research is needed.
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Anxiety

Cognitive state of displeasing worry or concern with the feeling that bad events may arise; an impairment to well being, many supplements are anxiolytics (things that reduce anxiety). HTML/HTML

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Kava</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	Appears to be quite reliable and effective in treating non-psychotic anxiety, with less reliability on the topic of generalized anxiety (which <a href="#">lavender</a> shows some promise for). It is possible that long-term usage of kava may have similar side-effects as long term usage of benzodiazepines (note demonstrated, but wholly logical) and most studies on kava are of a few weeks in duration without any problems.
	<a href="#">Ashwagandha</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	Evidence suggests potent anxiolytic effects <i>in the context of</i> chronic stress and anxiety disorder, with lesser potency in standard forms of anxiety not related to stress. There may be more benefit to social anxiety as well with Ashwagandha relative to other anxiolytics. More high-quality studies are needed to get an accurate assessment of how effective it is and the optimal dose.
	<a href="#">Inositol</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	There appears to be a decrease in anxiety symptoms associated with high dose inositol, and it has been noted to be comparable to fluvoxamine in potency.
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Is somewhat more effective than placebo in reducing symptoms of anxiety, specifically state and trait anxiety.
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	A decrease in anxiety has been noted in medical students
	<a href="#">Theanine</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Possible anxiety reducing effects, although anticipatory anxiety appears to be unaffected.
	<a href="#">Lavender</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	There appears to be a notable decreased in symptoms of generalized anxiety disorder and with oral ingestion of lavender supplements; aromatherapy seems effective and implicated in reducing state anxiety (acute, situation based, anxiety), but has less robust evidence to support it. One study suggesting oral supplementation was comparable to lorazepam

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Red Clover Extract</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A minor reduction in anxiety (associated with menopause) has been noted in one independent trial while it was much more significant (near 80%) in a study with a potential conflict of interest; requires more research.
	<a href="#">Bacopa monnieri</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to prevent rises in anxiety, and does not appear to unilaterally reduce anxiety. May be more of a modulator than anything, but doesn't appear overly potent
	<a href="#">Caffeine</a>	 Minor	- <a href="#">See study</a>	It is possible for caffeine to be anxiogenic, but requires genetic susceptibility to it
	<a href="#">Centella asiatica</a>	 Minor	- <a href="#">See study</a>	There appears to be a reduction in anxiety symptoms that build up over time (reaching a quarter reduction after two months) associated with twice daily ingestion of 500mg of the plant extract
	<a href="#">D-Serine</a>	 Minor	- <a href="#">See study</a>	When taken 2 hours prior to testing, 2.1g D-serine seems effective in reducing anxiety during testing in otherwise healthy humans
	<a href="#">Ganoderma lucidum</a>	 Minor	- <a href="#">See study</a>	Some possible anti-anxiety effects secondary to reducing symptoms of cancer related fatigue
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	Prolonged supplementation of ginkgo biloba appears to confer anxiolytic effects in persons with generalized anxiety disorder. Anxiety in dementia may also be reduced secondary to treating the symptoms of dementia
	<a href="#">Maca</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	An anxiety reducing effect has been noted in postmenopausal women but not otherwise healthy young men
	<a href="#">Melissa officinalis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in anxiety has been noted with lemon balm extract, although not to a remarkable degree
	<a href="#">Nicotine</a>	 Minor	- <a href="#">See 2 studies</a>	Reduced anxiety symptoms have been noted in persons with cognitive decline, where anxiety was relieved as a symptoms of cognitive decline. In otherwise healthy persons prone to anxiety attacks, nicotine may be able to cause them.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	The aroma of saffron has once been noted to cause a mild (approximately 10%) reduction in state anxiety following 20 minutes of exposure in otherwise healthy women.
	<a href="#">Sceletium tortuosum</a>	 Minor	- <a href="#">See study</a>	In high cognitive load tests, there appears to be a reduction in state anxiety (anxiety that arises during the testing) associated with Kanna compared to placebo. This reduction in anxiety does not occur during low load tests, and chronic anxiety has not yet been assessed.
	<a href="#">Vitex agnus castus</a>	 Minor	- <a href="#">See study</a>	Can reduce PMS related anxiety but may not have any inherent anxiolytic effects; the potency correlates to the severity of anxiety during a menstrual cycle.
	<a href="#">Yamabushitake</a>	 Minor	- <a href="#">See study</a>	Decreases in anxiety noted, this may be secondary to menopausal symptom reduction
	<a href="#">Yohimbine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although unreliable, an increase in anxiety may occur following yohimbine ingestion
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	The trial to measure anxiety related to menopausal symptoms failed to find a benefit associated with black cohosh
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on state anxiety during stress testing
	<a href="#">N-Acetylcysteine</a>	-	- <a href="#">See study</a>	
	<a href="#">Synephrine</a>	-	- <a href="#">See study</a>	
	<a href="#">Valeriana officinalis</a>	-	- <a href="#">See study</a>	Valerian does not appear to be effective for the treatment of generalized anxiety disorder in the one study assessing its effects.










LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">CBD</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	No long term anxiety trials exist, and very few types of anxiety have been researched thus far.
	<a href="#">Meditation</a>	 Notable	- <a href="#">See study</a>	
	<a href="#">Holy Basil</a>	 Minor	- <a href="#">See study</a>	A decrease has been noted, but the studies are not overly robust at this moment in time
	<a href="#">Iron</a>	 Minor	- <a href="#">See study</a>	One study found a small decrease in iron-deficient but non-anemic participants which wasn't statistically significant. This isn't a systematic assessment of studies.
	<a href="#">Phenylpiracetam</a>	 Minor	- <a href="#">See study</a>	Anxiety as a symptom of stroke has been reduced with phenylpiracetam. No studies currently exist in otherwise healthy persons with anxiety symptoms
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See study</a>	One study found a reduction in PMS-associated anxiety with 100 mg of vitamin E daily.
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	One study found an improvement in women with PMS. This might not translate to other cases, and much more research is needed.
	<a href="#">Calcium</a>	-	- <a href="#">See study</a>	
	<a href="#">Magnesium</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin D</a>	-	- <a href="#">See all 3 studies</a>	



# Apolipoprotein A

Apolipoprotein A is the apolipoprotein for HDL cholesterol, and increasing its concentrations promotes flux of fatty acids and molecules that are carried on lipoproteins away from peripheral tissue and towards the liver.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Red Clover Extract</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	A large decrease has been noted in one study in overweight postmenopausal women, although three other studies failed to replicate this decrease.
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	In high risk individuals, the reduction has been noted to be 23.4+/-7.9%
	<a href="#">Trimethylglycine</a>	 Minor	- <a href="#">See study</a>	An increase in Apolipoprotein A1 has been noted with supplementation of betaine relative to placebo in otherwise healthy persons.
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	- <a href="#">See all 4 studies</a>	Mixed evidence, including null evidence, in different populations as to whether apolipoprotein AI is increased or decreased; one study in subjects with low HDL-C noted an increased (which would be cardioprotective).
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	A slight increase in apolipoprotein A has been reported in obese persons who may have been zinc deficient, but then supplemented to alleviate said deficiency.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No known interactions with Apolipoprotein A.
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on Apolipoprotein A concentrations

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	No significant influence on Apolipoprotein A seen with supplementation of hesperidin.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Grape juice</a>	 Minor	- <a href="#">See study</a>	A small increase with a small decrease of ApoB in one study. Much more research is needed.
	<a href="#">Krill Oil</a>	 Minor	- <a href="#">See study</a>	A decrease in Apolipoprotein A has been noted with krill oil supplementation
	<a href="#">Curcumin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No apparent effect in studies.
	<a href="#">Hibiscus sabdariffa</a>	-	- <a href="#">See study</a>	No significant influence on apolipoprotein A levels in serum
	<a href="#">Medium-chain triglycerides</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)





# Apolipoprotein B

Apolipoprotein B is the primary apolipoprotein (protein part of a lipoprotein) for LDL cholesterol, and increasing expression of apolipoprotein B is thought to help increase uptake of LDL from the blood into tissues.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>Moderate</b> <a href="#">See all 6 studies</a>	Although at least one study has noted a decrease, usually there is no significant changes
	<a href="#">Hesperidin</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appear to be mild decreases of circulating Apolipoprotein B seen with supplementation of hesperidin in the populations with poor baseline cholesterol that actually see benefit from supplementation.
	<a href="#">Pueraria mirifica</a>	 Minor	- <a href="#">See study</a>	A slight decrease in Apolipoprotein B has been noted with Pueraria Mirifica
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	Apolipoprotein B may be abnormally elevated during zinc deficiency as it is reduced upon supplementation of zinc.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No known interactions with Apolipoprotein B.
	<a href="#">Garcinia cambogia</a>	-	- <a href="#">See study</a>	No significant influence on apolipoprotein B detected
	<a href="#">Ginkgo biloba</a>	-	- <a href="#">See study</a>	No significant alterations are observed in apolipoprotein B concentrations

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Vitamin B3 (Niacin)</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	While a decrease in apolipoprotein B has been noted, most research suggests that it is not appreciably influenced.
	<a href="#">Grape juice</a>	 Minor	- <a href="#">See study</a>	A small decrease, with a small increase in ApoA in one study. Much more research is needed.
	<a href="#">Red Clover Extract</a>	 Minor	- <a href="#">See study</a>	One preliminary study has noted a reduction in Apolipoprotein B concentrations with supplementation of a Formononetin rich red clover supplement.
	<a href="#">Yerba mate</a>	 Minor	- <a href="#">See study</a>	Somewhat of a decrease in hyperlipidemic patients consuming Mate tea
	<a href="#">Curcumin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No apparent effect in studies.
	<a href="#">Hibiscus sabdariffa</a>	-	- <a href="#">See study</a>	No significant influence on Apolipoprotein B levels in serum
	<a href="#">Ketogenic diet</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No apparent effect in 2 studies where the ketogenic group lost more weight.
	<a href="#">Krill Oil</a>	-	- <a href="#">See study</a>	No significant influence on Apolipoprotein B noted
	<a href="#">Medium-chain triglycerides</a>	-	- <a href="#">See study</a>	














LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pueraria lobata</a>	-	- <a href="#">See study</a>	No alterations in Apolipoprotein B have been noted
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	- <a href="#">See study</a>	













Back to: [Supplements](#) | [Health Outcomes](#)

# Appetite

The desire to eat food, independent of whether food is actually eaten or not. This pools together both physical hunger and subjective appetite, since studies measure this by self-report survey.















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">5-HTP</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	There does appear to be a fairly effective suppression in appetite noted with 5-HTP supplementation in the higher dosage range, which tends to reduce food intake.
	<a href="#">Chromium</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There may be a role in reducing appetite specifically in persons who self-report inappropriate eating patterns and carbohydrate cravings, with no known effect in persons who do not report such.
	<a href="#">Fenugreek</a>	-	<b>Low</b> <a href="#">See all 4 studies</a>	Variable effects on appetite, but it seems the fenugreek fibers (not commonly in supplements) may reduce appetite similar to most dietary fibers while the saponins (commonly supplemented) have no significant effect or a possible increase
	<a href="#">Caralluma fimbriata</a>	 Minor	- <a href="#">See study</a>	Might be more effective as the one study noted a time-dependent suppression of appetite (but was terminated at 2 months); requires more research and perhaps some comparators.
	<a href="#">Modafinil</a>	 Minor	- <a href="#">See study</a>	Modafinil appears to be able to reduce appetite, and 'loss of appetite' is a common side-effect of modafinil supplementation.
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	The side-effect of 'high appetite' was effectively abolished in men with central obesity, which may underlie the observed weight loss; food intake was not reported in this study.
	<a href="#">Pelargonium sidoides</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be an increase in appetite during sickness in those given this supplement, and surprisingly this may not be limited to acute bronchitis.
	<a href="#">Psyllium</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Studies that report appetite note that there is a significant reduction after a meal containing psyllium (relative to no fiber ingestion) although it does not appear to be too remarkable in potency as overall food intake does not appear influenced.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	High dose (176.5mg) saffron extract appears to be able to reduce snacking and increase self-reported satiety in otherwise healthy overweight women.
	<a href="#">Salvia hispanica</a>	 Minor	- <a href="#">See study</a>	The decrease in appetite in one study was notable, but longer term studies do not note weight loss when diet is uncontrolled (which undermines the idea that chia is a potent appetite suppressant)
	<a href="#">Blueberry</a>	-	- <a href="#">See study</a>	No significant influence on appetite or satiety
	<a href="#">Caffeine</a>	-	- <a href="#">See study</a>	In men, there does not appear to be a significant suppressive effect of caffeine on appetite.
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, and even the promising evidence noted that the degree of appetite suppression was insufficient to suppress food intake.
	<a href="#">Garcinia cambogia</a>	-	- <a href="#">See study</a>	No significant influence of acute HCA supplementation on appetite when taken before a meal
	<a href="#">Hoodia gordonii</a>	-	- <a href="#">See study</a>	No significant reduction in appetite was seen with hoodia relative to placebo
	<a href="#">Stevia</a>	-	- <a href="#">See study</a>	No significant influence on appetite have been detected with stevia (in isolation)
	<a href="#">Synephrine</a>	-	- <a href="#">See study</a>	
	<a href="#">Apple Cider Vinegar</a>	 Minor	- <a href="#">See study</a>	Subject ratings of appetite according to the Simplified Nutritional Appetite Questionnaire were reduced somewhat more in an apple cider vinegar group than a placebo group in one study. More research is needed, though spontaneous reductions in caloric intake are common in other studies., lending support to the idea of apple cider vinegar as an appetite-suppressant.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">CDP-choline</a>	 Minor	- <a href="#">See study</a>	There appear to be minor appetite suppressing effects at higher doses of oral CDP-choline ingestion (2,000mg daily), although on a 1-10 point Likert scale the reduction measured at 27% (6.8 to 5.92; 1 being the lowest possible ranking)
	<a href="#">Ephedrine</a>	 Minor	- <a href="#">See study</a>	A decrease in appetite following ephedrine intake is noted and thought to be secondary to its psychostimulatory effects
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	A decrease in appetite has been noted with ginger intake
	<a href="#">Grape juice</a>	 Minor	- <a href="#">See study</a>	One study found an increase in subjective appetite compared with a grape-flavored sugar drink. Much more research is needed.
	<a href="#">Whey Protein</a>	 Minor	- <a href="#">See study</a>	Appears to reduce appetite (common to all protein sources), but its superiority over other protein sources is not yet demonstrated.
	<a href="#">Ascophyllum nodosum</a>	-	- <a href="#">See study</a>	The noted reduction in food intake was not associated with decreased appetite.
	<a href="#">Milk Protein</a>	-	- <a href="#">See study</a>	Despite the reduction in food intake, no significant influence on perceived appetite



Back to: [Supplements](#) | [Health Outcomes](#)

# Arterial Stiffness




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cocoa Extract</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Mixed evidence as to whether cocoa flavanols can decrease arterial stiffness in otherwise healthy adults, with the one study coming back positive being conducted in overweight adults
	<a href="#">Garlic</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a reduction in arterial stiffness seen with daily supplementation of garlic when measured over the course of a few years, relative to no garlic ingestion.
	<a href="#">Red Clover Extract</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Short term supplementation of red clover isoflavones appears to reduce arterial stiffness in a manner independent of changes in blood pressure or flow.
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See study</a>	Mixed evidence, but vitamin E has been implicated in improving arterial stiffness (thought to underlie decreased cardiovascular mortality)
	<a href="#">Curcumin</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	No apparent effect in one study.
	<a href="#">Blueberry</a>	 Minor	- <a href="#">See study</a>	May affect brachial-ankle measures of stiffness, but does not affect carotid-femoral stiffness.
	<a href="#">Grape juice</a>	 Minor	- <a href="#">See study</a>	One study found an improvement compared with grapefruit juice. Much more research is needed.
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No apparent difference in augmentation index in one study that lasted 8 weeks.

# Asthma

Asthma is an inflammatory breathing condition which can be aggravated by particular stimuli, and some supplements are currently being investigated as to whether the reactivity of a person to these stimuli can be reduced.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Magnesium</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	There appears to be a reduction in asthmatic symptoms associated with magnesium supplementation to a low degree, with the one study using corticosteroids alongside magnesium finding no effect. There may be a role for magnesium in aiding untreated asthma, but already medicated situations are not certain
	<a href="#">Boswellia serrata</a>	 Notable	- <a href="#">See study</a>	Preliminary evidence, but boswellia appeared to benefit much more people than did placebo in symptoms of asthma.
	<a href="#">Coleus forskohlii</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Although more evidence is required, it appears to be more effective at suppressing asthmatic symptoms than other nutraceuticals. Mechanisms may be related to beta-adrenergic compounds (due to increasing cAMP and inducing bronchiol dilation)
	<a href="#">Pelargonium sidoides</a>	 Minor	- <a href="#">See study</a>	In children with upper respiratory tract infections <i>and</i> asthma, the amount of asthmatic attacks during sickness appears to be slightly but significantly reduced relative to placebo.
	<a href="#">Pycnogenol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A slight reduction in asthmatic symptoms has been noted with Pycnogenol supplementation
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See study</a>	Appears to be somewhat effective at reducing the occurrence of asthma attacks in youth
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Supplementation of vitamin E in medicated asthmatics failed to exert any appreciable benefits to symptoms.
	<a href="#">Moringa oleifera</a>	 Minor	- <a href="#">See study</a>	Non-allergic asthmatic symptoms were reduced in a pilot study using the seeds of <i>moringa oleifera</i>



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nigella sativa</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Asthmatic symptoms appear to be reduced with supplementation of <i>nigella sativa</i> seeds, in part due to benefits to lung function and in part due to its anti-allergic properties. Potency has not been adequately assessed
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	No significant interaction between CLA supplementation and asthmatic symptoms

Back to: [Supplements](#) | [Health Outcomes](#)














# Asymmetric dimethylarginine (aka ADMA)

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Arginine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Although there is some evidence for an increase in ADMA (a negative regulator of NOS that is derived from L-arginine), it does not appear to occur most of the time
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	













Back to: [Supplements](#) | [Health Outcomes](#)

# Attention






The ability to keep focus on chosen targets, the clinical lack of attention is ADD (or ADHD if hyperactivity exists); Attention and/or Focus may be affected by supplements listed on this page.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Bacopa monnieri</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	There is unlikely to be an inherent effect of bacopa on attention, although at least one study noted improvements in attention in persons with attention deficit (ADD).
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	In assessing the effects of cocoa on mood states, attention does not appear to be significantly altered when compared to placebo.
	<a href="#">Ginkgo biloba</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	Attentional focus and similar parameters (task switching) do not appear to be significantly influenced by ginkgo supplementation.
	<a href="#">Theanine</a>	 Notable	- <a href="#">See study</a>	A single study that used 200 mg of Suntheanine® observed a notable improvement in attentional task performance in subjects with high anxiety, whereas subjects with low anxiety didn't see a notable improvement.
	<a href="#">CDP-choline</a>	 Minor	- <a href="#">See study</a>	There appear to be attention promoting effects of CDP-Choline, with the one study in adult women noting that 250-500mg was effective but 250mg was more effective.
	<a href="#">Centella asiatica</a>	 Minor	- <a href="#">See study</a>	An increase in attention has been noted which may be secondary to the treatment of anxiety (or the reductions in stress and depression that also occurred due to treating anxiety).
	<a href="#">D-Serine</a>	 Minor	- <a href="#">See study</a>	There was an increase in sustained attention during cognitive testing in otherwise healthy subjects given 2.1g D-serine prior to testing, as assessed by CPT-IP.
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in attention has been noted to be secondary to reductions in the symptoms of chronic fatigue

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Modafinil</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There appears to be somewhat of an increase in subjective attention with modafinil secondary to its arousal promoting effects
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	Attention processing on trail making tests appears to be increased.
	<a href="#">Phosphatidylserine</a>	 Minor	- <a href="#">See study</a>	The improvement in attention is associated with reducing the symptoms of attention deficit, an increase in attention outright has not yet been demonstrated
	<a href="#">Pycnogenol</a>	 Minor	- <a href="#">See study</a>	An improvement in attention has been noted, possibly secondary to improvements in general cognition, in students during prolonged academic testing
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	No effect on attention during sleep deprivation.
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Fish oil supplementation in otherwise healthy adults has failed to significantly influence attention processing
	<a href="#">Marijuana</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Tolerant users do not experience any attention reduction when inhaling marijuana.
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	Despite the reduction in alertness, no significant influence on sustained attention tests
	<a href="#">Melissa officinalis</a>	-	- <a href="#">See study</a>	Despite the decrease in alertness seen with lemon balm, there does not appear to be any alterations in intentional attention
	<a href="#">Red Clover Extract</a>	-	- <a href="#">See study</a>	No significant influence on attention processing in older women in a postmenopausal state with supplementation of red clover isoflavones.


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rhodiola Rosea</a>	-	- <a href="#">See study</a>	No significant influences on attention
	<a href="#">S-Adenosyl Methionine</a>	-	- <a href="#">See study</a>	No significant alterations in attention in persons given SAME in conjunction with their SSRI antidepressant medication
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Studies suggest an improvement in people cognitive impairment or bipolar disorder with the use of ashwagandha root extract.
	<a href="#">Peppermint</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although there is no influence acutely in cognitive testing, there appears to be improvements in sustained attention processing with prolonged testing (10-40 minutes) with the aroma of peppermint. Suggesting an anti-fatigue effect.
	<a href="#">Pueraria lobata</a>	 Minor	- <a href="#">See study</a>	Small boost in attention in menopausal women (independent of reductions in symptoms of menopause); needs to be reinvestigated
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	No apparent effect from acute consumption in one study.
	<a href="#">Iron</a>	-	- <a href="#">See study</a>	One study didn't find an effect in iron-deficient but non-anemic participants. This isn't a systematic assessment of studies.
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No apparent difference between diets in one study.
	<a href="#">Nicotine</a>	-	- <a href="#">See study</a>	No significant influence on attention in otherwise healthy persons







# B-Cell Count

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	The overall quantity of B lymphocytes does not appear to be altered with fish oil supplementation
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	The overall count of B cells in response to supplementation does not differ between colostrum and whey protein, both seeming to be without any effect.
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	Overall B-cell count does not appear to be influenced with supplementation of hesperidin.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Vitamin E does not appear to influence B cell count relative to placebo.

Back to: [Supplements](#) | [Health Outcomes](#)

# Bilirubin


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Hoodia gordonii</a>	 Minor	- <a href="#">See study</a>	The increase in bilirubin seen with hoodia is thought to be a biomarker of possible hepatotoxicity, although it was not met with hemolysis (usually accompanies)
	<a href="#">Picrorhiza kurroa</a>	 Minor	- <a href="#">See study</a>	Supplemental <i>picrorhiza kurroa</i> can reduce bilirubin in a model of acute viral hepatitis, although no comparisons to reference drugs have yet been made.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No significant interactions with bilirubin concentrations in serum.
	<a href="#">Cordyceps</a>	-	- <a href="#">See study</a>	
	<a href="#">Creatine</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Nigella sativa</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Despite treating the viral load of hepatitis C, no significant changes in serum bilirubin exist.
	<a href="#">S-Adenosyl Methionine</a>	-	- <a href="#">See study</a>	No significant alterations in serum bilirubin seen with supplementation

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Serum bilirubin does not appear to be influenced with supplementation of vitamin E relative to placebo.
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	- <a href="#">See study</a>	One study in dyslipidemics found an increase in bilirubin associated with niacin supplementation.
	<a href="#">Curcumin</a>	-	<b>Low</b> <a href="#">See all 3 studies</a>	It's unclear if it has much of an effect from the limited research.
	<a href="#">Ketogenic diet</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Unclear effects from 2 studies. One found a reduction but wasn't controlled.
	<a href="#">Tinospora cordifolia</a>	-	- <a href="#">See study</a>	The reduction in bilirubin seen with this herb failed to reach statistical significance when used in a clinical setting.

Back to: [Supplements](#) | [Health Outcomes](#)






# Bleeding Time

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	When supplemented by itself, vitamin E does not appear to significantly influence bleeding time. This differs from a combination of vitamin E and coumarin based anticoagulants (such as warfarin) where an adverse interaction may occur.

Back to: [Supplements](#) | [Health Outcomes](#)

# Blood Acidity

Blood Acidity is a way of referring to the pH of the blood, and while the blood tends to be resilient to large changes some supplements may slightly influence pH. Overly large deviations in pH are associated with metabolic abnormalities.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sodium Bicarbonate</a>	 Notable	<b>Very High</b> <a href="#">See all 46 studies</a>	Although the magnitude of decrease is somewhat minor, this is due to blood pH being highly regulated in the body. acidity appears to be reliably reduced following supplementation of 300mg/kg sodium bicarbonate
	<a href="#">Colostrum</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	While one study noted an increase in buffering capacity of the blood (reduction in acidity), this observation failed to be replicated in another study and both failed to find an ergogenic effect thought to occur after such an increase in buffer capacity.

Back to: [Supplements](#) | [Health Outcomes](#)

# Blood Flow








Blood flow is a measure of blood circulation, and is independent of blood pressure. It can be increased either by reducing atherosclerotic plaque, or producing nitric oxide.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cocoa Extract</a>	 Notable	<b>Very High</b> <a href="#">See all 20 studies</a>	Blood flow appears to be increased in the body very reliably as assessed by <i>flow-mediated vasodilation</i> (FMD) by around 2%, affecting both healthy and unhealthy people. There may also be an increase in arterial blood flow which is less reliable.
	<a href="#">Pycnogenol</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	An improvement in nitric oxide dependent blood flow appears to occur following procyanidin supplementation which has been noted in both unhealthy persons as well as healthy controls; there does not appear to be a <b>per se</b> hypotensive effect either.
	<a href="#">Arginine</a>	 Minor	<b>Low</b> <a href="#">See all 6 studies</a>	May increase blood flow secondary to activating nitric oxide, but due to the unreliability of increasing nitric oxide there is also unreliability in how arginine increases blood flow
	<a href="#">Centella asiatica</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Blood flow appears to be increased alongside improvements in microcirculation seen in persons with impaired venous insufficiency being treated with <i>centella asiatica</i>
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Appears to increase blood flow in metabolic conditions characterized by both insufficient blood flow and an excess of oxidative stress.
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See all 7 studies</a>	Ginkgo biloba has shown both vasodilatory effects (via nitric oxide metabolism) and some possible constrictive effects, depending on the context of supplementation.
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	Appears to somewhat increase blood flow
	<a href="#">Vitamin C</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	An increase in blood flow is seen in instances of impaired blood flow (smoking, obesity, etc.) which may be due to preservation of nitric oxide function (via reducing oxidation thereof); this is a phenomena general to antioxidants and not unique to Vitamin C

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See all 3 studies</a>	Similar to blood pressure, blood flow is differentially affected by vitamin E supplementation thought to be due to whether it is acting as a prooxidant or an antioxidant.
	<a href="#">Fish Oil</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	Although there is some counter evidence to suggest an improvement of small magnitude, most evidence suggest no significant changes in blood flow
	<a href="#">Grape Seed Extract</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in blood flow appears to be reliable following ingestion of high dose procyanidins; this is likely the same increase seen with <a href="#">Pycnogenol</a> due to the same molecules being bioactive
	<a href="#">Hesperidin</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in blood flow has been noted in persons with metabolic impairments, and was fairly notable in the lone study due to reaching 24.5% over placebo.
	<a href="#">Taurine</a>	 Notable	- <a href="#">See study</a>	The improvement in blood flow seen in type 1 diabetics was sufficient to normalize to a non-diabetic control group
	<a href="#">Alpha-Lipoic Acid</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May increase blood flow, although not the a remarkable degree. Possibly secondary to antioxidative effects
	<a href="#">Caffeine</a>	 Minor	- <a href="#">See study</a>	An increase in blood flow (Flow mediated vasodilation) has been noted with caffeine.
	<a href="#">Citrulline</a>	 Minor	- <a href="#">See study</a>	An increase in blood flow is noted with citrulline supplementation in persons with impaired blood flow
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	An increase in blood flow has been noted with curcumin supplementation
	<a href="#">Dehydroepiandrosterone</a>	 Minor	- <a href="#">See study</a>	Possible increases in blood flow associated with DHEA supplementation

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ketogenic diet</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Flow-mediated dilation is sometimes worsened on a ketogenic diet and improved on a low-fat diet, although this isn't always the case in studies.
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	Increases in blood flow appear to occur following carnitine supplementation, which may be related to the increases in nitrate
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	Has been noted to increase blood flow at rest
	<a href="#">Panax ginseng</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in blood flow has been noted with panax ginseng supplementation
	<a href="#">Psyllium</a>	 Minor	- <a href="#">See study</a>	Study noted an improved augmentation index by 22% alongside a reduction in blood pressure, mechanisms unknown and no reference drug for comparison.
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	An improvement in blood flow (secondary to <a href="#">nitric oxide</a> interactions) has been noted with low dose resveratrol, possibly relevant to high wine and grape product consumption
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	In persons at risk for type II diabetics, chromium supplementation failed to improve blood flow relative to placebo.
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in blood flow.
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No significant influence on blood flow noted with reishi ingestion

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Garlic</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Minimal studies have directly measured blood flow associated with garlic, and the best evidence currently suggests that basal flow mediated vasodilation is unaffected; there is likely an effect, although most studies indirectly measure blood pressure.
	<a href="#">Grapefruit</a>	-	- <a href="#">See study</a>	No significant influence on blood flow noted
	<a href="#">Marijuana</a>	-	- <a href="#">See study</a>	Despite alterations in cardiac output and diastolic blood pressure, acute usage of marijuana does not appear to influence the flow of blood relative to control.
	<a href="#">Nitrate</a>	-	- <a href="#">See study</a>	No significant influence on blood flow in studies that use flow-mediated vasodilation
	<a href="#">Policosanol</a>	-	- <a href="#">See study</a>	No significant influence detected on blood flow
	<a href="#">Red Clover Extract</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	The reduction in arterial stiffness (increase in arterial compliance) sometimes seen with supplementation of red clover extract does not necessarily coincide with improved blood flow.
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin B3 (Niacin)</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	While one study noted an increase in blood flow in subjects on medication who were given additional niacin, other studies do not find an interaction with niacin and blood flow.
	<a href="#">Whey Protein</a>	-	- <a href="#">See study</a>	Insufficient evidence to support a role of whey protein in improving blood flow
	<a href="#">Zinc</a>	-	- <a href="#">See study</a>	Blood flow does not appear to be modified with supplementation of zinc.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Artichoke Extract</a>	 Minor	- <a href="#">See study</a>	The increase in blood flow was relatively minor in magnitude, possibly related to antioxidant effects.
	<a href="#">Creatine</a>	 Minor	- <a href="#">See study</a>	One study has found that creatine can increase blood flow to the calf and leg when combined with resistance training in healthy men. Creatine alone was found to have no effect.
	<a href="#">Grape juice</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Flow-mediated dilation may be improved by grape juice, though more research is needed.
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant influences on blood flow and vasodilation











Back to: [Supplements](#) | [Health Outcomes](#)

# Blood Glucose

How much glucose, or blood sugar, is floating around in your blood. Fasting blood glucose is measured during a fasted state and Postprandial blood glucose after a meal. Both used as indicators of diabetes risk.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chromium</a>	 Minor	<b>Very High</b> <a href="#">See all 29 studies</a>	In looking at the entirety of the data on type II diabetic persons, there does appear to be a mild reduction in fasting blood glucose despite no apparent changes in insulin sensitivity or HbA1c. No significant or reliable effect in non-diabetic persons.
	<a href="#">Panax ginseng</a>	 Minor	<b>Moderate</b> <a href="#">See all 10 studies</a>	A decrease in fasting blood glucose has been noted over time with standard supplemental doses of panax ginseng in diabetics, with this dose being ineffective in altering the blood glucose of non-diabetics; high (20g) doses may acutely reduce blood glucose in healthy persons
	<a href="#">Fish Oil</a>	-	<b>High</b> <a href="#">See all 19 studies</a>	No significant alterations in fasting glucose are seen over time with fish oil supplementation
	<a href="#">Berberine</a>	 Strong	<b>Very High</b> <a href="#">See all 4 studies</a>	The usage of berberine in reducing blood glucose, according to the most recent meta-analysis, is comparable to the oral hypoglycemic drugs Metformin or Glibenclamide; this suggests berberine is one of the more effective supplements for blood glucose reductions.
	<a href="#">Ketogenic diet</a>	 Notable	<b>Moderate</b> <a href="#">See all 22 studies</a>	In both short and long-term trials, a keto diet has been shown to notably reduce fasting blood glucose independently of weight loss when compared with various other control diets (usually low-fat diets). Particularly in those with elevated levels to begin with. Glycemic variability may be reduced,, and average glucose levels throughout the day will tend to be lower. Ketogenic diets tend to worsen carbohydrate tolerance during postprandial testing.
	<a href="#">Salacia reticulata</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	The decrease in blood glucose is acute due to blocking carbohydrate absorption (no studies on long-term glucose influence) and standard supplemental doses range between 20-25% inhibition of carbohydrate absorption, with is quite reliable and significant.
	<a href="#">Caffeine</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There may be an acute increase in blood glucose when caffeine is paired with a carbohydrate containing meal, but long term ingestion of caffeine does not appear to adversely influence glucose (only acutely)




















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	No apparent influence on fasting blood glucose, but an 11-22% reduction in the postprandial spike.
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See all 27 studies</a>	The reduction in glucose is likely small and inconsistent overall, and most likely to be meaningful for people with type 2 diabetics. It is unlikely that plain turmeric has notable effects, and high potency curcuminoids are more likely to have an effect.
	<a href="#">Inositol</a>	 Minor	<b>Moderate</b> <a href="#">See all 9 studies</a>	Blood glucose can be reduced in women with PCOS secondary to treating that condition.
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	A decrease in blood glucose has been noted with carnitine supplementation
	<a href="#">Magnesium</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	There appears to be some reduction in blood glucose in diabetics and persons with elevated glucose with magnesium supplementation, which may be secondary to better insulin functioning from the pancreas. The reduction in glucose is not overly impressive and is somewhat unreliable, and increases in glucose have been noted to occur during exercise when magnesium is supplemented in healthy persons
	<a href="#">Psyllium</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Reductions in blood glucose seen with psyllium seem to occur reliably in persons with high blood glucose, but are transient benefits and not of a remarkable magnitude.
	<a href="#">Stevia</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	There may be a very small glucose reducing effect of stevia consumption, but it does not appear to apply to everybody and is unreliable. Requires more evidence.
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	There appears to be an increase in fasting glucose concentrations among users of pharmacological doses of niacin when compared to controls, thought to be related to insulin resistance.
	<a href="#">Vitamin C</a>	 Minor	- <a href="#">See all 20 studies</a>	Studies are very mixed, however, there appears to be a modest benefit to fasting glucose in type 2 diabetics. More research is needed before having great confidence in this effect. The vast majority of studies don't treat this outcome as their primary outcome and more glucose-specific research is needed.




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Zinc</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	A reduction in blood glucose has been observed alongside improvements in insulin sensitivity in obese persons who may have been zinc deficient.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Blueberry</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	Although the leaf extract has once been associated with a reduction in blood glucose, the fruits do not appear to inhibit carbohydrate absorption nor reduce fasting glucose concentrations.
	<a href="#">Citrulline</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	There do not appear to be any significant influences of supplemental citrulline on blood glucose concentrations
	<a href="#">Cocoa Extract</a>	-	<b>High</b> <a href="#">See all 10 studies</a>	It is possible that the improvement in insulin sensitivity could beneficially influence blood glucose, but most studies assessing diabetic or healthy subjects find no difference in fasting glucose concentrations. The increase in serum glucose in response to an oral glucose tolerance test may be attenuated somewhat.
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Very High</b> <a href="#">See all 9 studies</a>	Insufficient evidence to support reliable increases in blood glucose
	<a href="#">Dehydroepiandrosterone</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Most evidence suggests no alterations to fasting blood glucose levels
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No known alterations in fasting blood glucose concentrations or glucose concentrations during exercise seen with betaine supplementation.
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	Vitamin E does not appear to influence blood glucose in otherwise healthy persons nor in diabetics (type I or type II) relative to placebo.
	<a href="#">Gynostemma pentaphyllum</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Decrease in blood glucose in diabetics given gynostemma tea or root appears to be greater than other supplements; currently no studies in otherwise healthy persons.











LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Apple Cider Vinegar</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	There's an inconsistent effect on blood sugar after meals, with the most plausible explanation being the baseline insulin sensitivity of the participants. Those with notable insulin resistance are more likely to see a reduction than those with good glucose clearance. One study looked at fasting levels and noted a benefit in people with type 2 diabetes while another didn't find a notable effect, but fasting levels were normal so this is unsurprising.
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A small decrease in blood glucose has been noted with ashwagandha, but evidence for people with type 2 diabetes is lacking.
	<a href="#">Bladderwrack</a>	 Minor	- <a href="#">See study</a>	Appears somewhat potent at acutely reducing blood glucose following a meal (possibly by inhibiting absorption) but no long term studies.
	<a href="#">Capsaicin</a>	 Minor	- <a href="#">See study</a>	A possible reduction in blood glucose may occur secondary to pancreatic stimulation with high doses of capsaicin
	<a href="#">Chlorogenic Acid</a>	 Minor	- <a href="#">See study</a>	Not overly remarkable reductions in blood glucose
	<a href="#">Citrullus colocynthis</a>	 Minor	- <a href="#">See study</a>	May decrease blood glucose in diabetics at low doses, but the evidence at this moment in time is limited (due to differences between groups at the start of the study)
	<a href="#">Ecklonia cava</a>	 Minor	- <a href="#">See study</a>	May reduce blood glucose levels, not overly potent in doing so
	<a href="#">Eleutherococcus senticosus</a>	 Minor	- <a href="#">See study</a>	A decrease in glucose consumption during exercise (without affecting metabolic rate and due to an increase in fat oxidation) has once caused an acute lowering of glucose. The magnitude is quite minor, and there is no evidence to assess the effects of eleuthero on fasting blood glucose or in diabetes management
	<a href="#">Fenugreek</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Appears to result in a decrease of blood glucose following ingestion of fenugreek

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Glutamine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in blood glucose may occur from direct conversion of glutamine into glucose following oral ingestion
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	A decrease in fasting blood glucose is noted with green tea catechin ingestion
	<a href="#">Irvingia gabonensis</a>	 Minor	- <a href="#">See study</a>	May reduce fasting blood glucose following prolonged supplementation; confounded with both weight loss (seen in trials) and industry influence
	<a href="#">Olive leaf extract</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There appears to be significant interactions with olive leaf and diabetes, and research is too preliminary to come to conclusions. Olive leaf may reduce blood glucose in diabetics only
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	A decrease in blood glucose has been noted, practical significance unknown
	<a href="#">Rooibos</a>	 Minor	- <a href="#">See 2 studies</a>	A decrease may occur in persons at risk of cardiovascular disease with daily ingestion of Rooibos tea, although at least one study noted an inexplicable acute increase in otherwise healthy persons (faded within an hour of ingestion).
	<a href="#">Royal Jelly</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May slightly reduce blood glucose in otherwise healthy older persons, but not to a remarkable degree
	<a href="#">Salvia hispanica</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Has been implicated in reducing postprandial glucose while having no significant influence on fasting glucose levels.
	<a href="#">Sea Buckthorn</a>	 Minor	- <a href="#">See study</a>	An increase in glucose has been noted with sea buckthorn, but it was from one study which had the control group (coconut oil) also raise blood glucose; this may just be due to added calories.
	<a href="#">Spirulina</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Reductions in blood glucose seen are not overly remarkable or noteworthy

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">7-Keto DHEA</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in blood glucose
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose relative to control.
	<a href="#">Alpha-Lipoic Acid</a>	↓↓↓	- <a href="#">See study</a>	A small decrease in blood glucose is noted with oral supplementation of ALA, related to the glucose disposal properties
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See study</a>	
	<a href="#">Arginine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fasting blood glucose concentrations even in persons with impaired glucose tolerance
	<a href="#">Artichoke Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There is still a possibility that artichoke extract is able to aid the blood glucose of diabetics, but currently the best evidence does not support this conclusion
	<a href="#">Biotin</a>	-	- <a href="#">See study</a>	
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose levels
	<a href="#">Branched Chain Amino Acids</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	There does not appear to be a likely alteration in blood glucose concentrations <i>per se</i> with BCAA supplementation, but the increased fat oxidation may attenuate the decline in glucose seen during prolonged exercise (which would appear to be a relative increase at later time points)
	<a href="#">Coenzyme Q10</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Insufficient evidence to support changes in blood glucose with CoQ10 supplementation








LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">ECA</a>	-	- <a href="#">See study</a>	No significant alterations in blood glucose noted with ECA supplementation
	<a href="#">Eucommia ulmoides</a>	-	- <a href="#">See study</a>	
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	Supplementation of garlic does not appear to significantly reduce fasting blood glucose in persons with metabolic syndrome.
	<a href="#">Ginkgo biloba</a>	-	- <a href="#">See study</a>	In diabetics, ginkgo does not appear to significantly reduce blood glucose
	<a href="#">Grape juice</a>	-	<b>Moderate</b> <a href="#">See all 8 studies</a>	It's unlikely that, compared to an isocaloric amount of sugar, grape juice reduces blood glucose levels. However, the vast majority of the studies were not in people with full-blown hyperglycemia, and participants weren't selected on this basis, so the effects on diabetics are unknown.
	<a href="#">Green Coffee Extract</a>	-	- <a href="#">See study</a>	No significant influence noted on fasting glucose levels (may reduce postprandial slightly)
	<a href="#">Hesperidin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There are no known significant alterations in blood glucose seen with supplementation of hesperidin
	<a href="#">Hibiscus sabdariffa</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in blood glucose noted
	<a href="#">Japanese Knotweed</a>	-	- <a href="#">See study</a>	Blood glucose appears to be unaffected following ingestion of Japanese knotweed in otherwise healthy lean persons
	<a href="#">Krill Oil</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactobacillus casei</a>	-	- <a href="#">See study</a>	
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose levels
	<a href="#">Nicotine</a>	-	- <a href="#">See study</a>	No significant influence on fasting glucose levels
	<a href="#">Nigella sativa</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	Although the best evidence to date shows no change in blood glucose, these studies were not structured to assess the influence on diabetics; in diabetics, there appears to be a significant reduction in glucose.
	<a href="#">Pterostilbene</a>	-	- <a href="#">See study</a>	Supplementation of pterostilbene in hypercholesterolemic adults does not appear to influence blood glucose relative to control.
	<a href="#">Pycnogenol</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	No significant alterations in blood glucose are detected with quercetin supplementation.
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fasting blood glucose concentrations are known with supplementation of red clover extract.
	<a href="#">Rose Hip</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Both fasting and postprandial glucose in persons given prolonged rose hip supplementation is not affected relative to placebo.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sodium Bicarbonate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant effect on blood glucose concentrations at rest or during exercise is seen with sodium bicarbonate supplementation
	<a href="#">Tauroursodeoxycholic Acid</a>	-	- <a href="#">See study</a>	No significant influence on fasting glucose levels
	<a href="#">Ursolic Acid</a>	-	- <a href="#">See study</a>	Ursolic acid with meals in athletic subjects has failed to alter fasting glucose concentrations relative to placebo.
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	No significant influence on fasting blood glucose levels
	<a href="#">Vitamin K</a>	-	- <a href="#">See study</a>	Despite an improvement in insulin sensitivity, the lone study failed to note any significant changes in blood glucose concentrations in a fasted state
	<a href="#">Whey Protein</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No significant influence on fasted blood glucose levels, may decrease postprandial glucose levels (relative to no protein ingestion) due to the release of insulin
	<a href="#">Yacon</a>	-	- <a href="#">See study</a>	No significant influence on fasting blood glucose in nondiabetic obese women who consume Yacon relative to placebo, despite weight loss.
	<a href="#">Banaba Leaf</a>	 Notable	- <a href="#">See study</a>	The reduction in blood glucose appeared to range from 20-30%, which is more than usually seen with dietary supplements.
	<a href="#">Emblica officinalis</a>	 Notable	- <a href="#">See study</a>	Preliminary evidence suggested that 3g of the fruits (a fairly reasonable dosage) was as effective as 5mg glibenclamide twice daily
	<a href="#">Aronia melanocarpa</a>	 Minor	- <a href="#">See study</a>	Requires more studies before conclusions can be made, appears to simply be exerting anti-oxidant effects.

















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Asteracantha longifolia</a>	 Minor	- <a href="#">See study</a>	Appears to reduce the spike and overall exposure to glucose following an oral glucose tolerance test in both healthy and diabetic adults
	<a href="#">Colostrum</a>	 Minor	- <a href="#">See study</a>	Preliminary trial in type II diabetics noted a reduction in fasting glucose concentrations to 10-14% with four weeks of colostrum supplementation; no control was used for reference.
	<a href="#">HMB</a>	 Minor	- <a href="#">See study</a>	A lone study that is underpowered suggest a decrease in blood glucose (measured by chance during a blood panel); not enough robust evidence supports a reduction in blood glucose but it cannot be ruled out
	<a href="#">Holy Basil</a>	 Minor	- <a href="#">See study</a>	May reduce blood glucose, with the potency demonstrated (fairly good) limited by the quality of the evidence currently
	<a href="#">Moringa oleifera</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a decrease in postprandial blood glucose following a meal in type II diabetics (21%), and this hypoglycemia may apply to non-diabetics based on rodent research, and appears to increase with time.
	<a href="#">Ruscus aculeatus</a>	 Minor	- <a href="#">See study</a>	A reduction reaching 10.2% blood glucose has been noted with continual supplementation of <i>ruscus aculeatus</i> in type II diabetic persons in this non-placebo controlled study; requires replication.
	<a href="#">Tribulus terrestris</a>	 Minor	- <a href="#">See study</a>	One randomized, controlled trial found a modest reduction in fasting and 2 hour postprandial glucose when taking 1 g/d of a Tribulus extract
	<a href="#">Vanadium</a>	 Minor	- <a href="#">See study</a>	A decrease in blood glucose has been noted in type II diabetics which is thought to be secondary to reducing hepatic synthesis of glucose
	<a href="#">Yerba mate</a>	 Minor	- <a href="#">See study</a>	A slight decrease in blood glucose has been noted with Mate consumption in type II diabetics; no evidence in otherwise healthy persons
	<a href="#">Ginger</a>	-	- <a href="#">See study</a>	No significant alterations in blood glucose seen with ginger ingestion

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Medium-chain triglycerides</a>	-	- <a href="#">See study</a>	Insufficient evidence to support alterations in blood glucose.
	<a href="#">Pyrroloquinoline quinone</a>	-	- <a href="#">See study</a>	Short term ingestion of PQQ supplementation in otherwise healthy adults has failed to significantly influence serum glucose concentrations.
	<a href="#">Rubus coreanus</a>	-	- <a href="#">See study</a>	No significant alterations in fasting blood glucose are noted with daily berry consumption in otherwise healthy persons.
	<a href="#">Safflower Oil</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose in diabetics
	<a href="#">Sulbutiamine</a>	-	- <a href="#">See study</a>	No significant influence on blood glucose in diabetics detected
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	- <a href="#">See study</a>	



Back to: [Supplements](#) | [Health Outcomes](#)

# Blood Pressure






A relation of how much blood is in your veins and how much diameter the vein is given to accommodate the blood, and measured in systolic over diastolic (average of 120/80). Many supplements interact, either acutely or chronically, with Blood Pressure. HTML/HTML

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cocoa Extract</a>	 Minor	- <a href="#">See all 23 studies</a>	While not affecting everybody, there appears to be a decrease in blood pressure when assessing mildly hypertensive people; the increase in blood flow seen in healthy people is not accompanied by a decrease in blood pressure, while the xanthine (caffeine) content of chocolate products may cause a mild and transient increase in blood pressure in some subjects.
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See all 8 studies</a>	May decrease blood pressure in persons with high blood pressure, but does not appear to have efficacy in persons with normal blood pressure
	<a href="#">Garlic</a>	 Notable	<b>High</b> <a href="#">See all 12 studies</a>	Garlic supplementation appears to reduce blood pressure, and the magnitude is quite respectable in persons with hypertension (around 10 points systolic or 8-10%) whereas there is a smaller but present reduction in persons with normal blood pressure.
	<a href="#">Hibiscus sabdariffa</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	The decrease in blood pressure seen with roselle tea and supplements is notable and is greater than that seen with other supplements
	<a href="#">Magnesium</a>	 Notable	<b>Moderate</b> <a href="#">See all 9 studies</a>	There appears to be a significant reduction in blood pressure assuming one of two conditions is met, either the subject is low in magnesium levels in the body (deficient) or if the subject has elevated blood pressure (140/90 or above), with the latter not requiring a deficiency to precede the blood pressure reducing effects
	<a href="#">Nitrate</a>	 Notable	<b>Moderate</b> <a href="#">See all 7 studies</a>	Appears to be a fairly potent blood pressure reducing agent during periods of high blood pressure (at rest during disease states or during exercise in healthy persons) without having a reducing effect when blood pressure is normalized. There may be no effect on people on hypertensive medications, though.
	<a href="#">Olive leaf extract</a>	 Notable	<b>High</b> <a href="#">See all 4 studies</a>	One study assessing the potency in hypertensive persons noted it was comparable to Captopril, and olive leaf appears to be potent when it can reduce blood pressure. It does not appear to reduce blood pressure in normotensive persons, however

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Arginine</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Arginine has been implicated in reducing blood pressure, but the degree of reduction does not appear to be too remarkable and it is unreliable in doing so
	<a href="#">Caffeine</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Tends to increase blood pressure more than it doesn't, which is in part due to caffeine tolerance (naive users experiencing increases in blood pressure at higher rates) or genetics; the increase in blood pressure tends to be transient and low in magnitude
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Low</b> <a href="#">See all 6 studies</a>	There appears to be an interaction between CoQ10 and blood pressure, but it is not wholly reliable and uncertain whether this is at the level of the cardiac tissue or at the level of the endothelium (both plausible). Magnitude of reductions don't appear too remarkable.
	<a href="#">Curcumin</a>	 Minor	<b>High</b> <a href="#">See all 14 studies</a>	May decrease blood pressure, but more contextual evidence is required, such as enough studies to properly compare effects in hypertension, type 2 diabetes, and healthy people.
	<a href="#">Ephedrine</a>	 Minor	<b>Low</b> <a href="#">See all 5 studies</a>	There may be an acute increase in blood pressure seen with ephedrine intake, although this does not appear to be overly reliable; long-term usage of ephedrine does not seem to alter blood pressure, and may reduce it secondary to weight loss
	<a href="#">Grape Seed Extract</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The meta-analysis conducted noted a pooled reduction of 1.54mmHg systolic associated with standard doses of grape seed extract; something, but a small reduction.
	<a href="#">Inositol</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	There may be a slight decrease in blood pressure in women with PCOS who are having it treated with inositol therapy.
	<a href="#">Marijuana</a>	 Minor	- <a href="#">See all 9 studies</a>	A single use in a new user will increase diastolic blood pressure (no real influence on systolic), and this is subject to tolerance. Heavy users will not experience this acute increase anymore and may instead have a decrease in diastolic blood pressure.
	<a href="#">Melatonin</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	An acute decrease in blood pressure occurs following melatonin ingestion, but this decrease is temporary and abolished upon standing; likely not practically relevant in an ambulatory population
	<a href="#">Modafinil</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	There may be a slight increase in systolic blood pressure with acute usage of modafinil (when measured at its peak blood levels), although it does not appear to modify basal blood pressure values

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nigella sativa</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	The reduction in blood pressure is only seen in hypertensives and very mild (1-3mmHg), likely not practically relevant at all.
	<a href="#">Pycnogenol</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Pycnogenol has shown mixed effects on blood pressure in hypertensive subjects. While the majority of trials examined reported modest blood-pressure lowering effects, one randomized controlled trial found no effect on blood pressure. The mixed results suggest that pycnogenol blood-pressure lowering effects may be dependent on the underlying cause of hypertension. More research is needed to determine which individuals with hypertension may benefit from supplementation.
	<a href="#">Stevia</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	There appears to be a reduction in blood pressure associated with stevia only in persons with high blood pressure, this may be a transient effect that is normalized upon supplement cessation.
	<a href="#">Vitamin D</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Some correlational and intervention studies note that higher serum vitamin D is associated with mildly lower blood pressure, although the evidence is somewhat conflicted and effects that have been found are rather small.
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See all 3 studies</a>	Blood pressure has been differentially affected by vitamin E supplementation, thought to be associated with whether it is an antioxidant or a prooxidant.
	<a href="#">Alpha-Lipoic Acid</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	The majority of evidence using intravenous or oral supplements fail to find an influence, and the one study to suggest a reduction was also confounded with weight loss (known to reduce blood pressure). It can be assumed that ALA has no significant influence on blood pressure even in studies where blood flow is altered
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	The majority of evidence does not support a role for chromium in reducing blood pressure any more than placebo.
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Does not appear to significantly influence blood pressure.
	<a href="#">Ginkgo biloba</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	Despite the influence on blood flow and circulation, there does not appear to be a significant influence on blood pressure

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hesperidin</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Overall, studies don't suggest a notable effect on blood pressure. Some studies have found small reductions, and one has found a large reduction, but the evidence is inconsistent. A meta-analysis didn't find a notable influence of dose or study duration. More research is needed, particularly in people with severe hypertension.
	<a href="#">L-Tyrosine</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	It is possible that Tyrosine can reduce blood pressure during stress, but the one study that noted this also noted a reduction in blood pressure in the stressed placebo; other studies have found no influence.
	<a href="#">Nicotine</a>	-	<b>Moderate</b> <a href="#">See all 4 studies</a>	Mixed effects on blood pressure
	<a href="#">Panax ginseng</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Although there may be a slight blood pressure reducing effect in persons with the highest blood pressure, overall there is not a significant reducing effect of panax ginseng
	<a href="#">Psyllium</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No real significant effect of psyllium on blood pressure directly, although there may be an insignificant reduction seen with correcting other parameters of metabolic syndrome.
	<a href="#">Quercetin</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No acute alterations in blood pressure following Quercetin supplementation
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	The one study in diabetics found a reduction in blood pressure, and due to no studies in hypertensives all other studies have failed to find an influence on blood pressure.
	<a href="#">1,3-Dimethylamylamine</a>	 Notable	- <a href="#">See study</a>	The increase in blood pressure with 1,3-DMAA was fairly notable and of concern, with 75mg paired with caffeine (common in preworkout supplements) increasing systolic by up to 20%.
	<a href="#">Chlorogenic Acid</a>	 Notable	- <a href="#">See study</a>	The decrease in systolic blood pressure with chlorogenic acid has reached 15 points systolic in hypertensives (150mmHg systolic initially) and appears to maintain at that level until supplement cessation.
	<a href="#">Green Coffee Extract</a>	 Notable	- <a href="#">See study</a>	Decrease in blood pressure noted with green coffee extract ingestion, due to the <a href="#">chlorogenic acid</a> component. Degree of reduction reached 10mmHg (from just above 145mmHg to just above 135mmHg) and is quite notable.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hoodia gordonii</a>	 Notable	- <a href="#">See study</a>	The increase in blood pressure noted with <i>hoodia gordonii</i> in otherwise healthy persons reached 5.9-15.9mmHg systolic and 4.6-11.5mmHg diastolic; a worrying increase
	<a href="#">Spirulina</a>	 Notable	<b>Moderate</b> <a href="#">See all 3 studies</a>	Insufficient evidence to fully evaluate the effects on blood pressure, but given how 6 weeks supplementation reduced both systolic and diastolic in <i>nonhypertensive</i> persons by about 11/6 points it is notable
	<a href="#">Blueberry</a>	 Minor	- <a href="#">See all 3 studies</a>	A decrease in blood pressure has been noted in persons at risk for cardiovascular disease (6% systolic and 4% diastolic), but this may be limited to high risk individuals only.
	<a href="#">CDP-choline</a>	 Minor	- <a href="#">See study</a>	One study in older adults noted, as a side-effect, that systolic blood pressure was slightly reduced
	<a href="#">Chlorella</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Might reduce blood pressure in some instances but does not appear remarkably potent.
	<a href="#">Citrulline</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	A decrease in blood pressure is noted secondary to increasing plasma arginine (and thus increasing nitric oxide), but this blood pressure reduction may only occur in those with hypertension or prehypertension
	<a href="#">Ecklonia cava</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A possible reduction in blood pressure in overweight persons with supplementation of ecklonia cava
	<a href="#">Fucoxanthin</a>	 Minor	- <a href="#">See study</a>	In obese, premenopausal women, fucoxanthin may lower blood pressure; this is confounded with overall weight loss, however
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	Possible decrease in blood pressure noted with green tea catechin consumption
	<a href="#">Irvingia gabonensis</a>	 Minor	- <a href="#">See study</a>	A decrease in blood pressure has been noted with weight loss associated with this supplement; no inherent blood pressure reduction has been demonstrated

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	May reduce blood pressure
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	A reduction in blood pressure is noted alongside reduced autonomic nervous system activation and increased relaxation; this is likely to not affect the body over the long term
	<a href="#">Microlactin</a>	 Minor	- <a href="#">See study</a>	Has been noted to reduce blood pressure in persons with hyperlipidemia
	<a href="#">Nattokinase</a>	 Minor	- <a href="#">See study</a>	A possible blood pressure reducing effect seen with nattokinase, notable but with high variability
	<a href="#">Policosanol</a>	 Minor	- <a href="#">See study</a>	Possibly a small effect in persons with high blood pressure.
	<a href="#">Pterostilbene</a>	 Minor	- <a href="#">See study</a>	Pterostilbene appears to reduce blood pressure in hypercholesterolemic adults, and the addition of grape seed extract (which mitigates adverse cholesterol effects) adds to the benefits to blood pressure.
	<a href="#">Pyruvate</a>	 Minor	- <a href="#">See study</a>	May reduce blood pressure in hyperlipidemics, relation to weight loss not known
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	Blood pressure has been reduced with resveratrol in persons with high blood pressure; influence on otherwise healthy persons unknown
	<a href="#">Rose Essential Oil</a>	 Minor	- <a href="#">See study</a>	A small reduction in blood pressure was noted, possibly secondary to reductions in CNS activity
	<a href="#">Rose Hip</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A mild (3.7%) decrease in systolic blood pressure has been noted in obese persons given supplementation of rose hip.

























LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	A decrease in blood pressure was noted in otherwise healthy (normotensive) men following 26 weeks of saffron supplementation at 60mg daily, although this was thought to possibly be related to chronic toxicity of the higher than normal dose.
	<a href="#">Salvia sclarea</a>	 Minor	- <a href="#">See study</a>	A decrease in systolic blood pressure resulted in response to clary sage aromatherapy, to a small degree and likely not able to exert long-term benefit (probably more indicative of short-term CNS depression)
	<a href="#">Sesamin</a>	 Minor	- <a href="#">See study</a>	A small decrease in blood pressure has been noted with sesamin supplementation
	<a href="#">Tribulus terrestris</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in blood pressure has been noted in hypertensive subjects in one study. Another larger study in normotensive subjects failed to find a significant change. More studies in hypertensive subjects are needed before confidence in the effect is warranted.
	<a href="#">Vitamin B2</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be a reduction in blood pressure in the same subjects who have a reduction in homocysteine, those with the MTHFR 677TT genetic mutation.
	<a href="#">Vitamin C</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	May attenuate the increase due to acute hyperglycemia or over the course of 4 months in type 2 diabetics, though the evidence is mixed and more research is needed.
	<a href="#">Yohimbine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to increase blood pressure, which may aid the proerectile effects (as it is an acute increase) but is a cardiovascular risk factor
	<a href="#">7-Keto DHEA</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in blood pressure following 7-keto supplementation.
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	No significant interaction with blood pressure during exercise has been noted with acute supplementation of alanylglutamine
	<a href="#">Anatabine</a>	-	- <a href="#">See study</a>	6-12mg anatabine does not appear to significantly influence blood pressure in otherwise healthy persons.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See study</a>	
	<a href="#">Ashwagandha</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	A small decrease in systolic and diastolic blood pressure has been noted in one study, but the evidence is very inconsistent and limited to people without hypertension.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Bacopa monnieri</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure has been noted with chronic bacopa ingestion
	<a href="#">Benfotiamine</a>	-	- <a href="#">See study</a>	No significant evidence to support alterations in blood pressure.
	<a href="#">Capsaicin</a>	-	- <a href="#">See study</a>	
	<a href="#">Centella asiatica</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure in otherwise healthy persons given an acute dosage.
	<a href="#">Citrullus colocynthis</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure with up to 300mg of the fruit extract daily over two months
	<a href="#">Coleus forskohlii</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on blood pressure was noted with coleus supplementation
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No significant interaction between CLA and blood pressure

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">ECA</a>	-	- <a href="#">See study</a>	No significant alterations in long term blood pressure, although acute spikes are possible due to the ephedrine and caffeine components
	<a href="#">Echinacea</a>	-	- <a href="#">See study</a>	No significant known effects on blood pressure
	<a href="#">Eucommia ulmoides</a>	-	- <a href="#">See study</a>	
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure noted with reishi
	<a href="#">Grape juice</a>	-	<b>Moderate</b> <a href="#">See all 7 studies</a>	While a small reduction in people with hypertension is possible, the research doesn't point to a reliable benefit.
	<a href="#">Ketogenic diet</a>	-	<b>Moderate</b> <a href="#">See all 9 studies</a>	Studies that find a greater reduction in blood pressure compared with the control group are studies where the ketogenic diet group experience greater weight loss. When calories are matched, there is generally no difference.
	<a href="#">Lactobacillus casei</a>	-	- <a href="#">See study</a>	
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Ornithine</a>	-	- <a href="#">See study</a>	No significant interactions with blood pressure
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant alterations in blood pressure noted with PS supplementation








LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rhodiola Rosea</a>	-	- <a href="#">See study</a>	No significant effects yet noted on blood pressure
	<a href="#">Rooibos</a>	-	- <a href="#">See study</a>	Despite ACE inhibition, Rooibos tea does not appear to significantly reduce blood pressure
	<a href="#">Royal Jelly</a>	-	- <a href="#">See study</a>	No significant alterations in blood pressure observed over long term supplementation with Royal Jelly
	<a href="#">Salvia hispanica</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on blood pressure noted with long term chia ingestion
	<a href="#">Sceletium tortuosum</a>	-	- <a href="#">See study</a>	Three weeks Kanna usage does not appear to influence blood pressure compared to placebo.
	<a href="#">Shilajit</a>	-	- <a href="#">See study</a>	No significant effect has been detected on blood pressure
	<a href="#">Sodium Bicarbonate</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure
	<a href="#">Synephrine</a>	-	- <a href="#">See study</a>	
	<a href="#">Taurine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Despite the improvement in blood flow, no significant influence on blood pressure
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant influence of betaine supplementation on blood pressure is currently known.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	In otherwise healthy subjects, niacin does not appear to influence blood pressure.
	<a href="#">Whey Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Insufficient evidence to support the blood pressure reducing effects of whey protein
	<a href="#">Yerba mate</a>	-	- <a href="#">See study</a>	No significant influences on blood pressure have been noted (although this may be due to it being underresearched; Mate may follow the same motifs as caffeine ingestion)
	<a href="#">Zinc</a>	-	- <a href="#">See study</a>	Blood pressure does not appear to be modified with zinc supplementation.
	<a href="#">Eclipta alba</a>	 Notable	- <a href="#">See study</a>	Decreases of blood pressure in unhealthy persons using eclipta alba have occurred by 15% (mean arterial pressure)
	<a href="#">Licorice</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	Has the potential to increase blood pressure secondary to increasing cortisol; this is notable as it seems hypertensives are at greater risk from an adverse reaction to high dose licorice and as such should exert caution when using this herb (related to the glycyrrhizin content, and deglycyrrhizinated supplements should not have the same risk)
	<a href="#">Berberine</a>	 Minor	- <a href="#">See study</a>	One study showed a slight decrease in systolic blood pressure only in people with the metabolic syndrome who were given berberine 0.5g three times a day for three months.
	<a href="#">Kava</a>	 Minor	- <a href="#">See study</a>	One study has noted a reduction in blood pressure associated with kava, of minor magnitude
	<a href="#">Tetradecyl Thioacetic Acid</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A slight reduction in blood pressure has been noted in dyslipidemic obese men with TTA supplementation
	<a href="#">Vitamin B1</a>	 Minor	- <a href="#">See study</a>	In instances where thiamine is deficient, replenishment of thiamine appears to cause a modest decrease in blood pressure.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Apple Cider Vinegar</a>	-	- <a href="#">See 2 studies</a>	While one study found a modest reduction with 30 ml (which was more effective than 15), another study failed to find a greater reduction with 20 ml than a placebo. Much more research is needed before knowing if and when apple cider vinegar may have a reliable effect on blood pressure.
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure
	<a href="#">Calcium</a>	-	- <a href="#">See study</a>	
	<a href="#">Cissus quadrangularis</a>	-	- <a href="#">See study</a>	In otherwise healthy athletic men, there is no significant influence of supplementation over eight weeks on blood pressure.
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Vanadium</a>	-	- <a href="#">See study</a>	No significant influence on blood pressure noted






Back to: [Supplements](#) | [Health Outcomes](#)

# Body Fat

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Apple Cider Vinegar</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	One study on obese participants found a small reduction over 4 weeks with doses of 15 and 30 ml, but not a placebo. The greater reduction was seen in the 30 ml group. While both apple cider vinegar groups reported a greater reduction in energy intake than the placebo group, the low-dose group reported the greatest reduction. It's important to note that these records can be inaccurate.
	<a href="#">Ashwagandha</a>		- <a href="#">See study</a>	In one study, body fat percentage was reduced by 0.6% after 12 weeks in a mixed-weight group. The placebo group so no notable change. Weight loss wasn't the focus of the study and more studies are needed.
	<a href="#">Curcumin</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No apparent effect in 2 short-term studies.
	<a href="#">Rose Hip</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No apparent effect on body weight over the course of 4 months.

Back to: [Supplements](#) | [Health Outcomes](#)

# Body Temperature

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	A decrease in body temperature is seen with lavender ingestion
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	In assessing the effects of colostrum on gut permeability during exercise (secondary to an increase in body heat), colostrum benefited permeability without modifying body heat.
	<a href="#">Marijuana</a>	-	- <a href="#">See study</a>	No significant influence on body temperature.
	<a href="#">Ashwagandha</a>	-	- <a href="#">See study</a>	No apparent effect in one 8-week study.

Back to: [Supplements](#) | [Health Outcomes](#)



# Bone Mineral Density







Bone mineral density (BMD) is the density of mineral in bone tissue (more mass in the same area causing an increase in density), and is thought to reflect structural integrity of bones. Improving BMD reduces the risk of osteoporosis and falls in the elderly.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin K</a>	 Notable	<b>Moderate</b> <a href="#">See all 15 studies</a>	There appears to be a <i>relative</i> increase in bone mineral density associated with vitamin K supplementation, due to attenuating the rate of bone loss in older individuals. Although it is significant overall in meta-analyses, it is quite unreliable and similar in potency to vitamin D when it occurs (less than estrogen replacement therapy)
	<a href="#">Creatine</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	There is limited evidence in favor of improvements in bone mineral density.
	<a href="#">Dehydroepiandrosterone</a>	-	<b>High</b> <a href="#">See all 7 studies</a>	Most evidence suggests no increase in bone mineral density, but this may be due to short trials (6 months). Longer trials note a small but unreliable increase in bone mineral density, so there may be a role of DHEA in bone health
	<a href="#">Red Clover Extract</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Beyond a small (less than 5%) attenuation in the rate of lumbar bone mineral density losses, standard supplementation does not appear to significantly influence bone mass or the rate of bone loss.
	<a href="#">Coleus forskohlii</a>	 Notable	- <a href="#">See study</a>	Definitely requires more evidence, but a DXA confirmed increase in bone mass in men over 12 weeks makes this notable (rather than an increase in bone mass in osteoporotic women over 2 years)
	<a href="#">Horny Goat Weed</a>	 Minor	- <a href="#">See study</a>	The rate of bone loss over 2 years has been noted to be reduced with icariin supplementation, although not to a remarkable degree
	<a href="#">Magnesium</a>	 Minor	- <a href="#">See study</a>	An increase in bone mineral density has been noted with magnesium supplementation
	<a href="#">Vitamin C</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The rate of bone mineral density loss over time in elder women appears to be reduced with dietary antioxidants, and as such applies to Vitamin C supplementation. The protective effect is not remarkably large

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	No evidence to support a link between CLA and alterations in bone mineral density
	<a href="#">HMB</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Studies that assess bone mineral density via DEXA, albeit short in duration and in athletes rather than populations at risk for osteoporosis, fail to find significant alterations in bone mineral density.
	<a href="#">Leucic Acid</a>	-	- <a href="#">See study</a>	No significant alterations in bone mineral density
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	
	<a href="#">Whey Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Currently no demonstrated benefit to bone mineral density, although protein in general appears to have a protective effect
	<a href="#">Yerba mate</a>	 Minor	- <a href="#">See study</a>	An <i>association</i> has been noted with increased bone mineral density and Mate consumption; insufficient evidence to suggest a causative role as no interventions exist
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant influence on bone mineral density
	<a href="#">Calcium</a>	-	- <a href="#">See study</a>	
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No significant influence on bone mineral density noted with fish oil supplementation
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No change in spine BMD after 2 years and considerable weight loss.















# Breast Cancer Risk

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant protective effect of 600 IU vitamin E every other day in otherwise healthy women for preventing the development of breast cancer.
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	An increase in breast cancer risk has been noted to barely pass statistical significance in an analysis of cancer development in elderly persons (75 years or older) given EGb-761 daily for a median 6.1 years.
	<a href="#">Vitamin D</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There is less risk of breast cancer associated with Vitamin D supplementation
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	Too preliminary to conclude any relation to breast cancer, but urinary melatonin metabolites are positively correlated with breast cancer risk (not applied yet to supplementation)

Back to: [Supplements](#) | [Health Outcomes](#)





# Breast Tenderness

Breast tenderness refers to the actual physical tenderness of breast tissue, usually associated with a small amount of pain. Breast tenderness tends to be a symptom of PMS or menopause, and supplements that reduce those symptoms help with breast tenderness.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitex agnus castus</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	The increase in breast tenderness during PMS is ameliorated with vitex supplementation; the degree of benefit correlating with general reductions in PMS symptoms. Notable as supplements catering to breast tenderness are rare.
	<a href="#">Krill Oil</a>	 Minor	- <a href="#">See study</a>	Secondary to reducing symptoms of PMS, a reduction in breast tenderness has been reported
	<a href="#">Serrapeptase</a>	 Minor	- <a href="#">See study</a>	A decrease in breast tenderness and soreness has been noted with serrapeptase treatment in one study.
	<a href="#">Vitamin B6</a>	 Notable	- <a href="#">See study</a>	One study found a notable reduction in cyclic mastalgia pain as compared with baseline, though there was no placebo group, only a comparator group that received vitamin E, and the true effect is unknown.
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	A notable improvement in one study on women with PMS. Needs more research.
	<a href="#">Vitamin E</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A small amount of low-quality evidence suggests an improvement in cyclic mastalgia pain when taking vitamin E. More research is needed.

Back to: [Supplements](#) | [Health Outcomes](#)

# C-Peptide

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No significant influence on C-peptide, a biomarker of insulin secretion status.
	<a href="#">Ketogenic diet</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	Notable, consistent reduction in the studies.
	<a href="#">Curcumin</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Limited and mixed evidence.

Back to: [Supplements](#) | [Health Outcomes](#)

# C-Reactive Protein

C-Reactive Protein is an inflammatory biomarker for cardiovascular disease and atherosclerosis (arterial plaque). Its reduction is thought to be protective and reduces the risk of cardiovascular incidents.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See all 16 studies</a>	Although some decreases have been noted, the vast majority of the evidence suggests that there is no significant influence
	<a href="#">Curcumin</a>	 Minor	<b>High</b> <a href="#">See all 19 studies</a>	May decrease C-reactive protein if elevated. Studies are somewhat inconsistent, but an effect in those who will benefit most is likely.
	<a href="#">Hesperidin</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There is a decrease in C-Reactive Protein (inflammatory biomarker) in those with higher baseline inflammation or inflammatory disease conditions, but not in healthy persons.
	<a href="#">Zinc</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	Supplementation of zinc in persons who may be zinc deficient is able to reduce C-reactive protein
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	Most studies assessing cocoa flavanols do not find reliable reductions in C-reactive protein when compared to placebo or control treatments.
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>High</b> <a href="#">See all 8 studies</a>	For the most part, CLA is seen as ineffective.
	<a href="#">L-Carnitine</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin E</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Most studies assessing C-reactive protein (an inflammatory biomarker) have failed to find a significant influence of vitamin E supplementation.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ketogenic diet</a>	 Notable	<b>Moderate</b> <a href="#">See all 9 studies</a>	Studies have generally found notably higher c-reactive protein on a ketogenic diet than control diet. Some studies have found no difference and some have found a greater reduction, one with considerably greater weight loss in the ketogenic group, and the other with unbalanced baseline levels.
	<a href="#">Krill Oil</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in C-Reactive protein has only been noted in rheumatoid arthritis (none in obese but healthy persons) but reached 30% within 30 days of 500mg krill oil, a very significant reduction
	<a href="#">Fucoxanthin</a>	 Minor	- <a href="#">See study</a>	A decrease in C-reactive protein is noted with fucoxanthin ingestion
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	A decrease in C-reactive protein is noted with supplementation of Ginkgo biloba
	<a href="#">Grape Seed Extract</a>	 Minor	- <a href="#">See study</a>	May reduce levels of C-reactive protein
	<a href="#">Grape juice</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Research is limited, but one study found an increase compared with an isocaloric amount of apple juice, and another found an increase from a small amount of concentrate compared with no intervention. One study did find a small reduction, and another didn't find an effect.
	<a href="#">Irvingia gabonensis</a>	 Minor	- <a href="#">See study</a>	A decrease in C-reactive protein has been noted, confounded with weight loss and industry influence
	<a href="#">Magnesium</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible reduction in C-Reactive protein, but these changes are unreliable
	<a href="#">Rhodiola Rosea</a>	 Minor	- <a href="#">See study</a>	A decrease in C-reactive protein has been noted with rhodiola supplementation; practical significance of these results unknown
	<a href="#">Salvia hispanica</a>	 Minor	- <a href="#">See 2 studies</a>	It is possible that a decrease in C-Reactive protein may exist but evidence is contradictory at this moment in time








LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Stinging Nettle</a>	 Minor	- <a href="#">See study</a>	Minor decrease in C-reactive protein concentrations
	<a href="#">Vitamin C</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A possible reduction in C-Reactive Protein exists with Vitamin C supplementation
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	C-reactive protein does not appear to be influenced by alanylglutamine
	<a href="#">Alpha-Lipoic Acid</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Although there may be a reduction of C-Reactive protein in some populations, for the most part ALA does not seem significantly effective in reducing this inflammatory biomarker of cardiovascular disease
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant alterations seen in C-RP with black cohosh
	<a href="#">Blueberry</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	C-reactive protein does not appear to be influenced with blueberry supplementation.
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on C-reactive protein, a biomarker for inflammation. One study did find a beneficial effect in women with PCOS, however.
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	No significant influence on C-reactive protein concentrations
	<a href="#">Coenzyme Q10</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on levels of C-reactive protein
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	C-reactive protein does not appear to be significantly influenced with supplementation of colostrum relative to control or baseline values.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	
	<a href="#">Feverfew</a>	-	- <a href="#">See study</a>	No significant effect on C-Reactive Protein
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No significant interactions with C-reactive protein have been detected
	<a href="#">Garlic</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on C-reactive protein is noted with supplementation of garlic.
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	No significant alterations in C-Reactive Protein levels
	<a href="#">HMB</a>	-	- <a href="#">See study</a>	No significant influence on C-reactive protein
	<a href="#">Lactobacillus casei</a>	-	- <a href="#">See study</a>	
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on C-reactive protein
	<a href="#">Nigella sativa</a>	-	- <a href="#">See study</a>	The alterations in C-reactive protein failed to reach statistical significance, but are otherwise not very well explored.


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Panax ginseng</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on C-reactive protein levels
	<a href="#">Pycnogenol</a>	-	- <a href="#">See study</a>	No significant alterations in C-Reactive protein noted
	<a href="#">Resveratrol</a>	-	- <a href="#">See study</a>	No significant effect on C-reactive protein
	<a href="#">Rooibos</a>	-	- <a href="#">See study</a>	No significant alteration in C-reactive protein
	<a href="#">Rose Hip</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	Preliminary studies showed marked reductions in C-reactive protein concentrations in healthy persons, although more recently conducted blinded studies have failed to replicate such a large decrease.
	<a href="#">S-Adenosyl Methionine</a>	-	- <a href="#">See study</a>	No significant influence on C-Reactive Protein
	<a href="#">Sea Buckthorn</a>	-	- <a href="#">See study</a>	2,000mg of the sea buckthorn supplement has failed to significantly influence C-reactive protein concentrations in serum
	<a href="#">Type-II Collagen</a>	-	- <a href="#">See study</a>	One study in rheumatoid arthritis patients reported that collagen didn't seem to influence c-reactive protein, but they didn't provide the data.
	<a href="#">Vitamin B2</a>	-	- <a href="#">See study</a>	C-reactive protein concentrations in serum do not appear to be affected with supplementation of riboflavin.
	<a href="#">Vitamin B3 (Niacin)</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In otherwise healthy subjects as well as dyslipidemics, C-reactive protein does not appear to be altered in its concentration relative to control.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin K</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on C-reactive protein (an inflammatory biomarker) seen with vitamin K supplementation
	<a href="#">Whey Protein</a>	-	- <a href="#">See study</a>	No demonstrated effects on C-Reactive Protein
	<a href="#">Ashwagandha</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Studies suggest a notable reduction that is probably dose-dependent. Note that research for this purpose currently is exclusively funded by industry.
	<a href="#">Ecklonia cava</a>	 Notable	- <a href="#">See study</a>	Appears to reduce C-reactive protein, with the degree of reduction being noted almost a halving
	<a href="#">Pyrroloquinoline quinone</a>	 Notable	- <a href="#">See study</a>	The decrease in C-reactive protein seen in one study in otherwise healthy humans reached 45% after three weeks of supplementation.
	<a href="#">Apple Cider Vinegar</a>	 Minor	- <a href="#">See study</a>	One study noted a very slight increase in the apple cider vinegar group and a decrease in the placebo group. It's unclear why this was the case, and more studies are needed to verify.
	<a href="#">Iodine</a>	 Minor	- <a href="#">See study</a>	There may be a small decrease in C-reactive protein associated with moderate iodine supplementation in otherwise healthy persons, indicative of an antiinflammatory effect.
	<a href="#">Safflower Oil</a>	 Minor	- <a href="#">See study</a>	A decrease in C-RP has been noted with safflower oil consumption
	<a href="#">Boron</a>	-	- <a href="#">See study</a>	No significant effect on this inflammatory biomarker
	<a href="#">Inositol</a>	-	- <a href="#">See study</a>	No significant influence on C-reactive protein concentrations even in persons with metabolic syndrome.





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Perilla Oil</a>	-	- <a href="#">See study</a>	
	<a href="#">Royal Jelly</a>	-	- <a href="#">See study</a>	No significant alterations in serum C-rp levels
	<a href="#">Rubus coreanus</a>	-	- <a href="#">See study</a>	In otherwise healthy men, there are no changes in C-reactive protein levels seen with berry consumption.
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on C-Reactive Protein levels
	<a href="#">Vitamin B1</a>	-	- <a href="#">See study</a>	No changes of note in people with high blood sugar

Back to: [Supplements](#) | [Health Outcomes](#)

# CD4 Lymphocytes

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	While there does not appear to be any influence in healthy controls or with low dose colostrum, higher doses of colostrum in persons with HIV (reduced CD4+ lymphocyte counts) may mildly increase CD4+ counts when compared to whey protein as control.
	<a href="#">Ganoderma lucidum</a>	 Minor	- <a href="#">See study</a>	The decrease in the CD4:CD8 ratio seen with altitude training is attenuated with 2,500-5,000mg of the water soluble polysaccharides
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	CD4+ Lymphocyte counts in subjects with HIV are not affected by alanylglutamine supplementation.
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	CD4+ Lymphocytes do not appear to be influence with supplementation of garlic
	<a href="#">Tinospora cordifolia</a>	-	- <a href="#">See study</a>	Limited studies looking into CD4+ Lymphocytes have failed to find a stimulatory effect.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	No known influence of vitamin E supplementation on the overall count of CD4+ lymphocytes relative to placebo.
	<a href="#">Andrographis paniculata</a>	-	- <a href="#">See 2 studies</a>	Unclear effects on CD4+ lymphocytes at this moment in time
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No known immunomodulatory actions at the level of CD4+ lymphocytes

# CD8 Lymphocytes

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	At baseline CD8+ lymphocytes do not appear to be altered, although one study noted that the expected decrease in these lymphocytes during exercise was attenuated with colostrum (resulting in a relative increase to whey control).
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	CD8+ Lymphocytes do not appear to be influenced with supplementation of garlic.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	CD8+ Lymphocytes do not appear to be significantly influenced with supplementation of vitamin E relative to placebo.






Back to: [Supplements](#) | [Health Outcomes](#)

# Calmness

Calmness is a similar parameter to relaxation, although they have different rating scales at time. Both calmness and relaxation are associated with slightly sedative and anxiolytic compounds.







LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melissa officinalis</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in self-reported ratings of 'calmness' appears to exist following ingestion of lemon balm single doses
	<a href="#">Centella asiatica</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction in fear and anxiety responses to an acute startle response (indicative of less responsiveness to alerting stimuli and more calmness) has been noted with this plant extract
	<a href="#">Cocoa Extract</a>	 Minor	- <a href="#">See study</a>	One study using relatively high doses of cocoa flavanols (500mg) found an increased rate of calmness and well being when compared to placebo in otherwise healthy subjects.
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	One study to assess the effects of ginkgo biloba in cognition, which failed to improve alertness, noted an increase in self-reported calmness with 120mg (EGb-761)
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	Has been noted to improve self-reported calmness
	<a href="#">Rose Essential Oil</a>	 Minor	- <a href="#">See study</a>	Self-reported ratings of calmness increase following application of rose oil topically
	<a href="#">Lavender</a>	-	- <a href="#">See study</a>	Despite the increase in 'relaxation', there does not appear to be an increase in calmness
	<a href="#">Modafinil</a>	-	- <a href="#">See study</a>	There do not appear to be any significant influences on self-reported ratings of calmness with supplementation of modafinil.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Grape juice</a>	 Minor	- <a href="#">See study</a>	One study found a small calming effect during cognitive testing. Much research is needed.
	<a href="#">Iron</a>	 Minor	- <a href="#">See study</a>	One study found a small increase in iron-deficient but non-anemic participants. This isn't a systematic assessment of studies.
	<a href="#">Peppermint</a>	-	- <a href="#">See study</a>	Subjective ratings of calmness during cognitive testing are not significantly influenced with the aroma of peppermint

Back to: [Supplements](#) | [Health Outcomes](#)









# Cancer Mortality

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	There appears to be a significant protective effect on life in cancer patients with solid tumors, although the protective effect does not reach 'half risk' (RR of 0.50) and fluctuates in the range of quarter risk.
	<a href="#">Vitamin K</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Although the studies have used superloading of vitamin K (40mg or more) and only in hepatic cancers, the reduction in mortality risk and prolongation of survival times appears to be quite notable
	<a href="#">Vitamin E</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Despite a small reduction in prostate cancer mortality seen in smokers with low dose (50mg) vitamin E, this does not appear to hold true as a general statement for all cancer types in most persons.
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	The overall mortality rate from stomach cancer is not influence with garlic supplementation during 15 years of followup

Back to: [Supplements](#) | [Health Outcomes](#)









# Canker Sores

Canker sore is the common phrase used to refer to small ulcers in the mouth (Apthous stomatitis), and many anti-ulcer compounds have been tested for their usage against canker sores in reducing inflammation and pain.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Aloe vera</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be more effective than control, but less effective than the reference drug of 0.1% triamcinolone acetonide
	<a href="#">Berberine</a>	 Minor	- <a href="#">See study</a>	Was able to reduce canker sores when topically applied, but was not compared to a reference compound.
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	A reduction in canker sore size and the pain associated with them are observed with topical lavender application
	<a href="#">Licorice</a>	 Minor	- <a href="#">See study</a>	Topical application of licorice is able to reduce canker sore size and pain associated with canker sores




Back to: [Supplements](#) | [Health Outcomes](#)

# Carbohydrate Absorption

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Psyllium</a>	 Minor	- <a href="#">See study</a>	Supplementation of 12g psyllium husk with a test breakfast is able to reduce carbohydrate absorption by around 12% relative to control.
	<a href="#">Green Tea Catechins</a>	 Notable	- <a href="#">See study</a>	One study has found a 30% reduction in carb absorption when coingesting 4 g green tea extract.
	<a href="#">Olive leaf extract</a>	 Minor	- <a href="#">See study</a>	There appears to be a decrease in either the rate or overall amounts of carbohydrate absorption seen with olive leaf consumption
	<a href="#">Sea Buckthorn</a>	 Minor	- <a href="#">See study</a>	Carbohydrate absorption appears to be attenuated with oral ingestion of sea buckthorn berries alongside a meal, which is thought to be due to the fiber component.




Back to: [Supplements](#) | [Health Outcomes](#)

# Cardiovascular Disease Mortality

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	A possible protective effect on overall cardiovascular disease mortality (not development of the disease states or incidences) has been reported with supplementation of 600 IU vitamin E every other day.
	<a href="#">Vitamin B3 (Niacin)</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Despite the benefits towards circulating lipids, overall mortality from cardiovascular disease does not appear to be significantly altered with niacin usage in pharmacological doses.

Back to: [Supplements](#) | [Health Outcomes](#)

# Cardiovascular Disease Risk

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin D</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	There appears to be less risk of cardiovascular disease and related cardiovascular complications with supplementation of 1,000 IU of Vitamin D or higher serum levels of Vitamin D, although studies using less have had null results. The degree of prevention found in positive trials is of borderline clinical significance.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	In general, the development of various cardiovascular diseases is not prevented with supplementation of vitamin E.

Back to: [Supplements](#) | [Health Outcomes](#)

# Cell Adhesion Factors

Cell Adhesion Factors are small targets expressed by blood vessels and organs to attract immune cells (and 'adhere' them to the cell) and draw them into tissue. Suppressing these factors is immunosuppressive, but may alleviate arteriosclerosis.
















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>Low</b> <a href="#">See all 8 studies</a>	Appears to be able to reduce cellular adhesion factors (that draw immune cells into tissue to aid in inflammatory processes, reducing these is immunosuppressive) in elderly persons, while slightly increasing expression in youth
	<a href="#">Vitamin E</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	While a decrease in P-selectin has been noted with low dose (100mg) γ-tocopherol, most studies have failed to find an influence of vitamin E supplementation on adhesion factors.
	<a href="#">Olive leaf extract</a>	 Notable	- <a href="#">See study</a>	A decrease was noted in CD40 and MCP1 adhesion factors, and this is notable as this downregulation was dose-dependently related to ingested tyrosol/hydroxytyrosol and may explain the reduced LDL oxidation
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Decreases in cell adhesion factors have been noted, which may underlie therapeutic benefits towards arteriosclerosis of curcumin supplementation.
	<a href="#">Hesperidin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There is a mild decrease in E-selectin and perhaps sCAM-1 seen with oral supplementation of hesperidin, but not ICAM or VCAM; this is thought to be a mechanism underlying atherosclerosis prevention.
	<a href="#">Polypodium leucotomos</a>	 Minor	- <a href="#">See study</a>	Even in healthy persons, cell adhesion factor expression on immune cells appears to be reduced with supplementation of the herb at 720mg.
	<a href="#">Red Clover Extract</a>	 Minor	- <a href="#">See study</a>	Isolated formononetin has been noted to reduce circulating VCAM-1 levels by approximately 11% in one study.
	<a href="#">Tetradecyl Thioacetic Acid</a>	 Minor	- <a href="#">See study</a>	Expression of VCAM-1 has been noted to be decreased



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	In persons who were probably zinc deficient, supplementation of zinc is able to reduce cellular adhesion factors and the risk for atherosclerosis.
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	Cell adhesion factors (ICAM-1 and VCAM-1) are unaffected with chromium supplementation in nondiabetic obese adults.
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	As a general statement, supplementation of cocoa flavanols does not appear to appreciably reduce cellular adhesion factors (ex. ICAM-1 or VCAM-1) when compared to placebos with low cocoa flavanol content.
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	Cellular adhesion factors on immune cells do not appear to be modified with colostrum relative to whey protein.
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	Select cellular adhesion factors (iCAM and vCAM) do not appear to be influenced in their quantity when niacin is supplemented.
	<a href="#">Artichoke Extract</a>	 Minor	- <a href="#">See study</a>	ICAM-1 and VCAM-1 decreased, not to a remarkable degree that would be indicative of immunosuppression.
	<a href="#">Blueberry</a>	-	- <a href="#">See study</a>	No significant alterations in cell adhesion factors (sCAM-1 and vCAM-1)
	<a href="#">Royal Jelly</a>	-	- <a href="#">See study</a>	No significant alterations in VCAM-1 levels in menopausal women, although a trend towards reduction was noted



# Cerebral Blood Flow









The amount of blood, and thus oxygen, that is delivered to the brain. Compounds can enhance cerebral blood flow by either fixing problems in unhealthy persons (fish oil) or outright increase flow (Resveratrol, Chocamine). Does not increase cognition per se, but may augment nootropics.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Marijuana</a>	 Minor	- <a href="#">See all 3 studies</a>	Both increases and decreases seem to have been reported over the whole brain, and it seems that in people who do <i>not</i> experience orthostatic hypotension from marijuana it is generally an increase; blood flow to the ACC in particular is increased following THC, but this becomes a decrease during tolerance.
	<a href="#">Cocoa Extract</a>	 Minor	- <a href="#">See study</a>	Cerebral blood flow during cognitive testing in youth can be increased from 170mg cocoa flavanols, although may not coexist with increases in cognition.
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	Appears to improve cerebral blood flow and volume in persons with low dietary fish intake
	<a href="#">Ginkgo biloba</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be a significant improvement in blood flow to the middle and anterior cerebral arteries, although other arteries are unaffected.
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	A reduction in cerebral blood flow has been noted with green tea catechins; a simultaneous reduction in cognitive performance was not noted.
	<a href="#">Polypodium leucotomos</a>	 Minor	- <a href="#">See study</a>	In persons with senile dementia, supplementation of 360mg anapsos may increase blood flow in both hemispheres of the brain (720mg being less effective).
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	500mg of resveratrol (high dose) has been confirmed to increase cerebral blood flow
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on cerebral blood flow rates

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Yohimbine</a>	 Minor	- <a href="#">See study</a>	A decrease in cerebral blood flow has been noted to be independent of cognitive impairment





Back to: [Supplements](#) | [Health Outcomes](#)

# Chronic Venous Insufficiency

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Centella asiatica</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	Symptoms of chronic venous insufficiency extending to poor circulation, venous reactivity, and adverse side-effects such as edema and leg pain are all reliably reduced with oral ingestion of centella asiatica
	<a href="#">Horse Chestnut</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Due to the venotrophic effects of aescin supplementation, disease states associated with blood pooling in extremities are significantly and fairly reliably treated with horse chestnut.
	<a href="#">Ruscus aculeatus</a>	 Minor	- <a href="#">See study</a>	<i>Ruscus aculeatus</i> appears to be more effective than placebo for treating chronic venous insufficiency, although the degree of benefit relative to other treatments is not established.
	<a href="#">Pycnogenol</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Reduces symptoms of chronic venous insufficiency. Potentially useful as an adjunct to compression therapy.

Back to: [Supplements](#) | [Health Outcomes](#)

# Cocaine Addiction

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">CDP-choline</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	CDP-Choline appears to be weakly anti-addictive against cocaine addiction, although the one study undertaken in persons with no intention to minimize cocaine usage can back negative.
	<a href="#">N-Acetylcysteine</a>	 Minor	- <a href="#">See study</a>	Self-reported cravings for cocaine during one day of withdrawal appear to be significantly reduced following 12 hours (although acute cravings after 2 hours of supplementation are not affected); this lasts for 24 hours after cessation.




Back to: [Supplements](#) | [Health Outcomes](#)




# Cognition

A general blanket statement referring to the abilities of the mind to pass tests put on it. Shares components of a lot of other cognitive phenomena, and not to be confused with Memory, Attention, or Anxiety.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rhodiola Rosea</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Notably effective assuming fatigue is being reduced. There is insufficient evidence to evaluate rhodiola's effects on cognition without the fatigue reduction aspect
	<a href="#">D-Serine</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There may be an improvement in cognitive performance secondary to reducing symptoms of schizophrenia, and while there is mechanistic plausibility that this can also work in normal controls it has not yet been demonstrated
	<a href="#">Ginkgo biloba</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Other parameters of cognition are differentially influenced by ginkgo, as facial recognition in those with dementia has noted improvement yet trip planning in middle-aged persons is unaffected.
	<a href="#">L-Tyrosine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Tyrosine appears to effectively improve cognition during acute stressors (altitude and cold being tested most); this appears reliable if the acute stressor is present, but may not be an inherent increase in cognition and it is unsure if it applies to chronic stress and fatigue.
	<a href="#">Modafinil</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Cognition is significantly improved in persons undergoing sleep deprivation or other conditions in which attention processing is highly impaired, while other conditions (cognitive decline or drug dependence) experience minor improvements in cognition that are lesser than those seen in sleep deprivation.
	<a href="#">Panax ginseng</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	An increase in cognition is seen acutely and thought to be due to anti-fatigue effects, with nonfatigued individuals not experiencing an increase in cognitive performance
	<a href="#">Phosphatidylserine</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	The interactions of supplemental PS with cognition in healthy persons is not fully researched, but there appears to be a positive influence; this may be secondary to a reduction in stress and excitation (the latter resulting in an increase in attention) but increased glucose utilization is an unexplored possibility

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Glycine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There are improvements in cognition due to glycine being able to treat schizophrenia and due to glycine being able to improve sleep; two states of impaired cognition.
	<a href="#">Green Tea Catechins</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed results, but may improve cognitive performance acutely in persons with poorer cognition at baseline
	<a href="#">Kava</a>	 Minor	- <a href="#">See study</a>	Possibly secondary to the antianxiety effects, kava taken prior to a test is able to enhance cognition related to mood during the stressful test.
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Improvements in general cognitive capacity has been noted in elderly persons and in disease models (hepatic encephalopathy); lack of literature on otherwise healthy youth
	<a href="#">Nicotine</a>	 Minor	- <a href="#">See study</a>	An improvement in cognition has been noted in persons with mild cognitive impairment
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	A slight improvement in cognition has been noted with supplementation of nigella seed extract in older persons
	<a href="#">Phenylpiracetam</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Cognition is improved in persons suffering from cognitive decline, organic brain lesions, and epilepsy. There are currently no studies conducted in otherwise healthy youth for the purpose of cognitive enhancement
	<a href="#">Pycnogenol</a>	 Minor	- <a href="#">See study</a>	An improvement in cognitive function has been noted in students during academic testing
	<a href="#">Sceletium tortuosum</a>	 Minor	- <a href="#">See study</a>	A general increase in cognition has been noted with Kanna usage prior to testing in otherwise healthy middle-aged adults, potentially related to the reduction in state anxiety during testing.
	<a href="#">Zinc</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An improvement in cognition has been seen in stroke patients given zinc to complement their zinc insufficient diet.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Bacopa monnieri</a>	-	- <a href="#">See study</a>	No significant influences noted on acute cognitive performance with bacopa monnieri ingestion
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant influences on cognition in menopausal women has been noted
	<a href="#">Choline</a>	-	- <a href="#">See study</a>	Acute ingestion of choline does not appear to per se influence cognitive capacity
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	General cognition does not appear to be acutely affected by supplementation of cocoa flavanols.
	<a href="#">Dehydroepiandrosterone</a>	-	- <a href="#">See study</a>	Overall cognition not affected by DHEA supplementation
	<a href="#">Marijuana</a>	-	- <a href="#">See study</a>	When used during multiple sclerosis, a general battery of cognitive function does not appear to be greatly influenced (positive or negative) with marijuana therapy.
	<a href="#">Resveratrol</a>	-	- <a href="#">See study</a>	No significant influence on cognition in otherwise healthy persons (despite an increase in cerebral blood flow)
	<a href="#">Sarcosine</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	Reaction time on various cognitive tests was improved in people taking 1,000 mg of an ashwagandha extract, but accuracy wasn't.
	<a href="#">Pramiracetam</a>	 Minor	- <a href="#">See study</a>	Cognitive ability in youth who experienced brain trauma is improved with prolonged usage of pramiracetam, suggesting neuroprotective effects









LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pueraria lobata</a>	 Minor	- <a href="#">See study</a>	A small boost in cognition in menopausal women given the supplement; needs to be replicated and uncertain if it applies to otherwise healthy youth.
	<a href="#">Piracetam</a>	-	- <a href="#">See study</a>	No significant influence on cognition and neural functioning has been noted in otherwise healthy persons following piracetam ingestion.

Back to: [Supplements](#) | [Health Outcomes](#)







# Cognitive Decline

Cognitive decline refers to a naturally occurring reduction in cognition and memory formation associated with aging, and may be benign or associated with some disease states (such as Alzheimer's). Some supplements that are not inherently nootropic may reduce cognitive decline.




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Notable	<b>High</b> <a href="#">See all 11 studies</a>	For usage of EGb-761 at 240-360mg daily as a therapeutic option in people who already are experiencing cognitive decline, then it appears to be reliably effective and comparable to 10mg Donepezil.
	<a href="#">Piracetam</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	There appears to be a notable reduction in the rate of cognitive decline (or rehabilitation of aged cognition) associated with high dose Piracetam over time and in a general manner. Piracetam is sometimes used as a comparator for cognitive decline.
	<a href="#">Oxiracetam</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Appears to reliably reduce the cognitive decline and related symptoms seen in dementia and other organic brain deterioration states, with particular efficacy towards verbal skill in doses above 1,200mg
	<a href="#">Phosphatidylserine</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	There appears to be a protective effect against cognitive decline with PS supplementation above 300mg when using the bovine cortex form; usage of the soy based PS is not yet confirmed to have these effects, although it is possible
	<a href="#">Alpha-GPC</a>	 Notable	- <a href="#">See study</a>	The rate of cognitive decline of either degenerative or vascular origin appears to be significantly reduced with Alpha-GPC supplementation
	<a href="#">Blueberry</a>	 Minor	- <a href="#">See study</a>	Supplementation of blueberry extract does appear effective in elderly persons with general cognitive decline, able to improve cognition and memory.
	<a href="#">CDP-choline</a>	 Minor	- <a href="#">See study</a>	The rate of memory decline seen in older persons during the aging process appears to be attenuated with supplementation of CDP-Choline
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	Rate of cognitive decline may be lesser with dietary inclusion of curcumin, but requires more evidence

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dehydroepiandrosterone</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May attenuate the rate of cognitive decline in persons at higher risk, but this protective effect does not seem to be overly remarkable
	<a href="#">Eleutherococcus senticosus</a>	 Minor	- <a href="#">See study</a>	A positive influence on the cognitive state of elderly persons (reduction of cognitive decline) has once been noted
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	High dose (900 mg) DHA appears to be somewhat beneficial in reducing the rate of cognitive decline in elderly but otherwise healthy persons, but 350 mg DHA and 600 mg EPA has been seen to have no effect in those with concurrent age-related macular degeneration.
	<a href="#">Polygala tenuifolia</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reduction in cognitive decline as assessed by CEMAD scores, although MMSE scores did not experience a significant benefit with supplementation at this moment in time.
	<a href="#">Polypodium leucotomos</a>	 Minor	- <a href="#">See study</a>	360mg anapsos daily appears to be somewhat benefit for persons with senile dementia.
	<a href="#">Yamabushitake</a>	 Minor	- <a href="#">See study</a>	The rate of cognitive decline seen with oral supplementation of yamabushitake appears to be significantly reduced in older persons, although there are no direct comparisons to reference drugs at this time to assess potency.
	<a href="#">DMAE</a>	-	- <a href="#">See study</a>	
	<a href="#">Nitrate</a>	-	- <a href="#">See study</a>	Short-term supplementation failed to restore cognitive decline in older persons, no evidence as to whether nitrate exerts a preventative effect.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	When supplemented by otherwise healthy elderly persons, the development of organic cognitive decline does not appear to be attenuated relative to placebo.
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	A decrease in symptoms associated with cognitive decline has been noted

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Phenylpiracetam</a>	 Minor	- <a href="#">See study</a>	The rate of cognitive decline appears to be significantly reduced following usage of phenylpiracetam
	<a href="#">Vinpocetine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The rate of cognitive decline appears to be attenuated with vinpocetine administration, this may be related to blood flow

Back to: [Supplements](#) | [Health Outcomes](#)







# Colon Cancer Risk

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	600 IU vitamin E every other day for a decade does not appear to reduce the risk of developing colon cancer in otherwise healthy women.
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	May reduce colon cancer risk as assessed by a beneficial influence in eicosanoids in the colon; requires more evidence

Back to: [Supplements](#) | [Health Outcomes](#)

# Colorectal Cancer Risk






Some dietary supplements are thought to reduce the risk of colonic cancer, and this is assessed by either epidemiological research showing a relationship or studies that note how supplementation can reduce a known biomarker of colon cancer.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin D</a>	 Notable	- <a href="#">See study</a>	The association between serum Vitamin D at 37ng/mL and colorectal cancer is approximately a halving of risk according to one meta-analysis, which is a notable risk reduction
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be associated with a reduced risk for colon cancer
	<a href="#">Panax ginseng</a>	 Notable	- <a href="#">See study</a>	More than a halving of the risk of colorectal cancer has been noted with panax ginseng daily ingestion

Back to: [Supplements](#) | [Health Outcomes](#)

# Constipation

Constipation is the state where intestinal motility decreases to such a degree that the persons can no longer easily defecate and has intestinal pain. In this instance, some laxative compounds are recommended.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Senna alexandrina</a>	 Strong	<b>Very High</b> <a href="#">See all 6 studies</a>	Due to the strong laxative effect, constipation is greatly reduced with supplemental Senna Alexandria. Has been noted effective against regular, postpartum, and opioid-induced constipation and appears to not require a context-specific cause of constipation (ie. reliable) but appears to be associated with more cramping than placebo.
	<a href="#">Ziziphus jujuba</a>	 Minor	- <a href="#">See study</a>	A decrease in the symptoms of constipation has been seen with the water extract of jujubes; which may apply to fruit consumption but may not apply to isolated supplements (due to the polysaccharides being the active ingredients)
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Cortisol

Cortisol is the hormone that mediates waking up and a variety of catabolic (tissue breakdown) reactions; it isn't bad in any way, but many people with elevated cortisol could suffer pathology from it. In these scenarios, it is nice to lower cortisol and supplementation may be effective.


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Caffeine</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	In general, cortisol appears to be increased at high doses of caffeine; lower doses may not have an effect.
	<a href="#">Dehydroepiandrosterone</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Highly unreliable influences on cortisol, with decreases seen in studies where androgens and estrogens are also increased (with no significant influence or possibly an increase in other studies)
	<a href="#">Fish Oil</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	A possible reducing effect of fish oil supplementation on cortisol
	<a href="#">Vitamin C</a>	 Minor	- <a href="#">See all 7 studies</a>	Vitamin C (500-1,500mg daily) appears to be associated with both increases and decreases in exercise-induced cortisol spikes, depending on whether it acts as a prooxidant or antioxidant (respectively). There is no influence on resting cortisol concentrations.
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No effect on cortisol changes associated with sleep deprivation.
	<a href="#">HMB</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on cortisol levels following acute ingestion
	<a href="#">Phosphatidylserine</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	A decrease in exercise-induced cortisol has been noted with the bovine cortex sourced PS only, soy based supplements (which are usually the only ones sold now due to fear of Creutzfeldt–Jakob disease) have been shown to have outright no effect at doses up to 750mg
	<a href="#">Ashwagandha</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	The decrease in cortisol noted in humans has reached 14.5-27.9% in otherwise healthy but stressed humans, which is significantly larger than many other supplements.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">5-HTP</a>	 Minor	- <a href="#">See study</a>	At least one study has noted increased in salivary cortisol following acute ingestion of 5-HTP supplementation.
	<a href="#">Eurycoma Longifolia Jack</a>	 Minor	- <a href="#">See study</a>	In stressed persons, daily supplementation of eurycoma is associated with a 16% reduction in cortisol concentrations.
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	The increase in cortisol seen before a stress test is attenuated with supplementation of ginkgo, secondary to its anti-stress effects
	<a href="#">Licorice</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Appears to increase cortisol at higher doses (500mg or more), with no significant influence at lower doses; this is related to the glycyrrhizin content, and would not occur in deglycyrrhizinated supplements
	<a href="#">Melatonin</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed results, a possible increase when measuring whole-day cortisol levels (when taken in the AM) with no augmentation of stress-induced cortisol increases; may reduce cortisol if taken prior to sleep, however
	<a href="#">Mucuna pruriens</a>	 Minor	- <a href="#">See study</a>	In chronically stressed men, prolonged ingestion of mucuna pruriens appears to be able to reduce cortisol concentrations
	<a href="#">Ornithine</a>	 Minor	- <a href="#">See study</a>	Increases have been noted with intravenous ornithine (not in human trials table) while decreases have been noted following treatment of hangovers. The most practical study of using ornithine as a preworkout supplement failed to find any effect
	<a href="#">Rose Essential Oil</a>	 Minor	- <a href="#">See study</a>	A decrease in cortisol appears to result from the anti-stress response of rose oil inhalation
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	The aroma of saffron has been noted to reduce cortisol concentrations to a mild degree in otherwise healthy women, and this occurred alongside a reduction in state anxiety.
	<a href="#">Salvia sclarea</a>	 Minor	- <a href="#">See study</a>	A decrease in cortisol may result following inhalation of clary sage, but the magnitude of reduction (2.5%) is very small





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Schisandra chinensis</a>	 Minor	- <a href="#">See study</a>	Conditional influences on cortisol, with an apparent increase in cortisol of beginner athletes at rest with decreases in exercise-induced cortisol in beginners and lower overall cortisol exposure in trained athletes
	<a href="#">Soy lecithin</a>	 Minor	- <a href="#">See study</a>	May reduce cortisol during a social stress test at 2g
	<a href="#">Theaflavins</a>	 Minor	- <a href="#">See study</a>	A decrease in exercise-induced cortisol secretions has been noted with theaflavin consumption in high doses (above 1,800mg daily)
	<a href="#">Trimethylglycine</a>	 Minor	- <a href="#">See study</a>	Cortisol appears to be minimally (6.1%) decreased with two weeks betaine supplementation when measured after exercise in a fasted state.
	<a href="#">Yohimbine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to increase cortisol following ingestion
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	Cortisol is not influenced by alanylglutamine relative to water during and after an exercise trial.
	<a href="#">Alcohol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in cortisol levels seen with alcohol ingestion in moderate levels
	<a href="#">Arachidonic acid</a>	-	- <a href="#">See study</a>	
	<a href="#">Arginine</a>	-	- <a href="#">See study</a>	No significant influence on circulating cortisol concentrations
	<a href="#">Beta-Alanine</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Branched Chain Amino Acids</a>	-	- <a href="#">See study</a>	No significant interactions with BCAA supplementation and cortisol
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See all 3 studies</a>	The increase in cortisol has been buffered in one study where stress was introduced, but otherwise cocoa does not appear to influence resting cortisol concentrations.
	<a href="#">Colostrum</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	While one study noted an increase in morning cortisol during multiple day training in elite cyclists (a beneficial response), basal cortisol concentrations and those immediately after standard exercise do not appear to be influenced with colostrum supplementation.
	<a href="#">Ecdysteroids</a>	-	- <a href="#">See study</a>	No demonstrated changes in cortisol levels with ecdysterone consumption
	<a href="#">Fenugreek</a>	-	- <a href="#">See study</a>	No significant influence on cortisol levels following fenugreek ingestion
	<a href="#">Gamma Oryzanol</a>	-	- <a href="#">See study</a>	No significant influence on cortisol levels with prolonged supplementation
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	No significant influence of garlic supplementation has been found on cortisol in cancer patients.
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	No significant alterations in cortisol noted
	<a href="#">Magnesium</a>	-	- <a href="#">See study</a>	No significant influence on cortisol seen with magnesium supplementation
	<a href="#">Nicotine</a>	-	- <a href="#">See study</a>	No significant influence on cortisol levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	No significant reduction in cortisol seen with supplementation of vitamin E relative to placebo.
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction has been noted in two studies, but more research is needed.
	<a href="#">Ketogenic diet</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Studies so far have found small to notable increases in cortisol.
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	A decrease in cortisol has been noted acutely with aromatherapy
	<a href="#">Blueberry</a>	-	- <a href="#">See study</a>	Exercise-induced changes in cortisol are not influence by blueberry supplementation
	<a href="#">Boron</a>	-	- <a href="#">See study</a>	No significant effect on cortisol has been noted with supplemental boron
	<a href="#">Marijuana</a>	-	- <a href="#">See study</a>	There does not appear to be a significant influence of marijuana on urinary cortisol.
	<a href="#">Nigella sativa</a>	-	- <a href="#">See study</a>	No significant alterations in cortisol concentrations seen with supplementation of the seeds.
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	Supplementation of niacin during a fasting period does not appear to influence circulating cortisol concentrations.
	<a href="#">Vitamin B6</a>	-	- <a href="#">See study</a>	










# Cough

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pelargonium sidoides</a>	 Minor	<b>Very High</b> <a href="#">See all 12 studies</a>	Symptoms of cough, <i>in the context of acute bronchitis</i> , are reduce in most subjects with around 50-60% of subjects reporting remission. There isn't an improvement in other lung disorders though, so this is more reflective of treatment of acute bronchitis.

Back to: [Supplements](#) | [Health Outcomes](#)

# Cramps

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitex agnus castus</a>	 Minor	- <a href="#">See study</a>	Efficacy against cramps appears to correlate both with how severe the cramps are during PMS and the response to Vitex supplementation; potency seems variable.
	<a href="#">Magnesium</a>	-	- <a href="#">See study</a>	No evidence to support a reduction in pregnancy related leg cramps
	<a href="#">Melissa officinalis</a>	 Minor	- <a href="#">See study</a>	One study found a small improvement from 1 g of an ethanolic extract compared with placebo. Much more research is needed.
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See study</a>	There was a small reduction in the rate and severity of menstrual cramps from 50,000 IU weekly in vitamin D deficient girls. More research is needed.

Back to: [Supplements](#) | [Health Outcomes](#)











# Creatinine

Creatinine is a metabolic byproduct of creatine, and is sometimes used as a biomarker for kidney damage as it can accumulate when kidneys are impaired (despite creatine supplementation giving a false positive).

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Notable	<b>Moderate</b> <a href="#">See all 12 studies</a>	Creatine supplementation usually increases serum creatinine levels during the loading phase (but usually not during maintenance), since creatinine is the breakdown product of creatine. This is <i>not</i> indicative of kidney damage.
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No known influence on creatinine, a biomarker for kidney health.
	<a href="#">Cissus quadrangularis</a>	 Minor	- <a href="#">See study</a>	An increase in creatinine has been noted alongside weight loss; practical significance of this information is not known.
	<a href="#">Citrulline</a>	 Minor	- <a href="#">See study</a>	A slight increase in creatinine has been noted with citrulline supplementation, practical relevance unknown.
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	A slight decrease in urinary creatinine has been noted with ginkgo supplementation in diabetics with nephropathy
	<a href="#">Glutamine</a>	 Minor	- <a href="#">See study</a>	An increase in serum creatinine has been noted, but thought to be due to a reduction in glomerular filtration rate acutely rather than due to alterations in muscle damage
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See study</a>	
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Citrullus colocyntis</a>	-	- <a href="#">See study</a>	No significant influence on creatinine concentrations with the lowest active dose of the supplement (300mg)
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Serum creatinine does not appear altered from supplementation of flavanols from cocoa.
	<a href="#">Cordyceps</a>	-	- <a href="#">See study</a>	
	<a href="#">Curcumin</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	No apparent effect in studies.
	<a href="#">Eucommia ulmoides</a>	-	- <a href="#">See study</a>	
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	No significant influence of garlic supplement on creatinine concentrations in serum are present.
	<a href="#">Green Coffee Extract</a>	-	- <a href="#">See study</a>	No alterations noted in creatinine associated with green coffee extract intake
	<a href="#">Nigella sativa</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on serum creatinine
	<a href="#">Pterostilbene</a>	-	- <a href="#">See study</a>	Supplementation of pterostilbene in hypercholesterolemic adults does not appear to influence creatinine relative to control.
	<a href="#">Saffron</a>	-	- <a href="#">See study</a>	Creatinine does not appear to be influenced in serum following supplementation of saffron.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant influence on circulating creatinine is seen with supplementation of betaine.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	In otherwise healthy elderly person, creatinine does not appear to be significantly altered relative to placebo.
	<a href="#">Ketogenic diet</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	While inconsistent, some studies have found an increase in the ketogenic group. It's possible that some of the effect may be due to increased meat consumption, in a similar way that supplementation creatine increases levels, though more research is needed.
	<a href="#">Rose Hip</a>	 Minor	- <a href="#">See study</a>	Creatinine, a biomarker of kidney damage and muscle damage, has been noted to be reduced with rose hip supplementation in one preliminary trial
	<a href="#">Ashwagandha</a>	-	- <a href="#">See study</a>	No apparent effect in one study of healthy participants.
	<a href="#">Bulbine natalensis</a>	-	- <a href="#">See study</a>	
	<a href="#">Hibiscus sabdariffa</a>	-	- <a href="#">See study</a>	No significant influence on creatinine
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No difference from 500 mg/d after 3 months of supplementation in type 2 diabetes patients (within-group).

Back to: [Supplements](#) | [Health Outcomes](#)













# DHEA

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Licorice</a>	 Minor	- <a href="#">See study</a>	An increase in serum DHEA has been noted following licorice consumption
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No significant influence on DHEA sulfate in serum
	<a href="#">Tribulus terrestris</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	One study found an increase with 2.25 g of Tribulus per day for 12 weeks, however, a larger study found no significant difference.

Back to: [Supplements](#) | [Health Outcomes](#)

# DHT

Dihydrotestosterone (DHT) is a derivative of testosterone that is known as being more potent at signalling through the androgen receptor, and due to this it is involved to a larger degree in hair loss and prostate cancer.




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Minor	- <a href="#">See study</a>	An increase in DHT independent of an increase in testosterone has been noted, but the study requires replication due to some potential issues (its location, the lack of biological plausibility, etc.).
	<a href="#">Dehydroepiandrosterone</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May increase DHT levels alongside testosterone levels, but this has only been observed in postmenopausal women
	<a href="#">Fenugreek</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in DHT has been noted following consumption of fenugreek seeds in otherwise healthy men, but appears to be unreliable
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	An increase in DHT has been noted in infertile men
	<a href="#">Saw Palmetto</a>	-	- <a href="#">See study</a>	
	<a href="#">Tribulus terrestris</a>	 Minor	- <a href="#">See study</a>	An increase of DHT has been noted in one study.
	<a href="#">Boron</a>	-	- <a href="#">See study</a>	No significant influences on serum DHT noted

# DNA Damage

DNA damage refers to oxidative changes to DNA, which can be measured in the urine or in white blood cells. Reductions in DNA damage from antioxidant supplements are thought to reduce the risk of cancer development and mutations.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blueberry</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	DNA damage appears to be acutely decreased following consumption of blueberries or its extracts (375mg anthocyanins or more) and tends to be in the range of a 20% reduction.
	<a href="#">Vitamin E</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	While most evidence suggests no influence on DNA damage, it is possible based on some studies that when vitamin E turns prooxidative that it may damage DNA.
	<a href="#">Olive leaf extract</a>	 Notable	- <a href="#">See study</a>	The one study to measure DNA damage (via 8-oxo-dGF as a biomarker) noted up to 50% reductions in mitochondrial and urine measurements; a fairly significant reduction.
	<a href="#">Creatine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Creatine supplementation appears to reduce exercise-induced DNA damage. This is potentially promising with regard to cancer prevention.
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	A decrease in DNA damage has been noted to be secondary to reducing arsenic toxicity
	<a href="#">Eleutherococcus senticosus</a>	 Minor	- <a href="#">See study</a>	A decrease in DNA damage biomarker has been noted, thought to be secondary to antioxidative effects
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	Can decrease the rates of DNA damage noted in lymphocytes, which may be related to the anticancer effects of panax ginseng
	<a href="#">Watercress</a>	 Minor	- <a href="#">See study</a>	DNA damage biomarkers have been reduced following watercress consumption

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chlorella</a>	-	- <a href="#">See study</a>	Has once failed to modify the DNA damage observed in male smokers
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	No significant influence of citrulline on DNA damage
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Insufficient evidence to suggest alterations in the rate of DNA damage with CLA ingestion.
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Does not appear to influence DNA damage
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	DNA damage in lymphocytes of volunteers given the polysaccharides appear unchanged
	<a href="#">Glutathione</a>	-	- <a href="#">See study</a>	
	<a href="#">Sea Buckthorn</a>	-	- <a href="#">See study</a>	DNA damage as measured in lymphocytes does not appear to be significantly affected by supplementation of sea buckthorn
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on DNA damage
	<a href="#">Garlic</a>	 Minor	- <a href="#">See study</a>	Urinary biomarkers of DNA damage are reduced in hypertensive persons following supplementation of garlic.
	<a href="#">Grape juice</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A small amount of research suggests that it may be able to mildly prevent DNA damage due to oxidative stress. Much more research is needed.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melissa officinalis</a>	 Minor	- <a href="#">See study</a>	A reduction in DNA damage has been noted with lemon balm tea in persons exposed to high levels of radiation
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	One study assessing DNA damage following ingestion of chromium supplementation failed to find any harmful nor beneficial interactions.

Back to: [Supplements](#) | [Health Outcomes](#)

# Depression











Depression is a cognitive state associated with hopelessness and apathy. Clinical depression is a realm for medical doctors to address, but subclinical ennui might be counteracted with some supplements. Consider physical exercise as well, it might help a little.









LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Notable	<b>Very High</b> <a href="#">See all 28 studies</a>	Fish oil supplementation has been noted to be comparable to pharmaceutical drugs (fluoxetine) in majorly depressed persons, but this may be the only cohort that experiences a reduction of depression. There is insufficient evidence to support a reduction of depressive symptoms in persons with minor depression (ie. not diagnosed major depressive disorder)
	<a href="#">Saffron</a>	 Notable	<b>Very High</b> <a href="#">See all 9 studies</a>	30mg saffron daily (both petals and stigma) appear to be effective in reducing depressive symptoms in persons with major depressive disorder, and the potency has been noted to be comparable to reference drugs (fluoxetine and imipramine).
	<a href="#">Curcumin</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	Curcumin seems to be more effective than placebo in reducing symptoms of depression. It may take 2-3 months to see any outcomes. Skepticism is warranted though, as the studies comparing curcumin to placebo were not well designed and produced effect sizes not too far apart, even though the differences were statistically significant.
	<a href="#">Zinc</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	The reduction in depression is notable <i>only for</i> treatment resistant depression alongside a pharmaceutical antidepressant; there does not appear to be a benefit to persons who respond to antidepressants and the inherent anti-depressant effects without a pharmaceutical add-on are modest at best.
	<a href="#">Chromium</a>	 Minor	<b>Low</b> <a href="#">See all 5 studies</a>	There is limited preliminary evidence for chromium having an adjuvant role in aiding depressive symptoms (better overall outcomes when paired with a more effective 'reference' therapy), although the limited evidence for chromium in isolation is unconvincing.
	<a href="#">Folic Acid</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Limited evidence suggests small reduction in depression symptoms
	<a href="#">Inositol</a>	 Minor	<b>Very High</b> <a href="#">See all 8 studies</a>	There appears to be a reduction in depressive symptoms associated with inositol supplementation, although it is less potent than the benefits of inositol on anxiety and panic attacks.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Depression symptoms seem to improve noticeably. This improvement is probably related to serotonin (creatine supplementation appears to enhance SSRI therapy). Possible gender differences (a greater efficacy in females) require further study.
	<a href="#">Red Clover Extract</a>	 Notable	- <a href="#">See study</a>	Depression as a side-effect of menopause has been noted to be decreased to quite a significant level (around 80%) which needs to be replicated due to possible funding issues.
	<a href="#">Rhodiola Rosea</a>	 Notable	- <a href="#">See study</a>	Limited evidence, but up to a halving of symptoms has been noted with higher doses of Rhodiola
	<a href="#">S-Adenosyl Methionine</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Has been noted to augment SSRI therapy (similar to <a href="#">creatine</a> ) and monotherapy with SAME appears to be of similar potency to tricyclic antidepressants for some studies.
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Antidepressive effects have been found with ashwagandha, although they are less notable than the anti-anxiety effects. They may be mediated by similar mechanisms.
	<a href="#">Bacopa monnieri</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An anti-depressive effect has been noted, but to a relatively small magnitude. Requires more context-based evidence
	<a href="#">Centella asiatica</a>	 Minor	- <a href="#">See study</a>	A reduction in depressive effects may be secondary to the treatment of anxiety.
	<a href="#">Ganoderma lucidum</a>	 Minor	- <a href="#">See study</a>	Depression as a symptom of cancer-related fatigue was reduced, may not hold inherent antidepressive effects
	<a href="#">Kava</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Depressive symptoms have been reduced vicariously through reductions in anxiety; <i>per se</i> antidepressant effects of kava uncertain
	<a href="#">Maca</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May reduce depression in postmenopausal women, unlikely to occur in otherwise healthy youth






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	Anti-depressive effects may be secondary to reducing menopausal symptoms
	<a href="#">Vitex agnus castus</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Can attenuate depressive symptoms that occur during PMS secondary to reducing PMS symptoms in general.
	<a href="#">Yamabushitake</a>	 Minor	- <a href="#">See study</a>	Decrease in depressive symptoms has been noted, which may be secondary to attenuating menopausal symptoms
	<a href="#">Dehydroepiandrosterone</a>	-	- <a href="#">See study</a>	No significant interactions with depression noted
	<a href="#">Ginkgo biloba</a>	-	- <a href="#">See study</a>	Supplementation of ginkgo does not appear to significantly influence depressive symptoms in older individuals
	<a href="#">L-Tyrosine</a>	-	- <a href="#">See study</a>	Depressive symptoms that occur during acute stressors have not been affected by Tyrosine supplementation; chronic depression not yet researched
	<a href="#">Marijuana</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Depression as a symptom of multiple sclerosis does not appear to be significantly affected by marijuana therapy.
	<a href="#">N-Acetylcysteine</a>	-	- <a href="#">See study</a>	
	<a href="#">Nefiracetam</a>	-	- <a href="#">See study</a>	
	<a href="#">Nicotine</a>	-	- <a href="#">See study</a>	No significant influence on depressive symptoms

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	
	<a href="#">Agmatine</a>	 Strong	- <a href="#">See study</a>	One very preliminary study exists, but remission was achieved in all three subjects with 2-3g agmatine.
	<a href="#">Grape juice</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Two studies on cognitively impaired participants found an increase in the Geriatric Depression Scale, and simultaneously no effect of a grape-flavored sugar drink. Much more research is needed.
	<a href="#">Holy Basil</a>	 Minor	- <a href="#">See study</a>	A decrease in depressive symptoms during generalized anxiety disorder has been noted
	<a href="#">Iron</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	One study found a notable reduction in people with iron deficiency but not anemic, a small reduction in people with iron deficiency anemia, and ambiguous evidence in people without iron deficiency. The other study didn't find an effect. This isn't a systematic assessment of studies.
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	Depression as a side effect of anxiety appears to be reduced
	<a href="#">Magnesium</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Reduced depressive symptoms have been found in elderly diabetics
	<a href="#">Phenylpiracetam</a>	 Minor	- <a href="#">See study</a>	Depressive symptoms following a stroke appear to be reduced following ingestion of phenylpiracetam. Currently, there are no studies on otherwise healthy persons with depressive symptoms
	<a href="#">Royal Jelly</a>	 Minor	- <a href="#">See study</a>	Reduction in irritability noted with Royal Jelly may be secondary to reducing symptoms associated with menopause
	<a href="#">Uridine</a>	 Minor	- <a href="#">See study</a>	Depressive symptoms in bipolar disorder have been noted to be reduced

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See study</a>	One study found a reduction in PMS-related depression with 100 mg daily.
	<a href="#">Calcium</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Melissa officinalis</a>	-	- <a href="#">See study</a>	One study found somewhat lower depression scores during the premenstrual period as compared with placebo, but it's unclear what the levels were at baseline.
	<a href="#">Theanine</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin B<sub>12</sub></a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin D</a>		<b>Very High</b> <a href="#">See 2 studies</a>	One randomized, controlled trial in 40 depressed patients found a modest but non-significant (p=0.06) reduction in Beck-II score compared with placebo after supplementation of 50,000 IU of vitamin D once at the start of an 8 week period.














Back to: [Supplements](#) | [Health Outcomes](#)

# Diarrhea

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	 Notable	<b>High</b> <a href="#">See all 8 studies</a>	Diarrhea can be potently reduced with colostrum under two conditions, either it is being used in persons with HIV-induced diarrhea from <i>cryptosporidium parvum</i> or when using colostrum (from cows immunized to E.coli) in response to food carrying E.coli (usually seen with traveler's diarrhea); despite being highly effective in those two scenarios it seems ineffective in other cases of diarrhea.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)








# Diuresis

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Astragalus membranaceus</a>	 Minor	- <a href="#">See study</a>	Astragalus root appears to have diuretic properties with oral ingestion (0.3g/kg) in otherwise healthy persons.
	<a href="#">Tribulus terrestris</a>	 Minor	- <a href="#">See study</a>	3g of the fruits or a water extract thereof appears to increase overall urine volume after a month of supplementation by around 200mL daily.
	<a href="#">Yohimbine</a>	 Minor	- <a href="#">See study</a>	There appears to be an increased urge to urinate following supplementation of yohimbine
	<a href="#">Orthosiphon stamineus</a>	-	- <a href="#">See study</a>	Despite both traditional usage and rat studies, the lone study assessing the diuretic effects of 10g of the fresh leaves has failed to find any effect.
	<a href="#">Eclipta alba</a>	 Notable	- <a href="#">See study</a>	Urine volume has been noted to be increased by 34%, which is fairly notable as it outperforms other nutraceuticals
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	May have diuretic effects, although not to a remarkable degree.
	<a href="#">Taraxacum officinale</a>	 Minor	- <a href="#">See study</a>	A pilot study has been conducted with dandelion showing efficacy, but overall urine output and comparisons to other drugs have not been undergone.

Back to: [Supplements](#) | [Health Outcomes](#)







# Dopamine

Dopamine is a catecholamine and neurotransmitter that can be measured in the blood, and changes in response to the diet or nutritional supplementation.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	Serum dopamine has been noted to be slightly reduced (37%) during waking at rest, but this decrease was eliminated upon walking
	<a href="#">Mucuna pruriens</a>	 Minor	- <a href="#">See study</a>	The reduction in dopamine seen in infertility seems to be reversed with L-DOPA ingestion; theoretically L-DOPA ingestion should unilaterally increase dopamine
	<a href="#">Branched Chain Amino Acids</a>	-	- <a href="#">See study</a>	Similar to the other catecholamines (adrenaline and noradrenaline), serum dopamine does not appear to be altered with supplemental BCAAs.
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	No significant alterations in plasma dopamine are seen with creatine supplementation during sleep deprivation.
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No significant influence on serum dopamine





Back to: [Supplements](#) | [Health Outcomes](#)

# Dry Eyes

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trehalose</a>	 Strong	<b>Very High</b> <a href="#">See 2 studies</a>	The benefits of trehalose containing eye drops appears to be greater than not only placebo (saline) eye drops, but also eye drops containing either hyaluronan (Hyalain) or hydroxyethylcellulose (Mytear) which are proven commercial products for dry eyes.
	<a href="#">Red Clover Extract</a>	 Minor	- <a href="#">See study</a>	The complaint of 'dry eyes' appears to be slightly reduced in postmenopausal women given 80mg of the isoflavones as a supplement.
	<a href="#">Sea Buckthorn</a>	 Minor	- <a href="#">See study</a>	2g of the oil daily is able to reduce symptoms of dry eyes, particularly reddening and the actual perceived dryness

Back to: [Supplements](#) | [Health Outcomes](#)







# Dry Mouth

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trimethylglycine</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Symptoms of dry mouth either caused by a disease state (Sjögren's syndrome) or as a side-effect of pharmaceuticals appears to be significantly reduced when betaine is formulated into a toothpaste at 4%. Studies currently have a potential industry influence (financing).
	<a href="#">Ashwagandha</a>	 Notable	- <a href="#">See study</a>	A notable reduction in anxiety-associated dry mouth has been noted in one industry-funded study, which needs to be replicated.

Back to: [Supplements](#) | [Health Outcomes](#)











# Dysmenorrhea

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Primarily research has consistently found an improvement and 400-500 IU per day.
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	Ginger was capable of reducing menstrual pain at 1g daily
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	Lavender as aromatherapy is able to reduce pain associated with menstruation

Back to: [Supplements](#) | [Health Outcomes](#)

# Edema

Edema is the retention of water in tissue, resulting in weight gain and bloating, and the cause of leg swelling. Some conditions such as diabetics are characterized by edema, and treating the condition may reduce edema.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Centella asiatica</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	There appears to be a decrease in edema associated with chronic venous insufficiency (CVI), associated with the treatment of CVI by <i>centella asiatica</i>
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	A decrease in edema has been noted with curcumin supplementation
	<a href="#">Methylsulfonylmethane</a>	 Minor	- <a href="#">See study</a>	One study that used MSM as a placebo noted that there was an increase in edema relative to baseline; not known why.
	<a href="#">Serrapeptase</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Related to the antiinflammatory effects, swelling and edema post surgery appear to be reduced.

Back to: [Supplements](#) | [Health Outcomes](#)





# Endothelial Function

Endothelial function (vasoreactivity) tends to refer to the reactivity of blood vessels to dilate or contract upon demand, and is associated with blood flow and arterial calcification. Improved vasoreactivity is associated with reduced risk for cardiovascular incidents.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	The effective size does not appear to be overly large, but CoQ10 is associated with a protective effect on blood flow and endothelial function in persons with otherwise impaired function.
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	There appears to be a slight increase in vascular reactivity and blood vessel responsiveness that may be independent of both blood flow alterations and blood pressure
	<a href="#">Arginine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Unreliable improvements in endothelial function, notably in persons with impaired glucose tolerance/type II diabetes, associated with the supposed increase in nitric oxide
	<a href="#">Panax ginseng</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible increase in endothelial reactivity is noted with panax ginseng supplementation
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	No significant influence on endothelial function
	<a href="#">Grape juice</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, but the positive study was specifically on people who had coronary heart disease.
	<a href="#">Vitamin C</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Attenuation of impairment due to either acute hyperglycemia or elevated free fatty acid levels
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No apparent effect in one study.







# Endothelin-1

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Arginine</a>	 Minor	- <a href="#">See study</a>	A decrease in concentrations of endothelin-1 has been noted with supplemental L-arginine
	<a href="#">Pycnogenol</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Endothelin-1 has failed to be influenced with supplementation of vitamin E in diabetics.

Back to: [Supplements](#) | [Health Outcomes](#)














# Eosinophil count












LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Tinospora cordifolia</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a reduction in eosinophils in the range of 30% or greater, somewhat notable
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No significant influence on baseline eosinophil count with supplementation of chromium relative to placebo in otherwise healthy women.
	<a href="#">Saffron</a>	-	- <a href="#">See study</a>	Eosinophil concentrations are not affected by saffron supplementation in otherwise healthy persons.

Back to: [Supplements](#) | [Health Outcomes](#)

# Erections







Erections refers to the ability to achieve and maintain an erection as well as its rigidity. Many supplements catering towards erectile dysfunction are said to possess these pro-erectile properties.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Panax ginseng</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	An improvement in erectile dysfunction is seen with 3g of Korean Red Ginseng (fermented panax ginseng, regular panax ginseng not as well tested) which is thought to be secondary to anti-fatigue effects and improved blood flow
	<a href="#">Yohimbine</a>	 Minor	- <a href="#">See study</a>	Erections are increased following yohimbine ingestion which is thought to be a combination of alpha-2-adrenergic antagonism (enhancing relaxation of the penile tissue so engorgement of blood can ensure) and increasing blood pressure (which would increase the amount of force in an erection). However, may not be able to overcome organic erectile dysfunction associated with poor blood flow
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	Increased erectile function has been noted with CoQ10, but this may be secondary to reductions in symptoms of Peyronie's Disease
	<a href="#">Eurycoma Longifolia Jack</a>	 Minor	- <a href="#">See study</a>	There appears to be a slight proerectile effect of eurycoma supplements as assessed by self-report survey
	<a href="#">Maca</a>	 Minor	- <a href="#">See study</a>	An increase in erection frequency has been noted in men, likely related to the libido enhancing properties
	<a href="#">Tribulus terrestris</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	1.5 and 2.25 of tribulus extract or 6 g of tribulus root seems to modestly improve erections in infertile men, men with partial androgen deficiency, and men with erectile dysfunction. The effect is reliable across all studies so far, however, research is still in its early stage and great confidence in these results would be unwarranted.
	<a href="#">Ashwagandha</a>	-	- <a href="#">See study</a>	Supplementation of 2,000mg of Ashwagandha thrice daily in men with psychogenic erectile dysfunction failed to exert any benefits more than placebo.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Butea superba</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Currently assumed to be ineffective for erections or erectile dysfunction due to the poor quality of the evidence in existence.
	<a href="#">Dehydroepiandrosterone</a>	-	- <a href="#">See study</a>	No significant influence on erectile properties in persons with sexual dysfunction
	<a href="#">Saffron</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	The best evidence to date does not support a pro-erectile effect of saffron supplementation <i>per se</i> , although it may have a particular role in combating SSRI related sexual dysfunction that results in erectile dysfunction.
	<a href="#">Citrulline</a>	 Minor	- <a href="#">See study</a>	Hardness of erections in persons with mild erectile dysfunction appears to be increased following supplementation of citrulline supplementation.
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	One study has noted an improvement in erections in persons thought to have impaired blood flow
	<a href="#">Pycnogenol</a>	 Minor	- <a href="#">See study</a>	May be proerectile in persons with organic erectile dysfunction (due to poor blood flow)
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	No apparent effect in one study.













# Erythema

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Feverfew</a>	 Notable	- <a href="#">See study</a>	The reduction in erythema with topical parthenolide-depleted feverfew was greater than that of the active control, Ibuprofen.
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Ingestion of fish oil appears to prolong the time required for sunlight to induce reddening of the skin, and secondary to this fish oil ingestion above 1,800mg EPA is able to reduce the risk of sunburn.
	<a href="#">Vitamin E</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Topical application of vitamin E to scar tissue has, in some participants, caused significant increases in redness of the tissue associated with itching.






Back to: [Supplements](#) | [Health Outcomes](#)

# Estrogen

Known as the female hormone, 'Estrogen' is a group of compounds that tends to work in opposition to androgens (like testosterone) and mediate fat metabolism, cognition, blood flow, and female reproduction. Men sometimes wish to lower estrogen via aromatase inhibition.





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dehydroepiandrosterone</a>	 Notable	<b>High</b> <a href="#">See all 14 studies</a>	There appears to be a notable and unreliable increase in estrogen following DHEA supplementation, with most research being conducted in menopausal women. This increase in estrogen has been noted in men as well, although similarly unreliable.
	<a href="#">Maca</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on circulating estrogen noted
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	Regardless of any direct estrogenic effects (which also do not appear to occur) there are no changes in circulating estrogen seen with oral supplementation of red clover extract.
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	The aroma of saffron appears to cause a mild increase in circulating estrogen concentrations in otherwise healthy women following 20 minutes of exposure.
	<a href="#">7-Keto DHEA</a>	-	- <a href="#">See study</a>	Insufficient evidence to claim changes in estrogen following 7-keto supplementation.
	<a href="#">Alcohol</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on fasting estrogen levels in males
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant influences on circulating estrogen levels or biomarkers of estrogenicity (vaginal cytology)
	<a href="#">D-Aspartic Acid</a>	-	- <a href="#">See study</a>	Despite a possible induction of aromatase seen in some species, D-aspartic acid supplementation does not appear to increase serum estrogen.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fenugreek</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences detected on estrogen levels
	<a href="#">Gamma Oryzanol</a>	-	- <a href="#">See study</a>	No significant influence on circulating estrogen levels in healthy men given gamma-oryzanol over a few weeks
	<a href="#">Garcinia cambogia</a>	-	- <a href="#">See study</a>	No significant influence on circulating estrogen levels associated with garcinia
	<a href="#">Green Tea Catechins</a>	-	- <a href="#">See study</a>	No significant influence on serum estrogens
	<a href="#">Horny Goat Weed</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on serum estrogen levels
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on circulating estrogen levels
	<a href="#">Panax ginseng</a>	-	- <a href="#">See study</a>	No significant influence on estrogen levels in women
	<a href="#">Royal Jelly</a>	-	- <a href="#">See study</a>	No significant alterations in estrogen seen with Royal Jelly
	<a href="#">Vitamin K</a>	-	- <a href="#">See study</a>	No significant interactions with estrogen noted with vitamin K supplementation
	<a href="#">Boron</a>	 Minor	- <a href="#">See 2 studies</a>	Appears to influence estrogen, seems unreliable in its mechanisms and is likely context dependent. Both increases and decreases have been noted

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ashwagandha</a>	-	- <a href="#">See study</a>	No apparent effect of ashwagandha on estradiol in aging, overweight men in one study.
	<a href="#">Grape Seed Extract</a>	-	- <a href="#">See study</a>	
	<a href="#">Licorice</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in serum estrogen
	<a href="#">Pueraria lobata</a>	-	- <a href="#">See study</a>	No significant influence of Pueraria lobata on circulating estrogen levels (although it itself may be a phytoestrogen; weak)
	<a href="#">Punicalagins</a>	-	- <a href="#">See study</a>	No significant influence on estrogen

Back to: [Supplements](#) | [Health Outcomes](#)

# Executive Function

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sceletium tortuosum</a>	 Minor	- <a href="#">See study</a>	According to the CNS Vital SignR test in middle aged adults, pre-testing administration of Kanna appeared to increase executive function when compared to placebo.
	<a href="#">Ashwagandha</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Possible improvement in a couple of studies that administered cognitive tests, though not all studies found an effect.

Back to: [Supplements](#) | [Health Outcomes](#)









# Exercise Capacity (with Heart Conditions)

Cardiovascular exercise is known to be impaired in persons with heart disorders and supplements are being investigated to see whether the performance enhancing effects in healthy subjects can be extended to these persons.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Appears to aid exercise capacity in persons after myocardial infarction
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Although there may be a small reduction of power output (typical of creatine), the main parameter of interest (cardiorespiratory output) is mostly unaffected by creatine supplementation.
	<a href="#">Berberine</a>	 Minor	- <a href="#">See study</a>	A positive effect, but the potency thereof was not overly remarkable
	<a href="#">Glutamine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although a failure has been noted in persons with COPD, one study has noted acute benefits in chronic stable angina with 80mg/kg oral glutamine supplementation.
	<a href="#">Citrulline</a>	 Minor	- <a href="#">See study</a>	Citrulline has been noted to increase physical exercise capacity in persons with heart failure.
	<a href="#">Garlic</a>	 Minor	- <a href="#">See study</a>	In persons with coronary heart disease, supplementation of garlic appears to increase physical performance when ingested at a food dose (1g) daily over six weeks; the increase in performance is moderate.
	<a href="#">Taurine</a>	 Minor	- <a href="#">See study</a>	An improvement in walking distance has been noted

# Exercise-Induced Immune Suppression

Intense exercise is known to be associated with an increased rate of sickness and reduced immune cell count, and supplementation is sometimes thought to reduce this rate of loss and thus preserve immunity. These effects are conditional on exercise being conducted.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin C</a>	-	<b>High</b> <a href="#">See all 6 studies</a>	More evidence suggests no significant effect than a possible protective effect, although the latter is possible
	<a href="#">Echinacea</a>	 Minor	- <a href="#">See study</a>	Possible effects, but study assessed salivary IgA (biomarker of immunity) and not sickness rates; hard to assess potency.
	<a href="#">Pelargonium sidoides</a>	 Minor	- <a href="#">See study</a>	Although rates of sickness were not assessed, the alterations in the cytokine/immunoglobulin profile (increase in Immunoglobulin A, suppressing of IL-6 and IL-15) suggest less immunosuppression from exercise.
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The limited studies assessing sickness in athletes during exercise have not found a significant reduction in sickness rates relative to control protein sources (whey).
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	Does not appear to augment nor alleviate the immunosuppression that occurs during exercise in otherwise healthy persons
	<a href="#">Blueberry</a>	-	- <a href="#">See study</a>	The alterations in most immune cells seen during exercise are wholly unaffected by blueberry supplementation.






Back to: [Supplements](#) | [Health Outcomes](#)

# Exercise-Induced Oxidation

Physical exercise is associated with an increase in oxidation in the body (which contributes to fatigue, but also mediates beneficial adaptations to exercise), and ingestion of some antioxidant supplements may reduce oxidation and are thought to prolong endurance.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Mixed effects on exercise-induced oxidation, but there appears to be some potential for CoQ10 supplementation to reduce oxidation.
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A decrease in the exercise-induced increase in MDA levels is seen with carnitine supplementation, possibly secondary to reducing damage to muscle tissue. The degree of MDA reduction is not overly remarkable
	<a href="#">Methylsulfonylmethane</a>	 Notable	- <a href="#">See study</a>	A decrease in exercise induced oxidation is noted with MSM supplementation and thought to be the underlying reason for reductions in muscle damage and soreness. The degree of reduction seems to be notable, as the increase in MDA and protein carbonylation were fully abolished
	<a href="#">Resveratrol</a>	 Notable	- <a href="#">See study</a>	The oxidation induced by exercise is effectively diminished with resveratrol, which is thought to underlie the inhibitory effects on exercise-induced adaptations.
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	Exercise induced oxidation has been noted to be increased in elite athletes with fish oil supplementation
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	A decrease in the oxidation that occurs during exercise may occur following acute ingestion of green tea catechins
	<a href="#">Melatonin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Related to the antioxidative effects, a reduction in exercise-induced oxidation has been noted
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	



















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on oxidation biomarkers that are increased during exercise
	<a href="#">Vitamin C</a>	-	- <a href="#">See 2 studies</a>	Highly mixed interactions with the exercise:oxidation axis with Vitamin C, with both increases and decreases being noted. Unlikely to have a reliable role
	<a href="#">Cocoa Extract</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The increase in oxygenation during exercise can be attenuated by supplementation of cocoa flavanols taken prior to exercise.
	<a href="#">Blueberry</a>	-	- <a href="#">See study</a>	The lone study using a 2.5 hour running protocol at 72% VO2 max failed to find any significant differences between groups in oxidative status after exercise.

Back to: [Supplements](#) | [Health Outcomes](#)

# Fat Mass







Fat Mass is a term for adipose tissue, the scientific name for any body fat you carry on you as a form of energy storage. Although not unhealthy per se, many people termed obese carry too much body fat and a reduction of fat mass is seen as healthy and desirable.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Green Tea Catechins</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	There appears to be a fat reducing effect associated with green tea, but it is minor and unreliable
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 11 studies</a>	There doesn't appear to be a significant nor reliable reduction in fat mass even in diabetics given chromium supplementation according to the literature.
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Moderate</b> <a href="#">See all 20 studies</a>	Evidence is too unreliable to conclude an inherent effect of CLA on fat mass. There may be a context-dependent reduction in body fat and explanation for the observed variability, but at this moment in time too much evidence concludes no effect
	<a href="#">Ephedrine</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	It is thought that most weight lost with ephedrine administration is due to fat mass, due to a slight muscle preserving effect; studies that note reductions in fat mass support this hypothesis
	<a href="#">HMB</a>	 Minor	<b>Low</b> <a href="#">See all 7 studies</a>	There may be a decrease in fat mass associated with HMB supplementation when combined with resistance training, but this reduction is not a large magnitude and usually does not occur; quite unreliable
	<a href="#">L-Carnitine</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There appears to be a fat reducing effect of L-Carnitine supplementation, but this may be limited to elderly persons; limited studies in otherwise healthy youth and adults fail to note an effect
	<a href="#">Vitamin D</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	Mixed effects on overweight/obese persons, but it appears that normalizing a deficiency may aid fat loss in persons of higher body weight. Insufficient evidence to suggest the role of Vitamin D in lean persons
	<a href="#">Whey Protein</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	Inclusion of dietary protein in the diet above the recommended daily intake appears to aid the process of fat loss during hypocaloric diets (eating less than required to sustain body weight). There is currently no demonstrated benefit with whey protein over other protein sources.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Supplementation of colostrum has failed to increase fat mass in subjects relative to baseline, similar to the same doses of whey protein which usually also fail to influence fat mass.
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 9 studies</a>	Creatine reliably increases lean mass (water at first, then muscle with more prolonged supplementation) but does not appear to significantly alter fat mass.
	<a href="#">Dehydroepiandrosterone</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	No significant influence on fat mass appears to exist with DHEA supplementation in youth or in elderly persons
	<a href="#">Pyruvate</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	The majority of the evidence currently does not support a role for supplemental Pyruvate in weight loss. The limited evidence to suggest fat loss are in obese women under severe caloric restriction, of which pyruvate was twice linked to increase the already drastic weight loss
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Fat mass does not appear to be significantly influenced with either short term (2 week) or long term supplementation.
	<a href="#">Clenbuterol</a>	 Notable	- <a href="#">See study</a>	The reduction in fat mass under the influence of clenbuterol is greater than that observed with other fat burners such as <a href="#">ephedrine</a> or <a href="#">yohimbine</a>
	<a href="#">Yohimbine</a>	 Notable	- <a href="#">See study</a>	Fat mass is reduced with yohimbine ingestion and appears to affect both obese and lean individuals
	<a href="#">7-Keto DHEA</a>	 Minor	- <a href="#">See study</a>	The amount of fat lost appears to be more with 7-keto than with placebo when either of them are paired with a low calories weight loss regiment.
	<a href="#">Arginine</a>	 Minor	- <a href="#">See study</a>	A slight reduction in fat mass has been noted with long-term usage in persons with impaired glucose tolerance. No evidence supports the usage of arginine as a fat burner in otherwise healthy persons
	<a href="#">Beta-Alanine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Some studies suggest a fat loss effect, possibly secondary to an increase in workout volume.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Coleus forskohlii</a>	 Minor	- <a href="#">See study</a>	Somewhat effective in reducing fat mass in obese and overweight persons.
	<a href="#">Fenugreek</a>	 Minor	- <a href="#">See study</a>	A lone study measuring fat mass in athletes given fenugreek noted a reduction in fat mass, which was not to a remarkable degree
	<a href="#">Grapefruit</a>	 Minor	- <a href="#">See study</a>	Fat mass appears to be reduced more in groups consuming grapefruit relative to placebo
	<a href="#">Green Coffee Extract</a>	 Minor	- <a href="#">See study</a>	Lone study to measure fat mass noted a decrease associated with green coffee extract consumption, but this is similarly confounded with industrial influence.
	<a href="#">Irvingia gabonensis</a>	 Minor	- <a href="#">See study</a>	A decrease in fat mass has been detected, but may be due to industry influence; independent trials are needed. Mechanism appears to be from suppressing food intake
	<a href="#">Ketogenic diet</a>	 Minor	<b>Moderate</b> <a href="#">See all 11 studies</a>	The effects of a ketogenic diet are likely reducible to its effects on calorie intake. Strictly controlled calorie intake means no difference, and ad libitum diets often mean greater fat loss, but sometimes don't.
	<a href="#">Arachidonic acid</a>	-	- <a href="#">See study</a>	
	<a href="#">Chlorella</a>	-	- <a href="#">See study</a>	No significant effects on fat mass
	<a href="#">D-Aspartic Acid</a>	-	- <a href="#">See study</a>	Fat mass does not appear to be altered with D-aspartic acid supplementation alongside exercise.
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on fat mass with routine supplemental fish oil














LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	The addition of glutamine supplementation to an exercise regiment has failed to outperform placebo in reducing fat mass.
	<a href="#">Hoodia gordonii</a>	-	- <a href="#">See study</a>	No significant reductions in fat mass are noted, secondary to a lack of influence on appetite
	<a href="#">Leucic Acid</a>	-	- <a href="#">See study</a>	No significant interaction between leucic acid and body fat has yet to be detected
	<a href="#">Leucine</a>	-	- <a href="#">See study</a>	
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant influence on fat mass
	<a href="#">Punicic Acid</a>	-	- <a href="#">See study</a>	No significant influence on fat mass by itself
	<a href="#">Tauroursodeoxycholic Acid</a>	-	- <a href="#">See study</a>	No significant influence on fat mass in obese persons
	<a href="#">Tribulus terrestris</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influences on fat mass are noted with tribulus terrestris
	<a href="#">Ursolic Acid</a>	-	- <a href="#">See study</a>	No significant reductions in fat mass were noted when ursolic acid (150mg thrice daily over 16 weeks) was used, when compared to placebo.
	<a href="#">Vitamin B3 (Niacin)</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Pharmacological doses of niacin in obese dyslipidemics does not appear to confer fat loss properties.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	Does not appear to significantly influence fat mass
	<a href="#">Ashwagandha</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There was a trend to reduce fat mass over 30 days when supplemented to otherwise healthy people, but this failed to reach statistical significance. In untrained persons doing strength training, it may improve fat loss, however.
	<a href="#">Medium-chain triglycerides</a>	 Minor	- <a href="#">See study</a>	May decrease fat mass to a greater degree than an isocaloric amount of long chain fatty acids.
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Fat mass does not appear to be influenced with supplementation of cocoa flavanols
	<a href="#">Eurycoma Longifolia Jack</a>	-	- <a href="#">See study</a>	No significant known influences on fat mass
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Safflower Oil</a>	-	- <a href="#">See study</a>	No significant reduction in total fat mass, although in obese diabetic women a slight reduction in abdominal fat mass may exist.
	<a href="#">Zinc</a>	-	- <a href="#">See study</a>	No known significant interactions with zinc supplementation on fat mass.













# Fat Oxidation

Fat Oxidation is the percentage of caloric expenditure that is derived from fatty acids (the alternative being mostly from glucose); it is independent of actual metabolic rate.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Green Tea Catechins</a>	 Minor	<b>Very High</b> <a href="#">See all 8 studies</a>	There appears to be a slight but unreliable increase in fat oxidation (percentage of overall calories used coming from fatty acids rather than glucose) associated with consumption of green tea catechins
	<a href="#">Branched Chain Amino Acids</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	In prolonged exercise and somewhat related to the antifatigue effects, an increase in fat oxidation is noted with BCAA supplementation; this is thought to be related to the glycogen preserving effects of BCAAs.
	<a href="#">Caffeine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	An increase in fat oxidation appears to be apparent (assessed via increased serum glycerol and free fatty acids) which is thought to be secondary to increases in adrenaline
	<a href="#">Yerba mate</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There is a possible increase in fat oxidation rates seen during rest, with one study confirming it during exercise; this may not coincide with an increase in metabolic rate.
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Colostrum does not influence fat oxidation rates or glucose expenditure during exercise any differently than other protein sources such as whey.
	<a href="#">L-Carnitine</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Rates of fat oxidation appear unaffected following carnitine supplementation
	<a href="#">Alpha-GPC</a>	 Minor	- <a href="#">See study</a>	Some biomarkers of hepatic fat oxidation increased at rest, no indication as to the potency of this relative to reference drugs.
	<a href="#">Conjugated Linoleic Acid</a>	 Minor	- <a href="#">See study</a>	May influence fat oxidation, but more evidence is required.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Eleutherococcus senticosus</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Some studies have noted an increase in fat oxidation during exercise; no current studies conducted at rest
	<a href="#">Sodium Bicarbonate</a>	 Minor	- <a href="#">See 2 studies</a>	An increase in fat oxidation has been noted at rest with supplemental sodium bicarbonate which contributed solely to the increase in metabolic rate
	<a href="#">Spirulina</a>	 Minor	- <a href="#">See study</a>	Nothing remarkable in the one study on fat oxidation rates during exercise.
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	- <a href="#">See study</a>	There may be a reduction in fat oxidation rates when pharmacological doses of niacin are consumed by otherwise healthy subjects, although no changes in the metabolic rate occur due to an increase in the rate of glucose oxidation.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Capsaicin</a>	-	- <a href="#">See study</a>	
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Fat oxidation (percent of energy derived from fatty acids relative to glucose) does not appear to be influenced following supplementation of chromium.
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	The rate of fat oxidation relative to carbohydrates does not appear to be altered in response to supplementation of cocoa flavanols.
	<a href="#">Creatine</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Nicotine</a>	-	- <a href="#">See study</a>	When nicotine increases metabolic rate, there is no change in rates of fat or glucose oxidation.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Panax ginseng</a>	-	- <a href="#">See study</a>	Rates of fat oxidation during exercise appear unchanged
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on fat oxidation during exercise
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	No significant alterations in fat oxidation noted with quercetin supplementation
	<a href="#">Resveratrol</a>	-	- <a href="#">See study</a>	Resting fat oxidation does not appear to be altered when 150mg resveratrol is taken shortly after exercise.
	<a href="#">Taurine</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fat oxidation
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	An increase in fat oxidation (percentage of energy being taken from fat tissue) has been noted with fish oil supplementation
	<a href="#">Medium-chain triglycerides</a>	 Minor	- <a href="#">See study</a>	Appears to increase the percentage of calories derived from lipids in obese persons; no comparator.
	<a href="#">Ashwagandha</a>	-	- <a href="#">See study</a>	Despite improvements seen in VO <sub>2</sub> max and endurance capacities in this study, the respiratory exchange ratio (indicative of fat oxidation) was not significantly influenced.
	<a href="#">Ketogenic diet</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Inconsistent effects in 2 studies.



# Fatigue






A chronic lack of motivation and 'energy'/'vitality', Fatigue can be acutely countered by stimulants (not advisable for the long term) or may be slowly mended by other compounds like Reishi or CoQ10.  
HTML/HTML

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rhodiola Rosea</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	The decrease in fatigue appears to be quite strong and somewhat reliable when a low dose is given over a prolonged period of time or a high dose is given acutely; there is one study which has noted an increase in fatigue (relative to placebo) that needs to be expanded upon.
	<a href="#">Creatine</a>	 Notable	<b>High</b> <a href="#">See all 7 studies</a>	400 mg/kg/day in children and adolescents subject to traumatic brain injury reduces fatigue frequency from around 90% down to near 10%. Fatigue is also reduced, though to a lesser degree, in cases of sleep deprivation.
	<a href="#">Modafinil</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	Fatigue is notably reduced with modafinil supplementation, particularly during instances of sleep deprivation or hypersomnia.
	<a href="#">Beta-Alanine</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Somewhat effective at reducing fatigue and, secondary to that, at improving time to exhaustion.
	<a href="#">Branched Chain Amino Acids</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	A decrease in fatigue (mental fatigue when measured after the workout) results when BCAA supplementation is taken during exercise at a dose above 10g or so
	<a href="#">Coenzyme Q10</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There may be an anti-fatigue effect of CoQ10 during exercise that may not extend to general fatigue.
	<a href="#">L-Carnitine</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Carnitine appears to be somewhat effective in reducing fatigue in elderly persons with low muscular endurance and perhaps in chronic fatigue syndrome; there is insufficient evidence to support a role of carnitine in reducing exercise-induced fatigue
	<a href="#">Pelargonium sidoides</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	Fatigue as a side-effect of acute bronchitis is reduced quite respectably relative to placebo.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trimethylglycine</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	One study noted a reduced <i>rate of change</i> in fatigue (no overall differences in fatigue outright though) seen with betaine, whereas the other two studies have failed to find benefit with betaine.
	<a href="#">Citrulline</a>	 Notable	<b>Moderate</b> <a href="#">See all 3 studies</a>	The decrease in fatigue during exercise is thought to underlie most of the benefit seen with training capacity (work volume), although in men who self-report fatigue issues supplemental citrulline appears to help with that as well (independent of exercise)
	<a href="#">Colostrum</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Both studies on fatigue assessed persons with HIV-related diarrhea, but when diarrhea was successfully (and greatly) benefited with colostrum containing porridge fatigue was reduced by over 80% of baseline values. It is uncertain if this anti-fatigue effect influences other persons.
	<a href="#">Alanylglutamine</a>	 Minor	- <a href="#">See study</a>	A possible minor antifatigue effect has been noted with higher doses of alanylglutamine in sports lasting an hour in length
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Secondary to its adaptogenic effects, ashwagandha is able to reduce the perceptions of fatigue with prolonged daily usage.
	<a href="#">Caffeine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Decrease in fatigue have been noted during exercise and during low strenuous physical exercise
	<a href="#">Coleus forskohlii</a>	 Minor	- <a href="#">See study</a>	Less fatigue reported as a side-effect, no comparator or ability to assess potency.
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	A decrease in postoperative fatigue has been noted with curcumin supplementation
	<a href="#">Ganoderma lucidum</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in fatigue has been noted, but secondary to disease states characterized by fatigue. Usage of Reishi to reduce fatigue outright or to aid exercise is unexplored
	<a href="#">Glycine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The reduction in fatigue may solely be secondary to how Glycine supplementation can improve sleep quality



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ornithine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction in fatigue has been noted for both prolonged exercise, hepatic pathology, and for hangovers; all situations characterized by excessive ammonia concentrations in the blood.
	<a href="#">Phosphatidylserine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Unreliable effects, but a quite notable reduction in fatigue has been noted during intense exercise (85% VO2 max) which resulted in increased time to exhaustion. This was not present at lower intensities
	<a href="#">Pyruvate</a>	 Minor	- <a href="#">See study</a>	May reduce fatigue during weight loss periods
	<a href="#">Valeriana officinalis</a>	 Minor	- <a href="#">See study</a>	One study assessing valerian in persons with cancer on chemotherapy (of which insomnia may be a side effect of chemotherapy) found reductions in sleep disturbances which manifested as less fatigue during the day; no other evidence at this point in time.
	<a href="#">Vitamin C</a>	 Minor	- <a href="#">See study</a>	A decrease in fatigue has been noted in obese adults given Vitamin C in conjunction with exercise
	<a href="#">7-Keto DHEA</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in fatigue and energy following 7-keto supplementation.
	<a href="#">Choline</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fatigue in exercise that is not associated with choline depletion (such as loaded carries) or in trained athletes, which do not appear to be depleted in choline
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Fatigue during cognitive testing in otherwise healthy youth is not affected by supplementation of cocoa flavanols.
	<a href="#">Fish Oil</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	No demonstrable benefit to fatigue
	<a href="#">HMB</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant reduction in exercise-induced fatigue associated with HMB supplementation in athletes

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-Tyrosine</a>	-	- <a href="#">See study</a>	No significant influence has been noted on fatigue from L-Tyrosine supplementation during acute stresses
	<a href="#">Marijuana</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Mixed evidence in regards to physical and mental fatigue in the usage of marijuana for multiple sclerosis, with more studies suggesting the benefits are not statistically significant.
	<a href="#">Methylsulfonylmethane</a>	-	- <a href="#">See study</a>	No significant influence on exercise related fatigue
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	No significant influence on fatigue nor vitality in otherwise healthy persons
	<a href="#">Resveratrol</a>	-	- <a href="#">See study</a>	No significant influence on self-reported ratings of fatigue at rest
	<a href="#">Tribulus terrestris</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Exercise related fatigue and vigor is unaffected by tribulus supplementation in trained men
	<a href="#">Melissa officinalis</a>	 Minor	- <a href="#">See study</a>	A decrease in fatigue associated with anxiety has been noted, no research looking at the <i>per se</i> influence of lemon balm on fatigue
	<a href="#">Pyrroloquinoline quinone</a>	 Minor	- <a href="#">See study</a>	A decrease in fatigue has been noted in older adults with self-reported energy problems
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	One study found an improvement in women with PMS. This might not translate to other cases, and much more research is needed.
	<a href="#">D-Ribose</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Phenylpiracetam</a>	-	- <a href="#">See study</a>	Despite the usage of phenylpiracetam to treat asthenia, the lone study assessing this in persons with traumatic brain injuries failed to find a benefit (which may be a false negative if phenylpiracetam is inactive on brain injuries in the first place).
	<a href="#">Spirulina</a>	-	- <a href="#">See study</a>	Currently no evidence to support an improvement in fatigue symptoms
	<a href="#">Vitamin B<sub>12</sub></a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin D</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Vitex agnus castus</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Fatigue (non-anemic)






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Iron</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	In people without anemia, but who have iron deficiency or low ferritin levels, increasing iron stores through oral or intravenous supplementation can reduce fatigue somewhat. It's unclear if the average person with iron levels traditionally considered to be sufficient can benefit from increased iron intake in this regard, though what research we have suggests that it's unlikely.

Back to: [Supplements](#) | [Health Outcomes](#)



# Fatigue Resistance






Fatigue Resistance tends to refer to the resilience of the body towards developing fatigue (a sort of preeminative anti-fatigue effect), and supplements that enhance fatigue resistance are thought to be anti-stress and adaptogenic.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	Small degree of fatigue reduction during exercise, but appears unreliable.
	<a href="#">Eleutherococcus senticosus</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May increase physical performance, but is unreliable in doing so
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Fecal Moisture





Fecal moisture is the measurement of water in feces, which contributes to the bulk thereof. This is an indicator of dietary soluble fiber (which resorbs water) and higher moisture eases the passing of stool.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Psyllium</a>	 Strong	<b>Very High</b> <a href="#">See all 4 studies</a>	Psyllium is the reference drug for increasing water content of stool.
	<a href="#">Yacon</a>	 Minor	- <a href="#">See study</a>	A mild increase in fecal moisture and consistency has been reported with consumption of yacon syrup, thought to be related to prebiotic effects and a reduction in intestinal motility.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Fecal Weight

Fecal weight refers to the overall weight of a bowel movement, and increases in fecal weight (independent of changes in food intake) tend to reflect water accumulation and retention by soluble fibers.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Psyllium</a>	 Strong	<b>Very High</b> <a href="#">See all 4 studies</a>	Psyllium tends to be the reference drug for increasing fecal weight, and due to that and the reliability of which this occurs it gets a strong rating
	<a href="#">Colostrum</a>	 Minor	- <a href="#">See study</a>	A decrease in fecal weight has been noted in a trial assessing diarrhea, which was thought to be a consequence of successfully treating diarrhea.

Back to: [Supplements](#) | [Health Outcomes](#)



# Fertility

Fertility refers to the capacity to create children, and in regards to supplementation this tends to refer to seminal parameters such as semen quality or semen motility.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Inositol</a>	 Notable	<b>Very High</b> <a href="#">See all 9 studies</a>	In women with PCOS, inositol (typically 2000 mg once or twice daily) can significantly increase ovulation and fertility rates.
	<a href="#">Dehydroepiandrosterone</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in fertility has been noted with DHEA supplementation
	<a href="#">Zinc</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Zinc can increase the fertility of men who are infertile <i>and</i> have low circulating testosterone, and appears ineffective in men who have normal testosterone levels with infertility. This is related to an increase in sperm count seen in the former group.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">D-Aspartic Acid</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Limited evidence for D-aspartic acid suggest an increase in fertility of men, with one study noting that a group went from no conceptions to 26.6% of subjects reporting conception over 90 days.
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	Insufficient evidence to support whether the increase in fertility is large or not, but preliminary evidence suggests that it exists.












Back to: [Supplements](#) | [Health Outcomes](#)

# Fever

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pelargonium sidoides</a>	 Notable	<b>High</b> <a href="#">See all 9 studies</a>	Fever as a side effect of acute bronchitis is reduced quite potently (80-90% of persons reporting elimination of fever) due to the potent treatment of acute bronchitis, but there is no inherent anti-pyretic effect of this herb in other instances.











Back to: [Supplements](#) | [Health Outcomes](#)

# Fibrinogen

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	An increase in fibrinogen has been noted
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	No significant alterations in fibrinogen content have been noted with oral supplementation of hesperidin
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No known changes to circulating fibrinogen concentrations.
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant alterations in fibrinogen concentrations seen with supplementation of betaine.
	<a href="#">Nattokinase</a>	 Minor	- <a href="#">See study</a>	A decrease in fibrinogen appears to exist following nattokinase ingestion
	<a href="#">Salvia hispanica</a>	 Minor	- <a href="#">See study</a>	A decrease in fibrinogen has been noted with chia seed ingestion according to one study
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Fibrinogen concentrations do not appear altered when 100g chocolate is ingested in otherwise healthy subjects

# Follicle-Stimulating Hormone

Follicle stimulating hormone (FSH) is a pituitary hormone similar to luteinizing hormone that positively regulates fertility and spermatogenesis.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Maca</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on follicle stimulating hormone noted
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	No significant influence on FSH seen with oral supplementation of red clover to postmenopausal women
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Not overly notable, but a decrease has reached statistical significance
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	A decrease in follicle stimulating hormone has been detected
	<a href="#">Shilajit</a>	 Minor	- <a href="#">See study</a>	An increase in follicle-stimulating hormone has been detected with shilajit consumption
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of chromium supplementation on follicle stimulating hormone (FSH) in women with PCOS relative to placebo.
	<a href="#">Dehydroepiandrosterone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in follicle-stimulating hormone levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Saffron</a>	-	- <a href="#">See study</a>	FSH is unaffected in infertile men given 60mg saffron daily over the course of 26 weeks.
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	No alterations in FSH levels have been noted with velvet antler supplementation
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	FSH does not appear to be influenced following supplementation of vitamin E.
	<a href="#">Alcohol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on FSH, but although null effects have been reported an increase may be possible
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	Effect occurs in normal-weight women, but not obese women.
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	A 17.6% increase in follicle stimulating hormone has been noted in infertile men given ginger, which is thought to underlie the observed pro-seminal effects of supplementation.
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant alterations in follicle stimulating hormone seen with licorice consumption
	<a href="#">Pueraria lobata</a>	-	- <a href="#">See study</a>	No significant alterations have been noted in follicle-stimulating hormone concentrations following pueraria lobata ingestion.
	<a href="#">Tribulus terrestris</a>	-	- <a href="#">See study</a>	No change in one uncontrolled study
	<a href="#">Zinc</a>	-	- <a href="#">See study</a>	No detectable influence of zinc supplementation of FSH concentrations in zinc deficient persons.





# Food Intake








Food intake refers to the quantitative amount of food ingested over a designated period of time, and does not necessarily reflect hunger nor appetite. Appetite suppressants should result in a reduction in food intake.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chromium</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	No significant influence on food intake in standard diabetics, although limited evidence suggest a possible role specifically in persons who self-report elevated carbohydrate cravings and inappropriate eating patterns due to urges.
	<a href="#">HMB</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Although there are sporadic alterations seen in food intake in studies using HMB supplementation, they are not reliable and the exact change observed changes. It is likely that there is no significant effect per se and this is due to the study population
	<a href="#">Grape Seed Extract</a>	 Minor	- <a href="#">See study</a>	A decrease in voluntary food intake has been noted with grape seed extract ingestion, appetite <i>per se</i> not measured
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	Secondary to reducing snacking (thought to be via increasing satiety from meals) saffron appears to reduce overall food intake.
	<a href="#">Stevia</a>	 Minor	- <a href="#">See study</a>	Stevia, in place of caloric sweeteners, has been associated with reducing whole-day food intake.
	<a href="#">Capsaicin</a>	-	- <a href="#">See study</a>	
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No effect on food intake.
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There does not appear to be a significant influence of fish oil supplementation on food intake

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Garcinia cambogia</a>	-	- <a href="#">See study</a>	Food intake appears to be unaltered following ingestion of garcinia supplements, which is different than results seen in rats
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	No significant alterations in food intake are seen with garlic ingestion (assuming no taste aversion).
	<a href="#">Nigella sativa</a>	-	- <a href="#">See study</a>	No significant alterations in food intake associated with ingestion of nigella sativa.
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	No significant alterations in food intake noted with Vitamin D supplementation
	<a href="#">Vitamin K</a>	-	- <a href="#">See study</a>	Studies that happen to measure dietary intake fail to note any influence of supplemental Vitamin K
	<a href="#">Ascophyllum nodosum</a>	 Minor	- <a href="#">See study</a>	The reduction in voluntary food intake noted was 16.4% of a test meal (which was 80kcal in this study) and is not likely to make significant effects during weight loss.
	<a href="#">Milk Protein</a>	 Minor	- <a href="#">See study</a>	Appears to reduce food intake, a phenomena common to all protein sources
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	The inclusion of cocoa flavanols via dark chocolate does not appear to alter whole-day food intake when compared to low flavanol chocolate.
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Psyllium</a>	-	- <a href="#">See study</a>	Failed to significantly influence food intake







# Forgetting

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Bacopa monnieri</a>	 Minor	- <a href="#">See study</a>	A small reduction of acute forgetting (just during a task, not outright amnesia) has been noted, which may contribute better to long term memory (ie. grasping concepts better)
	<a href="#">Pramiracetam</a>	 Minor	- <a href="#">See study</a>	Appears to decrease the influence of amnesiac drugs (scopolamine), and is effective when loaded over a few days rather than relying on acute administration
	<a href="#">Inositol</a>	-	- <a href="#">See study</a>	Electroconvulsion therapy induced amnesia is not prevented with oral administration of 6g <i>myo</i> -inositol preloaded for five days
	<a href="#">Phosphatidylserine</a>	 Minor	- <a href="#">See study</a>	A reduced rate of forgetting immediate information (results in 'grasping' information easier) has been noted during treatment of cognitive decline with PS; an inherent anti-amnesiac effect is not known

Back to: [Supplements](#) | [Health Outcomes](#)

# Free Fatty Acids



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ketogenic diet</a>	 Strong	<b>Very High</b> <a href="#">See all 5 studies</a>	The greater reliance on fatty acids for energy leads to an increase in circulating free fatty acids.
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	There was a modest reduction in one study in type 2 diabetics, but much more research is needed.

Back to: [Supplements](#) | [Health Outcomes](#)

# Free Testosterone

Free testosterone is a measurement of testosterone that is not bound to SHBG, and is thought to be more reflective of the effects of testosterone than a basic blood measurement of testosterone.










LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dehydroepiandrosterone</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Increases in free testosterone have been noted to coincide with testosterone increases (which are unreliable)
	<a href="#">Zinc</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Free testosterone follows the same trends as testosterone, and may be increased following supplementation in persons who are deficient in zinc
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of chromium supplementation on free testosterone concentrations in women with PCOS.
	<a href="#">Nigella sativa</a>	-	- <a href="#">See study</a>	No significant influence on circulating free testosterone concentrations in men with central obesity
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	Free testosterone was unaltered with velvet antler relative to placebo
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Vitamin E does not appear to alter the concentrations of free testosterone in serum following supplementation.
	<a href="#">Boron</a>	 Minor	- <a href="#">See study</a>	Appears to be quite effective, but requires some more robust trials
	<a href="#">Calcium</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">D-Aspartic Acid</a>	-	- <a href="#">See study</a>	
	<a href="#">Tribulus terrestris</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	One uncontrolled study found a small but significant increase from baseline, but the other studies found no significant difference.

Back to: [Supplements](#) | [Health Outcomes](#)



# Fructosamine









LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chromium</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Both studies assessing fructosamine have found a mild decrease.
	<a href="#">Psyllium</a>	 Minor	- <a href="#">See study</a>	A decrease in fructosamine has been noted in diabetics supplementing psyllium husk.
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No evidence to support an increase in fructosamine, which alongside HbA1c is thought to indicate pathology from elevated blood glucose (fish oil appears to elevate glucose, but does not appear to be associated with higher diabetes risk)
	<a href="#">Ruscus aculeatus</a>	 Minor	- <a href="#">See study</a>	A 7.8% reduction in fructosamine has been noted with supplementation of <i>ruscus aculeatus</i> in diabetic persons.
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	Unclear effect after taking 1 g/d for 4 months.

Back to: [Supplements](#) | [Health Outcomes](#)

# Functionality in Elderly or Injured

Supplements that improve symptoms of osteoarthritis, reduce the risk of falls, or improve muscle function in elderly persons tend to improve physical function and movement resulting in increased quality of life.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">S-Adenosyl Methionine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Somewhat of an increase in functionality of elderly persons, most likely secondary to the beneficial effects on joint health.
	<a href="#">Dehydroepiandrosterone</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Most evidence measuring functionality in elderly persons have not found any improvement with DHEA supplementation, although it is possible that DHEA may play a role
	<a href="#">Curcumin</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	In persons with osteoarthritis, the performance on a treadmill test after eight months was significantly increased (more than twice the distance covered with curcumin relative to control).
	<a href="#">Vitamin D</a>	 Notable	- <a href="#">See study</a>	An improvement in muscular and neural functionality in the elderly is thought to underlie the reductions of fall risk and reduced bone fracture rate seen in elderly cohorts
	<a href="#">Creatine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possibly an effect, but the less reliable effects of creatine in the older population (which seem to respond less) seems to manifest here.
	<a href="#">Kaempferia parviflora</a>	 Minor	- <a href="#">See study</a>	Grip strength has been found to be increased in elderly persons associated with supplementation at low doses
	<a href="#">Krill Oil</a>	 Minor	- <a href="#">See study</a>	The increase in functionality appears to be secondary to reductions in symptoms of rheumatoid arthritis
	<a href="#">Phenylpiracetam</a>	 Minor	- <a href="#">See study</a>	Physical function and activities of daily living in elderly persons after a stroke appear to be benefitted with phenylpiracetam. While it should work in elderly persons without cognitive impairment, this has not been tested

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	An increase in functionality of elderly frail persons has been seen with zinc supplementation, thought to be related to the increase in IGF-1 also observed.
	<a href="#">Nitrate</a>	-	- <a href="#">See study</a>	No significant influence has been noted on functional tests in elderly persons given nitrate supplementation
	<a href="#">Oxiracetam</a>	-	- <a href="#">See study</a>	The one study to note functional capabilities in persons with dementia given oxiracetam failed to find a significant treatment effect
	<a href="#">Cissus quadrangularis</a>	 Notable	- <a href="#">See study</a>	An increase in the function of the joint appears to occur alongside reductions in perceived pain and soreness when cissus treats athletic joint pain; one of the few options that sees to benefit athletes.
	<a href="#">Vinpocetine</a>	 Minor	- <a href="#">See study</a>	An improvement in balance has been noted with vinpocetine ingestion in the elderly, which may be related to the attenuation of cognitive decline

Back to: [Supplements](#) | [Health Outcomes](#)

# Gastrin

Gastrin is a peptide hormone that stimulates the production of stomach acid, and is required for proper digestion of protein-containing foods. Its overproduction is thought to contribute to heartburn at times.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Notable	<b>High</b> <a href="#">See all 4 studies</a>	There appears to be an increase in serum gastrin levels following ingestion of melatonin in persons with stomach ulceration, this increase is thought to be related to the ulcer healing effects of melatonin

















Back to: [Supplements](#) | [Health Outcomes](#)

# General Oxidation

General oxidation refers to a collection of biomarkers in the blood that are thought to reflect oxidative damage to the body. A reduction in these biomarkers is antioxidative, while an increase in prooxidative.






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alpha-Lipoic Acid</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	Appears to reduce biomarkers of oxidation
	<a href="#">Cocoa Extract</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	A potential yet unreliable decrease in biomarkers of oxidation in serum following ingestion.
	<a href="#">Coenzyme Q10</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	Appears to generally reduce pro-oxidative biomarkers in the body
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	Prooxidative biomarkers appear to be reduced following long term supplementation of curcumin
	<a href="#">Rooibos</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	A decrease sometimes occurs, although this has not been noted in all instances. The decrease in healthy persons is minor and lasts for about 5 hours, whereas it may be more prominent in persons at risk for cardiovascular disease
	<a href="#">Vitamin C</a>	 Minor	<b>Moderate</b> <a href="#">See all 7 studies</a>	Surprisingly mixed influences on biomarkers of oxidation, with either a decrease or no significant influence the majority of the time (with limited evidence to hint at an increase being possible)
	<a href="#">Vitamin E</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	Supplementation of vitamin E appears to reduce oxidation in plasma, requiring over 500mg (if not more) α-tocopherol in states where there is abnormal elevations of oxidation. Vitamin E is without effect at lower doses or in persons without abnormal oxidation levels.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See all 3 studies</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Spirulina</a>	 Notable	- <a href="#">See study</a>	Notable due to mechanisms, but requires studies with reference drugs and more biomarkers measured.
	<a href="#">Arginine</a>	 Minor	- <a href="#">See study</a>	A decrease in oxidation has been noted in persons with impaired glucose tolerance, thought to be associated with the increase in superoxide dismutase activity
	<a href="#">Blueberry</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Oral ingestion of berries or their extracts tends to reduce oxidative biomarkers and improve antioxidant status either acutely or with daily supplementation
	<a href="#">Chromium</a>	 Minor	- <a href="#">See all 3 studies</a>	Mixed evidence leaning towards no effect, although a possible antioxidative effect remains possible in persons with high baseline HbA1c or polycystic ovarian syndrome and a prooxidative effect in persons with normal HbA1c.
	<a href="#">Fish Oil</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase general oxidation in the body, but seems unreliable in doing so
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	There appears to be a reduction in general oxidation as assessed by biomarkers (reduced glutathione, etc.) associated with supplementation of ginkgo biloba
	<a href="#">Grape Seed Extract</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	A decrease in whole body oxidation appears to occur following ingestion of grape seed extract
	<a href="#">Inositol</a>	 Minor	- <a href="#">See study</a>	There may be a reduction in oxidation associated with PCOS when the condition is being treated by inositol
	<a href="#">Japanese Knotweed</a>	 Minor	- <a href="#">See study</a>	Appears to reduce oxidative biomarkers, requires more evidence to gauge potency and reliability thereof
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	May decrease biomarkers of oxidation in serum

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Methylsulfonylmethane</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction in oxidative biomarkers has been noted following MSM ingestion
	<a href="#">Olive leaf extract</a>	 Minor	- <a href="#">See study</a>	Is able to reduce oxidative parameters in the blood when they are measured.
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	Oxidation in the body appears to be reduced, which is thought to be secondary to induction of antioxidant enzymes
	<a href="#">Pycnogenol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction in general oxidation is noted following prolonged Pycnogenol supplementation
	<a href="#">Quercetin</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May reduce oxidative biomarkers in serum and urine, but is a tad unreliable in doing so.
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	A decrease in oxidative biomarkers has been noted following resveratrol supplementation
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	
	<a href="#">Ganoderma lucidum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in whole-body oxidation are apparent
	<a href="#">Glutathione</a>	-	- <a href="#">See study</a>	
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	General oxidative parameters do not appear to be significantly altered with supplementation of hesperidin under resting conditions.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Red Clover Extract</a>	-	- <a href="#">See study</a>	There does not appear to be a significant influence on oxidative parameters seen with supplementation of red clover isoflavones.
	<a href="#">Zinc</a>	-	- <a href="#">See study</a>	No significant interaction with biomarkers of general oxidation
	<a href="#">Aronia melanocarpa</a>	 Notable	- <a href="#">See study</a>	Requires more evidence, but it appears to reduce oxidative parameters more than other supplements.
	<a href="#">Grape juice</a>	 Notable	- <a href="#">See study</a>	One study found a reduction in superoxide. Much more research is needed.
	<a href="#">Garlic</a>	 Minor	- <a href="#">See study</a>	Oxidative biomarkers in the blood appear to be modestly reduced following supplementation of garlic in persons with high levels of oxidative damage indicative in serum.
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	Can decrease oxidation in the body (assessed via oxidative biomarkers)
	<a href="#">Hibiscus sabdariffa</a>	 Minor	- <a href="#">See study</a>	Appears to reduce oxidative biomarkers in the body, surprisingly not the potency one would expect from <i>in vitro</i> evidence
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	Reduction in general oxidation seems to be secondary to antioxidant enzyme induction
	<a href="#">Melissa officinalis</a>	 Minor	- <a href="#">See study</a>	A decrease in general oxidation occurs following lemon balm ingestion
	<a href="#">Punicalagins</a>	 Minor	- <a href="#">See study</a>	A decrease in general oxidation has been noted with punicalagins



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Yerba mate</a>	 Minor	- <a href="#">See study</a>	A decrease in serum oxidative parameters tends to be noted following Mate consumption
	<a href="#">Apple Cider Vinegar</a>	-	- <a href="#">See study</a>	One study didn't find a notable difference in malondialdehyde with 20 ml per day over 4 weeks, though the placebo group saw a considerable increase. Thus, even there the difference was statistically significant it's unclear if this is a genuine effect of apple cider vinegar. More studies are needed.
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Pyrroloquinoline quinone</a>	-	- <a href="#">See study</a>	Overall oxidation in serum as assessed by TRAP has failed to be significantly influenced by PQQ supplementation in otherwise healthy adults.






Back to: [Supplements](#) | [Health Outcomes](#)

# Ghrelin

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Marijuana</a>	 Minor	- <a href="#">See study</a>	An increase in ghrelin has been noted with marijuana usage, likely playing a role in the increase in appetite.
	<a href="#">Melatonin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in Ghrelin appears to exist following acute supplementation of melatonin
	<a href="#">Whey Protein</a>	 Minor	- <a href="#">See study</a>	A decrease in Ghrelin has been observed with whey protein supplementation.
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	Circulating ghrelin does not appear to be modified in response to colostrum supplementation.
	<a href="#">Ketogenic diet</a>	 Minor	- <a href="#">See study</a>	Somewhat of an increase in one study with ad libitum energy intake.







Back to: [Supplements](#) | [Health Outcomes](#)

# Glomerular Filtration Rate

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Glutamine</a>	 Minor	- <a href="#">See study</a>	A decrease has been noted in elderly persons given 0.5g/kg glutamine to a level where although the authors were not concerned but some serum biomarkers were adversely affected; long-term significance of this unknown
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	In type II diabetics, there is no influence of vitamin E supplementation on glomerular filtration rate.
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No difference compared with placebo after taking 6 g/d for 4 weeks.

Back to: [Supplements](#) | [Health Outcomes](#)









# Glucagon

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Arginine</a>	-	- <a href="#">See study</a>	Does not appear to significantly influence circulating glucagon concentrations
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No significant influence on plasma glucagon concentrations
	<a href="#">Ketogenic diet</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Small increases in most studies, independently of caloric intake. The one study that found a reduce compared with the control group was a very low calorie diet for both groups.
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Serum glucagon does not appear to be influenced by ingestion of cocoa flavanols.
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	Circulating glucagon concentrations do not appear to be altered when niacin (100mg every hour) is supplemented during a fasting period.

Back to: [Supplements](#) | [Health Outcomes](#)








# Glycemic Control

Glycemic controls refers to the ability to maintain somewhat controlled fluctuations in blood glucose following ingestion of carbohydrates or fasting, which is important for persons who are insulin resistant or diabetic.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chlorogenic Acid</a>	 Minor	- <a href="#">See study</a>	Slight increase in glycemic control possibly secondary to reducing carbohydrate absorption
	<a href="#">Creatine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be somewhat effective in diabetics for improving glycemic control.
	<a href="#">Fenugreek</a>	 Minor	- <a href="#">See study</a>	May improve glycemic control secondary to reduction in blood glucose, although this may be more indicative of fenugreek fibers than the saponin content
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No significant influence on glycemic control in diabetics with Vitamin C supplementation
	<a href="#">Alpha-Lipoic Acid</a>	-	- <a href="#">See study</a>	No significant practical benefit on glycemic control noted




Back to: [Supplements](#) | [Health Outcomes](#)

# Glycemic Control / Insulin Sensitivity

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Curcumin</a>	-	<b>Moderate</b> <a href="#">See all 12 studies</a>	An effect is possible in type 2 diabetics but studies are not generally supportive.
	<a href="#">Ketogenic diet</a>	 Notable	<b>High</b> <a href="#">See all 10 studies</a>	Calculations based on glucose and insulin such as HOMA and QUICKI suggest an improvement in insulin sensitivity on ketogenic diets, even independently of weight loss. One study used a euglycemia hyperinsulinemia clamp and found an improvement in insulin sensitivity, but it was confounded by weight loss.
	<a href="#">Apple Cider Vinegar</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	One study found a modest improvement only in the 15 ml group and not the 30 ml group, while another didn't note an effect. Much more research is needed to assess the effects of apple cider vinegar, and particularly independently of weight loss.
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	One study failed to find an effect on HOMA-IR.
	<a href="#">Vitamin C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence. Significant improvement with 1 g/d in type 2 diabetics, though not accompanied by changes in fasting blood glucose. The other study didn't find a change.
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Glycogen Content

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	Similar to the failure in increasing glycogen replenishment rate, the overall glycogen content increased by carbohydrate is not altered by supplementation of chromium.
	<a href="#">Creatine</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Resveratrol</a>	-	- <a href="#">See study</a>	150mg resveratrol taken shortly after a workout appears does not appear to influence muscular glycogen content at rest.

Back to: [Supplements](#) | [Health Outcomes](#)

# Glycogen Resynthesis

Glycogen resynthesis refers to the rate of glycogen replenishment following its depletion from exercise, and supplements that increase the rate of glycogen repletion are thought to be useful to athletes with a high workload and carbohydrate intake.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Notable	- <a href="#">See study</a>	Degree of improvement is somewhat more potent than other supplemental options, and may be related to the improvements in glycemic control seen with creatine.
	<a href="#">Fenugreek</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed influence on glycogen resynthesis rates, but may have a possible benefit
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	When testing the addition of chromium to a glycogen repletion protocol (after exercise), chromium failed to augment the replenishment from carbohydrates any more than placebo.
	<a href="#">D-Ribose</a>	-	- <a href="#">See study</a>	
	<a href="#">Vanadium</a>	 Minor	- <a href="#">See study</a>	An increase in glycogen content has been noted in diabetic persons given vanadium, no studies in athletes currently













Back to: [Supplements](#) | [Health Outcomes](#)



# Growth Hormone

Growth hormone (GH) is a peptide hormone that regulates growth in youth, and in adults is thought to promote fat loss and longevity. Increasing growth hormone should improve these goals, but supplements are currently lacklustre.


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Arginine</a>	 Minor	- <a href="#">See all 5 studies</a>	Arginine has been implicated in increasing growth hormone (at rest) and suppressing an exercise-induced increase in growth hormone; both of these are short in duration, and it is unsure if there are any long lasting effects of such short a spike.
	<a href="#">Creatine</a>	 Notable	- <a href="#">See all 4 studies</a>	During exercise, creatine supplementation can suppress growth hormone secretion: up to 35% during loading; up to 5% during maintenance. At rest, creatine supplementation can spike growth hormone by up to 83±45%. This bidirectional effect is similar to that of <a href="#">arginine</a> supplementation.
	<a href="#">Alpha-GPC</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Has noted an increase in circulating growth hormone, but measurements were acute (whole-day measurements of growth hormone are more reliable due to hourly fluctuations)
	<a href="#">Citrulline</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in growth hormone has been noted with exercise, but not at rest. Practical significance of this information is unknown, since Arginine supplementation has unreliable effects itself
	<a href="#">Melatonin</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Appears to increase circulating levels of growth hormone
	<a href="#">Nicotine</a>	 Minor	- <a href="#">See study</a>	An acute suppression of growth hormone has been noted with nicotine to a small degree
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	The kinetics of growth hormone release from exercise are not influenced by alanylglutamine relative to water.
	<a href="#">Beta-Alanine</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Gamma Oryzanol</a>	-	- <a href="#">See study</a>	No significant alterations in growth hormone following ingestion of gamma-oryzanol
	<a href="#">HMB</a>	-	- <a href="#">See study</a>	Serum growth hormone is not significantly altered with HMB supplementation in athletes
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	The minor increase in growth hormone seen with betaine (6.1%), relative to placebo, failed to reach statistical significance and is too low of magnitude to consider it practically appreciable.
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	No significant influence on growth hormone levels
	<a href="#">Alcohol</a>	 Minor	- <a href="#">See study</a>	An acute suppression of growth hormone is noted with alcohol ingestion
	<a href="#">Dehydroepiandrosterone</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase growth hormone concentrations, but this appears to be unreliable
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	There does not appear to be a significant influence of colostrum supplementation on circulating GH following oral supplementation relative to other protein sources.
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No apparent effect in a short-term, uncontrolled study.
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on exercise-induced growth hormone
	<a href="#">Vitamin B6</a>	-	- <a href="#">See 2 studies</a>	



# HDL-C






High Density Lipoprotein Cholesterol (HDL-C) is seen as the 'good' cholesterol (relative to LDL-C). Its job is to bring circulating cholesterol and fatty acids back to the liver tissue and clear them from the blood; high levels are desired to protect the heart.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Garlic</a>	 Notable	<b>Very High</b> <a href="#">See all 14 studies</a>	Garlic supplementation tends to increase HDL cholesterol in persons with cardiovascular disease risk reliably and in the range of 10-15% when looking at individual trials and by 1.49mg/dL (95% CI of 0.19-2.79mg/dL) as assessed by meta-analysis.
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See all 27 studies</a>	Mixed evidence, but a possible increase in HDL-C is seen with fish oil supplementation in unhealthy persons
	<a href="#">Policosanol</a>	 Minor	<b>Moderate</b> <a href="#">See all 12 studies</a>	Unlikely to be potent, either small or no increases in HDL-C are likely to occur after policosanol ingestion. A good deal of the literature is based upon some highly suspicious past research from Cuba
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 17 studies</a>	Although an increase in insulin sensitivity in diabetics should increase HDL cholesterol, the best evidence to date does not support a role for chromium supplementation in improving HDL cholesterol in diabetics.
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 15 studies</a>	While an increase of HDL-C may occur, it is both mild and infrequent so large studies and meta-analyses fail to find reliable evidence for cocoa.
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Moderate</b> <a href="#">See all 16 studies</a>	Insufficient evidence to support significant influences on HDL-C
	<a href="#">Red Clover Extract</a>	-	<b>High</b> <a href="#">See all 13 studies</a>	Similar to other lipid parameters, despite an increase (10-20%) being noted in a few studies the best evidence to date does not support this conclusions and the benefits, when they occur, are unreliable.
	<a href="#">Vitamin B3 (Niacin)</a>	 Strong	<b>Very High</b> <a href="#">See all 6 studies</a>	Niacin supplementation is currently the major reference for increasing HDL cholesterol concentrations rapidly and reliably, at times being called the Golden Standard for HDL increasing pharmaceuticals.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Berberine</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Degree of improvement was 0.07mmol/L (95% CI 0.04 to 0.10) according to the meta-analysis, not remarkably effective
	<a href="#">Curcumin</a>	 Minor	<b>Low</b> <a href="#">See all 26 studies</a>	Possible increases in HDL-C
	<a href="#">Green Tea Catechins</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed effects with somewhat of an increase, not to a remarkable magnitude
	<a href="#">Inositol</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	An increase in circulating HDL-C is seen in women with PCOS getting inositol therapy
	<a href="#">Ketogenic diet</a>	 Minor	<b>High</b> <a href="#">See all 17 studies</a>	Most trials, across various health condition, have seen a keto diet modestly increase HDL-C levels. This can be due, in part, to an increase in overall fat intake.
	<a href="#">Olive leaf extract</a>	 Minor	<b>Moderate</b> <a href="#">See all 7 studies</a>	The increase in HDL seen with olive phenolics is somewhat inconsistent and not to a large magnitude when it occurs
	<a href="#">Psyllium</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Similar to the reductions in LDL-C and total cholesterol, the reduction in HDL-C is seemingly small in magnitude and likely not much to be concerned about
	<a href="#">Spirulina</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	A positive influence of spirulina on HDL-C appears to be present, but the magnitude of benefit is not overly remarkable and varies depending on the disease state (with states associated with fatty liver having a much greater increase in HDL-C seen with spirulina)
	<a href="#">Astaxanthin</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">Dehydroepiandrosterone</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	Most of the evidence leans towards no significant influence of DHEA on HDL-C levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Grape Seed Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on HDL-C even at up to 600mg GSE daily in a high risk population
	<a href="#">Hesperidin</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	There is no significant or long lasting effect on HDL cholesterol seen with hesperidin, except maybe a very small (less than 5%) increase in those with the lowest levels of HDL which fades after cessation of supplementation.
	<a href="#">L-Carnitine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant changes in HDL cholesterol seen with supplementation
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Magnesium</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	For the most part, there is no significant direct influence of magnesium on HDL-C levels. Some counter evidence suggests it may occur vicariously through betterment of glycemic control in diabetics, but that is not always seen
	<a href="#">Nigella sativa</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	Mild increases have been reported in some cases, but for the most part <i>nigella sativa</i> does not influence HDL cholesterol in the active dosage range.
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant alterations in circulating HDL-C are seen with prolonged supplementation of betaine in persons with metabolic impairment.
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	No significant influence on HDL cholesterol
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	The majority of evidence has failed to find any influence of vitamin E supplementation on HDL total levels or particulates relative to placebo.
	<a href="#">Ganoderma lucidum</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	There may be an increase in HDL-C in persons with hyperlipidemia that doesn't occur in otherwise healthy adults, but this is not certain due to lack of evidence. The degree of increase was fairly strong (24%).

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Krill Oil</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Although one study suggest no such increase (healthy persons), the increase seen in hyperlipidemics exceeded 50% and was remarkable; requires replication
	<a href="#">Ephedrine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in HDL-C has been noted with ingestion of ephedrine, may be confounded with weight loss also seen in the trials
	<a href="#">Fenugreek</a>	 Minor	- <a href="#">See study</a>	An increase in HDL-C has been associated with fenugreek ingestion
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	May increase HDL-C levels
	<a href="#">Guggul</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Either no significant change associated with Guggul supplementation or a small decrease is observed
	<a href="#">Irvingia gabonensis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase has been noted, but not to a remarkable degree. Independent trials need to be conducted to confirm.
	<a href="#">Panax ginseng</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase HDL-C levels, seems unreliable in doing so
	<a href="#">Pterostilbene</a>	 Minor	- <a href="#">See study</a>	In hypercholesterolemic adults <i>not</i> on cholesterol lowering medication, pterostilbene appears to reduce HDL mildly.
	<a href="#">Pueraria mirifica</a>	 Minor	- <a href="#">See study</a>	Not overly potent, only testing in menopausal women has been conducted
	<a href="#">Punicic Acid</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although there are possible increases in HDL-C with punicic acid, this has not been noted all the time and may be unreliable

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Quercetin</a>	 Minor	- <a href="#">See 2 studies</a>	An increase in HDL-C has been noted following quercetin supplementation
	<a href="#">Rooibos</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Increases HDL-C in persons at risk for cardiovascular disease to a small amount, does not appear effective in otherwise healthy persons
	<a href="#">Shilajit</a>	 Minor	- <a href="#">See study</a>	Minor increase in HDL-C has been detected in persons after shilajit consumption
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Artichoke Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	There does not appear to be an inherent effect of Artichoke on HDL-C, although the one study in diabetics suggest that HDL-C might increase when glucose is decreased.
	<a href="#">Ashwagandha</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	A fairly notable increase in HDL-C has been reported with ashwagandha supplementation (17.3% over 60 days), however, the evidence is inconsistent and inadequate overall.
	<a href="#">Benfotiamine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on HDL-C observed.
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C
	<a href="#">Blueberry</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on HDL-C
	<a href="#">Caffeine</a>	-	- <a href="#">See study</a>	No significant influences on HDL cholesterol noted








LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C concentrations
	<a href="#">Citrullus colocynthis</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible benefit in hyperlipidemics only has failed to reach statistical significance.
	<a href="#">Creatine</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Eleutherococcus senticosus</a>	-	- <a href="#">See study</a>	No significant influences yet known for HDL cholesterol
	<a href="#">Gamma Oryzanol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No detectable influences on HDL cholesterol, although rice bran oil (a source of gamma oryzanol) may have a slight positive effect
	<a href="#">Garcinia cambogia</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C levels
	<a href="#">Grape juice</a>	-	<b>High</b> <a href="#">See all 8 studies</a>	Studies overall don't support an effect, though one study with a highly concentrated grape juice found an increase. It may be a dosing issue, though we don't know yet.
	<a href="#">Green Coffee Extract</a>	-	- <a href="#">See study</a>	No significant alterations in HDL cholesterol noted following consumption of GCE
	<a href="#">Gynostemma pentaphyllum</a>	-	- <a href="#">See study</a>	HDL appears unaffected
	<a href="#">HMB</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on HDL cholesterol levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hemp Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No detectable differences in HDL-C levels
	<a href="#">Hibiscus sabdariffa</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	HDL cholesterol appears to be unaffected following roselle ingestion
	<a href="#">Japanese Knotweed</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C in otherwise healthy lean persons
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant influence of licorice on HDL
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influences on HDL-C are noted with melatonin supplementation
	<a href="#">Microlactin</a>	-	- <a href="#">See study</a>	Despite reductions in LDL and total cholesterol, there do not appear to be significant influences on HDL-C levels
	<a href="#">Nattokinase</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C levels
	<a href="#">Phosphatidylcholine</a>	-	- <a href="#">See study</a>	
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C with PS supplementation
	<a href="#">Pyruvate</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant influence on HDL-C levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Resveratrol</a>	-	- <a href="#">See study</a>	No significant influence on HDL cholesterol
	<a href="#">Rose Hip</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alteration of HDL-C concentrations has been noted with limited evidence investigating rose hip supplementation.
	<a href="#">Royal Jelly</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influences on HDL-C detectable
	<a href="#">Salvia hispanica</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	HDL-C appears to be unaffected with chia ingestion when compared to similar macronutrient sources
	<a href="#">Sea Buckthorn</a>	-	- <a href="#">See study</a>	No significant influence on circulating HDL-C levels
	<a href="#">Soy lecithin</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C levels
	<a href="#">Stevia</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C has been detected with stevia
	<a href="#">Theaflavins</a>	-	- <a href="#">See study</a>	No significant influence of theaflavins on HDL-C
	<a href="#">Vanadium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on HDL-C levels in serum of obese subjects
	<a href="#">Vitamin K</a>	-	- <a href="#">See study</a>	Vitamin K does not appear capable of influencing HDL cholesterol

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Whey Protein</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant evidence to support an increase in HDL-C with whey protein
	<a href="#">Yacon</a>	-	- <a href="#">See study</a>	No significant influence on HDL cholesterol has been noted with Yacon syrup, despite weight loss occurring.
	<a href="#">Zinc</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on HDL-C, even when normalizing a zinc deficiency associated with weight loss.
	<a href="#">Coleus forskohlii</a>	 Notable	- <a href="#">See study</a>	Needs to be replicated in larger trials, but the degree of increase was quite remarkable.
	<a href="#">Ruscus aculeatus</a>	 Notable	- <a href="#">See study</a>	A fairly notable increase in HDL-C (23%) in the lone (but not placebo controlled) study with <i>ruscus aculeatus</i> , requires replication
	<a href="#">Coffee</a>	 Minor	- <a href="#">See study</a>	An increase in HDL-C is noted with coffee ingestion
	<a href="#">Emblica officinalis</a>	 Minor	- <a href="#">See study</a>	Higher doses of the fruits (3g) appear to be able to increase circulating HDL cholesterol in otherwise healthy persons and diabetics
	<a href="#">Medium-chain triglycerides</a>	 Minor	- <a href="#">See study</a>	Administration of purified MCTs results in a decrease in HDL-C in diabetics that is minor and likely not practically relevant.
	<a href="#">Pycnogenol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase HDL cholesterol, but has mixed evidence to support it and may be unreliable
	<a href="#">Safflower Oil</a>	 Minor	- <a href="#">See study</a>	A slight increase in HDL-C has been noted with safflower oil









LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Tauroursodeoxycholic Acid</a>	 Minor	- <a href="#">See study</a>	A decrease in HDL-C has been noted to be secondary to treating cholestasis
	<a href="#">Tetradecyl Thioacetic Acid</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	An increase in HDL cholesterol has been noted with TTA consumption
	<a href="#">Yerba mate</a>	 Minor	- <a href="#">See study</a>	An increase in HDL-C has been noted with Mate consumption
	<a href="#">Apple Cider Vinegar</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Two studies have failed to note a clear effect.
	<a href="#">Ecklonia cava</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C detected
	<a href="#">Eclipta alba</a>	-	- <a href="#">See study</a>	No detectable influence on HDL-C cholesterol
	<a href="#">Horse Chestnut</a>	-	- <a href="#">See study</a>	No significant influence on HDL-C levels associated with horse chestnut extract supplementation.
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Perilla Oil</a>	-	- <a href="#">See study</a>	
	<a href="#">Pueraria lobata</a>	-	- <a href="#">See study</a>	No detectable influence on HDL-C levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pyrroloquinoline quinone</a>	-	- <a href="#">See study</a>	Three weeks supplementation of PQQ has failed to significantly influence HDL cholesterol levels in otherwise healthy adults.
	<a href="#">Rubus coreanus</a>	-	- <a href="#">See study</a>	No significant influence of the berries on HDL cholesterol levels in men who are otherwise healthy.
	<a href="#">Tribulus terrestris</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No apparent effect
	<a href="#">Vitamin B1</a>	-	- <a href="#">See study</a>	No significant changes in people with hyperglycemia
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	No change in HDL-C was seen in vitamin D-insufficient healthy people supplemented with 800 IU over 12 weeks.

Back to: [Supplements](#) | [Health Outcomes](#)

# Hair Regrowth

Hair regrowth refers to the rate of which hair grows, and may also refer to attenuating or reversing forms of alopecia (hair loss). These supplements can be both ingested or applied topically to the scalp.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Minoxidil</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	Topical application of Minoxidil (oral administration as well, but that is associated with more side-effects) appears to be highly effective in increasing the rate of hair regrowth and can reverse hair loss associated with non-androgenic hair loss (bald patch, rather than a receding hair line which is related to androgens)
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See study</a>	One study noted that 100mg of mixed tocopherol was able to promote hair growth in persons with alopecia (androgen dependence not specified) relative to placebo.
	<a href="#">Raspberry Ketone</a>	 Minor	- <a href="#">See study</a>	May induce hair growth when topically applied
	<a href="#">Saw Palmetto</a>	 Minor	- <a href="#">See study</a>	Saw palmetto usage over two years (320mg) appears to increase hair growth on the crown in 38% of users with male pattern baldness, a response rate that was less than 1mg finasteride (benefiting 66% of users and also improving hair growth in the frontal region).

Back to: [Supplements](#) | [Health Outcomes](#)

# HbA1c

HbA1c (Glycated hemoglobin) is a biomarker of glucose metabolism, and higher HbA1c is associated with more disease progression and comorbidities in states of insulin resistance or diabetes.






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 18 studies</a>	Although sporadic evidence suggest improvements in HbA1c in diabetics, the entirety of the evidence does not support a reliable and significant improvement in diabetic persons.
	<a href="#">Fish Oil</a>	-	<b>Moderate</b> <a href="#">See all 10 studies</a>	Although the majority of evidence suggests absolutely no influence on HbA1c, reductions have been reported and a lone case has noted a clinically irrelevant increase of HbA1c (secondary to the increase in glucose). Practically, there is unlikely to be any large changes
	<a href="#">Berberine</a>	 Strong	<b>Very High</b> <a href="#">See all 3 studies</a>	The reduction of HbA1c associated with berberine, according to a meta-analysis of diabetics using 1,000-1,500mg berberine daily, was -0.72% (95% CI -0.97 to -0.47) more than placebo. This reduction appears to be one of the more significant reductions associated with dietary supplements.
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	There may be an effect on HbA1c, but it appears unreliable and not overly potent.
	<a href="#">Magnesium</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	More evidence than not suggest no significant effect on HbA1c levels, but one study suggests a decent decrease with the other two studies trending towards a decrease. There may be a role for magnesium in reducing HbA1c levels to a minor degree
	<a href="#">Psyllium</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Reduction seen in HbA1c was not overly remarkable
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant reduction (or increase) in HbA1c levels following CLA supplementation
	<a href="#">Curcumin</a>	-	<b>Moderate</b> <a href="#">See all 13 studies</a>	Some studies have found reductions but, even in type 2 diabetics, evidence is inconsistent.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	No significant influence of Vitamin C supplementation on HbA1c levels
	<a href="#">Gynostemma pentaphyllum</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Preliminary evidence in diabetics suggest potent HbA1c reducing effects (6g of the root reducing HbA1c by 2% over a few months)
	<a href="#">Spirulina</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	Lone study noted a decrease from 9% to 8% with 2g spirulina, which is somewhat notable but requires more evidence to establish this.
	<a href="#">Alpha-Lipoic Acid</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	There appears to be a slight reducing effect on HbA1c
	<a href="#">Citrullus colocynthis</a>	 Minor	- <a href="#">See study</a>	May be able to mildly decrease HbA1c, although the research supporting this claim is very preliminary at this time.
	<a href="#">Olive leaf extract</a>	 Minor	- <a href="#">See study</a>	A minor decrease in HbA1c has been noted with olive leaf consumption
	<a href="#">Panax ginseng</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reduction in HbA1c, but small in magnitude and unreliably seen
	<a href="#">Salacia reticulata</a>	 Minor	- <a href="#">See study</a>	A decrease in HbA1c has been noted in diabetics given a tea of Salacia for months, but the decrease was minor in magnitude and outperformed by Glibenclamide
	<a href="#">Arginine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on HbA1c concentrations in persons with impaired glucose tolerance, even when endothelial function is improved
	<a href="#">Astaxanthin</a>	-	- <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Benfotiamine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Two studies in diabetics have failed to find an influence of benfotiamine on HbA1c
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	HbA1c does not appear to be altered in response to cocoa flavanol ingestion.
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	Alongside a failure to improve insulin sensitivity or to reduce glucose was a failure to reduce HbA1c concentrations in the plasma of those with metabolic syndrome given 500mg hesperidin.
	<a href="#">Pycnogenol</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Red Clover Extract</a>	-	- <a href="#">See study</a>	No significant changes in HbA1c seen with supplementation of red clover in diabetics.
	<a href="#">Rose Hip</a>	-	- <a href="#">See study</a>	No significant influence of rose hip on HbA1c concentrations in the blood of non-diabetic yet obese persons relative to placebo
	<a href="#">Royal Jelly</a>	-	- <a href="#">See study</a>	No significant alterations in HbA1c levels following Royal Jelly ingestion for 6 months
	<a href="#">Stevia</a>	-	- <a href="#">See study</a>	No significant influence on HbA1c serum levels has been detected
	<a href="#">Vitamin D</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The decrease in HbA1c is statistically insignificant and very small in magnitude, likely not a concern.
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	HbA1c does not appear to be influenced in type II diabetics given supplementation of vitamin E.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ruscus aculeatus</a>	 Notable	- <a href="#">See study</a>	The decrease in HbA1c noted in this pilot study (15.6%) was fairly marked and requires replication.
	<a href="#">Aronia melanocarpa</a>	 Minor	- <a href="#">See study</a>	Requires more studies before conclusions can be made, appears to simply be exerting anti-oxidant effects.
	<a href="#">Ketogenic diet</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Most studies have found a reduction, and the one that didn't was far too short to evaluate the effect of a ketogenic diet. More research is needed in type 2 diabetics.
	<a href="#">Moringa oleifera</a>	 Minor	- <a href="#">See study</a>	The reduction of HbA1c noted is minor, from 7.8% down to 7.4% with 90 days supplementation of the leaf extracts
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	A mild decrease in HbA1c has been noted in diabetics given the seeds as an adjuvant to standard therapy
	<a href="#">Safflower Oil</a>	 Minor	- <a href="#">See study</a>	A slight decrease in HbA1c has been noted with safflower despite no alterations in any other diabetic biomarker
	<a href="#">Tribulus terrestris</a>	 Minor	- <a href="#">See study</a>	One randomized, controlled trial found a modest reduction, accompanied by reduced fasting and postprandial glucose levels.
	<a href="#">Vanadium</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in HbA1c has been noted with vanadium supplementation
	<a href="#">Yerba mate</a>	 Minor	- <a href="#">See study</a>	A decrease in HbA1c levels has been detected in type II diabetics consuming Mate tea, although not to a remarkable degree
	<a href="#">Apple Cider Vinegar</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	One study noted a small but statistically significant reduction in non-diabetics, while another didn't find a difference compared with placebo. Much more research, particularly in type 2 diabetics, is needed.









LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Blueberry</a>	-	- <a href="#">See study</a>	Currently no studies noting changes in HbA1c, as it appears to be unaffected by supplementation.
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Salvia hispanica</a>	-	- <a href="#">See study</a>	No significant influence on HbA1c levels of diabetics given chia seeds
	<a href="#">Sulbutiamine</a>	-	- <a href="#">See study</a>	No significant influence of sulbutiamine on HbA1c
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in HbA1c concentrations

Back to: [Supplements](#) | [Health Outcomes](#)

# Heart Rate

Heart Rate is a term used to refer to the amount of beats a heart gives in X amount of time, usually a minute. Heart rate is variable, and should be constant; arrhythmia (irregular beats) are a cause for concern, and some supplements (usually stimulants) influence Heart Rate.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Caffeine</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	An increase in heart rate is noted, but not wholly consistent. It appears to affect those with lower caffeine tolerance or high overdoses of caffeine
	<a href="#">Ephedrine</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	An increase in heart rate is present following ephedrine administration which correlates well with its psychostimulatory properties; this is not 100% reliable, and heart rate increases may not occur
	<a href="#">Grape Seed Extract</a>	 Minor	- <a href="#">See study</a>	A small decrease in heart rate may occur following grape seed extract, although the studies are currently in persons with metabolic syndrome and not healthy persons
	<a href="#">Marijuana</a>	 Minor	- <a href="#">See all 10 studies</a>	Similar to the diastolic blood pressure, heart rate modifications are subject to tolerance. New users may experience a reduced heart rate yet increased cardiac output, and heart rate during light exercise may be increased, with chronic users becoming tolerant to these effects.
	<a href="#">Arginine</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No significant influence on heart rate seen with supplemental L-Arginine
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	Cocoa and the main constituent (-)-epicatechin do not appear to have an appreciable effect on heart rate at rest or during exercise when compared to placebo.
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Heart rate during exercise, either submaximal or at lactate threshold, is not modified with dietary supplementation of colostrum.
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No known influence on heart rate.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	No significant influence of ginkgo biloba supplementation on heart rate.
	<a href="#">Modafinil</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Heart rate and pulse do not appear to be influenced from modafinil supplementation, despite a small increase in systolic blood pressure.
	<a href="#">Ornithine</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	For the most part there is no significant effect, although one trial did note that after exercise during a recovery period ornithine had a higher heart rate. The reason for this is not known
	<a href="#">Sodium Bicarbonate</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	There is no significant effect of sodium bicarbonate on heart rate at rest or during exercise
	<a href="#">Green Coffee Extract</a>	 Minor	- <a href="#">See study</a>	A decrease has been noted in hypertensives alongside a reduction in blood pressure; no studies in otherwise healthy persons
	<a href="#">Green Tea Catechins</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed influence on heart rate, a possible decrease secondary to weight loss and blood pressure reduction but no apparent alteration <i>per se</i> (possible increases with overdoses of green tea catechins)
	<a href="#">Hoodia gordonii</a>	 Minor	- <a href="#">See study</a>	Both heart rate and pulse rate are increased with hoodia ingestion, which are thought to be related to toxic effects of the herb
	<a href="#">L-Carnitine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in heart rate has been noted associated with supplementation
	<a href="#">Lavender</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in heart rate has been noted at rest over a long period of time (12 weeks in insomniacs) and acutely; both studies have used aromatherapy
	<a href="#">Nicotine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in heart rate is present after nicotine ingestion due to the stimulatory properties










LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pyruvate</a>	 Minor	- <a href="#">See study</a>	May decrease heart rate alongside blood pressure in hyperlipidemics according to one trial
	<a href="#">Salvia sclarea</a>	 Minor	- <a href="#">See study</a>	A decrease in heart rate has been noted acutely in response to the aroma of clary sage
	<a href="#">Tribulus terrestris</a>	 Minor	- <a href="#">See study</a>	A decrease in heart rate has been observed in hypertensive persons given tribulus supplementation
	<a href="#">Vitamin C</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	A decrease in heart rate has been noted in exercising obese adults, a per se effect of Vitamin C on heart rate (rather than secondary to the rate of perceived exertion) seems unlikely.
	<a href="#">Yerba mate</a>	 Minor	- <a href="#">See study</a>	A decrease has been noted with Yerba Mate consumption, which is somewhat notable as stimulants tend to increase heart rate
	<a href="#">Yohimbine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Due to stimulatory effects, an increase in heart rate follows yohimbine ingestion
	<a href="#">1,3-Dimethylamylamine</a>	-	- <a href="#">See study</a>	No significant effect on heart rate noted with DMAA supplementation despite the increase in blood pressure.
	<a href="#">Alanylglutamine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of alanylglutamine on heart rate during exercise relative to water
	<a href="#">Alpha-Lipoic Acid</a>	-	- <a href="#">See study</a>	No significant interaction between ALA and heart rate has been noted
	<a href="#">Anatabine</a>	-	- <a href="#">See study</a>	There is no significant influence on heart rate seen with 6-12mg anatabine in otherwise healthy persons




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See study</a>	
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Blueberry</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No known interactions with heart rate and blueberry supplementation.
	<a href="#">Branched Chain Amino Acids</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in heart rate noted with BCAA supplementation at rest or during exercise
	<a href="#">Capsaicin</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Centella asiatica</a>	-	- <a href="#">See study</a>	No significant influence on heart rate with acute ingestion of the herb in healthy persons.
	<a href="#">Chlorella</a>	-	- <a href="#">See study</a>	No significant influence on heart rate has been detected
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on heart rate is known with chromium supplementation.
	<a href="#">Citrulline</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant influence on heart rate seems likely, although at least one study noted a random but significant reduction post-exercise
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No significant influence on heart rate seen with curcumin supplementation



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">ECA</a>	-	- <a href="#">See study</a>	Heart rate at rest is not affected by ECA supplementation and may indirectly be lowered secondary to weight loss. However, an acute increase in heart rate is possible from the stimulatory effects of ephedrine
	<a href="#">Eucommia ulmoides</a>	-	- <a href="#">See study</a>	
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No significant acute effect on heart rate seen with fish oil supplementation
	<a href="#">L-Tyrosine</a>	-	- <a href="#">See study</a>	No significant influences of Tyrosine on heart rate has been noted
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Maca</a>	-	- <a href="#">See study</a>	No significant influence on heart rate noted with Maca ingestion
	<a href="#">Melatonin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of melatonin on heart rate during waking either at rest or ambulation
	<a href="#">Nigella sativa</a>	-	- <a href="#">See study</a>	No significant influence on heart rate or pulse rate.
	<a href="#">Nitrate</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Does not appear to significantly influence heart rate
	<a href="#">Panax ginseng</a>	-	- <a href="#">See study</a>	No significant influence on heart rate



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Phosphatidylserine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on heart rate with PS supplementation
	<a href="#">Pycnogenol</a>	-	- <a href="#">See study</a>	No significant alterations in heart rate noted
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	No significant influence on heart rate either acutely or with prolonged supplementation.
	<a href="#">Red Clover Extract</a>	-	- <a href="#">See study</a>	No significant influence on resting heart rate is seen with supplementation of red clover extract.
	<a href="#">Rhodiola Rosea</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on heart rate found so far
	<a href="#">Rooibos</a>	-	- <a href="#">See study</a>	No significant alterations in heart rate are seen with Rooibos ingestion
	<a href="#">Sceletium tortuosum</a>	-	- <a href="#">See study</a>	Three weeks Kanna usage does not appear to influence heart rate when compared to placebo.
	<a href="#">Soy lecithin</a>	-	- <a href="#">See study</a>	Despite the reduction in perceived stress, heart rate does not appear to be affected by supplemental soy lecithin
	<a href="#">Stevia</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on heart rate detected with stevia consumption
	<a href="#">Synephrine</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Taurine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on heart rate following Taurine supplementation
	<a href="#">Theanine</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on heart rate in subjects who are rehydrated and then subject to exercise.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Heart rate during exercise in elite athletes is unaltered by supplementation of vitamin E.
	<a href="#">Ashwagandha</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A slight reduction in pulse rate has been noted in otherwise healthy but anxious persons in one study, but not another.
	<a href="#">Cissus quadrangularis</a>	-	- <a href="#">See study</a>	No significant influence on heart rate when taken over the course of eight weeks.
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	No significant interaction between heart rate and CLA supplementation
	<a href="#">Eleutherococcus senticosus</a>	-	- <a href="#">See study</a>	No significant influences on heart rate are yet known
	<a href="#">Garlic</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	There is no inherent influence of garlic on heart rate, although when garlic aids cardiovascular performance in persons with heart problems it is associated with a reduced heart rate relative to control (due to less stress on the tissue).
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	There was a possible small increase in one study, but it was unclear if it was due to the grape juice.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Grapefruit</a>	-	- <a href="#">See study</a>	No significant alterations in heart rate associated with grapefruit ingestion
	<a href="#">Iron</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	- <a href="#">See study</a>	












Back to: [Supplements](#) | [Health Outcomes](#)



# Helicobacter Pylori Infection

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Garlic</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Despite potent antibacterial properties of garlic oil when tested outside of the body, it appears to be ineffective when given to human volunteers.

Back to: [Supplements](#) | [Health Outcomes](#)

# Hematocrit

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-Carnitine</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Astaxanthin</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	No significant alterations in hematocrit noted
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on hematocrit is noted with supplementation of betaine.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Hematocrit does not appear to be significantly influenced with supplementation of vitamin E relative to placebo.
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See study</a>	Small drops in hematocrit were noted in vitamin D-insufficient healthy people supplemented with 800 IU over 12 weeks.
	<a href="#">Ashwagandha</a>		- <a href="#">See study</a>	A possible small decrease in one study in healthy, active participants. More research is needed.
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No apparent effect in one study.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ketogenic diet</a>		<p style="text-align: center;">-</p> <a href="#">See study</a>	No apparent effect in one 6-week study.

Back to: [Supplements](#) | [Health Outcomes](#)

# Hemoglobin

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-Carnitine</a>	-	- <a href="#">See study</a>	
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	Hemoglobin has been noted to be decreased in one study and thought to be related to possible toxic effects of moderately high dose saffron (60mg for more than 8 weeks).
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There does not appear to be an <i>inherent</i> increase in hemoglobin with colostrum, although when it successfully treated HIV-associated diarrhea an increase in hemoglobin was noted once (thought to partially underlie the reduction in fatigue).
	<a href="#">Curcumin</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Inconsistent evidence from 3 studies. Much more research is needed.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	No significant influence of vitamin E supplementation on hemoglobin.
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See study</a>	Small drops in hemoglobin were noted in vitamin D-insufficient healthy people supplemented with 800 IU over 12 weeks.
	<a href="#">Ashwagandha</a>		<b>Moderate</b> <a href="#">See 2 studies</a>	A slight but significant 6.3% increase in hemoglobin has been detected in otherwise healthy persons given ashwagandha daily for a period of 60 days. However, another study found a slight decrease in healthy subjects after 12 weeks.
	<a href="#">Ketogenic diet</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	The results of two don't suggest a noticeable influence.



# Homocysteine

Homocysteine is a biomarker of cardiovascular disease, and it is thought that higher circulating levels of homocysteine are indicative of a higher risk for cardiovascular incidents.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trimethylglycine</a>	 Strong	<b>Very High</b> <a href="#">See all 9 studies</a>	Betaine (3g or more) appears to potently and reliably reduce homocysteine concentrations following a single dose and maintaining this reduction for as long as supplementation is continued. The magnitude is around 10% in persons with normal homocysteine levels, and greater (20-40%) in those with high homocysteine, and (unlike folate) works in instances of methionine loading tests. 500mg betaine can reduce homocysteine after a methionine load, but it too low to influence fasting homocysteine.
	<a href="#">Vitamin B2</a>	 Notable	<b>Moderate</b> <a href="#">See all 5 studies</a>	Homocysteine appears to be reduced to a large degree at 1.6mg, but this effect is exclusive to subjects with a specific genetic mutation known as MTHFR 677TT (two copies of MTHFR 677C->T).
	<a href="#">Chlorogenic Acid</a>	 Minor	- <a href="#">See study</a>	Somewhat high acute spike of homocysteine, which is normally a negative thing. Practical significance of this unknown
	<a href="#">Creatine</a>	 Minor	- <a href="#">See study</a>	Decrease in homocysteine (biomarker of inflammatory cardiovascular disease) was present, but not to a remarkable magnitude
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May decrease homocysteine content
	<a href="#">Green Coffee Extract</a>	 Minor	- <a href="#">See study</a>	Decrease in homocysteine noted, thought to be indicative of cardioprotection
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Homocysteine has been found to be unaltered in response to cocoa ingestion compared to control.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Garlic</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in homocysteine concentrations are seen with garlic supplementation.
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	There was no influence on homocysteine seen with supplementation of hesperidin relative to placebo, despite subjects being in an inflammatory state.
	<a href="#">Red Clover Extract</a>	-	- <a href="#">See study</a>	There do not appear to be changes to circulating homocysteine in premenopausal women given supplementation of red clover extract.
	<a href="#">S-Adenosyl Methionine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant alterations in plasma homocysteine occur following supplemental S-Adenosyl Methionine ingestion
	<a href="#">Vitamin B<sub>12</sub></a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There does not appear to be a significant influence of vitamin E supplementation on homocysteine concentrations.
	<a href="#">Curcumin</a>	 Notable	- <a href="#">See study</a>	A notable effect was found in one study in obese people with a high risk of cardiovascular disease, but much more research is needed.
	<a href="#">Ketogenic diet</a>	 Minor	- <a href="#">See study</a>	One study found a greater increase than the control group, likely due to reduced folate intake.
	<a href="#">Apple Cider Vinegar</a>	-	- <a href="#">See study</a>	One study found a small reduction in the apple cider vinegar group but an increase in the control group. It's unclear if the difference is a genuine effect of apple cider vinegar.

# Hydration (Total Body Water)

Hydration is an approximately measurement of reserves of water on the human body, and a severe reduction in hydration from either no water intake or diuretic usage is known as dehydration. Some supplements are either diuretic or may promote water retention.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Notable	<b>Very High</b> <a href="#">See all 9 studies</a>	Appears to be quite notable due to the increase in water weight in skeletal muscle tissue following creatine supplementation.
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	Parameters of hydration including water retention do not appear to be modified with alanylglutamine when compared to the free amino acids or water.
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	Hydration during exercise in the heat is unaffected by quercetin supplementation.
	<a href="#">Sodium Bicarbonate</a>	-	- <a href="#">See study</a>	The addition of sodium bicarbonate to a pre-testing rehydration protocol does not enhance hydration more than the protocol itself (mostly water and carbohydrates)
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Betaine supplementation does not appear to be significantly beneficial in improving hydration status of users either outright or after prior dehydration relative to water alone.
	<a href="#">Ketogenic diet</a>	 Minor	- <a href="#">See study</a>	One study found a small reduction. The implication isn't dehydration, but less water needed for glycogen storage.
	<a href="#">Marijuana</a>	-	- <a href="#">See study</a>	
	<a href="#">Rooibos</a>	-	- <a href="#">See study</a>	Rooibos tea does not appear to be significantly better than the water it is brewed in at restoring hydration in athletes



# IGF Binding Protein










LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No influence of supplementation on circulating concentrations of any measured IGF binding protein (IGFBP-1, IGFBP-2, IGFBP-3) in any tested population.
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	An increase in IGF binding protein (3) has been noted following carnitine supplementation in otherwise healthy youth
	<a href="#">Olive leaf extract</a>	 Minor	- <a href="#">See study</a>	An increase in IGF binding proteins has been noted in one study (which would sequester and reduce the activity of IGF hormones); potency of this interaction unable to be determined (no reference drug)
	<a href="#">Dehydroepiandrosterone</a>	-	- <a href="#">See study</a>	There may be an influence (study noted both increases and decreases with high variability) but this does not appear to be a clinical concern
	<a href="#">Ketogenic diet</a>	 Minor	- <a href="#">See study</a>	One study found a small increase compared with the control group.

Back to: [Supplements](#) | [Health Outcomes](#)

# IGF-1

Insulin-like growth factor-1 (IGF-1) is an anabolic derivative of growth hormone that is thought to mediate cell growth and muscle protein synthesis. Supplements that increase IGF-1 are thought to promote muscle hypertrophy.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dehydroepiandrosterone</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	An increase in IGF-1 hormone levels may exist following DHEA supplementation, although this has only been investigated in older persons.
	<a href="#">Zinc</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There is an increase in IGF-1 concentrations if the subject is deficient in zinc, but no increase otherwise.
	<a href="#">Colostrum</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	While any protein sources has the potential to increase IGF-1 when included in the diet, colostrum is no different than whey protein at doing so. The IGF-1 that is present in colostrum naturally appears to be fully digested in the intestinal tract and does not reach the blood.
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	Insufficient evidence to support a role of creatine in increasing IGF-1
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Supplementation does not appear to significantly influence circulating IGF-1 concentrations, although equol (a possible metabolite of formononetin) has been associated with a reduction not observed to a significant degree in most trials on red clover extract.
	<a href="#">Trimethylglycine</a>	 Minor	- <a href="#">See study</a>	IGF-1 appears to be minimally increased relative to placebo (7.8%) following two weeks supplementation of betaine and when tested after exercise in a fasted state.
	<a href="#">Ursolic Acid</a>	 Minor	- <a href="#">See study</a>	An increase in IGF-1 concentrations has been noted with supplementation of ursolic acid three times daily (150mg) in exercising subjects.
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	No demonstrated effects on IGF-1 concentrations following the usage of citrulline supplementation












LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Eurycoma Longifolia Jack</a>	-	- <a href="#">See study</a>	No detectable alterations in IGF-1 for eurycoma extract
	<a href="#">HMB</a>	-	- <a href="#">See study</a>	No significant alterations in circulating IGF-1 concentrations
	<a href="#">L-Carnitine</a>	-	- <a href="#">See study</a>	No significant changes in IGF-1 seen with carnitine supplementation; IGF-2 also appears unaffected
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on IGF-1 levels
	<a href="#">Olive leaf extract</a>	-	- <a href="#">See study</a>	No significant influence on circulating IGF-1 nor IGF-2 levels
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	No significant influence of velvet antler on IGF-1
	<a href="#">Whey Protein</a>	-	- <a href="#">See study</a>	Does not appear to inherently alter circulating IGF-1 levels
	<a href="#">Ketogenic diet</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Somewhat of a reduction in two trials where the ketogenic group reduced calories and lost weight.

# Immunity










Immunity tends to refer to the capacity of the body to ward off infections, and tends to be measured acutely by seeing the count or activity of immune cells that can help ward off sickness. Enhanced immunity results in less sickness.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	There appears to be an increase in T-cell mediated immunity in older subjects when supplementing low dose (50-200mg) vitamin E; this immunity enhancement does not appear to occur in youth due to it alleviating an age-related immune suppression.
	<a href="#">Astragalus membranaceus</a>	 Notable	- <a href="#">See study</a>	Appears to activate T-cells to a degree higher than the reference drug echinacea
	<a href="#">Chlorella</a>	 Minor	- <a href="#">See study</a>	Increase in salivary IgA suggests an immune enhancing effect; no comparison to an active control.
	<a href="#">Chromium</a>	 Minor	- <a href="#">See study</a>	At least one study has noted an increase rate of lymphocyte proliferation when they were stimulated with a mitogen (proliferation inducing factor) with chromium supplementation relative to placebo.
	<a href="#">Citrulline</a>	 Minor	- <a href="#">See study</a>	Neutrophil oxidative burst post-workout appears to be enhanced when the exercise is preloaded with citrulline supplementation
	<a href="#">Eleutherococcus senticosus</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to have a stimulating effect on T-cell proliferation and NK cell activity, but requires more evidence.
	<a href="#">Ganoderma lucidum</a>	 Minor	- <a href="#">See all 4 studies</a>	There appears to be proliferative effects on T-lymphocytes and natural killer cells and no significant alteration in a CD4:CD8 lymphocytic ratio following ingestion of Ganoderma polysaccharides.
	<a href="#">Holy Basil</a>	 Minor	- <a href="#">See study</a>	Appears to induce proliferation of T cytokines and T lymphocytes










LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	DTH responsiveness (indicative of T-cell mediated immunity) was not affected with colostrum in adults overall or in the elderly cohort which are normally more responsive to therapeutic interventions on DTH responsiveness.
	<a href="#">Feverfew</a>	-	- <a href="#">See study</a>	No significant influence detected on immunity
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	No significant influence on immunity per se
	<a href="#">Lactobacillus casei</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	Minor T-cell activation following ingestion of Ashwagandha tinctures, needs to be replicated.
	<a href="#">Grape juice</a>	 Minor	- <a href="#">See study</a>	One study found an increase in Gamma-delta T-cell proliferation but not peripheral blood mononuclear cells. Much more research is needed.
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	Macrophage phagocytic activity and killing potential is increased following oral ingestion of the seed extract.

# Immunoglobulin A

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	-	<b>Moderate</b> <a href="#">See all 8 studies</a>	IgA concentrations in saliva and serum do not appear to be reliably increased although a few studies have noted spikes, which do not appear to be consistent in their magnitude nor incidence. The only incidence where IgA appears to be reliably increased is when it is taken as a vaccine adjuvant.
	<a href="#">Pelargonium sidoides</a>	 Notable	- <a href="#">See study</a>	The decrease in Immunoglobulin A noted with exercise in one study in marathon runners (60% relative to baseline) was reversed to a large increase (194% relative to baseline) when measured after exercise.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Saffron</a>	-	- <a href="#">See study</a>	No significant influence on circulating IgA concentrations following saffron ingestion.
	<a href="#">Type-II Collagen</a>	-	- <a href="#">See study</a>	No apparent effect in one study on rheumatoid arthritis.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Supplementation of vitamin E does not appear to significantly influence circulating concentrations of IgA relative to placebo in otherwise healthy elderly adults.
	<a href="#">Lactobacillus casei</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Raised salivary IgA but not serum IgA in one study.





Back to: [Supplements](#) | [Health Outcomes](#)

# Immunoglobulin G

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	IgG has been noted to be increased once when colostrum was used as a vaccine adjuvant (relative to skim milk with whey as control), but in general there is no influence without coadministered vaccination.
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	An increase in IgG concentrations has been noted to occur with saffron supplementation alongside a decrease in IgM and no influence on IgA.
	<a href="#">Vitamin E</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	IgG has been noted to be increased when vitamin E is used as a vaccination adjuvant, but not in otherwise healthy persons not subject to a vaccination.
	<a href="#">Type-II Collagen</a>	-	- <a href="#">See study</a>	No apparent effect in one study on rheumatoid arthritis.
	<a href="#">Lactobacillus casei</a>	-	- <a href="#">See study</a>	No effect on IgG seen in one study.





Back to: [Supplements](#) | [Health Outcomes](#)

# Immunoglobulin M

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	IgM does not appear to <i>per se</i> be modified in serum relative to control protein, and unlike the other immunoglobulins there is no augmentation of a vaccine-induced IgM spike.
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	A decrease in IgM concentrations has been noted to occur following supplementation of saffron.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	IgM concentrations in the blood of older persons do not appear to be influenced with supplementation of vitamin E.





Back to: [Supplements](#) | [Health Outcomes](#)

# Incontinence

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Marijuana</a>	 Minor	- <a href="#">See study</a>	In a secondary data analysis on subjects with multiple sclerosis, it seems the side effect of incontinence may be reduced with marijuana usage.
	<a href="#">Octopamine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be mild benefit in stress incident female incontinence with thrice daily dosing of octopamine between 15-30mg, with up to a quarter of subjects reporting full continence from supplementation.

Back to: [Supplements](#) | [Health Outcomes](#)














# Infantile Colic

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactobacillus reuteri</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	Supplementation of 10 <sup>8</sup> CFU of DSM 17938 (no other strain tested) has been associated with greatly reducing infantile colic within a week and increasing potency for one month, but the available evidence appears to be potentially biased and the lone independent study failed to find a protective effect of supplementation.
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	Reduction in infantile colic and improvements in mother-child interaction has been noted with adding the aroma of lavender to a bathing period

Back to: [Supplements](#) | [Health Outcomes](#)

# Inflammation



Not inherently good or bad, Inflammation is the process recruiting immune cells to tissues in the body for their actions; good for immunity and cell defense, excessive levels can cause joint pain and accelerate signs of aging and disease pathology such as cancer or obesity.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>Moderate</b> <a href="#">See all 17 studies</a>	Highly mixed and unreliable influences on circulating inflammatory cytokines (although, due to immunosuppression on cellular adhesion factors, the overall effect may still be antiinflammatory)
	<a href="#">Curcumin</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	There appears to be a decrease in disease states or conditions characterized by inflammation associated with curcumin ingestion, does not appear to be too discriminatory in which inflammatory states it benefits
	<a href="#">Ginger</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Inflammatory parameters seem to be reduced following ginger consumption
	<a href="#">Serrapeptase</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Appears to reduce swelling and inflammation following surgery or trauma, although to a lesser degree than corticosteroids. There is a lack of practical evidence for the claims behind serrapeptase (instead, studies tend to only look at post-surgery inflammation)
	<a href="#">Coenzyme Q10</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Classical inflammatory cytokines do not appear to be altered much following CoQ10 supplementation, although there may still be a minor antiinflammatory effect
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Insufficient evidence to support significant changes in inflammatory status.
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No significant alterations seen in inflammatory cytokines associated with Vitamin C supplementation
	<a href="#">Japanese Knotweed</a>	 Notable	- <a href="#">See study</a>	The study in question measured nF-kB activity and noted a 25% decrease, which is somewhat novel (not a common measurement) and to quite a large degree; may be related to the <a href="#">resveratrol</a> or stilbene content

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alpha-Lipoic Acid</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects depending on what inflammatory biomarker or cytokine is measured; practical significance unknown
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	Possible antiinflammatory effect on exercise-induced inflammatory biomarkers
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	A reduction in inflammatory cytokines is noted with melatonin supplementation
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	A decrease in IL-6 concentrations has been noted
	<a href="#">Spirulina</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Some various and uncertain changes in cytokines that are seen as indicators of inflammation; not enough human interventions to draw conclusions.
	<a href="#">Stinging Nettle</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to reduce LPS-stimulated proinflammatory cytokine release, and thus is likely to have anti-inflammatory effects. The potency of this is not overly remarkable
	<a href="#">Benfotiamine</a>	-	- <a href="#">See study</a>	Insufficient evidence with the preliminary evidence failing to any influence on circulating cytokines.
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	No significant influence on inflammatory cytokines except perhaps IL-6 seen with glutamine supplementation
	<a href="#">Olive leaf extract</a>	-	- <a href="#">See study</a>	No significant effects on biomarkers of inflammation when measured
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on inflammatory cytokines




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pycnogenol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on standard inflammatory cytokines
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	Mixed influence on inflammation, but does not appear to at all be practically significant
	<a href="#">Salvia hispanica</a>	-	- <a href="#">See study</a>	No significant alteration in serum biomarkers noted with chia seeds
	<a href="#">Sea Buckthorn</a>	-	- <a href="#">See study</a>	Supplementation of sea buckthorn in persons on hemodialysis has failed to significantly influence any inflammatory biomarker measured at the standard supplemental dosage.
	<a href="#">Theaflavins</a>	-	- <a href="#">See study</a>	No significant influence on inflammatory cytokines noted with theaflavins supplementation
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	No significant influence on select inflammatory cytokines
	<a href="#">Whey Protein</a>	-	- <a href="#">See study</a>	Insufficient evidence to support whey protein as interacting with inflammation and biomarkers of inflammation
	<a href="#">Boron</a>	 Minor	- <a href="#">See study</a>	Some influence on typically inflammatory cytokines, practical relevance of these changes unknown
	<a href="#">Bromelain</a>	 Minor	- <a href="#">See study</a>	Requires more evidence, but at the moment appears somewhat effective
	<a href="#">Coffee</a>	 Minor	- <a href="#">See study</a>	A decrease in some inflammatory cytokines has been noted with coffee ingestion


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hibiscus sabdariffa</a>	 Minor	- <a href="#">See study</a>	Possible decreases in MCP-1 with mixed or no influence on other inflammatory cytokines

Back to: [Supplements](#) | [Health Outcomes](#)

# Insomnia

Insomnia is the inability to sleep or an excessive awakening during night that significantly impairs daily functioning. Supplements that improve sleep quality may also improve symptoms of insomnia.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Strong	<b>Very High</b> <a href="#">See all 4 studies</a>	Melatonin is the reference drug for insomnia related purposes, and appears to be highly effective at 3mg (time release formulation) or lower concentrations when taken before sleep.
	<a href="#">Valeriana officinalis</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, with benefit to insomnia in menopausal women yet no apparent benefit in those with restless leg syndrome. Overall, a lack of evidence to conclude efficacy for this particular disorder.
	<a href="#">Vitex agnus castus</a>	 Minor	- <a href="#">See study</a>	Can reduce insomnia that is a side-effect of PMS, although the influence on insomnia in other scenarios is not known.
	<a href="#">Fish Oil</a>	 Notable	- <a href="#">See study</a>	A notable improvement in one study on women with PMS. Needs more research.
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Self-reports of insomnia have been reduced with supplementation of ashwagandha in women undergoing chemotherapy, people with anxiety disorders, and chronically stressed people.
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	May be effective in reducing insomnia when measured
	<a href="#">Melissa officinalis</a>	 Minor	- <a href="#">See study</a>	A decrease in insomnia has been noted to be to quite a large degree in one open-label trial, but may be secondary to anxiety reduction
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	One study found an improvement in women with PMS. This might not translate to other cases, and much more research is needed.


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Theanine</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)


# Insulin

Insulin is a hormone that increases when blood glucose rises, and acts to reduce blood glucose by putting it into cells and increasing its usage. It temporarily shifts energy metabolism from fats to carbs, and does not inherently make somebody fat. Its potency is seen as Insulin Sensitivity.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chromium</a>	-	<b>Moderate</b> <a href="#">See all 19 studies</a>	Somewhat similar to the influence on insulin sensitivity, the reductions in fasting insulin concentrations in diabetics appear to exist in some studies but are highly unreliable.
	<a href="#">Ketogenic diet</a>	 Notable	<b>High</b> <a href="#">See all 21 studies</a>	While not necessarily more potent than all control diets, studies have generally found a notably larger reduction in fasting insulin, independently of weight loss. The average insulin levels throughout the day tend to be lower on a ketogenic diet as well.
	<a href="#">Salacia reticulata</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	A decrease in postprandial insulin has been noted with acute supplementation, which is thought to be secondary to the reduction in glucose absorption (as the two correlate highly). There are currently no studies assessing long term changes in fasting insulin
	<a href="#">Berberine</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Degree of reduction of fasting insulin according to meta-analysis was SMD -0.50mU/L (95% CI -0.96 to -0.03) which is not overly remarkable.
	<a href="#">Inositol</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Secondary to treating symptoms of PCOS, fasting insulin concentrations are fairly reliably reduced.
	<a href="#">Magnesium</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	Decreases in fasting insulin appear to occur over long term supplementation with magnesium in persons at risk for diabetes or already with the disease state; decreases in insulin may not occur in normoglycemic persons
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Chronic supplementation of pharmacological doses of niacin appears to increase fasting insulin concentrations when compared to control subjects.
	<a href="#">Whey Protein</a>	 Minor	<b>Low</b> <a href="#">See all 5 studies</a>	Mixed effects on insulin, as there is an acute increase due to whey being a protein source (although whey increases insulin more than other proteins). Fasting insulin (chronically) tends to either be not affected or reduced, although the latter is usually confounded with weight loss.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Zinc</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Basal insulin concentrations appear to be reduced following supplementation of zinc.
	<a href="#">Citrulline</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Most studies note that there is no significant change in insulin concentrations, although a lone study (not replicated) suggested that the exercise-induced increase in insulin was suppressed with citrulline. As this study also noted performance degradation, it may be a flaw
	<a href="#">Cocoa Extract</a>	-	<b>High</b> <a href="#">See all 9 studies</a>	Despite improvements in insulin sensitivity, only one study has noted a reduction in fasting insulin in diabetics while other studies (in diabetics and healthy subjects) do not notice any significant alterations in insulin concentrations.
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	No significant influence on fasting insulin levels
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No effect on fasting insulin.
	<a href="#">Fenugreek</a>	-	<b>Low</b> <a href="#">See all 3 studies</a>	No consensus as to the influence of fenugreek on insulin levels
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	No significant influence on fasting insulin levels
	<a href="#">Vitamin C</a>	-	- <a href="#">See all 11 studies</a>	Mixed evidence across studies. Overall, there may be a modest reduction in fasting insulin levels, though more evidence is needed.
	<a href="#">Bladderwrack</a>	 Minor	- <a href="#">See study</a>	Appears to reduce insulin AUC after a carbohydrate containing meal
	<a href="#">Blueberry</a>	 Minor	- <a href="#">See study</a>	Insulin has once been noted to be decreased in elderly persons with blueberry ingestion.










LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Capsaicin</a>	 Minor	- <a href="#">See study</a>	High doses of capsaicin may induce insulin release from the pancreas
	<a href="#">Chlorogenic Acid</a>	 Minor	- <a href="#">See study</a>	Spike in insulin was attenuated a bit, secondary to attenuating the rate of glucose absorption. Not overly remarkable
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See all 13 studies</a>	May increase postprandial insulin concentrations, and a decrease, when taken chronically, is possible but unreliable from studies.
	<a href="#">Glutamine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in insulin occurs following ingestion of glutamine supplementation, which is thought to be secondary to the increase in blood glucose seen with glutamine ingestion
	<a href="#">Gynostemma pentaphyllum</a>	 Minor	- <a href="#">See study</a>	A decrease in fasting insulin has been noted with supplementation in diabetics
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	Fasting insulin has been noted to be decreased in diabetics given carnitine
	<a href="#">Olive leaf extract</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease of fasted and postprandial insulin with olive leaf consumption has been noted, not to a remarkable degree
	<a href="#">Psyllium</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A minor decrease in diabetics following supplementation, although it is small in magnitude and does not carry over to nondiabetics.
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	A decrease in insulin (fasting) has been noted in persons with metabolic syndrome
	<a href="#">Yacon</a>	 Minor	- <a href="#">See study</a>	A minor reduction in fasting insulin levels has been noted in obese women given supplementation, but this is confounded with weight loss.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Apple Cider Vinegar</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	While some studies suggest a reduction in insulin after meals, many others don't, and it's not apparent if differences in insulin sensitivity can explain the changes. One study looked at fasting insulin and found a comparable reduction in the apple cider vinegar group as compared with the placebo group in type 2 diabetes patients. Another study looked at fasting insulin and found a small reduction in the low dose (15 ml) group but not the high dose group (30 ml).
	<a href="#">Biotin</a>	-	- <a href="#">See study</a>	
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin
	<a href="#">Branched Chain Amino Acids</a>	-	- <a href="#">See study</a>	No significant influence of BCAA supplementation on fasting insulin levels
	<a href="#">Caffeine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on fasting insulin (not postprandial) are noted with caffeine
	<a href="#">Coenzyme Q10</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in insulin associated with CoQ10 supplementation.
	<a href="#">Dehydroepiandrosterone</a>	-	- <a href="#">See study</a>	No significant alterations in fasting glucose levels
	<a href="#">ECA</a>	-	- <a href="#">See study</a>	No significant alterations in fasting insulin reported
	<a href="#">Gamma Oryzanol</a>	-	- <a href="#">See study</a>	No significant alterations noted in fasting insulin levels following prolonged ingestion of gamma-oryzanol in healthy persons



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	In persons with metabolic syndrome, there is no significant influence on fasting insulin concentrations relative to placebo after supplementation of garlic.
	<a href="#">Grape juice</a>	-	<b>Moderate</b> <a href="#">See all 6 studies</a>	No apparent effect compared with a flavored sugar drink or apple juice as control. However, studies looking at its effects on type 2 diabetes haven't been done.
	<a href="#">Green Tea Catechins</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant influence on fasting insulin levels
	<a href="#">Hesperidin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Similar to blood glucose, there is no significant influence on basal insulin concentrations in otherwise healthy persons or those with metabolic diseases.
	<a href="#">Japanese Knotweed</a>	-	- <a href="#">See study</a>	No significant alterations in fasting insulin levels seen with treatment
	<a href="#">Krill Oil</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant changes in fasting insulin levels
	<a href="#">Marijuana</a>	-	- <a href="#">See study</a>	Short term marijuana usage does not influence circulating insulin concentrations.
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels noted with melatonin
	<a href="#">Nicotine</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Panax ginseng</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fasting insulin levels seen with panax ginseng
	<a href="#">Punicic Acid</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Fasting blood insulin concentrations do not appear to be significantly influenced with supplementation of red clover extract.
	<a href="#">Rose Hip</a>	-	- <a href="#">See study</a>	No significant influence on circulating (basal) insulin has been noted with rosehip supplementation.
	<a href="#">Sodium Bicarbonate</a>	-	- <a href="#">See study</a>	Fasting insulin concentrations are not affected with sodium bicarbonate supplementation
	<a href="#">Tauroursodeoxycholic Acid</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	Similar to blood glucose, there is currently no known influence of betaine supplementation on fasting insulin concentrations.
	<a href="#">Ursolic Acid</a>	-	- <a href="#">See study</a>	No alterations in insulin concentrations are noted with chronic ursolic acid supplementation.
	<a href="#">Vitamin D</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on fasting insulin levels
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Basal insulin concentrations (fasted state) do not appear to be influenced by supplementation of vitamin E.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin K</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A relative deficiency of vitamin K seems to be associated with higher post-meal insulin spikes (over 120 minutes), and this abnormal elevation is normalized upon supplementation of vitamin K
	<a href="#">Arginine</a>	-	- <a href="#">See study</a>	No significant influence on <i>fasting</i> insulin concentrations associated with arginine supplementation
	<a href="#">Ginger</a>	-	- <a href="#">See study</a>	No significant alterations in insulin levels (fasting) seen with ginger
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Medium-chain triglycerides</a>	-	- <a href="#">See study</a>	No significant influence detected on fasting insulin levels following coconut oil consumption
	<a href="#">Pycnogenol</a>	-	- <a href="#">See study</a>	
	<a href="#">Safflower Oil</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels in diabetics
	<a href="#">Salvia hispanica</a>	-	- <a href="#">See study</a>	No significant influence on fasting insulin levels following chronic consumption of chia seeds in the diet

Back to: [Supplements](#) | [Health Outcomes](#)

# Insulin Secretion

Insulin secretion refers to the amount of insulin released from the pancreas either inherently or from a carbohydrate containing test meal. Supplements that increase insulin release are known to be hypoglycemic when taken with a meal.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	There does not appear to be an augmented insulin release from dietary carbohydrate nor an inherent insulin release from the pancreas associated with fish oil supplementation
	<a href="#">Arginine</a>	 Minor	- <a href="#">See study</a>	An increase in insulin secretion has been noted with arginine supplementation. This is both due to arginine being a secretagogue (when used acutely), and prolonged usage in those with impaired glucose tolerance may regenerate pancreatic beta-cells
	<a href="#">Chromium</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, but it is possible that chromium causes an increased insulin response to dietary glucose (leading to a greater release of insulin acutely, possibly preceding a reduction in blood glucose).
	<a href="#">Cocoa Extract</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence as to whether cocoa flavanols can increase insulin secretion, with the positive result coming from a very high dose (1,000mg flavanols) in hyperglycemic subjects.
	<a href="#">Colostrum</a>	 Minor	- <a href="#">See study</a>	Insulin is secreted in response to colostrum intake due to it being a dietary protein, but this response does not seem to be different from whey protein in magnitude.
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Curcumin has been found to increase insulin secretion in insulin resistant persons, suggesting benefits to pancreatic tissue.
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	A minor decrease in insulin secretion has been noted associated with green tea catechin ingestion
	<a href="#">Inositol</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	The amount of insulin secreted in response to orally ingested glucose is attenuated after supplementation of inositol to insulin resistant persons

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	- <a href="#">See study</a>	Insulin secretion (in response to glucose) appears to be hindered with chronic supplementation of pharmacological doses of niacin
	<a href="#">Vitamin D</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	An improvement in insulin secretion is noted in diabetics (type II mostly) and in persons at risk for diabetes, which is thought to be secondary to protective effects at the level of the pancreas.
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	No effect on the insulin secretion in response to a test meal.
	<a href="#">Sea Buckthorn</a>	 Minor	- <a href="#">See study</a>	Secondary to reducing the absorption of carbohydrates from a test meal, insulin secretion is attenuated
	<a href="#">Moringa oleifera</a>	-	- <a href="#">See study</a>	The hypoglycemic properties of this supplement do not appear to be related to an increase in insulin secretion from the pancreas following a meal
	<a href="#">Pycnogenol</a>	-	- <a href="#">See study</a>	
	<a href="#">Sodium Bicarbonate</a>	-	- <a href="#">See study</a>	No significant influence of supplementaion sodium bicarbonate on insulin secretion

Back to: [Supplements](#) | [Health Outcomes](#)







# Insulin Sensitivity

---

Affects the ability of cells to respond to the hormone insulin. Higher insulin sensitivity indicates better responsiveness, and insulin resistance (low sensitivity) is fundamental for the development of type II diabetes.






Back to: [Supplements](#) | [Health Outcomes](#)

# Interferon Gamma

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See all 3 studies</a>	IFN $\gamma$ is increased when vitamin E is taken alongside a vaccination, and decrease in the elderly (alongside improvements in immunity) with no significant changes if neither of the above contexts are considered.
	<a href="#">Garlic</a>	 Minor	- <a href="#">See study</a>	Alongside the increase in immune cell activity in otherwise healthy persons is an increase in IFN-y concentrations
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	IFN-y does not appear to be influenced with supplementation of colostrum relative to control proteins (whey).
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No apparent difference compared with placebo in response to ultramarathon running.

Back to: [Supplements](#) | [Health Outcomes](#)









# Interleukin 1-beta

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	A reduction in IL-1b has been noted in osteoarthritic patients, which is thought to underlie the benefits to joint health seen with curcumin.
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No significant influence on circulating IL-1 $\beta$ concentrations
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Interleukin-1B does not appear to be influenced by supplementation of cocoa flavanols









Back to: [Supplements](#) | [Health Outcomes](#)



# Interleukin 10

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	IL-10 does not appear to be significantly influenced with colostrum relative to baseline or other protein sources.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Blueberry</a>	 Minor	- <a href="#">See study</a>	An increase in IL-10 following exercise has been noted.
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Serum interleukin-10 does not appear to be influenced with supplementation of cocoa flavanols
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	Nonsignificant increase compared with placebo in response to ultramarathon running.
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	


# Interleukin 2

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on IL-2 concentrations, with an increase noted when supplemented around exercise and no change noted at rest.
	<a href="#">Vitamin E</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in interleukin 2 (IL-2) concentrations has been noted in the elderly given supplementation of vitamin E alongside immunity enhancements.
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	Interleukin 2 (IL-2) appears to be reduced during zinc deficiency, and this is normalized upon zinc sufficiency.
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	Possible large reduction due to 7 days of taking 1.5 g/d, however, pre-supplementation measurements weren't taken.






Back to: [Supplements](#) | [Health Outcomes](#)

# Interleukin 6

Interleukin 6 (IL-6) is a proinflammatory cytokine that is thought to reflect a more inflammatory state in the body.






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A slight decrease in IL-6 concentrations has been noted, practical relevance unknown.
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	A decrease in circulating IL-6 has been noted with fish oil supplementation
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	A slight reduction in IL-6 has been reported in persons who are diagnosed with metabolic syndrome
	<a href="#">Zinc</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Alongside other proinflammatory cytokines, IL-6 appears to be reduced following supplementation of zinc.
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	Interleukin-6 does not appear to be influenced during exercise when alanylglutamine is increased prior as rehydration (relative to water)
	<a href="#">Blueberry</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on IL-6 concentrations in serum
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Serum interleukin six (IL-6), a biomarker of inflammation, does not appear to be altered in response to supplementation of cocoa.
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	IL-6 does not appear to be influenced with supplementation of colostrum.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Garlic</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Supplementation of garlic to persons in chronic pro-inflammatory states does not seem to significantly influence circulating IL-6 concentrations
	<a href="#">HMB</a>	-	- <a href="#">See study</a>	No significant alterations in circulating IL-6 concentrations
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	No significant influence on interleukin 6 (IL-6) is seen with oral supplementation of hesperidin.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	The alterations in IL-6 concentrations seen with exercise are unchanged with quercetin supplementation.
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	The inflammatory cytokine IL-6 does not appear to be influenced by supplementation of niacin.
	<a href="#">Vitamin C</a>	-	<b>Low</b> <a href="#">See all 4 studies</a>	Mixed evidence. One study found a significant reduction compared with placebo after 8 weeks supplementation, one study found a non-significant increase in response to ultramarathon running, and one study found no change.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	IL-6 concentrations do not appear to be influenced relative to placebo.
	<a href="#">Vitamin K</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant effect of vitamin K on circulating levels of IL-6, an inflammatory marker
	<a href="#">Iodine</a>	 Minor	- <a href="#">See study</a>	There is a minor decrease in circulating IL-6 associated with iodine supplementation, thought to be indicative of a minor antiinflammatory effect.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pyrroloquinoline quinone</a>	 Minor	- <a href="#">See study</a>	IL-6 appeared to be significantly reduced in the serum of adults given PQQ supplementation relative to baseline.
	<a href="#">Ashwagandha</a>	-	- <a href="#">See study</a>	No apparent effect in schizophrenia patients in one study.
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	
	<a href="#">Ketogenic diet</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	One study found an initial increase followed by a return to roughly baseline, while the other found no notable difference in the increase compared with the control diet.

Back to: [Supplements](#) | [Health Outcomes](#)

# Interleukin 8

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	IL-8 does not appear to be significantly influenced with supplementation of colostrum relative to placebo.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	1.5 g/d didn't lead to a significant difference compared with placebo in response to ultramarathon running.

Back to: [Supplements](#) | [Health Outcomes](#)

# Intestinal Motility

Intestinal motility refers to the speed of which food particulate passes through the intesines, with an increase in motility causing faster evacuation and a prolonged motility time being the opposite.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Senna alexandrina</a>	 Strong	<b>Very High</b> <a href="#">See all 10 studies</a>	Senna Alexandria is a reference drug for its laxative effects, with comparable efficacy to oral polyethylene glycol (PEG; used before colonoscopies) and lactulose, but more cost-effective than the latter
	<a href="#">Yacon</a>	 Notable	- <a href="#">See study</a>	The one study to assess intestinal motility (speed of food transit from stomach to anus) has noted a near halving of time, suggesting that yacon increases intestinal motility.
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	May increase intestinal motility
	<a href="#">Psyllium</a>	 Minor	- <a href="#">See study</a>	Increases intestinal motility due to being a bulk laxative, but is unlikely to have a strong laxative effect.

Back to: [Supplements](#) | [Health Outcomes](#)










# Intestinal Parasites

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Even in cases where traveler's diarrhea (from E.coli) is successfully treated, the overall amount of bacteria found in the stool is not modified suggesting no actual antibacterial properties.
	<a href="#">Origanum vulgare</a>	 Notable	- <a href="#">See study</a>	One lone study (potential financial influence) has noted ablation of parasites in infected humans (77% of study group) and a reduction otherwise as assessed by stool samples.

Back to: [Supplements](#) | [Health Outcomes](#)



# Intestinal Permeability

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	 Minor	- <a href="#">See all 3 studies</a>	Evidence is preliminary, and there are studies suggesting both an increase in permeability and a decrease seen with endurance exercise (increase) or with high heat stress exercise or NSAID coingestion (decrease).
	<a href="#">Alanylglutamine</a>	 Minor	- <a href="#">See study</a>	In subjects with HIV who reported diarrhea in the last two weeks, supplementation of alanylglutamine was more effective than placebo (glycine) in reducing intestinal permeability
	<a href="#">Quercetin</a>	 Minor	- <a href="#">See study</a>	An increase in the amount of intestinal permeability induced by training in the heat has been noted with quercetin supplementation, which is an adverse event; the influence of quercetin at rest is uncertain
	<a href="#">Lactobacillus casei</a>	-	- <a href="#">See study</a>	
	<a href="#">Whey Protein</a>	 Minor	- <a href="#">See study</a>	Appears to decrease intestinal permeability, which is due to the <a href="#">glutamine</a> content of whey protein.

Back to: [Supplements](#) | [Health Outcomes](#)

# Intraocular Pressure

Intraocular pressure (IOP) is the pressure within an eye that is elevated in instances of retinal disorders such as glaucoma, and contributes to the pathology. Supplements that reduce IOP are known to reduce pain and possibly improve vision in these conditions.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Despite the increase in ocular blood flow associated with repeated dosing of ginkgo biloba, there does not appear to be a significant modification of intraocular blood pressure in persons with normal IOP.
	<a href="#">Coleus forskohlii</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Eyedrops containing forskolin seem effective in reducing intraocular pressure (IOP), and while it seems effective orally those studies are currently confounded with the inclusion of other nutrients (and thus omitted from the HEM).
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	Oral supplementation of melatonin (500mcg) is able to reduce intraocular pressure in otherwise healthy persons
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Cocoa does not appear to reduce intraocular pressure when given to subjects with glaucoma.
	<a href="#">Marijuana</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Inhalation of marijuana is able to reduce intraocular blood pressure quite significantly, leading to it being useful in instances of glaucoma.
	<a href="#">CDP-choline</a>	-	- <a href="#">See study</a>	Despite the improvements seen in visual acuity and eye health with supplementation of CDP-Choline, intraocular pressure does not appear to be affected.













# Iron Absorption

Iron Absorption is the percentage of iron that is absorbed from a meal, also known as its bioavailability. Many supplements appear to interact with iron absorption in a meal, either in an additive or hindering fashion.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	A decrease in iron absorption associated with green tea catechins has been noted
	<a href="#">Zinc</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Iron absorption is decreased when both iron and zinc exceed 10mg in a supplement given on an empty stomach. The inhibition does not appear to be relevant if the same ratio is at lower doses (500mcg) or if the minerals are ingested via food products.
	<a href="#">Psyllium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on iron absorption; it is possible the inhibitory effect of phytates in the small intestine are negated by the reduced pH in the colon that enhances mineral reuptake
	<a href="#">Alpha-GPC</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	It is possible that Alpha-GPC increases iron absorption from non-meat sources (nonheme iron), but the evidence is currently mixed and a very low dose of 46mg may be required (which would render supplementation irrelevant).
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No significant influence on iron absorption seen with low levels of dietary turmeric intake.

Back to: [Supplements](#) | [Health Outcomes](#)

# Irritability

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Krill Oil</a>	 Minor	- <a href="#">See study</a>	Irritability as a side-effect of PMS has been reduced with supplemental krill oil
	<a href="#">Peppermint</a>	 Minor	- <a href="#">See study</a>	Irritability as a side-effect of tension headaches is reduced secondary to the treatment of tension headaches
	<a href="#">Vitex agnus castus</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Can reduce irritability as a side effect of PMS, no evidence as to whether this reduction in irritability applies to other persons (males) or periods that are not PMS.
	<a href="#">Marijuana</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Irritability as a side effect of multiple sclerosis does not appear to be significantly affected by marijuana therapy.
	<a href="#">N-Acetylcysteine</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Ashwagandha</a>	 Notable	- <a href="#">See study</a>	Reduction in one industry-funded study of chronically stressed people. Needs to be replicated.
	<a href="#">Royal Jelly</a>	 Minor	- <a href="#">See study</a>	Decrease in irritability seen with Royal Jelly may be secondary to reducing the symptoms of menopause

Back to: [Supplements](#) | [Health Outcomes](#)

# Ketone Bodies







Ketone bodies are small molecules that are produced in higher amounts during states of carbohydrate depletion, and are known to contribute to energy metabolism and may influence other aspects of the body.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ketogenic diet</a>	 Strong	<b>Very High</b> <a href="#">See all 8 studies</a>	When a ketogenic diet is followed, ketone bodies will increase considerably. Ketosis is compatible with a wide range of protein intakes as long as carbohydrate intake is low, but the most ketogenic diets will be the ones low in both carbohydrates and protein.
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	An increase in ketone bodies has been noted when fish oil is paired with a weight loss diet (relative to placebo)
	<a href="#">Branched Chain Amino Acids</a>	-	- <a href="#">See study</a>	No significant alterations in formation of ketone bodies, which may be due to the ketogenic BCAA (leucine) being offset by the other two glucogenic ones
	<a href="#">Colostrum</a>	 Minor	- <a href="#">See study</a>	A decrease in ketone bodies in type II diabetics was noted with supplementation of colostrum daily for four weeks; the decrease was mild, and there was no protein containing placebo for comparison.
	<a href="#">Medium-chain triglycerides</a>	 Minor	- <a href="#">See study</a>	Has been implicated in increasing serum ketones more than other fatty acids.
	<a href="#">Sodium Bicarbonate</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	During fasting or ketogenic diets, sodium bicarbonate supplementation may be able to increase ketone body production. This appears to be of somewhat small magnitude and was not associated with additional fat loss
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	- <a href="#">See study</a>	Supplementation of low dose niacin (100mg) repeatedly while in the fasted state appears to be associated with an increase in blood ketone levels.

# Kidney Function

Kidney function tends to refer to a series of urinary or serum biomarkers that are thought to accurately assess kidney health, and supplements that change these biomarkers in a positive direction are thought to aid in kidney function.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 13 studies</a>	In otherwise healthy persons given creatine supplementation, there is no significant beneficial nor negative influence on kidney function.
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to promote kidney function in instances where function is normally hindered
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Benfotiamine</a>	-	- <a href="#">See study</a>	Insufficient evidence to support enhanced kidney function.
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No apparent influence on kidney function (negative nor positive) with chromium supplementation in older sedentary adults.
	<a href="#">Cordyceps</a>	-	- <a href="#">See study</a>	
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant alterations of kidney function in healthy persons given betaine (4g) for six months.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Biomarkers of kidney function are not significantly altered with supplementation of vitamin E relative to placebo.
	<a href="#">Astragalus membranaceus</a>	 Notable	- <a href="#">See study</a>	Despite statistically weak evidence, case studies suggest <i>curative</i> effects. Potential of astragalus for aiding kidney function.
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	No significant influence of CLA supplementation on renal functioning
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No notable change in estimated glomerular filtration rate (eGFR) in type 2 diabetics over the course of 4 months.


Back to: [Supplements](#) | [Health Outcomes](#)




# LDL-C

Low Density Lipoprotein (LDL) cholesterol is (sometimes falsely) seen as the 'bad' cholesterol and is the ying to HDL-C's yang. LDL serves to bring fatty acids and cholesterol from the liver and circulate them to tissues, oxidized LDL (oLDL) can contribute to heart disease.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Garlic</a>	 Notable	<b>Very High</b> <a href="#">See all 14 studies</a>	There appears to be a reliable and significant reduction in circulating LDL cholesterol in hypercholesterolemic persons with garlic supplementation, and the magnitude of this change tends to be in the range of 10-20% (more potency in those with worse profiles at baseline)
	<a href="#">Cocoa Extract</a>	 Minor	<b>Very High</b> <a href="#">See all 15 studies</a>	Cocoa products appear to be able to reduce LDL cholesterol due to their flavonoid component, with the reduction in LDL-C being mild.
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See all 30 studies</a>	A decrease has been noted in persons without high cholesterol in the first place, and the decreasing effect of statins appears to be augmented with fish oil. However, in persons at higher risk for cardiovascular disease due to high triglycerides and cholesterol (who more frequently use fish oil as therapy) it is possible LDL-C may actually be increased. The magnitude tends to be in the 5-10% range.
	<a href="#">Policosanol</a>	 Minor	<b>Moderate</b> <a href="#">See all 13 studies</a>	It is possible that policosanol is either effective or totally ineffective due to older Cuban studies being remarkably different than more recent replications; high probability of publicity bias
	<a href="#">Psyllium</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Not overly potent reductions of LDL-C, although they seem to reliably occur in persons with high cholesterol
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 14 studies</a>	The best evidence to date does not support a role for chromium in the reduction of LDL cholesterol, even when assessing type II diabetic individuals.
	<a href="#">Red Clover Extract</a>	-	<b>High</b> <a href="#">See all 11 studies</a>	Although a minor effect may occur in those with high blood cholesterol concentrations, the majority of evidence does not support a role of Red Clover Extract in reducing LDL-C when supplemented.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ketogenic diet</a>	 Notable	<b>Very High</b> <a href="#">See all 17 studies</a>	There appears to be a reliable and significant increase in circulating LDL cholesterol when people undertake a keto diet. In what long-term trials we have, this effect appears to persist on average.
	<a href="#">Vitamin B3 (Niacin)</a>	 Notable	<b>High</b> <a href="#">See all 5 studies</a>	Most evidence suggests that in subjects with dyslipidemia that supplemental niacin at the pharmacological dose results in a decrease in circulating LDL-C, although to a lesser magnitude than it influences HDL-C
	<a href="#">Berberine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	The reduction of LDL-C when berberine was paired with lifestyle changes was $-0.58\text{mmol/L}$ (95% CI $-0.78$ to $-0.39$ ) in diabetics, suggesting a significant benefit but not remarkably potent. However, another study in people with nonalcoholic fatty liver disease showed no benefit over lifestyle changes alone.
	<a href="#">Curcumin</a>	 Minor	<b>Low</b> <a href="#">See all 26 studies</a>	A small reduction in people with high cholesterol levels is possible, but studies are inconsistent.
	<a href="#">Green Tea Catechins</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	There appears to be somewhat of a reduction in LDL-C associated with consumption of green tea polyphenolics (5% or so with 500mg catechin intake)
	<a href="#">Nigella sativa</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	Reductions in LDL-C are mild at best and only occur in persons with impaired lipid profiles (high cholesterol or dyslipidemia), but they do appear to occur with ingestion of the seed extract
	<a href="#">Olive leaf extract</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	A decrease in LDL-C seems to be somewhat consistent, but the magnitude of decrease is not overly impressive relative to other agents
	<a href="#">Spirulina</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Degree of efficacy seems variable and correlated with disease state (more drastic improvements when LDL-C is much higher) but currently does not appear to be overly remarkable unless fatty liver exists.
	<a href="#">Trimethylglycine</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Similar to total cholesterol, one study noted a stasis in LDL when placebo decreased (a relative increase). Reasons for this unknown and the data needs to be replicated, and HDL was unaffected.
	<a href="#">Zinc</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	A decrease in LDL cholesterol may occur when a zinc deficiency in obese persons is being normalized.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Astaxanthin</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>High</b> <a href="#">See all 12 studies</a>	Insufficient evidence to support decreases of LDL-C and evidence to support no influence whatsoever.
	<a href="#">Dehydroepiandrosterone</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Although there is some counter evidence, usually DHEA supplementation does not alter LDL-C concentrations
	<a href="#">Hesperidin</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	Similar to total cholesterol, while there may be a minor reduction in those at the worst levels of LDL cholesterol those with minor increases fail to find benefit.
	<a href="#">L-Carnitine</a>	-	- <a href="#">See 2 studies</a>	No detectable influence on LDL-C levels
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See all 9 studies</a>	No significant alterations in LDL cholesterol seen with Vitamin C supplementation
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	Vitamin E supplementation does not appear to alter the overall levels of LDL cholesterol.
	<a href="#">Krill Oil</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in LDL-C has been noted with krill oil, which appears to be to quite a significant degree
	<a href="#">Soy lecithin</a>	 Notable	- <a href="#">See study</a>	A decrease in LDL-C has been noted with soy lecithin ingestion to the degree of 42.05-56.15% in hypercholesterolemics, which is a remarkable decrease. Requires replication.


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Artichoke Extract</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Nothing remarkable about the reductions in LDL-C, seem to occur somewhat reliably and are minor in magnitude
	<a href="#">Ashwagandha</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	A slight decrease in LDL-C has been noted following ashwagandha supplementation.
	<a href="#">Ecklonia cava</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Possible reductions in LDL-C
	<a href="#">Eleutherococcus senticosus</a>	 Minor	- <a href="#">See study</a>	A decrease in LDL-C has once been noted
	<a href="#">Ephedrine</a>	 Minor	- <a href="#">See study</a>	A decrease in LDL-C has been noted to be associated with ephedrine, although this may be confounded with weight loss (also seen in the trials)
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	May decrease LDL-C
	<a href="#">Grapefruit</a>	 Minor	- <a href="#">See study</a>	A decrease in LDL cholesterol has been noted, but may be due to weight loss
	<a href="#">Guggul</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although unreliable, there is a possible increase in LDL cholesterol from Guggul supplementation
	<a href="#">Irvingia gabonensis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in LDL-C has been noted, confounded with both weight loss and industry influence.
	<a href="#">Microlactin</a>	 Minor	- <a href="#">See study</a>	A reduction in LDL-C is seen in hyperlipidemics associated with hyperimmune milk consumption

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Panax ginseng</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May reduce LDL-C levels to a very small degree, seems unreliable in doing so
	<a href="#">Pterostilbene</a>	 Minor	- <a href="#">See study</a>	An increase in LDL cholesterol has been noted with oral ingestion of pterostilbene in hypercholesterolemic adults, mitigated by grape seed extract
	<a href="#">Pueraria mirifica</a>	 Minor	- <a href="#">See study</a>	Somewhat effective in menopausal women.
	<a href="#">Pycnogenol</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	May reduce LDL cholesterol for as long as pycnogenol is taken (some evidence to suggest a normalization after supplement cessation)
	<a href="#">Pyruvate</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A reducing effect on LDL-C has been noted once during caloric surplus; practical relevance of this information unknown
	<a href="#">Quercetin</a>	 Minor	- <a href="#">See 2 studies</a>	A decrease in LDL-C has been noted in persons with high blood lipids, although this decrease is not observed in persons who do not have high LDL-C concentrations.
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	Possible decreases in LDL-C in persons at risk for heart disease, but it does not appear to be of large magnitude
	<a href="#">Rooibos</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in LDL-C has been noted to a minor degree in persons at risk for cardiovascular disease, but there is no inherent reduction in LDL-C in otherwise healthy persons.
	<a href="#">Rose Hip</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A mild reduction in LDL cholesterol levels seen in obese persons with rose hip supplementation explains the reduction in total cholesterol, as HDL-C appears to be unaffected.
	<a href="#">Shilajit</a>	 Minor	- <a href="#">See study</a>	Minor decrease in LDL has been noted with shilajit

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin D</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Either no significant influence on LDL cholesterol or a slight increase (around 5%) has been noted; practical significance of this information unknown
	<a href="#">Whey Protein</a>	 Minor	- <a href="#">See study</a>	Possible LDL-C lowering effect, but has not yet been shown to be better than other protein sources.
	<a href="#">Yacon</a>	 Minor	- <a href="#">See study</a>	A respectable decrease in LDL has been reported once, although this reduction in LDL is confounded with weight loss that occurred with yacon syrup.
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Benfotiamine</a>	-	- <a href="#">See study</a>	Although not a primary research end-point, no significant influence on LDL-C is seen.
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant effects on LDL-C
	<a href="#">Blueberry</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant changes in LDL-C concentrations in serum with blueberries.
	<a href="#">Caffeine</a>	-	- <a href="#">See study</a>	No significant influences on LDL cholesterol noted
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	No significant influence on LDL-C concentrations in serum following citrulline supplementation
	<a href="#">Citrullus colocynthis</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reduction seen in persons with high blood triglycerides and cholesterol failed to reach statistical significance due to large variance.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Gamma Oryzanol</a>	-	- <a href="#">See study</a>	Although rice bran oil may reduce LDL cholesterol, there is insufficient evidence to support the role of gamma-oryzanol in this role
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No significant reducing effects on LDL cholesterol have been noted with ganoderma supplementation
	<a href="#">Garcinia cambogia</a>	-	- <a href="#">See study</a>	Garcinia appears unable to influence LDL-C levels based on preliminary evidence
	<a href="#">Grape Seed Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant interactions with LDL-C even in high risk persons
	<a href="#">Grape juice</a>	-	<b>Moderate</b> <a href="#">See all 9 studies</a>	Studies overall don't support an effect. One study that used a highly concentrated juice found a reduction, and it may be a dosing issue, but we don't know yet.
	<a href="#">Green Coffee Extract</a>	-	- <a href="#">See study</a>	LDL cholesterol appears unaffected
	<a href="#">Gynostemma pentaphyllum</a>	-	- <a href="#">See study</a>	LDL cholesterol appears unaffected
	<a href="#">HMB</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on LDL cholesterol levels
	<a href="#">Hemp Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant modifications in LDL-C levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hibiscus sabdariffa</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	LDL cholesterol appears to be unaffected following Roselle ingestion
	<a href="#">Japanese Knotweed</a>	-	- <a href="#">See study</a>	LDL-C appears to be unaffected, but testing has not been conducted in metabolically unwell persons
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant influence on LDL cholesterol seems apparent
	<a href="#">Magnesium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on LDL cholesterol levels seen with magnesium supplementation
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on LDL cholesterol is noted with melatonin
	<a href="#">Nattokinase</a>	-	- <a href="#">See study</a>	No significant influence on LDL cholesterol
	<a href="#">Phosphatidylcholine</a>	-	- <a href="#">See study</a>	
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on LDL-C with PS supplementation
	<a href="#">Punicic Acid</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on LDL-C levels
	<a href="#">Royal Jelly</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Although a reduction in LDL-C cannot be ruled out (due to the reduction in total cholesterol), the best evidence currently suggest no effect while uncontrolled studies confirm a reduction of minor magnitude

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Salvia hispanica</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	LDL-C appears to be unaffected with chia ingestion when compared to similar macronutrient sources
	<a href="#">Sea Buckthorn</a>	-	- <a href="#">See study</a>	No significant influence on LDL-C levels in otherwise healthy men
	<a href="#">Theaflavins</a>	-	- <a href="#">See study</a>	No detectable influence on LDL-C levels following theaflavin consumption
	<a href="#">Vanadium</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Mixed effects on LDL-C, likely no direct influence on LDL but may reduce overall LDL levels secondary to improving the diabetic state (which normally increases LDL)
	<a href="#">Vitamin K</a>	-	- <a href="#">See study</a>	LDL-C appears to be unaffected by supplemental vitamin K
	<a href="#">Eclipta alba</a>	 Notable	- <a href="#">See study</a>	Decreases in LDL-C have been noted with eclipta alba in hypertensive persons to 24%, which is quite a significant reduction.
	<a href="#">Emblica officinalis</a>	 Minor	- <a href="#">See study</a>	A decrease in LDL-C has been noted with consumption of the fruits over 21 days, affecting both healthy controls and diabetics
	<a href="#">Inositol</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	A decrease in LDL-C has been noted alongside other improvements in lipid parameters.
	<a href="#">Medium-chain triglycerides</a>	 Minor	- <a href="#">See study</a>	Administering purified MCTs to diabetics results in a non-significant reduction of LDL-C.
	<a href="#">Tetradecyl Thioacetic Acid</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Possible reductions in LDL cholesterol seen with TTA consumption














LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Yerba mate</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Decreases in LDL cholesterol have been noted in metabolically unwell persons following moderate Mate consumption (as brewed tea)
	<a href="#">Apple Cider Vinegar</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No apparent meaningful effect in two studies.
	<a href="#">Horse Chestnut</a>	-	- <a href="#">See study</a>	No detectable influence on LDL cholesterol concentrations associated with horse chestnut extract.
	<a href="#">Perilla Oil</a>	-	- <a href="#">See study</a>	
	<a href="#">Pueraria lobata</a>	-	- <a href="#">See study</a>	No significant influence on circulating LDL-C has been noted with supplementation
	<a href="#">Pyrroloquinoline quinone</a>	-	- <a href="#">See study</a>	No apparent changes to LDL cholesterol exist in otherwise healthy adults given PQQ supplementation daily for up to three weeks.
	<a href="#">Rubus coreanus</a>	-	- <a href="#">See study</a>	No significant influence of <i>rubus coreanus</i> on LDL cholesterol levels in otherwise healthy persons.
	<a href="#">Safflower Oil</a>	-	- <a href="#">See study</a>	No significant alterations in LDL-C concentrations
	<a href="#">Tribulus terrestris</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	One study found a modest, significant reduction relative to placebo. Another study found a small, non-significant reduction
	<a href="#">Vitamin B1</a>	-	- <a href="#">See study</a>	No change noted in those with high blood sugar



# Lactate Production

Lactate can be produced during prolonged exercise, and while it is not thought to contribute to muscular failure it seems to be a good biomarker of it. Reductions in lactate production tend to be associated with prolonged physical endurance.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sodium Bicarbonate</a>	 Notable	- <a href="#">See all 37 studies</a>	Increases of lactate production are noted in short intense exercises (due to allowing more work to be conducted, and the work produces more lactate) while prolonged exercise is associated with a decrease in lactate concentrations relative to placebo
	<a href="#">Caffeine</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Seems to increase lactate production during exercise when caffeine is acutely preloaded
	<a href="#">L-Carnitine</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Lactate production appears to be decreased in studies that note an increase in muscular carnitine stores, although the decrease is not overly notable
	<a href="#">Branched Chain Amino Acids</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	There does not appear to be any reliable or significant changes in blood lactate concentrations following exercise with BCAA supplementation
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Lactate production during physical exercise does not appear to be any different with dietary colostrum when compared to whey protein.
	<a href="#">Creatine</a>	-	<b>Moderate</b> <a href="#">See all 6 studies</a>	No apparent reduction or increase in lactate in swimmers after sprinting exercises.
	<a href="#">Trimethylglycine</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	An attenuation in the rise of lactate seen in more endurance based exercise may need to be replicated, since two other studies (majority of evidence) have failed to find an interaction with betaine ingestion and lactate.
	<a href="#">Chromium</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, but at least one study has noted that lactate production during exercise was greater with 600mcg chromium than it was with placebo; no known mechanism for this observation.













LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	A decrease in lactate has been noted one hour into training in heat, with no significant influence prior to one hour
	<a href="#">Rhodiola Rosea</a>	 Minor	- <a href="#">See study</a>	A decrease in lactate production has been noted with rhodiola supplementation; practical significance unknown
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	Lactate production and serum levels during a cycle to fatigue do not appear to differ between alanylglutamine and water
	<a href="#">Arginine</a>	-	- <a href="#">See study</a>	No significant influence on lactate production associated with L-arginine supplementation
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	No significant influence on lactate production seen with citrulline supplementation before exercise
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Lactate production during exercise does not appear to be influenced with supplementation of vitamin E.
	<a href="#">Yerba mate</a>	-	- <a href="#">See study</a>	At rest and during exercise there does not seem to be any major modification of lactate levels in serum.
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	The rate of lactate accumulation and production during exercise does not appear to be significantly influenced by pre-exercise supplementation of cocoa flavanols
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on exercise-induced lactate production



# Lean Mass










Lean Mass is overall body mass after Fat Mass has been subtracted. It consists of organs, bone, the brain, water and contractile muscle; since changes in the first three do not occur often, changes in lean mass are assumed to either be muscle tissue, glycogen (energy storage) or water.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Conjugated Linoleic Acid</a>	 Minor	<b>Moderate</b> <a href="#">See all 13 studies</a>	Some evidence that CLA can preserve lean mass during fat loss in an obese cohort of patients, but even in this subgroup the results are highly unreliable.
	<a href="#">Creatine</a>	 Minor	<b>Very High</b> <a href="#">See all 20 studies</a>	Does appear to have inherent lean mass building properties, but a large amount of research is confounded with water weight gains (difficult to assess potency).
	<a href="#">Colostrum</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Colostrum, inherently due to being a dietary protein, appears to promote lean mass accrual. This is comparable to a similar dose of whey protein as the growth factors in colostrum do not appear to provide an additional benefit.
	<a href="#">Whey Protein</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Protein in general increases lean mass, but there is not a significant body of evidence to support whey protein as being more effective than other protein sources
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	Studies in trained and untrained persons, with or without physical exercise, have failed to find an increase in the rate of lean mass accrual relative to placebo.
	<a href="#">Dehydroepiandrosterone</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	Perhaps due to a lack of studies pairing DHEA with a prolonged resistance training program, there is no evidence to support DHEA supplementation to increase muscular or lean mass
	<a href="#">HMB</a>	-	<b>High</b> <a href="#">See all 8 studies</a>	No significant influences on lean body mass associated with HMB supplementation
	<a href="#">Arginine</a>	 Minor	- <a href="#">See study</a>	An increase in lean mass has been noted in persons with impaired glucose tolerance using L-arginine over a long period of time, where placebo experienced a decrease. It is unsure how this applies to otherwise healthy persons

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Beta-Alanine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Beta-alanine seems to have a hypertrophic effect, either inherently or through greater workload, but this effect does not appear overly potent.
	<a href="#">Coleus forskohlii</a>	 Minor	- <a href="#">See study</a>	Somewhat effective (2lbs over 12 weeks relative to placebo) although somewhat confounded with the increase in bone mass, as lean mass is inclusive of bone and skeletal muscle.
	<a href="#">Ketogenic diet</a>	 Minor	<b>Moderate</b> <a href="#">See all 10 studies</a>	Studies generally find no difference or a decrease in the ketogenic group. The decrease may have to do with either greater calorie restriction, more water loss, or increase utilization of amino acids for glucose.
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in lean mass has been noted in elderly persons. This may not apply to lean healthy individuals, and no research assesses youth
	<a href="#">Leucic Acid</a>	 Minor	- <a href="#">See study</a>	An increase in lean mass has been noted in the legs of soccer players to the degree of 0.4kg over 4 weeks; this study currently stands alone
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See 2 studies</a>	An increase in lean mass has been noted in dieting obese women relative to control (2,000IU) and a trend to reduce lean mass relative to control has been noted in exercising healthy persons (4,000IU); there appears to be potential for both effects with Vitamin D supplementation, but there is insufficient evidence to draw conclusions
	<a href="#">Arachidonic acid</a>	-	- <a href="#">See study</a>	
	<a href="#">D-Aspartic Acid</a>	-	- <a href="#">See study</a>	No significant influence on lean mass in otherwise healthy trained men.
	<a href="#">Ecdysteroids</a>	-	- <a href="#">See study</a>	No differences between ecdysteroids and placebo in improving lean mass accrual during a weight lifting program
	<a href="#">Fenugreek</a>	-	- <a href="#">See study</a>	No demonstrated benefit to lean mass accrual in otherwise healthy trained men given a workout program








LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on lean mass associated with fish oil supplementation
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	Supplemental glutamine does not appear capable of increasing lean mass when paired with a weightlifting routine.
	<a href="#">Hoodia gordonii</a>	-	- <a href="#">See study</a>	No significant modifications in lean mass during weight loss with hoodia relative to placebo
	<a href="#">Leucine</a>	-	- <a href="#">See study</a>	
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant alterations in lean mass associated with licorice
	<a href="#">Punicic Acid</a>	-	- <a href="#">See study</a>	No significant influence on lean mass has been noted with punicic acid supplementation
	<a href="#">Tribulus terrestris</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Insufficient evidence to support a consistent increase of lean mass associated with tribulus relative to placebo during training or in general.
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In studies assessing lean mass, there are no apparent changes with supplementation of betaine.
	<a href="#">Ursolic Acid</a>	-	- <a href="#">See study</a>	The increase in power output and IGF-1 seen with ursolic acid over 16 weeks was not accompanied by an increase in lean mass relative to control (resistance training was included).
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	No interaction between velvet antler and lean mass accrual



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Yohimbine</a>	-	- <a href="#">See study</a>	No significant influence on lean mass detected with yohimbine ingestion
	<a href="#">Apple Cider Vinegar</a>	 Minor	- <a href="#">See study</a>	One study found a reduction in the apple cider vinegar group, though it's possible that the effect is due to a reduction in caloric intake and overall weight loss.
	<a href="#">Eurycoma Longifolia Jack</a>	 Minor	- <a href="#">See study</a>	One pilot study has noted an increase more than control when both eurycoma and control were paired with exercise
	<a href="#">Safflower Oil</a>	 Minor	- <a href="#">See study</a>	An increase in lean mass relative to control ( <a href="#">CLA</a> ) has been noted in obese menopausal women
	<a href="#">Ashwagandha</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There was a slight trend to increase lean mass in otherwise sedentary persons over 30 days, but it failed to reach statistical significance.
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Lean mass does not appear to be increased in response to supplementation of cocoa flavanols
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	1 g/d for 4 months showed no effect in type 2 diabetic patients.

# Left Ventricular Ejection Fraction

Left ventricular ejection fraction (LVEF) is the capacity of the heart to 'pulse' blood out of cardiac tissue and into circulation, and is a biomarker of cardiac health. The reduction in LVEF seen during cardiac ailments tends to be a focus of rehabilitation.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	10mg resveratrol appears to improve left ventricle function slightly
	<a href="#">Terminalia arjuna</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to increase LVEF in person suffering from cardiovascular ailments; preliminary evidence suggests that this is not limited to myocardial infarction
	<a href="#">Vitamin E</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Supplementation of vitamin E has failed to influence the activity of the cardiac tissue itself.
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	Has been noted to increase LVEF in persons with myocardial impairment

Back to: [Supplements](#) | [Health Outcomes](#)









# Leg Swelling

Leg swelling is a transient state of edema caused by prolonged sitting, and may occur even during walking in persons with poor circulation or during the later months of pregnancy. Some supplements that improve blood circulation may help with leg swelling.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Horse Chestnut</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Symptoms of leg swelling and varicose veins appear to be fairly reliably reduced with the recommended oral doses of horse chestnut supplementation.
	<a href="#">Centella asiatica</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	The leg swelling associated with chronic venous insufficiency appears to be significantly reduced secondary to treating the state of chronic venous insufficiency.
	<a href="#">Pycnogenol</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to reduce leg swelling secondary to the enhancement of blood flow. While the evidence is not overly robust, it is comparable if not better than the reference supplement of <a href="#">Horse Chestnut</a>
	<a href="#">Grape Seed Extract</a>	 Minor	- <a href="#">See study</a>	A reduction in leg swelling has been noted in sedentary women (sitting for a day or so), thought to be indicative of better blood flow with grape seed extract
	<a href="#">Ruscus aculeatus</a>	 Minor	- <a href="#">See study</a>	Secondary to its venotropic actions in persons with chronic venous insufficiency, supplementation of <i>ruscus aculeatus</i> appears to reduce leg swelling and edema (thigh and ankle).
	<a href="#">Boswellia serrata</a>	 Minor	- <a href="#">See study</a>	Lack of reference drugs limits conclusions that can be made in regards to the potency
	<a href="#">Chlorella</a>	 Minor	- <a href="#">See study</a>	Study in pregnant women, it did have efficacy but more studies are required to assess chlorella overall.

# Length of Sickness



Length of sickness is the duration of which symptoms of a cold or infection persist, and reducing the duration of sickness is said to be a pro-immunity effect. Supplements may either be a daily supplement or taken on an as-needed basis.







LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Echinacea</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	Although a high variability exists, the meta-analysis has concluded a 1.4-day reduction in sickness when it occurs relative to placebo. As echinacea is also a comparator for sickness, this reduction is notable
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Despite tenuous evidence suggesting a reduction in the frequency of sickness with colostrum, when sickness does occur there is no benefit of colostrum in reducing how long it occurs for.
	<a href="#">Andrographis paniculata</a>	 Notable	- <a href="#">See study</a>	Seems to be one of the few compounds able to reduce the length of sickness when taken at the first signs of sickness. The lack of a reference drug to compare Andrographis limits the strength of the evidence
	<a href="#">Garlic</a>	 Minor	- <a href="#">See study</a>	The length that one is sick for is only modestly reduced with garlic supplementation even at higher doses.
	<a href="#">Vitamin C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed influences on the length one is sick for, with possibly no effect

Back to: [Supplements](#) | [Health Outcomes](#)

# Leptin




Leptin is a well-known 'adipokine' (signalling molecule made in body fat) that acts as a nutrient sensor, and increases metabolic rate during periods of overfeeding; its secretion is sensitive to carbohydrate ingestion, and its elevation during dieting desired.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed influences on leptin, but melatonin may be able to increase leptin levels following acute administration
	<a href="#">Vitamin B3 (Niacin)</a>	 Notable	- <a href="#">See study</a>	An increase in circulating leptin has been noted with supplementation of pharmacological doses of niacin in subjects with metabolic syndrome.
	<a href="#">Irvingia gabonensis</a>	 Minor	- <a href="#">See study</a>	May decrease leptin, but is confounded with weight loss
	<a href="#">Marijuana</a>	 Minor	- <a href="#">See study</a>	An increase in leptin has once been noted with usage of marijuana.
	<a href="#">Zinc</a>	 Minor	- <a href="#">See 2 studies</a>	Normalizing a zinc deficiency increases leptin (which is suppressed during deficiency), but elsewhere the abnormal elevation of zinc seen in morbid obesity has been reduced alongside weight loss and insulin sensitization from zinc.
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	No significant influence on circulating leptin concentrations when compared to control.
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Not enough evidence to support alterations in circulating leptin due to CLA ingestion.
	<a href="#">Fenugreek</a>	-	- <a href="#">See study</a>	No significant influences detected on circulating leptin levels with fenugreek

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on Leptin in serum
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	In a study that noted an increase in adiponectin in persons with metabolic syndrome, there was no influence on circulating leptin concentrations.
	<a href="#">Japanese Knotweed</a>	-	- <a href="#">See study</a>	No significant influence on leptin in otherwise healthy and lean individuals
	<a href="#">Curcumin</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed evidence suggesting a possible small reduction in people with non-alcohol fatty liver disease.
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See all 3 studies</a>	Inconsistent results but compatible with the effect being secondary to body fat reduction.

Back to: [Supplements](#) | [Health Outcomes](#)












# Leukotriene B4

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence as to whether leukotriene B4 can be reduced in diabetics with vitamin E supplementation.
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on LKB4 concentrations




Back to: [Supplements](#) | [Health Outcomes](#)

# Libido

Libido is the spontaneity, frequency, and magnitude of sexual desire. Some supplements (falsely referred to as aphrodisiacs) are known to enhance libido or normalize a reduced libido seen in instances of sexual dysfunction.






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Maca</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	An increase in libido appears to occur following Maca ingestion, which is notable as it appears to influence all demographics and is not associated with systemic hormones
	<a href="#">Dehydroepiandrosterone</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Insufficient evidence to support an increase in libido despite increases in androgen status
	<a href="#">Ginkgo biloba</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Although a potential benefit cannot be ruled out at this moment in time (the first pilot study showed promise and there are some responders), overall ginkgo does not appear to influence SSRI-induced sexual dysfunction in more well conducted trials.
	<a href="#">Fenugreek</a>	 Notable	- <a href="#">See study</a>	Increases in libido have been noted before, which is notable due to the lack of significant influence on testosterone and possible suppression of DHT (theoretically should reduce libido, yet a large increase is seen with fenugreek)
	<a href="#">Chromium</a>	 Minor	- <a href="#">See study</a>	Perhaps secondary to causing an antidepressive effect, supplementation of chromium was able to alleviate a suppressed libido resulting in an increase relative to control; no studies in nondepressed persons.
	<a href="#">Eurycoma Longifolia</a> <a href="#">Jack</a>	 Minor	- <a href="#">See study</a>	An increase in libido is seen with prolonged daily ingestion of eurycoma supplements in the range of 8.4-10.8%
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	May increase libido as a side-effect of reducing the symptoms associated with menopause, may not work inherently in youth or men
	<a href="#">Tribulus terrestris</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Most studies found an improvement in sexual desire in women reporting a general loss of libido. One study in men found an improvement. The research is still in its early stage and great confidence in these results would be unfounded.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-DOPA</a>	-	- <a href="#">See study</a>	No significant influence on libido
	<a href="#">Nicotine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There do not appear to be any significant interactions with nicotine and libido
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	There does not appear to be a significant influence of velvet antler supplementation on the libido

Back to: [Supplements](#) | [Health Outcomes](#)

# Lipid Absorption

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sodium Bicarbonate</a>	 Minor	- <a href="#">See study</a>	One study in menopausal women with a modest dose of sodium bicarbonate (less than 100mg) noted a reduction in lipid absorption from a meal.
	<a href="#">Calcium</a>	-	- <a href="#">See study</a>	
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Psyllium</a>	-	- <a href="#">See study</a>	A significant reduction of lipid absorption (assessed via fecal lipids) is not yet supported.

Back to: [Supplements](#) | [Health Outcomes](#)

# Lipid Peroxidation

A form of oxidation that influences lipids. In the body, it tends to reflect damage to cell membranes and is assessed by biomarkers thought to represent lipid peroxidation (MDA and TBARS).

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Coenzyme Q10</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Appears to reduce biomarkers of lipid peroxidation. CoQ10 tends to be a reference drug for lipid peroxidation, and although it is more potent than other nutraceuticals it is not astounding.
	<a href="#">Spirulina</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Although there is no reference drug to compare the effects of Spirulina against, the decrease in lipid peroxidation as assessed by serum MDA is quite notable and is likely stronger than other supplements. A comparative study would be needed
	<a href="#">Chromium</a>	 Minor	- <a href="#">See all 5 studies</a>	While minor, increases in lipid peroxidation have been noted in nondiabetic controls while decreases have occurred in those with a high baseline HbA1c. A possible modulatory effect exists.
	<a href="#">Creatine</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	A minor reduction has been observed.
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	A decrease in lipid peroxidation results following curcumin ingestion chronically
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See all 5 studies</a>	Both increases and decreases in lipid peroxidation have been noted with fish oil supplementation, with the increases in peroxidation usually seen with high doses of fish oil paired with other oxidative stressors (such as marathon running)
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	The reduction in MDA that occurs during exercise may also occur at rest, suggesting a per se effect
	<a href="#">Vitamin C</a>	 Minor	<b>Low</b> <a href="#">See all 8 studies</a>	Mixed and weak influences on lipid peroxidation, but a possible reduction exists

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See all 7 studies</a>	Vitamin E tends to reduce lipid peroxidation in instances where there is elevated oxidation, and tends to have no effect in otherwise healthy persons. In instances where vitamin E is thought to greatly exceed the activity of co-antioxidants (vitamin C or ALA) it can exert a prooxidant effect.
	<a href="#">Zinc</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	A slight decrease in lipid peroxidation has been noted with supplementation of zinc in persons who may be deficient.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">Alpha-Lipoic Acid</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to reduce biomarkers of lipid peroxidation (MDA mostly)
	<a href="#">Cissus quadrangularis</a>	 Minor	- <a href="#">See study</a>	A minor reduction in lipid peroxidation has been seen in serum associated with weight loss; uncertain significance.
	<a href="#">Cocoa Extract</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Decreases in lipid peroxidation (assessed by serum MDA) have been noted in oxidative states such as exercise, but have not been noted in resting states after cocoa flavanol ingestion.
	<a href="#">Garlic</a>	 Minor	- <a href="#">See all 3 studies</a>	A reduction in lipid peroxidation in the blood and in red blood cells has been noted in some states of metabolic ailment (aging and hypertension). Not 100% reliable as it wasn't seen in one study on hypercholesterolemia, and no studies in healthy controls.
	<a href="#">Kaempferia parviflora</a>	 Minor	- <a href="#">See study</a>	A minor decrease in lipid peroxidation has been noted with supplementation of low doses
	<a href="#">Licorice</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in lipid peroxidation is noted with licorice consumption, not to a remarkable degree
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	A reduction in lipid peroxidation has been noted with melatonin

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Methylsulfonylmethane</a>	 Minor	- <a href="#">See study</a>	A decrease in exercise-induced lipid peroxidation is noted as assessed by serum MDA
	<a href="#">Olive leaf extract</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to reduce biomarkers of lipid peroxidation.
	<a href="#">Rooibos</a>	 Minor	- <a href="#">See study</a>	A decrease in lipid peroxidation has been noted following oral ingestion of Rooibos tea
	<a href="#">Shilajit</a>	 Minor	- <a href="#">See study</a>	A decrease in lipid peroxidation (assessed by MDA) has been noted in serum and semen following oral ingestion of shilajit
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	Alanylglutamine does not appear to have any influence on lipid peroxidation (MDA) concentrations during exercise relative to glutamine or water control.
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	No significant influence of citrulline on lipid peroxidation has been noted
	<a href="#">Eleutherococcus senticosus</a>	-	- <a href="#">See study</a>	Insufficient evidence to evaluate lipid peroxidation reducing effects
	<a href="#">Ganoderma lucidum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant changes in lipid peroxidation biomarkers (such as MDA) are present following ingestion of Reishi
	<a href="#">Glutathione</a>	-	- <a href="#">See study</a>	
	<a href="#">Red Clover Extract</a>	-	- <a href="#">See study</a>	No known interactions with serum MDA concentrations, a biomarker of lipid peroxidation.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rhodiola Rosea</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on lipid peroxidation biomarkers in serum
	<a href="#">Stinging Nettle</a>	-	- <a href="#">See study</a>	No significant effect on lipid peroxidation has been noted.
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant alterations have been noted in circulating biomarkers of lipid peroxidation.
	<a href="#">Aronia melanocarpa</a>	 Notable	- <a href="#">See study</a>	Definitely requires more evidence, but appears to be fairly effective at reducing lipid peroxidation and other oxidative parameters (one study noting a 40% reduction with aronia)
	<a href="#">Ginger</a>	 Notable	- <a href="#">See study</a>	In the semen of infertile men, the reduction in lipid peroxidation has reached 53.7% with supplementation of ginger over three months.
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	One study noted a modest reduction in malondialdehyde levels in healthy people. More research is needed.
	<a href="#">Blueberry</a>	 Minor	- <a href="#">See study</a>	Alongside the reduction in serum oxidation comes a reduction in lipid peroxidation biomarkers such as MDA
	<a href="#">Eclipta alba</a>	 Minor	- <a href="#">See study</a>	A decrease in biomarkers of lipid peroxidation has been noted, possible related to an increase in serum <a href="#">Vitamin E</a> concentrations
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	Can decrease biomarkers of lipid peroxidation
	<a href="#">Hibiscus sabdariffa</a>	 Minor	- <a href="#">See study</a>	Has been noted to reduce lipid peroxidation

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melissa officinalis</a>	 Minor	- <a href="#">See study</a>	A slight decrease in biomarkers of lipid peroxidation occurs following ingestion of lemon balm
	<a href="#">Punicalagins</a>	 Minor	- <a href="#">See study</a>	A decrease in lipid peroxidation has been noted
	<a href="#">Pyrroloquinoline quinone</a>	 Minor	- <a href="#">See study</a>	Although a decrease technically exists as assessed by TBARS, the decrease was measured at around 0.2% and is practically irrelevant.
	<a href="#">Rubus coreanus</a>	 Minor	- <a href="#">See study</a>	In otherwise healthy men with no apparent health problems, there is a mild decrease in lipid peroxidation associated with consumption of the berries (12% reduction in MDA)
	<a href="#">Stephania tetrandra</a>	 Minor	- <a href="#">See study</a>	A minor decrease in levels of lipid peroxidation in serum were noted, to the tune of 17%.
	<a href="#">Yerba mate</a>	 Minor	- <a href="#">See study</a>	A decrease in lipid peroxidation has been noted with Mate consumption over 7 days
	<a href="#">Krill Oil</a>	-	- <a href="#">See study</a>	Despite containing PUFAs, no significant changes in lipid peroxidation
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	

# Liver Damage

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trimethylglycine</a>	 Minor	- <a href="#">See all 3 studies</a>	Preliminary evidence showed a large decrease in fibrotic area and inflammation in the livers of persons with NAFLD given high dose (20g) betaine, but the best evidence failed to find a significant influence. An interaction is apparent, but the exact role is not known as this time.
	<a href="#">Cordyceps</a>	-	- <a href="#">See study</a>	
	<a href="#">S-Adenosyl Methionine</a>	-	- <a href="#">See study</a>	Supplemental SAME in a study of persons with liver damage failed to confer rehabilitative effects
	<a href="#">Ketogenic diet</a>	 Notable	- <a href="#">See study</a>	One study found a greater reduction in fibrosis after 1 and 2 years of a ketogenic diet that led to substantial weight loss than a control diet that didn't.
	<a href="#">Curcumin</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A notable effect has been found in people with non-alcoholic fatty liver disease but studies are inconsistent and lacking.
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See study</a>	In those with inflammatory liver damage, supplementation of vitamin E appears to be capable of reducing damage over a long period of time.

Back to: [Supplements](#) | [Health Outcomes](#)














# Liver Enzymes

Liver enzymes are a commonly used biomarker to test the toxicity of a supplement, and are elevated in instances of fatty or cirrhotic livers. Their reduction in the blood is thought to reflect less damage to liver cells.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Tauroursodeoxycholic Acid</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	The decrease in liver enzymes associated with cholestasis is quite strong, and TUDCA is a reference drug for these effects
	<a href="#">Vitamin E</a>	 Notable	<b>Low</b> <a href="#">See all 9 studies</a>	There appears to be a notable decrease in both ALT and γ-GPT in persons with non-alcoholic fatty liver (NAFLD) which may exceed 50% when vitamin E is supplemented above 300mg for half a year; there does not appear to be any influence whatsoever in healthy controls.
	<a href="#">Curcumin</a>	 Minor	<b>Moderate</b> <a href="#">See all 16 studies</a>	No significant influence on liver enzymes associated with curcumin supplementation in most people, however, a small reduction is more likely in people with elevated liver enzymes.
	<a href="#">Trimethylglycine</a>	 Minor	<b>Low</b> <a href="#">See all 5 studies</a>	Similar to liver fat and damage, the levels of liver enzymes in serum appears to be reduced potently in preliminary evidence with the currently largest trial showing no significant influence; there may be a role, but it needs to be further elucidated.
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No known influence on liver enzymes or other markers of hepatic health.
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Moderate</b> <a href="#">See all 8 studies</a>	Inconsistent and unreliable effects on liver enzymes, no significant influence is thought to exist.
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	No known influence on circulating liver enzymes, suggesting no liver toxicity in humans.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See all 3 studies</a>	





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nigella sativa</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	There may be a reducing effect in instances of liver damage (this curative effect needs to be explored more), and there are no alterations in liver enzymes that would be indicative of liver damage.
	<a href="#">Fucoxanthin</a>	 Notable	- <a href="#">See study</a>	In a model of liver fat in obese premenopausal women, fucoxanthin was fairly effective at reducing liver enzymes after prolonged usage
	<a href="#">Artichoke Extract</a>	 Minor	- <a href="#">See study</a>	More evidence is required to establish the potency of the hepatoprotective effects (with liver enzymes as a biomarker)
	<a href="#">Garlic</a>	 Minor	- <a href="#">See 2 studies</a>	One study has noted a 20% decrease in the ALT enzyme following garlic supplementation to otherwise healthy controls.
	<a href="#">Gynostemma pentaphyllum</a>	 Minor	- <a href="#">See study</a>	Liver enzymes in a model of fatty liver are decreased with gynostemma ingestion
	<a href="#">Hesperidin</a>	 Minor	- <a href="#">See study</a>	In men with high triglycerides and cholesterol, the serum liver enzymes appear to be reduced suggesting protective effects at the level of the liver.
	<a href="#">Hoodia gordonii</a>	 Minor	- <a href="#">See study</a>	ALP was noted to be increased in otherwise healthy women given the standard dose of hoodia, although the other liver enzymes were not affected significantly
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	A decrease in liver enzymes has been noted in a model of hepatic encephalopathy, a per se reducing effect is uncertain
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	A decrease in liver enzymes has been noted in persons with fatty liver given melatonin supplementation, although not to a remarkable degree
	<a href="#">Picrorhiza kurroa</a>	 Minor	- <a href="#">See study</a>	Supplementation of <i>picrorhiza kurroa</i> is able to reduce circulating liver enzymes in acute viral hepatitis. While animal research suggests it is more potent than <a href="#">Milk thistle</a> , the human evidence is not yet able to directly compare the two.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	In persons with elevated liver enzymes (not pathological, just metabolic syndrome) there appeared to be a protective effect on the liver from resveratrol supplementation
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See study</a>	
	<a href="#">Astaxanthin</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	Plasma concentrations of LDH are unaffected following citrulline supplementation
	<a href="#">Citrullus colocynthis</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Both studies using 300mg of either the fruit or seed extract have failed to find alterations in liver enzymes associated with supplementation.
	<a href="#">Cordyceps</a>	-	- <a href="#">See study</a>	
	<a href="#">Dehydroepiandrosterone</a>	-	- <a href="#">See study</a>	No detectable alteration in serum liver enzymes (biomarker of liver damage) seen with DHEA supplementation
	<a href="#">Ecdysteroids</a>	-	- <a href="#">See study</a>	No significant alterations in any measured liver enzymes (ALT, AST, GGT)
	<a href="#">Eleutherococcus senticosus</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on liver enzymes when measured as a part of a safety test battery
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes noted

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes has been noted in toxicological testing with ganoderma
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	In safety testing, there does not appear to be an adverse effect of glutamine supplementation on liver enzymes in serum
	<a href="#">Green Coffee Extract</a>	-	- <a href="#">See study</a>	No significant influence noted for liver enzymes when tested in part of a safety assay
	<a href="#">HMB</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in serum liver enzymes are noted with HMB supplementation
	<a href="#">Inositol</a>	-	- <a href="#">See study</a>	No adverse effects to the liver during human toxicology testing.
	<a href="#">Kava</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on liver enzymes assuming the water extract (WS1490) is being used
	<a href="#">Leucine</a>	-	- <a href="#">See study</a>	
	<a href="#">Nattokinase</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes noted
	<a href="#">Olive leaf extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on liver enzymes have been noted in trials that assess them (safety reasons)
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes seen with PS supplementation

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pterostilbene</a>	-	- <a href="#">See study</a>	Supplementation of pterostilbene in hypercholesterolemic adults does not appear to influence liver enzymes (ALP, AST) relative to control.
	<a href="#">Red Clover Extract</a>	-	- <a href="#">See study</a>	Liver function does not appear to be significantly altered with supplementation of red clover.
	<a href="#">Rose Hip</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on the liver enzymes of otherwise healthy persons subject to rose hip supplementation
	<a href="#">S-Adenosyl Methionine</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	No significant rehabilitative effects on liver function in persons with impaired liver function, and no significant alterations in serum liver enzymes in otherwise healthy persons
	<a href="#">Saffron</a>	-	- <a href="#">See study</a>	Supplementation of 100mg saffron extract for six weeks failed to increase liver enzymes in otherwise healthy persons.
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	Pharmacological doses of niacin in obese dyslipidemic men do not appear to increase circulating liver enzymes, suggesting no hepatotoxicity.
	<a href="#">Spirulina</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	Preliminary evidence suggests the reduction of liver enzymes correlates with the degree of liver damage somewhat, and this is notable since the reduction of liver fat seen is strongly effective at this moment in time.
	<a href="#">Andrographis paniculata</a>	 Minor	- <a href="#">See study</a>	Study was in persons with HIV, although the magnitude was of concern it needs to be replicated.
	<a href="#">Hibiscus sabdariffa</a>	 Minor	- <a href="#">See study</a>	A decrease in liver enzymes has been reported
	<a href="#">Ketogenic diet</a>	 Minor	- <a href="#">See study</a>	One study found a great reduction in ALT, AST, and ALP after 1 and 2 years on a ketogenic diet that led to substantial weight loss than on a control group that didn't.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Rubus coreanus</a>	 Minor	- <a href="#">See study</a>	In otherwise healthy men with no health problems, the mild reduction in lipid peroxidation seen was associated with a mild reduction in circulating ALP levels (6%) although AST and GST were unaffected.
	<a href="#">Whey Protein</a>	 Minor	- <a href="#">See study</a>	Has been associated with a decrease in liver enzymes (in steatohepatitis) but not to a remarkable degree; may simply be due to the L-cysteine content.
	<a href="#">Ashwagandha</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In otherwise healthy persons, there is no significant influence on liver enzymes seen with supplementation.
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes
	<a href="#">Bulbine natalensis</a>	-	- <a href="#">See study</a>	
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Liver enzymes do not appear to be altered with supplementation of cocoa flavanols
	<a href="#">Perilla Oil</a>	-	- <a href="#">See study</a>	
	<a href="#">Pyrroloquinoline quinone</a>	-	- <a href="#">See study</a>	Serum ALT is not affected by supplementation of PQQ for up to three weeks.
	<a href="#">Royal Jelly</a>	-	- <a href="#">See study</a>	In safety testing, supplemental Royal Jelly does not appear to increase liver enzymes
	<a href="#">Terminalia arjuna</a>	-	- <a href="#">See study</a>	No significant influence on liver enzymes during standard testing of safety

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on liver enzymes in preliminary testing for possible toxicity
	<a href="#">Tribulus terrestris</a>		- <a href="#">See study</a>	One study found a small increase in AST but not ALT
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No notable change in AST, ALT, GGT, or ALP in type 2 diabetics over the course of 4 months.

Back to: [Supplements](#) | [Health Outcomes](#)

# Liver Fat









Liver fat refers to the triglycerides that can be stored in the liver, of which their excess accumulations results in fatty liver (alcohol or non-alcoholic) and possibly later cirrhosis. Some supplements may be able to reduce liver fat stores.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fucoxanthin</a>	 Notable	- <a href="#">See study</a>	The decrease in liver fat seen with fucoxanthin tends to be greater than that seen with other supplements, although insufficient evidence exists to suggest reliability of results
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	A possible decreasing effect of liver fat seen in persons with NAFLD
	<a href="#">Trimethylglycine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Preliminary evidence showed a major decrease in liver fat (normalization in over half of persons with fatty liver) but currently the best evidence suggests that this does not occur as potently; there may still be a role, but this requires more research.
	<a href="#">Vitamin E</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	In persons with steatohepatitis, there may be a reduction in liver fat over time when taking vitamin E supplements; currently there is no evidence assessing otherwise healthy persons on this parameter
	<a href="#">Spirulina</a>	 Strong	- <a href="#">See study</a>	Although only based on a series of case studies at this moment in time, the reduction of liver fat seen after 3 months was remarkably effective
	<a href="#">Ketogenic diet</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed results, and the study that found the large reduction observed considerably more weight loss in the ketogenic group. More research is needed.
	<a href="#">Whey Protein</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Reductions in liver fat have been noted with whey protein supplementation, which is thought to be more effective than other protein sources due to the high L-cysteine content.
	<a href="#">Curcumin</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Inconsistent evidence from non-alcoholic fatty liver disease.





# Lung Function














LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pelargonium sidoides</a>	 Minor	<b>Very High</b> <a href="#">See all 10 studies</a>	Secondary to treating sickness (bronchitis, URIs, common cold) there is improvement in sputum content, rhonchi, breathing, coughing, and chest pain while coughing relative to placebo; while the improvements are marked, they only occur secondary to treating illness.
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	No effect on healthy people or on disease states characterized by impaired lung function.
	<a href="#">Marijuana</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	While smoking <i>per se</i> is seen as negative, infusions of THC enhance lung function and acute usage of marijuana as joints seem to confer more benefit to lung function than drawbacks.
	<a href="#">N-Acetylcysteine</a>	-	- <a href="#">See study</a>	
	<a href="#">Moringa oleifera</a>	 Minor	- <a href="#">See study</a>	Respiratory capacity (as assessed by breath testing) in persons with nonallergic asthma (most of whom were smokers) appears to be enhanced following supplementation of the seeds of Moringa

Back to: [Supplements](#) | [Health Outcomes](#)

# Luteinizing Hormone

Luteinizing hormone (LH) is a hormone that is secreted from the pituitary and is known to regulate fertility and stimulate testosterone production from the testicles. Its increase is thought to promote testosterone (somewhat unreliably).




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Maca</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on luteinizing hormone noted with maca ingestion
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Luteinizing hormone does not appear to be significantly influenced with oral supplementation of red clover extract in postmenopausal women.
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	An increase in luteinizing hormone has been detected with ashwagandha supplementation.
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	A decrease in luteinizing hormone has been detected with CoQ10 supplementation
	<a href="#">Nicotine</a>	 Minor	- <a href="#">See study</a>	An increase in luteinizing hormone has been noted
	<a href="#">Alcohol</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No significant influence of alcohol on luteinizing hormone levels when consumed moderately
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of chromium supplementation on luteinizing hormone (LH) in women with PCOS relative to placebo.
	<a href="#">Dehydroepiandrosterone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations detected in luteinizing hormone levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Saffron</a>	-	- <a href="#">See study</a>	LH concentrations are unaffected by saffron supplementation at 60mg in infertile men.
	<a href="#">Shilajit</a>	-	- <a href="#">See study</a>	No significant influence on luteinizing hormone
	<a href="#">Tribulus terrestris</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	A consistent influence on luteinizing hormone hasn't been detected with supplemental tribulus
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	No significant influence on luteinizing hormone levels
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Vitamin E supplementation does not appear to influence circulating levels of luteinizing hormone (LH).
	<a href="#">Ginger</a>	 Notable	- <a href="#">See study</a>	Although the study is limited by lack of placebo control and disclosure of dosage, ginger is associated with a 43.2% increase in serum luteinizing hormone over three months in infertile men.
	<a href="#">D-Aspartic Acid</a>	 Minor	- <a href="#">See study</a>	An increase in LH concentrations has been noted to 30-60% in infertile men, correlating well with the testosterone increases seen in this study.
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	In persons who are deficient in zinc, an increase in LH occurs following zinc replenishment.
	<a href="#">Licorice</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	More evidence than not suggests no significant changes in luteinizing hormone, although limited evidence suggests an increase of minor magnitude.
	<a href="#">Pueraria lobata</a>	-	- <a href="#">See study</a>	No significant alterations in luteinizing hormone has been detected with pueraria lobata ingestion.



# Lymphocyte Count
















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	A decrease in lymphocytic count has been noted in obese persons
	<a href="#">Tinospora cordifolia</a>	 Minor	- <a href="#">See 2 studies</a>	Variable effects on Lymphocytes, with both increases and decreases being noted in persons with allergic rhinitis and no effect being observed in those with HIV.
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No significant alterations in baseline lymphocyte count with chromium supplementation relative to placebo.
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	Overall lymphocyte count does not appear to be significantly influenced with supplementation of dietary colostrum.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Vitamin E supplementation does not appear to influence overall lymphocyte count or its subdivisions.
	<a href="#">Trametes versicolor</a>	 Notable	- <a href="#">See study</a>	In women with breast cancer, a very large preservation of lymphocytes is noted with polysaccharide K
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	A decrease in people with type 2 diabetes has been noted in one study.
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No apparent effect in one study.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Moringa oleifera</a>	-	- <a href="#">See study</a>	No significant alterations in Lymphocyte count following continued supplementation of the seeds of <i>Moringa oleifera</i>
	<a href="#">Stephania tetrandra</a>	-	- <a href="#">See study</a>	Lymphocytes (both B and T cells) are unchanged in their overall quantity with 12 weeks of supplementation.
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	1.5 g/d didn't lead to a significant difference compared with placebo in response to ultramarathon running.





















Back to: [Supplements](#) | [Health Outcomes](#)

# Memory









The ability to remember things currently being done (working memory) recently learned (short term) and possible for life (long term memory); some compounds enhance memory by reversing states of neural malaise (Fish Oil, Curcumin) whereas some can increase memory unilaterally (Bacopa Monnieri).

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Minor	<b>High</b> <a href="#">See all 12 studies</a>	There appears to be a fairly reliable increase in short term memory and free recall associated with ginkgo supplementation in older individuals (55yrs or above) either with or without diagnosed neurodegenerative disease states.
	<a href="#">Bacopa monnieri</a>	 Notable	<b>High</b> <a href="#">See all 8 studies</a>	Although general and requiring a long time to take effect (4-6 weeks), bacopa appears to reliably and effectively improve memory in both healthy persons and during cognitive decline
	<a href="#">Melissa officinalis</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Mixed influences on memory, with one study noting a decrease in 'total' memory formation and two studies noting improvements in 'quality' of memories formed. There is likely a modulatory effect associated with lemon balm.
	<a href="#">Caffeine</a>	-	<b>Low</b> <a href="#">See all 5 studies</a>	Overall, highly mixed effects effects of caffeine on memory. It appears to increase spatial/perceptual memory and reduce working memory (perhaps secondary to overstimulation)
	<a href="#">PRL-8-53</a>	 Notable	- <a href="#">See study</a>	The lone study noted mild increases in memory (14%) bordering on statistical significance in high performers on a word recollection test, with higher performances in subjects over the age of 30 regardless of initial performance (108-152% increase over placebo performance) and in poor performers (87.5-105%).
	<a href="#">Blueberry</a>	 Minor	- <a href="#">See study</a>	Memory formation in elderly subjects can be improved with daily supplementation of blueberries or their extract
	<a href="#">CDP-choline</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to promote cognition in otherwise healthy older adults. Although animal studies suggest this may apply to youthful subjects as well, no human currently exists for youth
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See 2 studies</a>	Possible improvements in memory



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	An increase in memory has been noted in older women, no current studies in youth
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	An increase in memory retention under periods of stress has been noted
	<a href="#">Modafinil</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Memory (usually studies investigate short term) appears to be beneficially influenced with modafinil supplementation, possible secondary to the improvements in working memory and attention.
	<a href="#">Nicotine</a>	 Minor	- <a href="#">See study</a>	An increase in memory has been noted with ingestion of nicotine in persons with mild cognitive impairment
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	There appears to be a small but respectable (15-20% higher than baseline) improvement in logical memory and 30 minute recall in older subjects supplementing the seeds in their daily lifestyle.
	<a href="#">Oxiracetam</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Although it has mechanisms and animal evidence to support improvements in memory in healthy youth, all human studies are currently in those with cognitive decline
	<a href="#">Phosphatidylserine</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Increases in memory have been noted in persons with cognitive decline. A memory improving effect in otherwise healthy people is theoretical (secondary to reducing stress, has been noted in rodents), but not demonstrated in humans yet
	<a href="#">Piracetam</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Small increase in backwards recall with piracetam; nothing remarkable and overall very limited evidence in otherwise healthy individuals to draw from.
	<a href="#">Red Clover Extract</a>	 Minor	- <a href="#">See study</a>	The lone study to assess cognition in older women in menopause has noted an increase in visuospatial processing yet a reduction in digit span and verbal memory tests; uncertain implications.
	<a href="#">S-Adenosyl Methionine</a>	 Minor	- <a href="#">See study</a>	In persons with SSRIs, adding SAME confers a cognitive promoting effect; it is unsure if this persists in persons without SSRIs, and this augmenting effect with SSRIs is only seen in limited other instances (ie. with <a href="#">creatine</a> )

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vinpocetine</a>	 Minor	- <a href="#">See study</a>	An increase in acute memory formation has been noted in female volunteers given 40mg Vinpocetine
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant effect on memory function
	<a href="#">Choline</a>	-	- <a href="#">See study</a>	No acute effect on spatial memory formation
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No evidence for chromium reducing memory decline seen with aging.
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In subjects with otherwise healthy cognition, the addition of cocoa flavanols to the diet does not appear to significantly increase memory retention when compared to placebo.
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No effect on short-term recall during sleep deprivation.
	<a href="#">Marijuana</a>	-	- <a href="#">See study</a>	Overall memory formation does not appear to be significantly affected by usage of marijuana.
	<a href="#">Polygala tenuifolia</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There have been no detectable increases in long term (20 minute) recall, either with or without cues, associated with supplementation at this point in time.
	<a href="#">Sceletium tortuosum</a>	-	- <a href="#">See study</a>	Acute supplementation of Kanna prior to testing does not appear to influence acute memory formation or retention when compared to placebo.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Supplementation of vitamin E by otherwise healthy women has failed to significantly improve memory formation.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Multiple studies have noted an improvement on cognitive tests. Results are limited to people with cognitive impairment, anxiety, and bipolar disorder, and it's unclear if ashwagandha improves the memory of normal people.
	<a href="#">Grape juice</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Some studies have found that acute and chronic intake have coincided with improvements in elderly participants with mild cognitive impairment, but much more research is needed to confirm this in more rigorous trials.
	<a href="#">Pramiracetam</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	While it appears effective in promoting memory formation in elderly persons and cognitively injured youth, there is currently no evidence in otherwise healthy use for nootropic purposes
	<a href="#">Iron</a>	-	- <a href="#">See study</a>	No apparent effect in non-anemic but deficient participants in one study. This is not a systematic assessment of studies.
	<a href="#">Peppermint</a>	-	- <a href="#">See study</a>	The aroma of peppermint has been unable to influence memory processing (quantity or quality of memory formation) relative to control








Back to: [Supplements](#) | [Health Outcomes](#)

# Metabolic Rate

Metabolic Rate is a term used to refer to how many calories one 'uses' per day, and dietary intake per day is usually measured in accordance to Metabolic Rate. Some supplements may increase or decrease Metabolic Rate, and influence weight gain or loss.









LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ephedrine</a>	 Notable	<b>Very High</b> <a href="#">See all 6 studies</a>	Ephedrine, secondary to the stimulatory properties, appears to reliably increase metabolic rate
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	Currently thought to be somewhat ineffective as the evidence supporting an increase are confounded with food intake whereas the evidence supporting no increase is more statistically robust.
	<a href="#">Green Tea Catechins</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influences on metabolic rate overall
	<a href="#">7-Keto DHEA</a>	 Notable	- <a href="#">See study</a>	Somewhat notable as the decrease seen with dieting was effectively abolished and reversed with 7-keto supplementation over 7 days of low caloric intake, but more evidence is required to establish the reliability of this and how strong it actually is.
	<a href="#">ECA</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	The increase in metabolic rate seen with ephedrine is augmented with the inclusion of both aspirin and caffeine, hence its notable efficacy
	<a href="#">Fucoxanthin</a>	 Notable	- <a href="#">See study</a>	The lone study in obese premenopausal women noted a fairly remarkable increase in metabolic rate (the highest estimate being around 450kcal daily); this study requires replication to see if the effect size persists
	<a href="#">Aframomum melegueta</a>	 Minor	- <a href="#">See study</a>	Requires more evidence, and the increase in metabolic rate was wholly conditional on cold therapy also being used (where supplementation with aframomum melegueta increased cold therapy's efficacy rather than <i>per se</i> increasing metabolic rate)
	<a href="#">Caffeine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on metabolic rate following acute doses of caffeine

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Medium-chain triglycerides</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Appears to be a short lived and of small magnitude increase in metabolic rate.
	<a href="#">Nicotine</a>	 Minor	- <a href="#">See study</a>	Chewing gum containing nicotine can increase the metabolic rate in a dose-dependent manner (3.7-4.9% with 1-2mg nicotine) when measured for the 180 minutes following 20 minutes of chewing.
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	A decrease in the metabolic rate has been noted in humans, thought to be related to the caloric restriction mimetic aspect
	<a href="#">L-Carnitine</a>	-	- <a href="#">See study</a>	No significant influence on metabolic rate noted with carnitine supplementation
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	No significant influence on metabolic rate following acute Quercetin supplementation
	<a href="#">Synephrine</a>	-	- <a href="#">See study</a>	
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant influence of betaine on the metabolic rate of obese persons subject to chronic supplementation.
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	Despite alterations in fat and glucose oxidation rates (favoring the latter), there does not appear to be any influence of pharmacological doses of niacin on the metabolic rate of healthy subjects.
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	No detectable influence on metabolic rate over time
	<a href="#">Yerba mate</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on metabolic rate has been noted

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sodium Bicarbonate</a>	 Minor	- <a href="#">See study</a>	An increase in metabolic rate has been noted and calculated (extrapolated) to be approximately 0.5% extra over the course of 24 hours, associated with a low dose of sodium bicarbonate (17mg/kg)
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	Six months supplementation of chromium has failed to alter the metabolic rate relative to baseline.
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No significant influence on metabolic rate seen with fish oil supplementation
	<a href="#">Ginger</a>	-	- <a href="#">See study</a>	Despite an increase in the thermic effect of food, overall metabolic rate does not appear affected
	<a href="#">Ketogenic diet</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	No notable difference between groups when calories are matched, and a reduction in two uncontrolled trials with weight loss, as could be expected.

Back to: [Supplements](#) | [Health Outcomes](#)














# Microcirculation

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Centella asiatica</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	There appears to be a notable improvement in microcirculation associated with oral ingestion of <i>centella asiatica</i> in the treatment of chronic venous insufficiency; this may extend to otherwise healthy persons, albeit at a lesser magnitude
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	There is a small increase in microcirculation seen in elderly persons given ginkgo biloba, extending to both periphery and the liver. Benefits seem to be time dependent and greater at day 30 relative to day 10
	<a href="#">Hesperidin</a>	 Minor	- <a href="#">See study</a>	While hesperidin does not influence basal (fasting) microcirculation, there is an acute increase in circulation seen with supplementation of hesperidin at the time of peak blood concentrations.
	<a href="#">Vitamin C</a>	 Minor	- <a href="#">See study</a>	An increase in microcirculation has been noted secondary to increased blood flow, thought to be a general property of antioxidants

Back to: [Supplements](#) | [Health Outcomes](#)









# Migraine

A migraine is an intense and prolonged headache that may or may not be preceded by an aura. Supplementation for migraines either reduces the severity of a migraine or, when taken daily, reduces the monthly frequency of migraines.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Feverfew</a>	 Strong	<b>Very High</b> <a href="#">See all 5 studies</a>	Feverfew appears to be strongly effective in reducing migraines when the population in question are people with high frequency migraines possibly accompanied by auras. Feverfew is not as effective, although still somewhat effective, in persons with less frequent migraines.
	<a href="#">Vitamin B2</a>	 Notable	<b>Moderate</b> <a href="#">See all 7 studies</a>	Riboflavin supplementation appears to be quite effective in reducing migraine frequency based on preliminary research. The effect of riboflavin on intensity is still undetermined, and the optimal dose is not known as while most studies use 400mg one found similar benefits with 25mg.
	<a href="#">Vitex agnus castus</a>	 Notable	- <a href="#">See study</a>	Seems to reduce symptoms of migraines a bit more than other PMS related symptoms, but for the most part the reduction seen in migraines is solely a reduction of PMS symptoms.
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	Degree of improvement is not overly remarkable, with portions of the trial not outperforming placebo.
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	Acute inhalation of lavender at the onset of a migraine is associated with less pain symptoms than placebo scent
	<a href="#">Magnesium</a>	 Minor	- <a href="#">See study</a>	One study has noted a reduction in symptoms of migraines associated with oral magnesium supplementation
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No detectable influence of melatonin on migraines that exceeds placebo








# Monocyte Count

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	Supplementation of saffron appears to be able to cause a mild increase in monocyte concentrations in serum.
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	Monocytes do not appear to be influenced in their number with supplementation of colostrum.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	A decrease in people with type 2 diabetes has been noted
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No apparent effect in one short study.
	<a href="#">Vitamin C</a>		- <a href="#">See study</a>	1.5 g/d didn't lead to a significant difference compared with placebo in response to ultramarathon running.





Back to: [Supplements](#) | [Health Outcomes](#)

# Motor Control

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Marijuana</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Acute usage can reduce motor control and fine coordination, but this appears to be an effect that can be subject to tolerance (with tolerant users not seeing any difference following usage of marijuana).
	<a href="#">PRL-8-53</a>	-	- <a href="#">See study</a>	Supplementation of 5mg PRL-8-53 has failed to improve hand motor control following supplementation.
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	Improvement in one study in healthy people. Needs to be replicated.

Back to: [Supplements](#) | [Health Outcomes](#)



# Mucositis

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Zinc</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Decreases in the severity but not occurrence of mucositis have been reported in cancer patients undergoing both radiotherapy and chemotherapy, although the benefits seem unreliable
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	Symptoms of mucositis have been noted to be decreased with curcumin supplementation

Back to: [Supplements](#) | [Health Outcomes](#)

# Mucus Production






Some nasal congestion is due to excessive mucus production in the sinus cavity, which then narrows the breathable space. Supplements that reduce mucus production may be beneficial for nasal congestion related to allergies or sickness.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Serrapeptase</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	A somewhat notable decrease in mostly the viscosity of mucus (elasticity is somewhat unreliably decreased), due to the mucolytic properties of serrapeptase. This may be of use for both nasal discharge and lung sputum (cystic fibrosis)

Back to: [Supplements](#) | [Health Outcomes](#)

# Muscle Creatine Content



“Muscle creatine content” refers the amount of creatine (phosphocreatine included) stored in muscle tissues. This content can be increased by some supplements, notably oral creatine.















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Strong	<b>Very High</b> <a href="#">See all 18 studies</a>	Creatine supplementation is the reference compound for increasing muscular creatine levels; there is variability in this increase, however, with some nonresponders.
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	Betaine (2g) has failed to increase phosphocreatine levels in skeletal muscle and failed to augment the increase caused by 20g of creatine.
	<a href="#">Alpha-Lipoic Acid</a>	 Minor	- <a href="#">See study</a>	Has been associated with augmenting <a href="#">creatine</a> uptake into muscle cells acutely; long term influence unknown

Back to: [Supplements](#) | [Health Outcomes](#)

# Muscle Damage

Muscle damage refers to the breaking of muscle tissue during exercise, and is approximately by measuring some biomarkers in the blood released by damaged muscle (such as creatine kinase). Reducing muscle damage may alleviate soreness from exercise.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HMB</a>	 Notable	<b>High</b> <a href="#">See all 3 studies</a>	Decrease creatine kinase exists following acute supplementation (15-30 minutes before a workout) of HMB free acid to about a third of control, and is effective in trained individuals
	<a href="#">Creatine</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	Not overly protective, but there appears to be a degree of protection.
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Biomarkers of muscle damage including creatine kinase and muscle soreness are both fairly reliably reduced following ingestion of carnitine and pairing with exercise
	<a href="#">Vitamin C</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Although not acute, a possible reduction in biomarkers of muscle damage is sometimes noted with antioxidative supplementation which applies to Vitamin C; results are unreliable
	<a href="#">Blueberry</a>	 Minor	- <a href="#">See study</a>	Appears to reduce biomarkers of muscle damage such as creatine kinase
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	A slight decrease in biomarkers of muscle damage has been noted with CoQ10 supplementation.
	<a href="#">Melatonin</a>	 Minor	- <a href="#">See study</a>	A decrease in muscle damage biomarkers (creatinine) has been noted with melatonin supplementation
	<a href="#">Methylsulfonylmethane</a>	 Minor	- <a href="#">See study</a>	Biomarkers of muscle damage such as creatinine and bilirubin are decreased following exercise with an MSM preload

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	A decrease in biomarkers of muscle damage (creatine kinase) has been noted 72 hours after exercise in which panax ginseng was preloaded
	<a href="#">Rhodiola Rosea</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Able to reduce circulating levels of creatine kinase following exercise
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See study</a>	In athletes who experienced a reduction in lipid peroxidation from vitamin E supplementation during exercise, there is also a reduction in biomarkers of muscle damage.
	<a href="#">Anatabine</a>	-	- <a href="#">See study</a>	The progression of recovery after a novel workout (when measured over three days) was unaffected by 6-12mg anatabine
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No significant influence on biomarkers of muscle damage seen with fish oil supplementation
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	Serum creatinine (increased during exercise and thought to be indicative of muscle damage) does not appear to be significantly altered with glutamine supplementation
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on serum biomarkers of muscle damage such as creatinine
	<a href="#">Taurine</a>	-	- <a href="#">See study</a>	
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	Improved exercise-induced muscle damage/recovery in untrained people as measured by plasma creatine kinase levels










# Muscle Oxygenation

Muscle oxygenation is the rate of oxygen usage and supply to a working muscle tissue. This is usually tied in with nitric oxide metabolism, and increased muscle oxygenation should lead to increased anaerobic muscle performance.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Magnesium</a>	 Notable	- <a href="#">See study</a>	The one study to measure muscle oxygenation in high intensity exercise noted quite a remarkable increase in oxygenation in healthy athletes; this needs to be replicated
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	A decrease in muscle oxygenation has been noted during occlusion, but not during squat exercise; practical significance of these results unknown
	<a href="#">Sodium Bicarbonate</a>	 Minor	- <a href="#">See study</a>	The rate of muscle <i>de</i> oxygenation is reduced with attenuation of acidosis (which can be achieved with sodium bicarbonate), and in later stretches of exercise this can be manifest as a relative increase in oxygenation
	<a href="#">Trimethylglycine</a>	 Minor	- <a href="#">See study</a>	There appears to be a minor increase in overall oxygen consumption during physical training (anaerobic) to fatigue associated with betaine supplementation, although this was alongside increased work volume (which may be the causative factor).
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	
	<a href="#">Rhodiola Rosea</a>	-	- <a href="#">See study</a>	No significant effects on oxygenation during exercise or simulated altitude tests
	<a href="#">Citrulline</a>	 Minor	- <a href="#">See study</a>	An increase in muscle ATP production via aerobic means was noted in men given 6g citrulline daily, but this appeared to be attenuated with time.

# Muscle Protein Synthesis

Muscle protein synthesis refers to the rate of protein synthesis of the actual muscle fibers, and is a short-term marker of muscle hypertrophy as daily muscle protein synthesis results in visible muscle growth.




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Whey Protein</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Whey protein appears to increase muscle protein synthesis to a higher degree than other protein sources <i>acutely</i> , although over the prolonged supplementation it seems comparable in potency.
	<a href="#">Colostrum</a>	 Minor	- <a href="#">See study</a>	There is an increase in protein synthesis with colostrum relative to maltodextrin due to colostrum being a dietary protein, but there is also an increase in protein breakdown seen; efficacy of colostrum relative to other protein sources in MPS is currently not well investigated.
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	Currently no human evidence to support a practically significant increase in muscle protein synthesis at rest with citrulline supplementation


Back to: [Supplements](#) | [Health Outcomes](#)

# Muscle Soreness

Muscle soreness refers to the perceived soreness or tender state of muscle tissue following physical exercise, usually manifesting after a short delay (and hence its common name of 'delayed onset muscle soreness' or DOMS).

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although one study suggests a decrease, most evidence suggest no significant influence
	<a href="#">Citrulline</a>	 Notable	- <a href="#">See study</a>	The lone study using citrulline acutely pre-workout noted a 40% reduction in muscle soreness the following two days after the workout.
	<a href="#">Bromelain</a>	 Minor	- <a href="#">See 2 studies</a>	It is possible bromelain might reduce muscle soreness, but currently the evidence does not support this claim (although the trial to note a failure of bromelain also noted a failure with Ibuprofen, a known active drug)
	<a href="#">Ginger</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reduction of delayed onset muscle soreness, but this topic is a bit contested
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	A decrease in muscle soreness has been noted with catechin ingestion
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The decrease in muscle soreness appears to correlate with the reduced muscle damage
	<a href="#">Leucic Acid</a>	 Minor	- <a href="#">See study</a>	A decrease in muscle soreness has been noted in the one study conducted in athletes (when measured at week 4 only) to the degree of around 23%, but muscle soreness was not overly high in the study to begin with
	<a href="#">Methylsulfonylmethane</a>	 Minor	- <a href="#">See study</a>	A decrease in muscle soreness has been noted with MSM preloads before exercise

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Theaflavins</a>	 Minor	- <a href="#">See study</a>	May decrease muscle soreness at high doses, with the efficacy of lower doses uncertain.
	<a href="#">Vitamin C</a>	 Minor	- <a href="#">See study</a>	A possible reduction in muscle soreness the day after exercise may result when preloading exercise with Vitamin C
	<a href="#">Anatabine</a>	-	- <a href="#">See study</a>	Perceived muscle soreness and pain from a workout was unaffected by anatabine supplementation.
	<a href="#">Blueberry</a>	-	- <a href="#">See study</a>	Despite the reduction in muscle damage and increased rate of recovery, there are no significant changes in subjective muscle soreness
	<a href="#">Branched Chain Amino Acids</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant influence on muscle soreness when assessed 2-3 days after exercise that is preloaded with BCAA supplementation
	<a href="#">HMB</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on perceived muscle soreness following exercise with HMB supplementation
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on perceived muscle soreness
	<a href="#">Taurine</a>	-	- <a href="#">See study</a>	
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant influence of betaine supplementation of subjective ratings of muscular soreness nor the pump relative to placebo.
	<a href="#">Ashwagandha</a>	-	- <a href="#">See study</a>	500 mg of a potent extract failed to reduce muscle soreness in healthy, recreationally active participants. These results can't be extrapolated to people with highly sore muscles or people undergoing intense physical exercise.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Saffron</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Muscular Endurance








Muscular endurance tends to refer to the capacities of a muscle tissue to continuously exert itself during one 'set' of exercises, and improvements in muscular endurance are thought to reflect antifatigue effects.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Beta-Alanine</a>	 Minor	<b>Very High</b> <a href="#">See all 8 studies</a>	The lone meta-analysis suggests a small benefit: a median 2.85% increase in muscular endurance when exercising for 60-240 s (usually measured by time to exhaustion).
	<a href="#">Creatine</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Somewhat effective.
	<a href="#">Spirulina</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Studies currently assessing the effects of spirulina on muscular endurance are too heterogeneous to properly assess potency thereof. However, a positive effect does appear to exist
	<a href="#">Trimethylglycine</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	There may be a small benefit in prolonged and exhaustive resistance training with betaine relative to placebo, but at this moment in time most evidence assessing muscular endurance has failed to find a statistically significant increase (trends to improve do seem apparent).
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	Low dose chromium supplementation failed to promote muscular endurance in trained athletes relative to placebo.
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	Supplementation of colostrum, relative to whey protein, does not appear to promote greater increases in muscular endurance (as assessed by bench press repetitions) when taken alongside a training regimen.
	<a href="#">Iron</a>	 Minor	- <a href="#">See study</a>	There was a small improvement in one study of people with low iron levels but not anemia. This isn't a systematic assessment of studies.

# Nasal Congestion

Nasal congestion refers to conditions such as allergic rhinitis or sickness where an excess of mucus is able to clog the nasal passages and impair breathing. Some supplements are said to reduce this congestion.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pelargonium sidoides</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Nasal congestion appears to be decreased with supplementation of this herb, and while this is noted in acute bronchitis (most potently) it also affects other bacterial or viral instances such as the common cold and acute rhinosinitus.
	<a href="#">Spirulina</a>	 Strong	- <a href="#">See study</a>	The decrease in nasal congestion seen in the one study was remarkably strong relative to placebo in a model of allergic rhinitis; it is not sure if this applies to other causes of nasal congestion.
	<a href="#">Tinospora cordifolia</a>	 Strong	- <a href="#">See study</a>	In persons suffering from allergic rhinitis, nasal congestion is completely resolved in around two-thirds of persons. Currently no studies in nasal congestion for persons without allergies.
	<a href="#">Ephedrine</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Ephedrine appears to result in notable nasal decongestion
	<a href="#">Astragalus membranaceus</a>	 Minor	- <a href="#">See study</a>	Not an overly potent reduction of nasal congestion and other rhinitis symptoms, but more than placebo.
	<a href="#">ECA</a>	 Minor	- <a href="#">See study</a>	Due to the ephedrine component, ECA may also reduce nasal congestion
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	Nasal congestion as a side-effect of allergic rhinitis is slightly reduced following the treatment of rhinitis with <i>nigella sativa</i> seeds
	<a href="#">Rosmarinic Acid</a>	 Minor	- <a href="#">See study</a>	Nasal congestion is reduced secondary to reducing pollen allergies














LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Stinging Nettle</a>	 Minor	- <a href="#">See study</a>	A slight decrease in nasal congestion seen with stinging nettle
	<a href="#">Rubus suavissimus</a>	-	- <a href="#">See study</a>	Due to the lone study failing to find benefit to allergic symptoms with 400mg of the leaf extract, there are no reported benefits to allergic rhinitis
	<a href="#">Bromelain</a>	 Minor	- <a href="#">See study</a>	The potency at this moment in time does not appear remarkable.
	<a href="#">Methylsulfonylmethane</a>	 Minor	- <a href="#">See study</a>	Decreases upper respiratory symptoms have been noted with MSM supplementation, although not to a remarkable degree.


Back to: [Supplements](#) | [Health Outcomes](#)



# Natural Killer Cell Activity

Natural Killer Cell Activity refers to the ability of natural killer cells to do their actions in the body, and this activity can be increased either by increasing cell count or promoting activity in a direct stimulatory manner.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Although there do not appear to be changes in the amounts of NK cells in the body following fish oil, their activity appears to be a tad reduced
	<a href="#">Garlic</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There is an increase in NK cell activity alongside the increase in NK cell content, although it is not sure if there is an inherent increase in NK cell activity if you control for the increase in cell content.
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	The phagocytic activity of natural killer cells does not appear to be modified with supplementation of colostrum relative to whey control.
	<a href="#">Glutathione</a>	-	- <a href="#">See study</a>	
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	Natural Killer (NK) cell activity does not appear to be influenced with supplementation of hesperidin, with the count also remaining unchanged.
	<a href="#">Ganoderma lucidum</a>	 Notable	- <a href="#">See study</a>	Up to a 50% increase in NK cell activity relative to control has been noted with reishi, and this may be independent of a basic stimulatory action (which would lead into possible supplement combinations)
	<a href="#">Spirulina</a>	 Notable	- <a href="#">See study</a>	NK cell activity against a tumor cell line (K562) increased 40% following a week ingestion of fairly reasonable oral dosing, suggesting that this is a notable increase of possible interest.
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	A slight increase in natural killer cell activity has been noted with ashwagandha supplementation.







LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trametes versicolor</a>	-	- <a href="#">See study</a>	No significant alterations in NK cell activity

Back to: [Supplements](#) | [Health Outcomes](#)

# Natural Killer Cell Content

Natural killer cells can have their population increased by nutritional supplements, which usually (but not always) results in an increase in activity.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although one increase in NK cell content has been noted after exercise, the two studies using similar doses at rest have failed to find a significant influence on NK cell content
	<a href="#">Eleutherococcus senticosus</a>	 Minor	- <a href="#">See study</a>	An increase has been noted, but there is insufficient evidence to assess the magnitude of increase or the reliability
	<a href="#">Garlic</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There is an increase in NK cell levels seen in both healthy controls as well as cancer patients, and this is thought to be due in part to both immunostimulatory and anti-immunosuppressive effects.
	<a href="#">Holy Basil</a>	 Minor	- <a href="#">See study</a>	An increased level of NK cell count has been noted following ingestion of Tulsi leaves
	<a href="#">Colostrum</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	There does not appear to be a sustained influence on NK cell content relative to controls, although one study noted very transient decreases (which were shortly normalized).
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	The overall cell population of Natural Killer (NK) cells does not appear to be influenced with supplementation of Hesperidin
	<a href="#">Polypodium leucotomos</a>	-	- <a href="#">See study</a>	Although it cannot yet be ruled out, the best evidence currently suggests that the increase in NK cell activation seen with this herb does not apply after oral supplementation.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	The overall amount of NK cells do not appear to be altered with supplementation of vitamin E.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Spirulina</a>	 Notable	- <a href="#">See study</a>	The increases in mRNA content of natural killer cell content increased 37-55% (NKG2D) and 75% (perforin) which appeared to be dose-dependent, a possibly potent immunostimulatory effect.
	<a href="#">Blueberry</a>	 Minor	- <a href="#">See study</a>	An increase in natural killer cells has been noted in the range of 76-122% following physical exercise.
	<a href="#">Trametes versicolor</a>	-	- <a href="#">See study</a>	No significant influence on NK cell count
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	1.5 g/d didn't lead to a significant difference compared with placebo in response to ultramarathon running.

Back to: [Supplements](#) | [Health Outcomes](#)





# Nausea

Nausea is the feeling of acute sickness that may result in vomiting and loss of appetite. Some supplements are known as antiemetics, and are used to reduce the sensation of nausea when taken.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginger</a>	 Notable	<b>Very High</b> <a href="#">See all 11 studies</a>	There appears to be a reliable and fairly notable decrease in nausea symptoms with 1-3g of ginger related to pregnancy and seasickness (not as much consensus for post-operative nausea)
	<a href="#">Peppermint</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	There appears to be interactions with peppermint as aromatherapy and reducing nausea, but the best evidence at this point in time is mixed and with some faults. More research is needed to see the potential role of peppermint aromatherapy in nausea reduction
	<a href="#">Pelargonium sidoides</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Nausea as a side-effect of acute bronchitis may be reduced, although studies assessing nausea/vomiting outside of acute bronchitis have failed to find an effect despite the subjects being sick.
	<a href="#">Ephedrine</a>	 -	<b>-</b> <a href="#">See study</a>	Ephedrine has been noted to reduce postoperative nausea, but is also linked to inducing nausea secondary to its psychostimulatory and appetite suppressing effects. The latter is more practical for supplementation










Back to: [Supplements](#) | [Health Outcomes](#)


# Neutrophil Activity

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	The activity of neutrophils taken from subjects consuming hesperidin does not appear to be significantly altered when stimulated relative to placebo.
	<a href="#">N-Acetylcysteine</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Similar to neutrophil count, there does not appear to be a significant influence of vitamin E on the activity of neutrophils.
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Neutrophil activity does not appear to be altered in response to cocoa flavanol supplementation

Back to: [Supplements](#) | [Health Outcomes](#)

# Neutrophil Count

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Tinospora cordifolia</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although there was a reduction in neutrophils in the nasal mucosa, the two studies measuring neutrophils in serum failed to find any benefit.
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No significant influence of chromium supplementation relative to placebo on neutrophil count.
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The overall amount of neutrophils in serum does not appear to be modified with supplementation of colostrum relative to placebo.
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	There are no significant alterations in the amount of neutrophils seen in subjects consuming hesperidin.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Saffron</a>	-	- <a href="#">See study</a>	Neutrophil concentrations in serum are unaffected by supplementation of saffron.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	The overall amount of neutrophils in the blood does not appear to be influenced with supplementation of vitamin E.
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The overall amount of neutrophils in serum do not appear to be altered in response to cocoa flavanols
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No apparent effect in one study.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	Supplementation of 1.5 g/d didn't alter the increase in response to ultramarathon running compared with placebo.

Back to: [Supplements](#) | [Health Outcomes](#)



# Nitric Oxide

Nitric Oxide is a signalling molecule formed from Nitrogen (N) and Oxygen (O) and simply called NO. Nitric oxide plays major roles in vascular relaxation (blood pressure regulation, erectile dysfunction) immune response, inflammation, anti-thrombotic activity, and memory formation.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Arginine</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Has been implicated in increasing nitric oxide formation in the body, but this does not appear to be a reliably occurring phenomena (despite arginine being required to make nitric oxide, it is not a good inducer thereof)
	<a href="#">Citrulline</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Nitric oxide derivatives (nitrate and urinary cGMP, since nitric oxide itself is hard to measure these biomarkers are indicative of nitric oxide production) appear to be reliably increased following oral consumption of citrulline supplementation
	<a href="#">Curcumin</a>	 Notable	- <a href="#">See study</a>	80mg of a bioavailability enhanced curcumin supplement has been reported to increase nitric oxide in serum by 40% or so, which is significantly larger than many other dietary supplements.
	<a href="#">Cocoa Extract</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	There is mixed evidence in both smokers and subjects with peripheral vascular disease (two states of high endothelial oxidation) as to whether the inclusion of dark chocolate can increase nitric oxide levels, which would underlie improvements in blood flow.
	<a href="#">Dehydroepiandrosterone</a>	 Minor	- <a href="#">See study</a>	Has been detected to increase nitric oxide concentrations in serum, needs to be replicated to investigate mechanisms
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	An increase in exercise-induced nitric oxide production has been noted
	<a href="#">Ginkgo biloba</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in cGMP (downstream mediator of nitric oxide signalling) has been noted in high risk individuals alongside an increase in superoxide dismutase, to the degree of 27.7+/-8.3% and nitric oxide itself has been increased by up to 40% in persons with poor circulation.
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	An increase in nitric oxide has been noted, thought to be secondary to increases in plasma nitrate

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Schisandra chinensis</a>	 Minor	- <a href="#">See study</a>	An increase in serum nitric oxide has been detected in one study in elite athletes
	<a href="#">Blueberry</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Blueberries do not appear to significantly influence nitric oxide metabolism
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	The increase in nitric oxide (and nitrate) seen with supplementation of hesperidin failed to reach statistical significance.
	<a href="#">Pycnogenol</a>	-	- <a href="#">See study</a>	Despite one study establishing the blood flow effects are dependent on nitric oxide, there do not appear to be any significant differences in nitric oxide quantities in saliva
	<a href="#">Rooibos</a>	-	- <a href="#">See study</a>	No significant alterations in nitric oxide levels with acute ingestion of Rooibos tea to otherwise healthy persons.
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	A potent increase in nitric oxide seen in a pilot study has failed to be replicated in a controlled intervention.
	<a href="#">Garlic</a>	 Notable	- <a href="#">See study</a>	The lone study assessing nitric oxide and garlic noted that a raw garlic clove (2g) could increase nitric oxide by 224% in otherwise healthy persons within 2-4 hours of ingestion; potency did not decrease after seven days
	<a href="#">Punicalagins</a>	 Minor	- <a href="#">See study</a>	An increase in metabolites of nitric oxide metabolism have been noted and thought to be indicative of increased nitric oxide production
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	No apparent effect in one study of participants with coronary artery disease.




# Noradrenaline

Noradrenaline is a catecholamine involved in the flight or fight response, and has a fairly important role as a neurotransmitter in the body. Elevations of serum noradrenaline are thought to reflect increases in cerebral noradrenaline.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	A decrease in noradrenaline appears to reliably occur after melatonin ingestion, but only at rest; this reduction is abolished upon moving
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Peripheral concentrations of noradrenaline do not appear to be influenced by supplementation of cocoa.
	<a href="#">Mucuna pruriens</a>	 Minor	- <a href="#">See study</a>	The reduction in noradrenaline levels seen in infertility is normalized following mucuna ingestion
	<a href="#">Sodium Bicarbonate</a>	 Minor	- <a href="#">See study</a>	A decrease in exercise-induced noradrenaline has been noted before, but it is unsure if this is correct information (as this was the lone study to measure noradrenaline, three studies have measured adrenaline and are split with the only one noting a decrease in adrenaline also being this study)
	<a href="#">Branched Chain Amino Acids</a>	-	- <a href="#">See study</a>	BCAA supplementation does not appear to significantly influence noradrenaline concentrations in serum
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	No significant alterations in plasma noradrenaline are seen with creatine supplementation during sleep deprivation.
	<a href="#">L-Tyrosine</a>	-	- <a href="#">See study</a>	No significant influence on plasma noradrenaline levels (despite increased plasma tyrosine) during rest or during a cold stress test (which increases noradrenaline)
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No apparent effect in one short study.







# Ocular Blood Flow

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	An increase in ocular blood flow has been noted in instances of normal tension glaucoma as well as healthy controls, although a one-time oral dose is ineffective (at least two days supplementation is required)
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Osteocalcin

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Magnesium</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible but unreliable increases in osteocalcin
	<a href="#">Red Clover Extract</a>	-	- <a href="#">See study</a>	Circulating osteocalcin does not appear to be influenced with supplementation of red clover extract.
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No notable change in response to surgery-induced cortisol increases.

Back to: [Supplements](#) | [Health Outcomes](#)












# Oxidation of LDL

LDL oxidation is known to contribute to atherosclerosis (plaque buildup in arteries), and reducing the rate of LDL oxidation reduces atherosclerosis. Antioxidants that are potent enough and stay in serum can reduce this oxidation.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Olive leaf extract</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	The decrease in LDL oxidation seen with olive oil phenolics appears to be of notable potency due to its reliability (occurring in both healthy persons and diseased persons, chronically and acutely) and a reduction in LDL oxidation rates can exceed 25% in some studies with low intakes of olive phenolics (enough from virgin olive oil consumption)
	<a href="#">Cocoa Extract</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	The majority of evidence does not find a significant alteration in the rate of LDL oxidation with cocoa or its isolated flavanols relative to placebo.
	<a href="#">Ginkgo biloba</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	In high risk individuals, the reduction has been noted to be 17.0+/-5.5%
	<a href="#">Licorice</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	The decrease in oxidation of LDL seen with either licorice or isolated Glabridin appears to exceed 20% and is more than other supplements
	<a href="#">Blueberry</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a reduction in LDL oxidation, with the one chronic study suggesting a 27% reduction (the acute study noting less of a protective effect).
	<a href="#">Dehydroepiandrosterone</a>	 Minor	- <a href="#">See study</a>	One study has noted less small particles of LDL, indicative of less LDL oxidation; possibly protective effects
	<a href="#">Garlic</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible decrease in LDL oxidation rates, although this does not appear to be overly reliable.
	<a href="#">Hesperidin</a>	 Minor	- <a href="#">See study</a>	There is a mild increase in particulate size of LDL cholesterol, indicative of less oxidation of these particulates and less atherogenicity, with hesperidin supplementation.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Panax ginseng</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reducing effect on the oxidation of LDL, secondary to reduction of oxidation in general; however, this appears to be unreliable
	<a href="#">Policosanol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence, possibly an effect but needs to be replicated
	<a href="#">Vitamin E</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	While vitamin E appears to retain the potential to reduce LDL oxidation, it requires high doses as lower doses are not significantly effective.
	<a href="#">Zinc</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although there may not be an inherent protective effect and normalizing a deficiency does not <i>per se</i> reduce oxidation of LDL, if the body becomes more insulin sensitivity when restoring a deficiency then zinc may indirectly reduce oxidation.
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No significant influence on the rates of LDL oxidation when compared to placebo supplementation.
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	No significant protective or augmenting effects on the oxidation rates of LDL-C.
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence detected
	<a href="#">Grape Seed Extract</a>	-	- <a href="#">See study</a>	Does not appear to influence oxidation rates of LDL cholesterol
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant alterations in the overall oxidation of LDL cholesterol associated with supplementation of betaine.
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on the oxidation rates of LDL cholesterol






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alpha-Lipoic Acid</a>	 Minor	- <a href="#">See study</a>	Appeared to increase oxidation of LDL according to one study, which was abolished by exercise but noted to be a concern during rest.
	<a href="#">Grape juice</a>	 Minor	- <a href="#">See all 3 studies</a>	Mixed evidence, but more likely to support a modest reduction in oxidized LDL. More research is needed.
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	One study has shown that 1 g green tea catechins taken once slowed the oxidation of LDL 1 hour post-ingestion.
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	Supplementation of saffron appears to be capable of reducing LDL oxidation when tested <i>ex vivo</i> in both healthy controls and persons with cardiovascular disease, although to a mild degree.
	<a href="#">Curcumin</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No apparent effect in one study using turmeric.
	<a href="#">Ketogenic diet</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No apparent effect in one study and a greater reduction than the control group in another study. More research is needed.
	<a href="#">Magnesium</a>	-	- <a href="#">See study</a>	No significant influence on oxidation rates of LDL cholesterol

Back to: [Supplements](#) | [Health Outcomes](#)

# Oxygen Uptake

Oxygen uptake (not to be confused with VO2 max) is the amount of oxygen taken up during exercise, and is known to reflect overall energy expenditure during exercise.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Caffeine</a>	 Minor	- <a href="#">See study</a>	Appears to be an increase in oxygen uptake with caffeine consumption, may be related to the increase in metabolic rate
	<a href="#">Eleutherococcus senticosus</a>	 Minor	- <a href="#">See study</a>	Limited evidence, but it is in support of an increase in oxygen consumption
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	In persons undergoing high altitude climbing, the reduced risk of AMD is associated with increased functional capacity of blood to carry oxygen.
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	An increase in oxygen uptake has been noted with green tea catechin ingestion
	<a href="#">Branched Chain Amino Acids</a>	-	- <a href="#">See study</a>	Oxygen uptake during anaerobic cardiovascular exercise does not appear to be modified with BCAA supplementation
	<a href="#">Coenzyme Q10</a>	-	- <a href="#">See study</a>	No detectable influence on oxygen uptake during exercise
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	
	<a href="#">Ornithine</a>	-	- <a href="#">See study</a>	Oxygen uptake during exercise does not appear to be significantly altered

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sodium Bicarbonate</a>	-	- <a href="#">See study</a>	
	<a href="#">Trimethylglycine</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	A minor increase in oxygen uptake was noted in selective testing (final sprint of one, but not both, betaine conditions) which did not manifest over the whole study period and is likely practically insignificant.
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	In otherwise healthy athletes given 4.5g of garlic cloves daily before a performance test, the lack of increased performance is met by a lack of changes in oxygen uptake.

Back to: [Supplements](#) | [Health Outcomes](#)

# Oxygenation Cost of Exercise

The oxygenation cost of exercise refers to how much oxygen is required to metabolize energy efficiently, and a reduction in this cost signifies more efficiency and improved physical performance. Improved oxygen efficiency tends to result from increasing nitric oxide.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nitrate</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	A notable reduction in the oxygenation cost of exercise associated with nitrate supplementation.
	<a href="#">Arginine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	When nitric oxide is increased, the oxygenation cost of exercise appears to be decreased. This is unreliable with supplemental L-arginine as arginine is unreliable in increasing nitric oxide
	<a href="#">Echinacea</a>	 Minor	- <a href="#">See study</a>	Effective, but to a small degree based on one trial.
	<a href="#">Panax ginseng</a>	-	- <a href="#">See study</a>	No significant influence on oxygen uptake during exercise
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on oxygenation cost of exercise
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	










Back to: [Supplements](#) | [Health Outcomes](#)

# Pain

Pain is the adverse sensation associated with injury, arthritis, and various forms of nerve injury that impairs well being and day-to-day living. Supplements may either universally reduce pain, or may alleviate the pain associated with a disease state.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Glucosamine</a>	 Minor	<b>Very High</b> <a href="#">See all 8 studies</a>	There appears to be a decrease in pain, with one meta-analysis noting that over the long term it account for "a 13 point reduction on a scale of 0-100". Although present, it is not as effective as most painkillers and may be exclusive to osteoarthritis
	<a href="#">Curcumin</a>	 Notable	<b>Very High</b> <a href="#">See all 15 studies</a>	There decreases in pain associated with curcumin at higher doses which extend to post-operative, arthritis, and general pain symptoms. In particular, curcumin has been researched for osteoarthritis the most, but many of these studies are of low quality and funded by industry, so caution is warranted.
	<a href="#">Horse Chestnut</a>	 Minor	- <a href="#">See study</a>	The pain associated with chronic venous insufficiency may be alleviated when that condition is treated by horse chestnut extract.
	<a href="#">Marijuana</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	There appears to be a reduction in pain associated with the dose of marijuana which confers psychoactive effects.
	<a href="#">Serrapeptase</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	When a decrease in inflammation occurs post surgery, there appears to be a concomitant reduction in pain; it tends to hover around a 1 point reduction on a VAS scale (scale of 1-10).
	<a href="#">Type-II Collagen</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	Limited research suggests a small benefit for osteoarthritis patients and a modest benefit for those with rheumatoid arthritis. It's unclear what the optimal dose is, and it may depend on the form. 1 mg of solubilized collagen, 10 g of hydrolyzed collagen, and 40 mg of undenatured collagen are all supported by research, while 20 mcg of native collagen actually coincided with a greater reduction in rheumatoid arthritis pain than higher doses in one study.
	<a href="#">Agmatine</a>	 Notable	- <a href="#">See study</a>	In the trial on lumbar disc-associated radiculopathy, the degree of pain alleviation was fairly notable relative to placebo and persisted for two months after supplementation was ceased. No reference drug comparisons, unfortunately






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">S-Adenosyl Methionine</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	The decrease in pain associated with osteoarthritis appears to be similar to the reference drugs Aleve (Naproxen) and Celecoxib, but requires more time to act (up to one month)
	<a href="#">ECA</a>	 Minor	- <a href="#">See study</a>	At least in persons with upper respiratory tract infections, a possible analgesic effect of ephedrine with aspirin exists
	<a href="#">Microlactin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Possible pain reduction associated with reducing symptoms of osteoarthritis, with one study suggesting comparable efficacy to <a href="#">glucosamine</a> sulfate
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	Pain as a side-effect of rheumatoid arthritis is modestly reduced.
	<a href="#">Peppermint</a>	 Minor	- <a href="#">See study</a>	Pain has been noted to be reduced in instances where pain is associated with tightened intestinal tissue (ie. during a colonoscopy) or during tension headaches. No inherent analgesic effect is known
	<a href="#">Pycnogenol</a>	 Minor	- <a href="#">See study</a>	A reduction in pain secondary to improvements in symptoms of osteoarthritis has been noted, and while notable in this certain instance it is not certain if there are inherent analgesic effects
	<a href="#">Rose Essential Oil</a>	 Minor	- <a href="#">See study</a>	Inhalation of rose may confer pain relieving properties in emergency situations, although potency relative to other agents is not assessed
	<a href="#">Rose Hip</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Pain is reduced alongside improvements in osteoarthritic and rheumatoid arthritis, and at least one study (cohort) noted benefits in persons without these diseases yet with high labour jobs. No studies in athletes to assess the analgesic properties yet.
	<a href="#">Valeriana officinalis</a>	 Minor	- <a href="#">See study</a>	Menstrual pain appears to be reduced with supplementation of low dose valerian extracts.
	<a href="#">Methylsulfonylmethane</a>	-	- <a href="#">See study</a>	No significant influence on pain symptoms in osteoarthritis

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	
	<a href="#">Cissus quadrangularis</a>	 Notable	- <a href="#">See study</a>	Joint pain appears to be reduced following supplementation of cissus, and while the magnitude is not remarkable (respectable, but comparable to other supplements) it seems to be one of the few validated in athletes with nonpathological joint pain.
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in pain has been noted with supplementation of ashwagandha root during chemotherapy and in osteoarthritis.
	<a href="#">CBD</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Studies are very preliminary, with only one being randomized, and all being small with short treatment durations.
	<a href="#">Pyrroloquinoline quinone</a>	 Minor	- <a href="#">See study</a>	In persons with sleep disorders taking PQQ (which improved sleep) there were reductions in pain ratings at the end of the trial

Back to: [Supplements](#) | [Health Outcomes](#)

# Parathyroid Hormone

Parathyroid hormone (PTH) is a hormone secreted from the parathyroid that negatively influences the actions of Vitamin D and promotes bone loss when in excessive concentrations.









LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin D</a>	 Strong	<b>Very High</b> <a href="#">See all 4 studies</a>	Vitamin D supplementation is the reference drug for reductions in parathyroid hormone due to directly negatively regulating its secretion
	<a href="#">7-Keto DHEA</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in parathyroid hormone from 7-keto supplementation.
	<a href="#">Licorice</a>	 Minor	- <a href="#">See study</a>	An increase in parathyroid hormone has been noted with consumption of licorice

Back to: [Supplements](#) | [Health Outcomes](#)



# Penile Girth







Penile girth refers to the (usually flaccid) thickness of penile tissue, and appears to be positively modulated by agents that interact with dopamine or blood flow. It is somewhat related to the supplementations that promote erections.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-DOPA</a>	 Minor	- <a href="#">See 2 studies</a>	An increase in penile girth has been noted in the flaccid state at rest, which is no longer present during sexual stimulation.
	<a href="#">Nicotine</a>	 Minor	- <a href="#">See study</a>	A decrease in penile girth in the flaccid state is noted, which is thought to be secondary to reduced blood flow
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	In men with erectile dysfunction, saffron appeared to increase nighttime tumescence at both the tip and base.
	<a href="#">Yohimbine</a>	 Minor	- <a href="#">See study</a>	An increase in penile girth has been noted (similar to <a href="#">L-DOPA</a> ) which was not to a large degree, only detectable when dividing the group into responders and nonresponders

Back to: [Supplements](#) | [Health Outcomes](#)

# Photoprotection





Photoprotection refers to the ability of an agent to protect the skin from radiation damage, which practically tends to refer to solar waves. Although protective, they may also reduce photosynthesis of molecules (like Vitamin D).

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be reduced risk of DNA damage, immunosuppression, and erythema in response to sunlight associated with fish oil consumption. Studies have only investigated higher doses (1,800mg EPA minimum) and it is unsure if these protective effects apply to lower doses
	<a href="#">Cocoa Extract</a>	 Notable	- <a href="#">See all 3 studies</a>	Mixed results reported. Two randomized, controlled trials report significant protection from UV-induced skin damage with 320-326mg/day cocoa flavanols over 6-24 week time periods. In contrast, another study using high flavanol chocolate (600mg flavanols) over a period of weeks failed to note any increase in the resistance of the skin towards reddening in response to light.
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	An increase in photoprotection (protection of the skin from the sun) has been found with green tea catechin ingestion

Back to: [Supplements](#) | [Health Outcomes](#)





# Plasma Arginine

Plasma arginine refers to blood concentrations of arginine, and can be increased following oral ingestion of mixed protein meals or any amino acid in the urea cycle.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Arginine</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Supplemental L-Arginine increases plasma L-Arginine. The spike in plasma L-arginine concentrations may be slightly more than that seen with L-citrulline, but the latter lasts longer and is thus more effective
	<a href="#">Citrulline</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Citrulline can increase plasma arginine concentrations, and due to acting as a reservoir of arginine it is actually more effective overall at increasing plasma arginine than arginine itself (acute peaks are still observed to a higher level with arginine supplementation).

Back to: [Supplements](#) | [Health Outcomes](#)




# Plasma Glutamine

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alanylglutamine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Higher doses (0.09-0.2g/kg) of oral alanylglutamine appear to increase plasma glutamine, and when compared to glutamine itself this dipeptide is more bioavailable
	<a href="#">Citrulline</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although acute usage does not appear to influence plasma glutamine, a week of high dose supplementation (0.18g/kg) has been noted to reduce glutamine concentrations slightly.

Back to: [Supplements](#) | [Health Outcomes](#)

# Plasma Melatonin

Plasma melatonin refers to serum concentrations of melatonin, which are quite significantly spiked following consumption of melatonin supplementation. Other stimuli, such as dark therapy, may encourage production of melatonin and increase serum levels.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Strong	<b>Very High</b> <a href="#">See all 6 studies</a>	Plasma melatonin is increased at both night and daylight following supplementation of melatonin. Although the degree of increase is a tad unreliable, it seems to always occur and to a fairly large magnitude
	<a href="#">Yohimbine</a>	-	- <a href="#">See study</a>	Despite increased rates of melatonin elimination from the body (via urination), there does not appear to be a significant influence on plasma melatonin concentrations.

Back to: [Supplements](#) | [Health Outcomes](#)





# Plasma Nitrate

Oral ingestion of nitrate can increase plasma nitrate and nitrite, although they can also be used as biomarkers of nitric oxide metabolism by being able to be preserved and increased relative to their lower rate of decay. Higher plasma nitrate is associated with better blood flow.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nitrate</a>	 Strong	<b>Very High</b> <a href="#">See all 3 studies</a>	Nitrate ingestion strongly and fairly reliably increases plasma nitrate and nitrite.
	<a href="#">Citrulline</a>	 Minor	- <a href="#">See study</a>	An increase in plasma nitrate has been noted with citrulline supplementation, but not to the degree of supplemental <a href="#">nitrate</a> itself
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Plasma <a href="#">nitrate</a> appears to be increased following carnitine ingestion, although not to the same degree as nitrate supplementation itself
	<a href="#">Arginine</a>	-	- <a href="#">See study</a>	There does not appear to be a reliable increase in plasma nitrate seen with arginine supplementation
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	Plasma nitrate concentrations do not appear to be altered with supplementation of niacin.
	<a href="#">Zinc</a>	-	- <a href="#">See study</a>	No significant influence of zinc supplementation on plasma nitrate or nitrite levels, suggesting no interaction with nitric oxide metabolism







Back to: [Supplements](#) | [Health Outcomes](#)

# Plasma Vitamin C

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin C</a>	 Strong	<b>Very High</b> <a href="#">See all 11 studies</a>	For the purpose of increasing plasma Vitamin C concentrations, orally supplemented Vitamin C appears to be the best decision (second only to intravenous vitamin C).
	<a href="#">Grape juice</a>	 Minor	- <a href="#">See study</a>	An increase was found in one study.

Back to: [Supplements](#) | [Health Outcomes](#)

# Plasminogen Inhibitor 1

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	An increase in PAI-1 is noted with fish oil supplementation
	<a href="#">Trimethylglycine</a>	 Minor	- <a href="#">See study</a>	An increase in PAI-1 concentrations has been noted with 4g of betaine supplementation daily over the course of six months in otherwise healthy adults.
	<a href="#">Red Clover Extract</a>	-	- <a href="#">See study</a>	Circulating levels of PAI-1 (plasminogen activation inhibitor 1) have not been altered with supplementation of red clover isoflavones.
	<a href="#">Perilla Oil</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)




# Platelet Aggregation

Platelet aggregation is the rate of which platelets in the blood can form clots to stop bleeding. While it serves a vital role in preventing excessive bleeding, abnormally active aggregation can be a risk factor for cardiovascular diseases.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Possible decreases in platelet aggregation
	<a href="#">Cocoa Extract</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	Both acute and prolonged ingestion of reasonable levels of cocoa flavonoids (500mg or more) appear to reduce the aggregation of platelets, although the potency is lesser than that of a baby aspirin (81mg).
	<a href="#">Garlic</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Garlic appears to reduce platelet aggregation at the supplemental dose, but not a moderate dietary dose of garlic cloves. The potency is less than <a href="#">ginkgo biloba</a> as a reference.
	<a href="#">Sea Buckthorn</a>	 Minor	- <a href="#">See study</a>	5g of the oil daily is able to reduce platelet aggregation in otherwise healthy persons.
	<a href="#">Vitamin E</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	While 100mg of $\gamma$ -tocopherol has been once implicated in reducing platelet aggregation, higher doses and all tested dose of $\alpha$ -tocopherol by themselves do not appear to have an effect (there is still an interaction with warfarin, however).
	<a href="#">Grape juice</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed evidence. Much more research is needed.

Back to: [Supplements](#) | [Health Outcomes](#)


# Pneumonia

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Zinc</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	In regards to pneumonia in particular, zinc does not appear to have any appreciable benefit either when superloaded by itself or taken as an adjuvant alongside antibiotics

Back to: [Supplements](#) | [Health Outcomes](#)

# Postpartum Depression










Postpartum depression is a transient depressive state that occurs after the birth of a child, and is a target for anti-depressive compounds that have been confirmed to be safe to both mother and child.















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	There does not appear to be any unique effect of supplemental fish oil on postpartum depression. Fish oil in postpartum and perinatal periods follows the same motifs as other depressive states, with EPA being the active molecule but likely only of benefit in major depressive disorder

Back to: [Supplements](#) | [Health Outcomes](#)

# Power Output













Power Output is the ability to procure a large amount of strength in a rapid manner, and considered both muscular and neural factors. Supplements that increase power output are of interest to athletes and strength enthusiasts.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Strong	<b>Very High</b> <a href="#">See all 66 studies</a>	Creatine is the reference compound for power improvement, with numbers from one meta-analysis to assess potency being "Able to increase a 12% improvement in strength to 20% and able to increase a 12% increase in power to 26% following a training regiment using creatine monohydrate".
	<a href="#">HMB</a>	-	<b>Moderate</b> <a href="#">See all 12 studies</a>	Limited evidence supports the increase in power output, which may be due to chance; more often than not, there is no significant influence
	<a href="#">Sodium Bicarbonate</a>	-	<b>Moderate</b> <a href="#">See all 28 studies</a>	Although <i>technically</i> an increase in average power output may occur during exercise associated with the 'burn' (metabolic acidosis) to the degree of 1-2%, saying this is an inherent or reliable increase in power would be misleading; it is an attenuation of the decrease in power that acidosis is able to induce
	<a href="#">Caffeine</a>	 Notable	<b>Very High</b> <a href="#">See all 9 studies</a>	There appears to be a reliable and significant increase in power output (both weight lifting as well as cycle ergometer measurements) in both trained and sedentary persons with doses of caffeine exceeding 5mg/kg, assuming the subject is not caffeine tolerant. Tolerance, or lower doses of caffeine, are not as effective.
	<a href="#">Beta-Alanine</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No significant effect on acute power output.
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No interaction between chromium and strength gain in naive nor trained athletes.
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See all 9 studies</a>	For the most part and aside from one pilot study, there is no consistent or remarkable increase in power output seen with colostrum that is not replicated by whey. Protein, inherently, may increase power output when combined in the diet over longer periods though.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dehydroepiandrosterone</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant improvement in power output has been noted with DHEA supplementation (studies mostly in older individuals)
	<a href="#">L-Carnitine</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	Highly mixed effects on power output, with mostly no significant influence but a possible increase in mean power output occurring in short-term anaerobic endurance exercise secondary to reducing the rate of perceived exertion
	<a href="#">Trimethylglycine</a>	-	<b>High</b> <a href="#">See all 7 studies</a>	There appear to be isolated cases of power output being increased which fail to be replicated elsewhere under similar experimental conditions, and the majority of evidence suggests that the power output increase seen is no greater than placebo; a potential ergogenic effect is either due to a currently unknown prerequisite (ie. parameter of the study population) or is not present.
	<a href="#">Whey Protein</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	There doesn't seem to be an inherent effect of protein on power output, although it may augment training-induced power accrual (an inherent effect of protein supplementation).
	<a href="#">Alpha-GPC</a>	 Notable	- <a href="#">See study</a>	The lone pilot study noted a 14% increase in power output as assessed by bench throws, requires replication but seems stronger than caffeine based on this study.
	<a href="#">Ashwagandha</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Improvements in power output have been noted in trained persons subject to a sprint test and in sedentary persons who simply took the supplement as well as untrained people who began strength training.
	<a href="#">Spirulina</a>	 Notable	- <a href="#">See study</a>	Notable as acute power output (leg extension measurement) increased by 20-30% (more efficacy in untrained persons, some efficacy in trained persons) after 8 weeks whereas placebo failed to have an increase. Needs more research to fine-tune the efficacy.
	<a href="#">Alcohol</a>	 Minor	- <a href="#">See study</a>	Acute ingestion of alcohol may be able to reduce subsequent power output
	<a href="#">Clenbuterol</a>	 Minor	- <a href="#">See study</a>	An increase in power output is noted with clenbuterol usage

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	150mg resveratrol taken shortly after a workout appears to hinder the improvements in power output (assessed via Wingate test) seen with exercise alone; effects of resveratrol at other times uncertain.
	<a href="#">Terminalia arjuna</a>	 Minor	- <a href="#">See study</a>	Power output has been noted to be increased in sprint tests, which is thought to be secondary to pulmonary effects of terminalia
	<a href="#">Theaflavins</a>	 Minor	- <a href="#">See study</a>	An increase in power output on a Wingate test has been noted with theaflavins supplementation above 1,800mg daily; efficacy of lower doses is uncertain
	<a href="#">Ursolic Acid</a>	 Minor	- <a href="#">See study</a>	As measured by peak torque (isokinetically), ursolic acid supplementation may increase power output in trained individuals.
	<a href="#">Velvet Antler</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A lone study noted an increase in muscle torque associated with Velvet Antler supplementation, which needs to be replicated to see if it is a true effect.
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	When tested after exercise, alanylglutamine is no different than water in jump performance in athletes
	<a href="#">Anatabine</a>	-	- <a href="#">See study</a>	Strength recovery over the course of three days recovery was not significantly improved by 6-12mg anatabine
	<a href="#">Arachidonic acid</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Arginine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on power output
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Branched Chain Amino Acids</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on power output, but when it does occur it is not a <i>per se</i> increase in power output but secondary to reduced muscular soreness after repeated exercise. This may be more indicative of anti-fatigue effects than of genuine power output improvement
	<a href="#">D-Aspartic Acid</a>	-	- <a href="#">See study</a>	Otherwise healthy trained men do not experience a further increase in power output relative to placebo when D-aspartic acid is taken alongside resistance training.
	<a href="#">Ecdysteroids</a>	-	- <a href="#">See study</a>	No difference between improvements in power output between ecdysteroids and placebo
	<a href="#">Ephedrine</a>	-	- <a href="#">See study</a>	No significant influence on power output with standard oral doses of ephedrine (higher doses may influence power output, but this is not well researched)
	<a href="#">Gamma Oryzanol</a>	-	- <a href="#">See study</a>	No interactions with power output have been noted with gamma-oryzanol ingestion
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	No significant influence on power output and strength associated with glutamine supplementation over placebo.
	<a href="#">Kaempferia parviflora</a>	-	- <a href="#">See study</a>	No significant influence on power output when taken acutely before exercise
	<a href="#">Leucic Acid</a>	-	- <a href="#">See study</a>	Power output as assessed by jumping tasks and weightlifting is unaffected
	<a href="#">Leucine</a>	-	- <a href="#">See study</a>	
	<a href="#">Marijuana</a>	-	- <a href="#">See study</a>	Acute inhalation of marijuana failed to modify grip strength when tested compared to control.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">N-Acetylcysteine</a>	-	- <a href="#">See study</a>	
	<a href="#">Nitrate</a>	-	- <a href="#">See study</a>	No significant effect on acute power output
	<a href="#">Pyruvate</a>	-	- <a href="#">See study</a>	No significant influence on power output noted with pyruvate supplementation in healthy athletes
	<a href="#">Rhodiola Rosea</a>	-	- <a href="#">See study</a>	No significant influences on power output
	<a href="#">Tribulus terrestris</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in power output associated with tribulus supplementation.
	<a href="#">Vitamin D</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although a trend to increase power output has been noted, most research suggest no benefit, although recovery times may improve.
	<a href="#">Yohimbine</a>	-	- <a href="#">See study</a>	No significant influence on power output noted with yohimbine
	<a href="#">Eurycoma Longifolia Jack</a>	 Minor	- <a href="#">See study</a>	A slight increase in power output has been noted, which may be secondary to increased training adaptations
	<a href="#">Ketogenic diet</a>	 Minor	- <a href="#">See study</a>	A small reduction in one uncontrolled study where caloric intake was reduced on the ketogenic diet.
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No apparent effect when used acutely before exercise with a cycle ergometer.





# Pre-Eclampsia Risk







Pre-Eclampsia refers to a spike in blood pressure and proteinuria that some pregnant women experience, and due to the severity of this condition some supplements are sought after for reducing the risk of it ever developing.




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Calcium</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Calcium supplementation appears to be quite potent in reducing the risk of pre-eclampsia when supplemented at 1,000mg a day, with more efficacy in those with lower dietary calcium intake.
	<a href="#">Selenium</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Supplementation with selenium significantly reduces the incidence of pre-eclampsia.
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	There does not appear to be a significant protective effect against pre-eclampsia in women who supplement fish oil during pregnancy
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	A reduction in risk has been noted, but not to an overly amazing degree
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No significant influence on pre-eclampsia risk

Back to: [Supplements](#) | [Health Outcomes](#)

# Processing Accuracy

Processing accuracy refers to the ability to not make errors during information processing and testing. Attempts to increase processing speed and reaction time should make note of processing accuracy to maximize efficiency.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Branched Chain Amino Acids</a>	 Minor	- <a href="#">See study</a>	The increased processing accuracy appears to be secondary to reducing exercise-related fatigue, and occurs when testing is after exercise.
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	An improvement in processing accuracy (assessed by amount of errors in a cognitive test) has been noted with fish oil in otherwise healthy adults that do not frequently consume fish products
	<a href="#">Ginkgo biloba</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The number of errors seen in serial threes and serial sevens tasks appears to be reduced with acute supplementation of EGb-761
	<a href="#">Modafinil</a>	 Minor	- <a href="#">See study</a>	There is a possible improvement in processing accuracy with supplementation of modafinil.
	<a href="#">Phosphatidylserine</a>	 Minor	- <a href="#">See study</a>	Increased processing accuracy has been noted in otherwise healthy persons at 400mg PS daily when testing was conducted in a fatigued state (post exercise)
	<a href="#">Rhodiola Rosea</a>	 Minor	- <a href="#">See study</a>	Increases in processing accuracy are likely secondary to reductions in fatigue
	<a href="#">Centella asiatica</a>	-	- <a href="#">See study</a>	No significant influence on processing accuracy is seen with <i>centella asiatica</i> supplementation
	<a href="#">Nigella sativa</a>	-	- <a href="#">See study</a>	No significant improvements in the accuracy of cognitive processing appears to occur with supplementation of nigella sativa seeds.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vinpocetine</a>	-	- <a href="#">See study</a>	
	<a href="#">Ashwagandha</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	One study in people with bipolar disorder failed to find an effect and so did one study in healthy people, despite an increase in processing speed.
	<a href="#">Peppermint</a>	-	- <a href="#">See study</a>	Processing accuracy does not appear to be significantly influenced with acute inhalation of peppermint extract during cognitive testing

Back to: [Supplements](#) | [Health Outcomes](#)


# Processing Speed

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Coconut Oil</a>	 Minor	- <a href="#">See study</a>	Study was unable to properly assess coconut oil as it was used as an active control; some benefit appears apparent relative to fish oil.
	<a href="#">Ginkgo biloba</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	In older individuals, there appears to be an increase in processing speed without a sacrifice in accuracy
	<a href="#">Melissa officinalis</a>	 Minor	- <a href="#">See study</a>	A decrease in processing speed appears to occur following lemon balm ingestion, which may be related to the sedation effects
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	Trail making test time in older adult men appears to be reduced modestly with daily supplementation of nigella seed extract
	<a href="#">Phosphatidylserine</a>	 Minor	- <a href="#">See study</a>	Increased processing speed has been noted in otherwise healthy persons at 400mg PS daily when testing was conducted in a fatigued state (post exercise) which coincided with increase accuracy as well.
	<a href="#">Modafinil</a>	-	- <a href="#">See study</a>	There does not appear to be a significant influence on processing speed, with some evidence suggesting a possible reduction thereof.
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Studies in healthy people and people with bipolar disorder have found increases, but not in accuracy.
	<a href="#">Peppermint</a>	-	- <a href="#">See study</a>	Processing speed is not significantly influenced with the aroma of peppermint during cognitive testing

# Prolactin









Prolactin is a peptide hormone that is known to regulate lactation in females and are a negative regulator of steroid hormones (estrogen and testosterone) when it is highly elevated.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Mucuna pruriens</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in prolactin appears to occur following Mucuna or L-DOPA ingestion
	<a href="#">Nicotine</a>	 Minor	- <a href="#">See study</a>	An increase in prolactin has been noted with nicotine ingestion
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See study</a>	May decrease prolactin in instances of uremia, but there is currently no evidence in otherwise healthy controls.
	<a href="#">Fenugreek</a>	-	- <a href="#">See study</a>	No detectable interactions with fenugreek and prolactin levels
	<a href="#">Maca</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on prolactin levels
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on prolactin concentrations
	<a href="#">Panax ginseng</a>	-	- <a href="#">See study</a>	No significant influence on prolactin in men
	<a href="#">Saffron</a>	-	- <a href="#">See study</a>	Supplementation of 60mg saffron for 26 weeks does not significantly influence prolactin in infertile men.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	No significant interactions with prolactin and velvet antler noted
	<a href="#">Alcohol</a>	 Minor	- <a href="#">See study</a>	An increase in prolactin has been noted following acute ingestion of alcohol
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	No effect on prolactin levels in women with PCOS.
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	Prolactin appears unaffected following licorice consumption
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on exercise-induced prolactin
	<a href="#">Tribulus terrestris</a>	-	- <a href="#">See study</a>	One study found a reduction in Prolactin relative to baseline, however, this isn't statistically significant
	<a href="#">Vitamin B6</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Zinc</a>	-	- <a href="#">See study</a>	No detectable increase in prolactin in persons who are deficient in zinc and then supplemented to restore levels.

# Prostate Cancer Risk





Prostate cancer risk is thought to be reduce with some supplements or foods, and is usually measured either with survey data or by measuring prostate specific antigen doubling time and looking for a reduction.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Selenium</a>	 Minor	- <a href="#">See study</a>	A small decrease in prostate cancer risk is seen when comparing areas with high soil selenium (indicative of dietary intake of selenium) against areas with low soil selenium.
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See all 4 studies</a>	Low doses of vitamin E (50mg) in smokers has been associated with significant decreases in prostate cancer risk, whereas moderate doses (400IU) of vitamin E in otherwise healthy older men is associated with a mild but significant increase in prostate cancer risk.
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be associated with a reduced risk of prostate cancer in one study, but another study failed to find clinical implications in people with prostate cancer in remission.
	<a href="#">Punicalagins</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Notable as consumption of pomegranate juice is associated with a prolongation in the time require for PSA (biomarker of prostate cancer) to double, from 15 months to 54 months

Back to: [Supplements](#) | [Health Outcomes](#)















# Prostate Hypertrophy

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ganoderma lucidum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	At an oral dose that can reduce symptoms of prostatic hyperplasia, there is no apparent effect on prostatic hypertrophy
	<a href="#">Stinging Nettle</a>	-	- <a href="#">See study</a>	No significant influence on prostatic hypertrophy despite reducing symptoms
	<a href="#">Garlic</a>	 Notable	- <a href="#">See study</a>	The lone pilot study has noted a 32% reduction in prostatic size after a month of eating 200mg/kg garlic (as a water soluble liquid extract)

Back to: [Supplements](#) | [Health Outcomes](#)

# Prostate Specific Antigen




Prostate specific antigen (PSA) is a biomarker that is known to be reflective of prostate cancer risk. An elevated PSA is associated with greater risk of prostate cancer, and reducing the rate that PSA increases is seen as protective.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Has been noted to decrease prostate specific antigen levels following supplementation
	<a href="#">Dehydroepiandrosterone</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on PSA levels
	<a href="#">Fenugreek</a>	-	- <a href="#">See study</a>	No significant influence on prostate specific antigen levels
	<a href="#">Ganoderma lucidum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The ethanolic extract has failed to alter serum levels of PSA
	<a href="#">Saw Palmetto</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	While observational data suggests a decrease, trials have found no change in PSA levels.
	<a href="#">Garlic</a>	 Notable	- <a href="#">See study</a>	The lone study (no placebo control) noted a 60% reduction in both total and free PSA in a small group of men with prostate cancer; requires more evidence to evaluate the therapeutic potential
	<a href="#">Punicalagins</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Does not appear to be able to reduce PSA levels outright, although it can attenuate the rate of which PSA increases over time (relative to untreated control, this is a reduction)
	<a href="#">Tribulus terrestris</a>	 Minor	- <a href="#">See study</a>	One study found a significant increase relative to placebo with 2.25 g of a tribulus extract per day.



# Protection from Smoking








Smoking a cigarette is associated with some acute adverse changes in blood flow and oxidative biomarkers, and due to these thought to be risk factors for heart health some supplements are being investigated for negating the effects of smoking.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin C</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	There do not appear to be any inherent protective effects of Vitamin C against the oxidative and inflammatory changes associated with cigarette smoking, although the reduction in blood flow may be attenuated somewhat with antioxidants and this applies to Vitamin C
	<a href="#">Benfotiamine</a>	 Minor	- <a href="#">See study</a>	There appears to be an attenuation in how much a cigarette constricts peripheral blood flow by about half, with other biomarkers not changed overly to an overly potent degree.

Back to: [Supplements](#) | [Health Outcomes](#)

# Protein Carbonyl Content

Similar to how lipid peroxidation measures oxidation as it applies to lipids, protein carbonyls measure the oxidation rates of protein structures. The accumulation of protein carbonyls is highly associated with cellular aging.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alpha-Lipoic Acid</a>	 Minor	- <a href="#">See study</a>	Appears to reduce protein carbonylation, which may be related to the antioxidative effects
	<a href="#">Eleutherococcus senticosus</a>	 Minor	- <a href="#">See study</a>	A decrease in protein carbonylation has been noted, which is thought to be secondary to antioxidative effects
	<a href="#">Methylsulfonylmethane</a>	 Minor	- <a href="#">See study</a>	A decrease in protein carbonylation is noted with MSM supplementation
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No significant influence on protein carbonylation has been noted with curcumin ingestion

Back to: [Supplements](#) | [Health Outcomes](#)

# Proteinuria




Proteinuria is losses of large protein structures in the urine, which normally does not occur and signifies structural damage to the kidneys. A higher rate of proteinuria correlates with worsened kidney damage, and reductions in proteinuria reflect improved renal function.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Notable	- <a href="#">See study</a>	The study in diabetics noting a reduction in urinary albumin noted a near halving over 8 weeks with a low dose of ginkgo.
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	A reduction in proteinuria has been noted in persons with kidney impairment given curcumin
	<a href="#">Benfotiamine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No evidence to support a reduction in the amount of protein lost in the urine of persons with diabetic nephropathy (UAE between 15-300mg/24 hours). Whether there is a preventative effect or not, there does not appear to be a rehabilitative effect.
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	Chromium supplementation does not appear to cause proteinuria (protein losses in the urine) suggesting no kidney toxicity, as proteinuria is a biomarker of such damage.
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	There is no significant influence on protein losses in the urine (proteinuria).
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	Although a trend to reduce protein losses in the urine was noted (which would be kidney protective), this was a statistically insignificant and secondary to lupus treatment
	<a href="#">Nigella sativa</a>	-	- <a href="#">See study</a>	No significant influence on the rate of proteinuria, suggesting no kidney damage associated with supplementation.
	<a href="#">Chlorella</a>	 Minor	- <a href="#">See study</a>	Reduced proteinuria in pregnant women (possibly indicative of kidney protective effects); more studies would be prudent as to include comparators or use in other contexts.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ganoderma lucidum</a>	 Minor	- <a href="#">See study</a>	A decrease in urinary protein has been noted, indicative of kidney protective effects

Back to: [Supplements](#) | [Health Outcomes](#)

# Pulmonary Function

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nigella sativa</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	While the magnitude of benefit has not yet been compared to reference drugs, <i>nigella sativa</i> extracts appear to benefit lung function in both asthmatics and persons with otherwise damaged lung function; no studies in otherwise healthy persons.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	

Back to: [Supplements](#) | [Health Outcomes](#)










# Quality of Life

Quality of life (QOL) refers to a general, all encompassing, response as to how tolerance and enjoyable one's living conditions are. QOL is impaired in various disease states that reduce functionality or cause pain, and treating these symptoms causes an increase in QOL.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Berberine</a>	 Minor	- <a href="#">See study</a>	Minor effect in persons with cardiomyopathy, but it is unsure if berberine has a per se benefit on quality of life.
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	An increase in QOL has been noted in persons who either have heart ailments or are at risk for them, but this may not be a universal increase (perhaps dependent on reducing disease state symptoms)
	<a href="#">Oxiracetam</a>	 Minor	- <a href="#">See study</a>	The one study to measure subjective quality of life in persons with dementia found a significant improvement with supplementation
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	Quality of life in cancer patients is unaffected despite an increase in NK cell activity, thought to be indicative of a therapeutic effect of supplementation.
	<a href="#">Saw Palmetto</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	In one study in healthy, active adults, quality of life on the WHO-QOL scale was improved for physical function, psychological health, social relationships, and environmental factors.
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No apparent effect in one study in prostate cancer patients.

# Rate of Gastric Emptying

The rate of gastric emptying is how fast food leaves the stomach, and a delayed rate of emptying is able to reduce hunger due to the physical presence in the stomach causing release of appetite suppressing hormones.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginger</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	Ginger appears to increase the rate of gastric digestion, although the potency thereof is not too reliable
	<a href="#">Peppermint</a>	 Minor	- <a href="#">See study</a>	A slight increase in the rate of gastric emptying is noted with peppermint oil, which is thought to be of benefit to persons with GERD
	<a href="#">Psyllium</a>	 Minor	- <a href="#">See study</a>	No reference drug to compare it to, and thus the potency in psyllium delaying gastric emptying is not certain.
	<a href="#">Yohimbine</a>	-	- <a href="#">See study</a>	No significant effect on gastric emptying rate




Back to: [Supplements](#) | [Health Outcomes](#)

# Rate of Perceived Exertion

The rate of perceived exertion (RPE) is a subjective measurement of how difficult it is to conduct an exercise, usually used during cardiovascular exercise. Reducing the RPE may help with performance by allowing one to push harder (due to less difficulty and pain).

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Caffeine</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	Although the effects are somewhat unreliable, there appears to be a reduction in the rate of perceived exertion associated with caffeine ingestion
	<a href="#">Sodium Bicarbonate</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	Although there is some limited evidence that sodium bicarbonate can increase 'perceived readiness' for a task and ample evidence that it can reduce the rate of neuromuscular decline (seen with fatigue), the actual rate of perceived exertion (how hard an exercise feels) is wholly unaffected.
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence of betaine (acute or two weeks of supplementation) on the rate of perceived exertion.
	<a href="#">Branched Chain Amino Acids</a>	 Minor	- <a href="#">See study</a>	There is some evidence to support a reduction in the rate of perceived exertion during exercise under the influence of BCAA supplementation, but this appears to unreliably improve performance and is of low magnitude
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	A decrease in the rate of perceived exertion has been noted with CoQ10 supplementation
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	A reduction in the rate of perceived exertion appears to exist following carnitine supplementation
	<a href="#">Nitrate</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May reduce the rate of perceived exertion in some instances (prolonged cardiovascular exercise), but is not highly reliable.
	<a href="#">Rhodiola Rosea</a>	 Minor	- <a href="#">See study</a>	Possibly effective if confounded with fatigue (the antifatigue effects may reduce the rate of perceived exertion during submaximal exercise) but there does not appear to be strong effects in maximal effort trials

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin C</a>	 Minor	- <a href="#">See study</a>	The rate of perceived exertion in obese adults appears to be attenuated with Vitamin C supplementation
	<a href="#">Choline</a>	-	- <a href="#">See study</a>	No significant alterations in the rate of perceived exertion during loaded carrying exercises
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	
	<a href="#">Eleutherococcus senticosus</a>	-	- <a href="#">See study</a>	Despite possible influences on fatigue production, there is currently no demonstrated reduction in the rate of perceived exertion during exercise
	<a href="#">Ginger</a>	-	- <a href="#">See study</a>	No significant influence on the rate of perceived exertion
	<a href="#">Kaempferia parviflora</a>	-	- <a href="#">See study</a>	No significant influence on the rate of perceived exertion when a single dose is taken acutely
	<a href="#">Leucine</a>	-	- <a href="#">See study</a>	
	<a href="#">Maca</a>	-	- <a href="#">See study</a>	No significant influence on the rate of perceived exertion associated with Maca root
	<a href="#">Panax ginseng</a>	-	- <a href="#">See study</a>	No significant influence on the rate of perceived exertion during exercise
	<a href="#">Quercetin</a>	-	- <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Taurine</a>	-	- <a href="#">See study</a>	
	<a href="#">Ashwagandha</a>	-	- <a href="#">See study</a>	Despite alterations in power output seen, the rate of perceived exertion in otherwise sedentary persons is not affected.
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The rate of perceived exertion during exercise does not appear to be altered when cocoa flavanols are ingested prior to exercise.







Back to: [Supplements](#) | [Health Outcomes](#)

# Reaction Time

Reaction time refers to one's reflexes and the speed of which a task can be done, and is a cognitive parameter that is of interest to athletes or persons in need of more rapid coordination.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Caffeine</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Although the overall effect is unreliable and context dependent, caffeine appears to improve reaction time (possibly at the cost of accuracy)
	<a href="#">Modafinil</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	An improvement in reaction time (decrease) is noted in both healthy and normal persons as well as those undergoing either drug addiction or sleep deprivation. This may be related to the alertness promoting effects of the compound.
	<a href="#">Kava</a>	 Notable	- <a href="#">See study</a>	The one study to measure reaction time noted an astounding decreased (approximately 40% reduction), which needs to be replicated
	<a href="#">Alanylglutamine</a>	 Minor	- <a href="#">See study</a>	A low dose, yet not the higher antifatigue dose, has once been noted to improve reaction time and shooting accuracy following an hour long basketball game
	<a href="#">Branched Chain Amino Acids</a>	 Minor	- <a href="#">See study</a>	A (beneficial) decrease in reaction time has been noted during a stimulated soccer test, which was thought to be secondary to the antifatigue effects. Hypothesized to be useful for prolonged sports
	<a href="#">Centella asiatica</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There are decreases in reaction time when otherwise healthy older adults take this supplement (youth not tested) which span to choice recognition, and spatial memory reaction time but <i>not</i> digit vigilance and simple reaction time.
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	A reduction in reaction time has been noted with fish oil supplementation in persons who consume low levels of fish in the diet
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	A decrease in reaction time has been noted to be secondary to improvements in cognition in older women; no studies in youth at this moment in time.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See 2 studies</a>	Alongside improvements in general cognition in older individuals, an improvement in reaction time has been noted.
	<a href="#">Marijuana</a>	 Minor	- <a href="#">See study</a>	A reduction in reaction time has been noted in acute users of marijuana relative to control. While not directly tested, it is thought that this is attenuated during tolerance.
	<a href="#">Nicotine</a>	 Minor	- <a href="#">See study</a>	A decrease in reaction time is noted with acute nicotine ingestion
	<a href="#">Panax ginseng</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects on reaction time, with a possible decrease occurring
	<a href="#">Policosanol</a>	 Minor	- <a href="#">See study</a>	Reductions in reaction time were not overly significant.
	<a href="#">Vinpocetine</a>	 Minor	- <a href="#">See study</a>	High doses (40mg) may reduce reaction time during tested, with lower doses not being potent enough to influence reaction time
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	A slight decrease in reaction time has been noted in persons who are zinc deficient and then supplemented with zinc.
	<a href="#">Choline</a>	-	- <a href="#">See study</a>	No significant alterations in reaction time noted with choline
	<a href="#">D-Serine</a>	-	- <a href="#">See study</a>	When 2.1g D-serine is taken two hours prior to cognitive testing, there does not appear to be an increase in reaction time when compared to placebo
	<a href="#">PRL-8-53</a>	-	- <a href="#">See study</a>	The dose of PRL-8-53 that improves memory formation does not appear to have any significant influence on reaction time.










LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant alterations in reaction time during treatment of cognitive decline
	<a href="#">Rhodiola Rosea</a>	-	- <a href="#">See study</a>	No significant influences on reaction time
	<a href="#">Sceletium tortuosum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In response to cognitive testing involving reaction time, administration of Kanna prior to testing does not appear to outperform placebo in improving reaction time.
	<a href="#">Theanine</a>	-	- <a href="#">See study</a>	
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	An improvement has been noted in a small study in healthy people. The results need replication.









Back to: [Supplements](#) | [Health Outcomes](#)



# Red Blood Cell Count





Red blood cell count refers to total erythrocytes in serum, and is usually measured in toxicology testing or some instances of anemia. Although higher than average levels of red blood cells can needlessly increase blood pressure, it supports aerobic exercise and oxygen delivery.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	The overall amount of red blood cells does not appear to be significantly altered with supplemental vitamin E.
	<a href="#">Royal Jelly</a>	 Minor	- <a href="#">See study</a>	At least one study has noted an increase in red blood cell count following ingestion of Royal Jelly
	<a href="#">Saffron</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in RBCs has been noted in one study suggesting saffron toxicity with prolonged supplementation of a double dose (60mg).
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Echinacea</a>	-	- <a href="#">See study</a>	Oddly ineffective despite an increase in erythropoetin seen
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	There are no alterations in red blood cell count with normal doses of garlic (although there does appear to be a decrease when a <i>toxic</i> dose of garlic oil is ingested)
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Spirulina</a>	-	- <a href="#">See study</a>	Currently insufficient evidence to support a change in RBC count.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	No influence of this supplement on red blood cell count following prolonged supplementation
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	A normalization of RBC count has been noted in the treatment of hepatitis C with the seed oil of <i>nigella sativa</i>
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See study</a>	Small drops in red blood cell count were noted in vitamin D-insufficient healthy people supplemented with 800 IU over 12 weeks.
	<a href="#">Ashwagandha</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Supplementation with the water extract of the roots for 30 days in otherwise healthy persons did not significantly influence red blood cell count. Another study found no change in the ashwagandha group but a slight increase in the placebo group when ashwagandha was given to healthy, active adults.
	<a href="#">Curcumin</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No effect observed in the studies so far.
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)









# Reddening of the Skin

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Topical application of nicotinamide and its analogues (not including niacin) appears to reduce reddening of the skin.
	<a href="#">Vitamin K</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	It appears that for conditions with reddened skin (purpura or bags under the eyes) that vitamin K may have a role in removing the blood from the skin and reducing redness when 5% phylloquinone is applied to the skin. Mechanisms are not known, and study quality at the moment is lacklustre

Back to: [Supplements](#) | [Health Outcomes](#)








# Relaxation

Relaxation refers to a self-reported peace of mind and calmness, and may be influenced by light sedative or relaxing compounds. Relaxing compounds are said to be anti-stress.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Theanine</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	A notable increase in relaxation (usually without sedation) appears to occur, as assessed by neural measurements (such as alpha-waves) or self-report surveys. Occurs within 30 minutes to an hour
	<a href="#">Marijuana</a>	 Notable	- <a href="#">See study</a>	The dose and time which confer psychoactive effects are associated with reported of relaxation to a larger degree than control.
	<a href="#">Lavender</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	An increase in the magnitude of self-reported 'relaxation' is noted with lavender aromatherapy more than placebo
	<a href="#">Melissa officinalis</a>	 Minor	- <a href="#">See study</a>	An increase in self-reports of relaxation occur, which may be related to the increased calmness and sedation ratings also seen



Back to: [Supplements](#) | [Health Outcomes](#)

# Resistin

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	The adipokine known as resistin is not affected by supplementation of chromium relative to placebo.
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on resistin noted
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	Circulating resistin concentrations do not appear to be influenced with supplementation of niacin.
	<a href="#">Ketogenic diet</a>	 Notable	- <a href="#">See study</a>	The ketogenic diet group didn't see much of a difference but the low-fat control group saw a notable reduction.
	<a href="#">Vitamin C</a>	 Notable	- <a href="#">See study</a>	There was a notable decrease in one study, but more research is needed to tell how reliable this effect is.

Back to: [Supplements](#) | [Health Outcomes](#)



# Rhonchi

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pelargonium sidoides</a>	 Notable	<b>Very High</b> <a href="#">See all 5 studies</a>	Rhonchi (coarse rattling sound associated with mucus in the airway, similar to wheezing and crackles) appears to be eliminated in more than 90% of persons (with bronchitis) using the standard dose of this supplement within a week.

Back to: [Supplements](#) | [Health Outcomes](#)





# Risk of Falls

Risk of falling refers to elderly individuals with functional impairment, and interventions to improve muscular function or bone integrity tend to reduce falls and thus reduce both fracture and mortality risk.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin D</a>	 Notable	<b>Moderate</b> <a href="#">See all 4 studies</a>	The risk of falls in the elderly (and subsequently, rate of bone fractures) appears to be significantly reduced with Vitamin D supplementation at 700 IU or greater, with most research in the 700-1000 IU range. Lower doses do not appear effective, and a greater protective effect appears to exist alongside calcium supplementation (and possibly Vitamin K supplementation)

Back to: [Supplements](#) | [Health Outcomes](#)





# Risk of Myocardial Infarction

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Mixed evidence, but a possible decrease in the risk of myocardial infarction rates with niacin supplementation (overall mortality from cardiovascular diseases doesn't seem to be altered).
	<a href="#">Ginkgo biloba</a>	-	- <a href="#">See study</a>	The risk of myocardial infarction (as well as other heart conditions such as angina) does not appear to be significantly affected by ginkgo supplementation.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Vitamin E does not appear to reduce the incidence rates of myocardial infarctions despite a reduction in cardiovascular disease mortality.

Back to: [Supplements](#) | [Health Outcomes](#)












# Risk of Stroke

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There may be a decrease in the rates of strokes among subjects (dyslipidemics) using pharmacological doses of niacin when compared to controls
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	There does not appear to be a protective effect of vitamin E on the development of stroke relative to placebo.
	<a href="#">Ginkgo biloba</a>	-	- <a href="#">See study</a>	The risk of stroke does not appear to be reduced with supplementation of 240mg EGb-761 in older individuals.





Back to: [Supplements](#) | [Health Outcomes](#)

# Sedation

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Modafinil</a>	 Strong	<b>Very High</b> <a href="#">See 2 studies</a>	Modafinil (300mg) taken prior to sleep is as potent as 20mg D-amphetamine in reducing the need to sleep and improving cognitive performance during intentional sleep deprivation. Occasionally, this potency manifests itself as the 'side-effect' of insomnia in some persons who take it in the AM
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	An increase in sedation has been noted with aromatherapy, but not with oral usage of lavender supplements
	<a href="#">Valeriana officinalis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Doses above 750mg may be associated with the 'morning hangover' side effect (sleepiness upon waking) whereas lower doses of 400mg have not been associated with such.
	<a href="#">Synephrine</a>	-	- <a href="#">See study</a>	
	<a href="#">Theanine</a>	-	- <a href="#">See study</a>	
	<a href="#">Peppermint</a>	-	- <a href="#">See study</a>	Peppermint aromatherapy does not appear to significantly influence the state of wakefulness

Back to: [Supplements](#) | [Health Outcomes](#)

# Seizure Frequency





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	Seizure frequency in children with poorly controlled epilepsy is significantly reduced with a seed extract, and while it was quite notable in some children it was variable enough to also be quite modest in others. Needs more research to assess potency.
	<a href="#">CBD</a>	 Strong	<b>Very High</b> <a href="#">See all 3 studies</a>	These studies only looked at disorders with severe epilepsy, including Dravet and Lennox-Gastaut Syndromes, and Tuberous sclerosis complex (TSC).

Back to: [Supplements](#) | [Health Outcomes](#)

# Seminal Motility










Seminal motility is an aspect of fertility, and refers to the ability of sperm cells to move in medium (and in the womb). Increasing sperm motility can improve fertility in men who are otherwise infertile.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Alongside improvements in all seminal parameters, ashwagandha is able to increase seminal motility as well; both are thought to underlie pro-fertility effects.
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Requires more evidence to assess potency, but it does appear to reliably increase seminal motility
	<a href="#">Eurycoma Longifolia Jack</a>	 Minor	- <a href="#">See study</a>	Sperm motility appears to be increased, with more efficacy in those with lower baseline motility and improvements averaging 44.4%
	<a href="#">Mucuna pruriens</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in seminal motility is observed following mucuna ingestion
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Saffron</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The best evidence to date does not support a role for saffron supplementation in increasing seminal motility.
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	
	<a href="#">Ginger</a>	 Notable	- <a href="#">See study</a>	Preliminary evidence suggests a 47.3% increase in seminal motility seen with three months supplementation of ginger to infertile men.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Tribulus terrestris</a>	 Notable	- <a href="#">See study</a>	One uncontrolled study found a notable improvement in seminal motility relative to baseline
	<a href="#">D-Aspartic Acid</a>	 Minor	- <a href="#">See study</a>	Seminal motility is increased 50-100% in infertile men supplementing with D-aspartic acid








Back to: [Supplements](#) | [Health Outcomes](#)

# Serum Albumin

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-Carnitine</a>	-	- <a href="#">See study</a>	
	<a href="#">Nigella sativa</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	An increase in serum albumin has been noted, and the reason for this currently unknown.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Curcumin</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No apparent effect in 5 studies.
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	One study found a small, statistically reduction in healthy, active participants. More research is needed.
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No apparent effect in one study.

Back to: [Supplements](#) | [Health Outcomes](#)



# Serum BDNF

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	An increase in serum BDNF has been confirmed in persons with schizophrenia and tardive dyskinesia only
	<a href="#">Zinc</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Supplemental zinc (30mg) has been noted to increase serum BDNF in depressed subjects in one study, which did not occur in study; there were differences in the study demographic and more research is needed.
	<a href="#">D-Serine</a>	-	- <a href="#">See study</a>	2.1g D-serine in otherwise healthy humans does not acutely influence serum BDNF concentrations
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	An increase has been noted in patients with major depression.

Back to: [Supplements](#) | [Health Outcomes](#)

# Serum Bicarbonate



Serum bicarbonate is a way to indirectly measure the pH of the blood, as a higher bicarbonate concentration tends to reflect a more alkaline (buffered) pH. Bicarbonate is reliably increased in oral sodium bicarbonate.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sodium Bicarbonate</a>	 Strong	<b>Very High</b> <a href="#">See all 47 studies</a>	For the purpose of increasing serum bicarbonate concentrations, orally ingested bicarbonate is the reference compound for it. The increases tend to be around a 30% increase from baseline values (as there is always a circulating bicarbonate concentration)

Back to: [Supplements](#) | [Health Outcomes](#)










# Serum Cobalamin

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trimethylglycine</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	Mixed evidence as to whether B12 is influenced with supplementation of betaine, but the higher quality study appears to show no effect (since the other study noted a decline in B12 in placebo).
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Serum levels of cobalamin (vitamin B12) do not appear to be influenced with supplementation of vitamin E.

Back to: [Supplements](#) | [Health Outcomes](#)




# Serum DHEA

Serum DHEA refers to the concentration of DHEA in the blood, a steroid hormone precursor. Increasing DHEA concentrations is thought to reduce some side-effects of aging and promote longevity.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dehydroepiandrosterone</a>	 Strong	<b>Very High</b> <a href="#">See all 13 studies</a>	Supplemental DHEA results in a reliable and significant increase in DHEA concentrations in the blood (both sulfated DHEAS and unsulfated DHEA)
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	Chromium supplementation does not appear to alter serum concentrations of DHEA or sulfated DHEA.
	<a href="#">Eurycoma Longifolia Jack</a>	-	- <a href="#">See study</a>	No significant changes in the sulfate form of DHEA (DHEA-S) is noted after twelve continual weeks of supplementation
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A slight increase has been detected in serum DHEA sulfate (13.2%) with 60 days of ashwagandha supplementation.
	<a href="#">Zinc</a>	-	- <a href="#">See study</a>	No significant influence on serum DHEA sulfate

Back to: [Supplements](#) | [Health Outcomes](#)



# Serum Folate

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	<i>Chronically</i> there are no changes to serum folate due to the body normalizing folate levels, but acute supplementation can reduce folate concentrations in serum sharply for a short time.
	<a href="#">Red Clover Extract</a>	-	- <a href="#">See study</a>	There do not appear to be any significant changes to circulating folate seen with supplementation of red clover extract.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Serum folate does not appear to be modified with supplementation of vitamin E.

Back to: [Supplements](#) | [Health Outcomes](#)

# Serum Magnesium

Serum magnesium is the blood levels of magnesium. While an acute spike results after magnesium supplementation, blood levels tend to be a poor predictor of magnesium status (erythrocytes are better) but are associated with the ability of magnesium to reduce blood pressure.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Magnesium</a>	 Notable	<b>High</b> <a href="#">See all 6 studies</a>	Has the capacity to increase serum magnesium stores, but this is somewhat unreliable and may be dependent on the person being deficient in magnesium prior to supplementation

Back to: [Supplements](#) | [Health Outcomes](#)

# Serum Platelets

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Anethum graveolens</a>	 Minor	- <a href="#">See study</a>	12 week supplementation of dill, yet not 8 weeks for some reason, was able to reduce blood platelet concentrations in obese persons with metabolic syndrome (600mg dill)
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	Supplementation of 60mg saffron was able to reduce platelet counts in serum following eight weeks of exposure (increasing in magnitude until study cessation at 26 weeks) thought to be related to toxicity.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	Despite any possible interactions with the platelets (in regards to preventing their clotting), there are no alterations in the overall amount of platelets.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The overall content of platelets is not affected by supplementation of vitamin E.
	<a href="#">Ashwagandha</a>	-	- <a href="#">See study</a>	There is no significant change in total platelet count seen with 30 days supplementation of the basic root extract in otherwise healthy persons
	<a href="#">Curcumin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No apparent effect.

# Serum T3

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Iodine</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	500µg iodine or higher (in addition to the diet) appears to have a slight suppressive effect on thyroid function in otherwise healthy persons
	<a href="#">Vitamin E</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	The majority of evidence has failed to find any significant interaction with vitamin E supplementation and circulating levels of T3.
	<a href="#">7-Keto DHEA</a>	 Minor	- <a href="#">See study</a>	There appears to be an increase in circulating T3 hormone levels (active thyroid hormone) when 7-keto is paired with a caloric restriction and exercise (relative to placebo with the same regimen)
	<a href="#">Zinc</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The decline in T3 hormone levels during prolonged exercise is abolished with supplementation of zinc.
	<a href="#">Ashwagandha</a>	 Notable	- <a href="#">See study</a>	There was a notable increase in people with subclinical hypothyroidism in one study that used 600 mg of a standardized extract (5% withanolides) for 8 weeks.
	<a href="#">Ketogenic diet</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There was a similar reduction to a control group in one study without much of a difference in weight change, and a more notable reduction in an uncontrolled study where the participants lost a modest amount of weight.
	<a href="#">Dehydroepiandrosterone</a>	-	- <a href="#">See study</a>	No significant influence on serum T3 has been noted








Back to: [Supplements](#) | [Health Outcomes](#)

# Serum T4

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Iodine</a>	 Minor	<b>Moderate</b> <a href="#">See all 5 studies</a>	Supplemental iodine above 500µg appears to be capable of suppressing T4 to a small degree whereas lower doses are not associated with such an effect.
	<a href="#">Vitamin E</a>	-	<b>High</b> <a href="#">See all 5 studies</a>	Although one study noted a decrease with 600 IU, future studies in similar persons with multiple doses have failed to replicate these observations.
	<a href="#">Zinc</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	The decline in T4 hormone levels during prolonged exercise is abolished with supplementation of zin
	<a href="#">7-Keto DHEA</a>	-	- <a href="#">See study</a>	Insufficient evidence to support alterations in T4, with no changes detected when it is measured
	<a href="#">Ashwagandha</a>	 Notable	- <a href="#">See study</a>	There was a notable increase in people with subclinical hypothyroidism in one study that used 600 mg of a standardized extract (5% withanolides) for 8 weeks.
	<a href="#">Ketogenic diet</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	In one study, T4 declined less in the ketogenic group than a control group, there was no difference after 2 years in another study where the ketogenic group lost considerably more weight, and there was a small increase in one uncontrolled 6-week study.
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Severity of Sickness










LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Andrographis paniculata</a>	 Notable	- <a href="#">See study</a>	Seems to have more efficacy against nasal, ear, and throat symptoms of sickness. Lack of evidence and comparisons to reference drugs limits strong evidence
	<a href="#">Garlic</a>	 Minor	- <a href="#">See study</a>	Despite the potent efficacy in reducing the occurrence of sickness, the actual severity of symptoms is only modestly reduced with garlic.
	<a href="#">Pelargonium sidoides</a>	 Minor	- <a href="#">See study</a>	In children with upper respiratory tract infections (URTIs), supplementation is effective in reducing symptom severity.
	<a href="#">Colostrum</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	While in children with IgA deficiency colostrum appeared to reduce the severity of sickness when supplemented at the onset of sickness, this same effect was not observed in adults with suspected upper respiratory viral infections.

Back to: [Supplements](#) | [Health Outcomes](#)















# Sex Hormone Binding Globulin

Sex Hormone Binding Globulin (SHBG) is a globulin that is able to bind to and sequester steroid hormones such as estrogen, testosterone, and DHT. Its elevations are associated with less activity of the steroid hormones.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dehydroepiandrosterone</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	There appears to be a decrease in SHBG concentrations in older individuals who also experience an increase in androgen/estrogen concentrations, but this is similarly unreliable
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	There are no significant alterations in the circulating levels of SHBG seen with red clover supplementation.
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	In women with PCOS, chromium supplementation does not alter SHBG concentrations in serum.
	<a href="#">Eurycoma Longifolia Jack</a>	-	- <a href="#">See study</a>	No significant influence on circulating SHBG over the course of 12 weeks in otherwise healthy men.
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No significant influence on SHBG levels
	<a href="#">Maca</a>	-	- <a href="#">See study</a>	
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant alterations in SHBG levels following supplementation
	<a href="#">Tribulus terrestris</a>	-	- <a href="#">See study</a>	No significant change in men taking 1.5 g/d of a Tribulus extract










# Sexual Function

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Maca</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An improvement in SSRI induced sexual dysfunction has been noted with Maca supplementation
	<a href="#">Saffron</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	SSRI related sexual dysfunction in both men and women appears to be reduced with coingestion of saffron, although saffron does not alter the efficacy of SSRI therapy on depression.
	<a href="#">Velvet Antler</a>	-	- <a href="#">See study</a>	No discernible effect on sexual function in older, healthy men.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Vitamin E does not appear to influence sexual function or satisfaction in otherwise healthy persons with no known sexuality disorders.
	<a href="#">Ashwagandha</a>	 Notable	- <a href="#">See study</a>	In one pilot study, ashwagandha supplementation improved ratings of pain, lubrication, orgasm, satisfaction, arousal, and the total score on the Female Sexual Function Index.
	<a href="#">Saw Palmetto</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	While observational and smaller interventional studies have found some effect, larger and longer trials have not.
	<a href="#">Tribulus terrestris</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	There may be a small improvement in overall sexual function in premenopausal women with libido taking 2.25 g/d of a tribulus extract. Effects on postmenopausal women are unclear.

Back to: [Supplements](#) | [Health Outcomes](#)





# Skeletal Muscle Atrophy

Skeletal muscle atrophy (catabolism) is the loss of lean muscle tissue over time or during inactivity. Compounds that increase atrophy can accelerate this loss while compounds that reduce atrophy are known as 'anti-catabolic'.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Clenbuterol</a>	 Minor	- <a href="#">See study</a>	The rate of muscle protein breakdown is decreased with clenbuterol usage
	<a href="#">Ephedrine</a>	 Minor	- <a href="#">See study</a>	May decrease the rate of skeletal muscle breakdown over time
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The study that noted a prevention of lean mass loss did not distinguish between water and muscle, while the study that measured muscle mass specifically failed to find a protective effect during limb immobilization.
	<a href="#">Medium-chain triglycerides</a>		- <a href="#">See study</a>	Was able to attenuate the rate of skeletal muscle loss during a hypocaloric diet in obese persons; unknown if this applies to lean persons and may be related to ketone production.

Back to: [Supplements](#) | [Health Outcomes](#)

# Skin Dryness

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin A</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Skin dryness is a side-effect of topical application in some persons, increasing in frequency with higher doses; it is mild in severity and, while it may be associated with flaking, rarely causes dropouts.
	<a href="#">Coconut Oil</a>	 Notable	- <a href="#">See study</a>	Appears to be comparable to mineral oil, which is usually the active control in these studies.

Back to: [Supplements](#) | [Health Outcomes](#)




# Skin Elasticity

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cocoa Extract</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A slight increase in skin elasticity has been noted with oral flavanol supplementation in women, noted in the temple but not arm.
	<a href="#">Pycnogenol</a>	 Minor	- <a href="#">See study</a>	An improvement in skin elasticity has been noted with Pycnogenol supplementation
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	- <a href="#">See study</a>	Topical application of nicotinamide (not niacin) appears to increase elasticity of skin
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin A</a>	-	- <a href="#">See study</a>	
	<a href="#">Boswellia serrata</a>	 Minor	- <a href="#">See study</a>	Not enough evidence to evaluate potency, but an increase in skin elasticity has been noted with topical boswellia
	<a href="#">Raspberry Ketone</a>	 Minor	- <a href="#">See study</a>	Appears to benefit the skin when topically applied as part of a cream
	<a href="#">Rose Hip</a>	 Minor	- <a href="#">See study</a>	One study found 3 g of oral rose hip powder improved cheek skin elasticity over 8 weeks.

# Skin Moisture

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Coconut Oil</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be comparable to mineral oil, the active control
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Oral supplementation of cocoa flavanols does not appear to significantly influence skin hydration when compared to placebo.
	<a href="#">Ginkgo biloba</a>	 Notable	- <a href="#">See study</a>	The lone study assessing the effects of topical application of 0.3% ginkgo flavonoids in a cream noted a 28% increase in skin moisture content over 28 days, a highly relevant increase.
	<a href="#">Moringa oleifera</a>	 Minor	- <a href="#">See study</a>	Topical application of a 3% moringa leaf cream for three winter months appeared to increase skin hydration status relative to control cream.
	<a href="#">Rose Hip</a>	 Minor	- <a href="#">See study</a>	3 g of oral rose hip powder over 8 weeks increased the moisture content of the skin of the forehead.
	<a href="#">Salvia hispanica</a>	 Minor	- <a href="#">See study</a>	An increase in skin moisture has been noted with topical chia seed application (4% of the solution being chia oil)
	<a href="#">Saffron</a>	-	- <a href="#">See study</a>	Acute topical application of a cream containing saffron has failed to cause significant changes in skin moisture content over the course of seven hours.

# Skin Pigmentation













LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin A</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	- <a href="#">See study</a>	In subjects with hyperpigmented spots, topical application of nicotinamide cream (5%) was able to reduce the discoloration more than control.








Back to: [Supplements](#) | [Health Outcomes](#)



# Skin Quality




Skin quality tends to refer to an overall evaluation on (facial) skin parameters such as tightness, moisture content, and clearness from acne. Supplements that improve skin quality can be taken orally or topically as a cream.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin A</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Bladderwrack</a>	 Minor	- <a href="#">See study</a>	Limited evidence supports its efficacy, difficult to assess potency due to no reference drug.
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	Oral ingestion of high dose catechins (1400mg) has been shown to improve skin quality
	<a href="#">Pycnogenol</a>	 Minor	- <a href="#">See study</a>	Oral supplementation of standard doses of procyanidins can improve skin quality in elderly women, other demographics not tested
	<a href="#">Red Clover Extract</a>	 Minor	- <a href="#">See study</a>	There appears to be an overall increase in skin texture and moisture content associated with oral supplementation of the isoflavones, and a depigmenting activity should also apply (not yet shown in humans)
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Overall skin quality appears to be increased with topical application of nicotinamide containing creams and lotions; mildly but beneficially influencing most measured parameters.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Orthosiphon stamineus</a>	 Notable	- <a href="#">See study</a>	The lone study in women with oily skin noted that improvements in skin quality with a 2% <i>orthosiphon</i> cream were greater than the reference drug of 1% zinc gluconate on all parameters.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alpha-Lipoic Acid</a>	 Minor	- <a href="#">See study</a>	May improve skin quality when topically applied
	<a href="#">Boswellia serrata</a>	 Minor	- <a href="#">See study</a>	Somewhat effective, not enough evidence to fully evaluate potency.
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	Skin smoothness/roughness is beneficially influenced with topical application of ginkgo flavonoids at 0.3%
	<a href="#">Hemp Protein</a>	-	- <a href="#">See study</a>	No significant influence of topical hemp oil on skin quality

Back to: [Supplements](#) | [Health Outcomes](#)














# Sleep Latency

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Valeriana officinalis</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	There are isolated cases of minor reductions in the time taken to fall asleep (improvements in sleep latency), but the majority of the evidence and the only meta-analysis to date suggest no significant influence of valerian.
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	One study found no apparent effect of an algal DHA supplement on children.
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	






Back to: [Supplements](#) | [Health Outcomes](#)

# Sleep Quality

Sleep quality refers to the restfulness of a nights sleep and how well it rejuvenates the body, and does not necessarily reflect sleep length.












LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	An increase in sleep quality can occur following treatment of conditions known to impair sleep quality (insomnia and tinnitus)
	<a href="#">Valeriana officinalis</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	At least according to an overall meta-analysis on the topic, valerian does not appear to be much greater than placebo for aiding sleep in otherwise healthy persons. This may differ in persons with insomnia but that is not yet tested adequately
	<a href="#">Ginkgo biloba</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There may be an increase in sleep efficiency (reduced waking during the night) without any apparent enhancement of REM sleep, this seems to be related to the flavonoid portion
	<a href="#">Glycine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	In persons undergoing mild sleep deprivation, 3g of glycine an hour prior to sleep is able to increase sleep quality and improve self-reports of fatigue and well being the next day due to better sleep.
	<a href="#">Kava</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Sleep quality is enhanced via reducing the symptoms of anxiety which impair sleep
	<a href="#">Lavender</a>	 Minor	<b>Very High</b> <a href="#">See all 7 studies</a>	Improvements in sleep quality have been noted in insomniacs and persons with generalized anxiety disorder mostly, with some limited evidence suggesting this may benefit generally healthy persons. Both oral supplements and aromatherapy are implicated in these benefits, but overall the quality of the studies is somewhat less than desirable. The parameters that see benefit are less waking up during the night and reduction in insomniac symptoms
	<a href="#">Magnesium</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An improvement in sleep quality has been noted in persons with poor sleep quality, no studies assess persons with normal sleep function

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Marijuana</a>	 Minor	- <a href="#">See study</a>	Secondary to some benefits to physical symptoms in the treatment of multiple sclerosis, sleep quality was noted to be increased relative to placebo.
	<a href="#">Ornithine</a>	 Minor	- <a href="#">See study</a>	The increase in sleep quality was secondary to reducing the adverse effects of excessive drinking, and was measured by self-report
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	Has been noted to improve the first-night effect (impaired sleep when sleeping in a new location) after a week of supplementation; possibly of interest to frequent travellers
	<a href="#">Red Clover Extract</a>	 Minor	- <a href="#">See study</a>	In post menopausal women, there appears to be an increase in self reported sleep quality that was quite notable, reaching 70-73 points of improvement on a 0-100 rating scale (placebo at 10-16) although this needs to be replicated (independently) to assure quality of data.
	<a href="#">Sceletium tortuosum</a>	 Minor	- <a href="#">See study</a>	There appeared to be a barely significant increase in self-reported sleep quality with Kanna usage compared to placebo when taken prior to a cognitive test.
	<a href="#">Theanine</a>	 Minor	- <a href="#">See study</a>	Sleep quality has been noted to improve in persons with hyperactivity during sleep (such as ADHD). Sleep duration and latency do not appear to be affected
	<a href="#">Dehydroepiandrosterone</a>	-	- <a href="#">See study</a>	No significant influence on sleep quality in menopausal women
	<a href="#">Echinacea</a>	-	- <a href="#">See study</a>	Likely related to the inefficacy in treating symptoms, but no significant ability to aid in sleep quality during or without sickness
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	No significant influence on sleep quality
	<a href="#">Yamabushitake</a>	-	- <a href="#">See study</a>	No significant effects on sleep quality

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pyrroloquinoline quinone</a>	 Minor	- <a href="#">See study</a>	An improvement in sleep quality has been noted in persons with impaired sleep; it is not certain how PQQ affects persons with normal sleep cycles
	<a href="#">Fish Oil</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	One study found a considerable improvement in people with major depression, but two studies found no apparent effect in people who weren't depressed. Much more research is needed, but it's plausible that omega-3 can improve sleep quality insofar as it improves depression.
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitex agnus castus</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Sperm Count

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Zinc</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	An increase in sperm count has been noted in infertile men who also had low testosterone; it was ineffective in infertile men with normal testosterone
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Saffron</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Saffron supplementation does not appear to be effective in increasing sperm count in infertile men.
	<a href="#">Tribulus terrestris</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Only one uncontrolled trial has found an increase in sperm count with supplementation of 2.25 g of Tribulus extract daily. One study found an increase but it wasn't significant, and one that used 6g of tribulus root didn't find a significant increase compared with control.
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be an increase in sperm count in normozoospermic men with infertility consuming 5g ashwagandha daily, with more potency seen in men who self-identify as stressed. A high potency extract has also shown increases
	<a href="#">D-Aspartic Acid</a>	 Minor	- <a href="#">See study</a>	Improvements of sperm count in infertile men have been noted to vary between 50-100% increases over baseline.
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	A somewhat minor increase in sperm count (16.2%) is seen with supplementation of ginger (amount undisclosed) to infertile men over three months.







Back to: [Supplements](#) | [Health Outcomes](#)

# Sperm Quality

Sperm quality refers to the structural capacity of sperm cells and their ability to fertilize (and does not necessarily reflect sperm count nor motility). Supplements that improve sperm quality are thought to be pro-fertility agents.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-Carnitine</a>	 Notable	<b>High</b> <a href="#">See all 5 studies</a>	Carnitine at 3g daily appears to increase sperm quality mostly related to sperm morphology; there are mixed effects on sperm motility
	<a href="#">Mucuna pruriens</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be an increase in seminal quality and oxidative parameters following 3-month ingestion of Mucuna pruriens, which is thought to be secondary to correcting the hypothalamic-pituitary-testes axis
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Appears to enhance seminal quality (in a fairly general sense) but needs more studies against reference drugs to properly assess potency.
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	There may be some beneficial influences on the sperm quality, but they have not been reliably reported
	<a href="#">Eurycoma Longifolia Jack</a>	 Minor	- <a href="#">See study</a>	May increase parameters of sperm quality and volume.
	<a href="#">Shilajit</a>	 Minor	- <a href="#">See study</a>	Sperm quality (and thought to apply to fertility) has been improved with Shilajit supplementation
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Saffron</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	While preliminary evidence suggested benefit to seminal morphology, the best evidence to date does not support a role for saffron in enhancing seminal quality.






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Tribulus terrestris</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The increase in sperm quality seen with 6g tribulus root has failed to outperform placebo in infertile men. Another uncontrolled study that used 2.25 g per day of a tribulus extract found significant improvements in multiple measures of semen/sperm quality.
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	
	<a href="#">D-Aspartic Acid</a>	 Minor	- <a href="#">See study</a>	Appears effective, needs to be compared against a comparator.
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	Seminal viability (40.7%) and normal morphology () is increased in infertile men given ginger.

Back to: [Supplements](#) | [Health Outcomes](#)

# Stomach Ulcers

Stomach ulceration (either by NSAID, alcohol, or bacterial infection) can be treated with oral supplementation or antioxidants. The cause of ulceration may be relevant in the treatment thereof, with a curative substance for alcohol not necessarily benefitting *heliobacter pylori* infections.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	A notable protective effect against both aspirin and <i>heliobacter pylori</i> induced stomach ulceration is seen with melatonin either alone or with other agents (such as omeprazole) nearing absolute protection in some instances. Although less researched, these may apply to duodenal ulcers as well
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No significant influence on stomach ulceration detected

Back to: [Supplements](#) | [Health Outcomes](#)

# Stress












Stress (particularly distress) is excessive stimulation of the body's resources that eventually manifests negative symptoms such as fatigue or depression. Several supplements, such as adaptogens, are thought to reduce the development of stress.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ashwagandha</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Ashwagandha appears to significantly reduce the symptoms of stress and its comorbidities (fatigue, temporary cognitive impairment, etc.) as well as biomarkers such as cortisol.
	<a href="#">Centella asiatica</a>	 Minor	- <a href="#">See study</a>	There appears to be stress reducing properties associated with supplementation of this herb at 1g daily, although they may be secondary to anxiety reduction.
	<a href="#">Eurycoma Longifolia Jack</a>	 Minor	- <a href="#">See study</a>	Supplementation of eurycoma in stressed persons appears to reduce subjective perceptions of stress.
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	Self-reported stress in distressed women given fish oil supplementation appears to be reduced
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	There may be some anti-stress properties of ginkgo biloba supplementation when a single dose is taken prior to a stress test
	<a href="#">Krill Oil</a>	 Minor	- <a href="#">See study</a>	Stress as a side-effect of PMS has been reduced with supplemental krill oil
	<a href="#">L-Tyrosine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Perceptions of stress during acute stressors, as well as related symptoms of acute stress, appear to be reduced following tyrosine ingestion
	<a href="#">Melissa officinalis</a>	 Minor	- <a href="#">See study</a>	A decrease in self-reported stress has been reported with lemon balm

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Phosphatidylserine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible stress reducing effects that appear independent of cortisol and heart rate, although these effects are unreliable
	<a href="#">Rhodiola Rosea</a>	 Minor	- <a href="#">See 2 studies</a>	Might be effective, but the reduction in stress (rating scale) appears to be less than that seen with fatigue
	<a href="#">Rose Essential Oil</a>	 Minor	- <a href="#">See study</a>	Self-reported ratings of stress are reduced with rose oil inhalation
	<a href="#">Soy lecithin</a>	 Minor	- <a href="#">See study</a>	May reduce perceived stress during stressful situations
	<a href="#">Dehydroepiandrosterone</a>	-	- <a href="#">See study</a>	No significant influence on parameters of stress
	<a href="#">Lavender</a>	-	- <a href="#">See study</a>	No significant influences on stress
	<a href="#">Theanine</a>	-	- <a href="#">See study</a>	
	<a href="#">Kava</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Possible antistress effects of kava that requires larger studies
	<a href="#">Pyrroloquinoline quinone</a>	 Minor	- <a href="#">See study</a>	A reduction in self-reported stress has been noted after 8 weeks in persons with self-reported sleep problems; this study also noted improvements in sleep

# Stroke Recovery Rate




















After a stroke, the next few weeks and months are associated with a gradual improvement and recovery of cognitive capacities to near pre-stroke levels. Some supplements have been noted to accelerate this recovery or help survivors of stroke.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	-	- <a href="#">See study</a>	Although there is some scattered evidence to support the role of ginkgo in stroke recovery rates, the best evidence currently available does not find a significant therapeutic benefit.
	<a href="#">Astragalus membranaceus</a>	 Minor	- <a href="#">See study</a>	Not remarkably effective, but does confer some protective and cognitive promoting effects following acute stroke.
	<a href="#">Phenylpiracetam</a>	 Minor	- <a href="#">See study</a>	Symptoms (cognitive and physical) seen after a stroke appear to be more rapidly recovered with daily usage of phenylpiracetam than with placebo
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	In zinc deficient persons who recently suffered a stroke, supplementation of zinc appears to accelerate the rate of recovery.
	<a href="#">Nefiracetam</a>	-	- <a href="#">See study</a>	No significant influence on the recovery rates from stroke has been noted.
	<a href="#">Piracetam</a>	-	- <a href="#">See study</a>	Ineffective in the one study where stroke recovery rate was assessed
	<a href="#">Vitamin B<sub>12</sub></a>	 Minor	- <a href="#">See study</a>	A slight improvement in verbal learning associated with 1,000mcg of B12 supplementation in persons with lacunar stroke, according to at least one pilot study

# Subjective Well-Being


Self-reported ratings of well being and happiness; either in general (euphoria-inducing compound) or reducing a disease state to enough of a degree to make the persons relatively happy.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Kava</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	The increase in well being appears to be quite large, but secondary to reducing anxiety. At least one study has noted that, in healthy persons subject to a minor stressor (testing) that kava enhanced cheerfulness
	<a href="#">Rhodiola Rosea</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Increases in subjective well being and contentment in fatigued or stressed individuals appears to be greater than other supplements.
	<a href="#">Creatine</a>	 Minor	<b>Moderate</b> <a href="#">See all 11 studies</a>	The influence of creatine on well being and general happiness is usually dependent on it treating a disease state; there does not appear to be a <i>per se</i> benefit to well being.
	<a href="#">Ganoderma lucidum</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Subjective well being increases in disease states where other symptoms (seen as adverse) are decreased; an inherent increase of well being is uncertain.
	<a href="#">Ginkgo biloba</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	An improvement in mood has been noted in persons with cerebral injury, but not in otherwise healthy middle aged persons.
	<a href="#">Panax ginseng</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	There appears to be an increase in well being and happiness in persons who either have a disease state treated (ie, better glycemic control in diabetes or less erectile dysfunction) and this may also apply to acute usage of 400mg panax ginseng during acute mental stress. In an unstressed and healthy person, panax ginseng is unlikely to have benefit
	<a href="#">Pelargonium sidoides</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Alongside improvements in sickness comes improved well being and vitality associated with supplementation over placebo.
	<a href="#">Dehydroepiandrosterone</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	No significant influence on well being is noted with DHEA <i>per se</i> , although it may come secondary to other changes occurring during DHEA supplementation (such as improved functionality in elderly persons)

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Studies assessing well being in otherwise healthy persons or those with disease states not associated with depression have failed to find any interaction with vitamin E supplementation.
	<a href="#">Modafinil</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Subjective well being and enjoyment during cognitive tasks appears to be significantly improved modafinil supplementation, and this is notable as it has been noted to occur in otherwise healthy persons taking modafinil for nootropic purposes
	<a href="#">Nigella sativa</a>	 Notable	- <a href="#">See study</a>	Although only based on one study, in men with central obesity and a wide variety of general health complaints supplementation has outright abolished all measured complaints such as loss of libido, high appetite, pain, and forgetfulness.
	<a href="#">Ashwagandha</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	An improvement in well being has been noted secondary to reducing anxiety symptoms.
	<a href="#">Blueberry</a>	 Minor	- <a href="#">See study</a>	A slight improvement in subjective well being and happiness has been noted in elderly persons given blueberries over a few weeks as a daily supplement.
	<a href="#">Caffeine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May increase subjective well being and mood state, possibly secondary to reducing fatigue or from catecholamines
	<a href="#">Chlorogenic Acid</a>	 Minor	- <a href="#">See study</a>	Chlorogenic acid may have a mood enhancing effect independent of caffeine
	<a href="#">D-Serine</a>	 Minor	- <a href="#">See study</a>	Reported sadness during cognitive testing appears to be reduced with D-serine supplementation when compared to placebo
	<a href="#">Ephedrine</a>	 Minor	- <a href="#">See study</a>	Appears to increase well being acutely following the first doses of ephedrine, secondary to the psychostimulatory effects
	<a href="#">Eurycoma Longifolia Jack</a>	 Minor	- <a href="#">See study</a>	In otherwise normal men supplementing eurycoma, an increase in overall quality of life and happiness is seen (alongside increases in libido)


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	An improvement in well being has been noted in nondepressed and nonelderly obese persons given fish oil supplementation to a small magnitude.
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	An increase in well being has been noted in unhealthy persons given green tea catechins
	<a href="#">L-Tyrosine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There appears to be an increase in subjective well being during stress when tyrosine is preloaded (perhaps secondary to the antistress effects of tyrosine), although this is not overly reliable
	<a href="#">Maca</a>	 Minor	- <a href="#">See study</a>	An increase in well being has been noted
	<a href="#">Mucuna pruriens</a>	 Minor	- <a href="#">See study</a>	An increase in well being has been noted to be secondary to a reduction in cortisol
	<a href="#">Peppermint</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Although mood state during cognitive testing is unaffected, quality of life is increased when headaches or abdominal pain is being treated with peppermint oil.
	<a href="#">Pycnogenol</a>	 Minor	- <a href="#">See study</a>	An increase in well being and mood has been noted in students undergoing academic testing, which correlated with improved test scores
	<a href="#">Pyruvate</a>	 Minor	- <a href="#">See study</a>	An increase in well being may occur secondary to weight loss, although due to the complications in weight loss with pyruvate this may not be feasible
	<a href="#">Vitamin C</a>	 Minor	- <a href="#">See study</a>	An improvement in mood has been noted in hospitalized persons
	<a href="#">Zinc</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although the evidence is mixed currently, zinc has been previously associated with an improvement in mood state and has mechanisms by which it can work. It likely has a small but positive influence.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Arginine</a>	-	- <a href="#">See study</a>	In persons with peripheral artery disease (intermittent claudication), despite improving symptoms as assessed by a treadmill walking test there does not appear to be an improvement in self-reported well being
	<a href="#">Centella asiatica</a>	-	- <a href="#">See study</a>	Acute ingestion of this herb in otherwise healthy individuals does not appear to alter subjective mood parameters.
	<a href="#">Cocoa Extract</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	While one study using high dose flavanols (250-500mg) found increased well being in subjects during cognitive testing, other studies using dark chocolate have failed to notice any benefit to self-reported well being compared to placebo.
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See 2 studies</a>	Insufficient evidence to support an inherent contentment boosting effect, as the lone study was confounded with weight loss.
	<a href="#">L-Carnitine</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant changes in subjective well being associated with carnitine intake
	<a href="#">N-Acetylcysteine</a>	-	- <a href="#">See study</a>	
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on subjective well being noted
	<a href="#">Red Clover Extract</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Two differing studies have noted either no improvement of well being in menopausal women, or a significant (near 80%) improvement; more research is needed to refine the actual effect, but the study noting no effect is considered higher quality.
	<a href="#">Ruscus aculeatus</a>	-	- <a href="#">See study</a>	Despite improving symptoms of chronic venous insufficiency in the afflicted persons, supplementation failed to lead to an increase in quality of life relative to placebo.
	<a href="#">Sceletium tortuosum</a>	-	- <a href="#">See study</a>	While there are isolated instances of increased well-being, they do not appear to occur frequently enough in otherwise healthy adults to cause a whole-group increase in well-being.



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Theanine</a>	-	- <a href="#">See study</a>	No significant influence on subjective well being and mood state per se
	<a href="#">Black Cohosh</a>	 Minor	- <a href="#">See study</a>	May increase well being in those with menopause if a reduction of symptoms occurs.
	<a href="#">Boswellia serrata</a>	 Minor	- <a href="#">See study</a>	Increase in well-being was likely secondary to reducing joint pain from osteoarthritis
	<a href="#">Bromelain</a>	 Minor	- <a href="#">See study</a>	Minor improvements in well being secondary to reducing joint pain
	<a href="#">Lavender</a>	 Minor	- <a href="#">See study</a>	An increase in well being has been noted with lavender aromatherapy, possible secondary to the relaxing effects
	<a href="#">Vinpocetine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in well being has been noted to be secondary to the reduced rate of cognitive decline
	<a href="#">D-Ribose</a>	-	- <a href="#">See study</a>	
	<a href="#">Iron</a>	-	- <a href="#">See study</a>	There was a small, nonsignificant improvement in one study of people with moderately low iron levels but not anemia. This isn't a systematic assessment of studies.

# Swimming Performance

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	-	<b>Moderate</b> <a href="#">See all 17 studies</a>	No reliable improvement in swimming performance. Acute supplementation prior to short sprint tests (50-100 m) may reduce time by around 2%.



Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Acute Bronchitis

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pelargonium sidoides</a>	 Strong	<b>Very High</b> <a href="#">See all 11 studies</a>	The standard dose of EPs7630 appears to greatly reduce all symptoms of acute bronchitis, being able to outright eliminate symptoms in as little as 60% of patients (cough and hoarseness related) and up to 95% of persons (sputum and rhonchi related) with efficacy within three days increase over two weeks.












Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Acute Mountain Sickness






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Notable	<b>Moderate</b> <a href="#">See all 7 studies</a>	There appears to be a quite potent yet quite unreliable reduction in symptoms of AMS when ginkgo is taken at 240mg daily for 1-5 days prior to a trip up a mountain. The reason for this variability is not known.

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Alzheimer's









LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Cognitive impairment that is associated with Alzheimer's appears to be significantly reduced with ginkgo supplementation.
	<a href="#">Alpha-GPC</a>	 Notable	- <a href="#">See study</a>	At least among nutraceuticals, Alpha-GPC appears to significantly improve cognition in persons with Alzheimer's disease at the dose of 1,200mg when taken as a daily supplement over a prolonged period of time.
	<a href="#">Vitamin E</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Very high dose Vitamin E supplementation in the form of $\alpha$ -tocopherol (2,000 IU) appears to reduce the rate of cognitive decline in persons with moderate to severe Alzheimer's Disease with a potency comparable to selegiline. Currently no research on lower (more standard) doses, and there appears to be no influence on minor AD or cognitive decline not characterized by AD.
	<a href="#">Saffron</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Mixed evidence on the efficacy of saffron, but it is possible that supplementation could delay an increase in symptoms without a therapeutic effect.
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	Despite the benefit seen with high dose DHA in cognitive decline, there does not appear to be a proven significant protective effect in persons already with Alzheimer's
	<a href="#">Inositol</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	The preliminary evidence at this point in time using <i>scyllo</i> -inositol has failed to find a significant therapeutic benefit and <i>myo</i> -inositol shows a nonsignificant trend for improvement based on preliminary evidence.
	<a href="#">Oxiracetam</a>	-	- <a href="#">See study</a>	The lone study in persons with Alzheimer's rather than organic cognitive decline has failed to find any benefit associated with supplementation

# Symptoms of Autism

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">N-Acetylcysteine</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">L-Carnitine</a>	 Notable	- <a href="#">See study</a>	High dose carnitine (50mg per kilogram) appears to reduce some symptoms of autism as assessed by rating scales; notable due to the rarity of a supplement towards this goal
	<a href="#">Ginkgo biloba</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	The better conducted trial and parts of the preliminary evidence suggest no therapeutic benefit of ginkgo biloba in the treatment of autism
	<a href="#">Inositol</a>	-	- <a href="#">See study</a>	The preliminary evidence on autism does not support a role for inositol therapy

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Benign Prostatic Hyperplasia











LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pygeum</a>	 Minor	- <a href="#">See study</a>	Urinary complications with Benign prostatic hyperplasia appear to be reduced with Pygeum supplementation in the range of 19-23% (including nocturia, residual urine volume, and urinary flow rate).
	<a href="#">Saw Palmetto</a>	 Minor	- <a href="#">See all 7 studies</a>	Smaller, shorter trials have noted some effect, but larger, longer trials have noted no effect. The most recent Cochrane meta-analysis also notes no effect.
	<a href="#">Stinging Nettle</a>	 Minor	- <a href="#">See study</a>	Appears to increase urinary flow rate in persons with benign prostatic hyperplasia
	<a href="#">Garlic</a>	 Minor	- <a href="#">See study</a>	A decrease was noted alongside improvements in prostatic size, but a magnitude of reduction was not given for evaluation.

Back to: [Supplements](#) | [Health Outcomes](#)









# Symptoms of Bipolar Disorder

Bipolar disorder (a condition characterized by manic and depressive phases) may be influenced by various nutritional supplements, although one of the two phases may be unaffected while the other benefits.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	There appears to be reduced depressive symptoms in bipolar disorder when the depression is of a large magnitude (similar to the anti-depressant effects of fish oil in general). There may not be a reduction in depressive symptoms with lower severity depression (a trend to increase has been noted) and manic symptoms do not appear to be significantly influenced.
	<a href="#">CDP-choline</a>	-	- <a href="#">See study</a>	The lone study in persons with bipolar disorder was one investigating addiction, and when measuring symptoms of bipolar disorder they failed to find any influence of supplementation on symptoms.
	<a href="#">Inositol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although a beneficial effect cannot fully be ruled out, the best evidence currently available does not support a significant role for inositol in the treatment of bipolar disorder.
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	A modest reduction compared with placebo has been noted in one study which needs to be replicated.
	<a href="#">Chromium</a>	 Minor	- <a href="#">See study</a>	In persons with bipolar disorder given supplementation of chromium, benefits were only noted against depressive symptoms and while significant (statistically) were mild; manic symptoms were not affected.
	<a href="#">Uridine</a>	 Minor	- <a href="#">See study</a>	Depressive symptoms of bipolar disorder are fairly strongly reduced with uridine supplementation, but currently only open label studies are in existence








# Symptoms of Crohn's Disease

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	Possible reductions of symptoms associated with Crohns Disease
	<a href="#">Glutamine</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	A possible reduction of symptoms associated with Crohn's disease may occur, but this appears to be unreliable
	<a href="#">CBD</a>	-	- <a href="#">See study</a>	Used a relatively low dose of 10 mg, twice a day.
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Diabetic Neuropathy










Diabetic neuropathy is nerve pain associated with diabetes, and is commonly targeted to improve quality of life in diabetics.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alpha-Lipoic Acid</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Not yet compared to reference drugs, but it has been subject to a meta-analysis and appears to be more effective than other options for reducing nerve pain associated with diabetes. The lack of a reference comparison and some evidence suggesting no effect prevent a strong rating.
	<a href="#">Magnesium</a>	 Minor	- <a href="#">See study</a>	A reduction in symptoms associated with diabetic neuropathy has been noted with magnesium supplementation
	<a href="#">Curcumin</a>	 Minor	- <a href="#">See study</a>	One study noted a small reduction in symptoms, Much more evidence is needed.
	<a href="#">Sulbutiamine</a>	-	- <a href="#">See study</a>	Insufficient evidence to support a role in diabetic neuropathy associated with sulbutiamine supplementation

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Fibromyalgia

Fibromyalgia is a nonspecific pain disorder with currently unknown causes, although supplements are still being investigated for the purpose of reducing this pain.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Coenzyme Q10</a>	 Strong	<b>Very High</b> <a href="#">See all 5 studies</a>	CoQ10 appears to be quite strongly effective for reducing symptoms of fibromyalgia (strong rating may be retracted at a later time when other reference drugs arise)
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	Fibromyalgic symptoms are reduced with carnitine ingestion
	<a href="#">S-Adenosyl Methionine</a>	 Minor	- <a href="#">See study</a>	A decrease in soreness symptoms of fibromyalgia (with no apparent effect on force production) has been noted with S-AdoMe supplementation.
	<a href="#">Chlorella</a>	 Minor	- <a href="#">See study</a>	May have efficacy in reducing pain associated with fibromyalgia, but requires more evidence
	<a href="#">D-Ribose</a>	-	- <a href="#">See 2 studies</a>	

Back to: [Supplements](#) | [Health Outcomes](#)





# Symptoms of Intermittent Claudication

Intermittent claudication is a disorder of blood flow that limits mobility, and some supplements that aid in blood flow are known to prolong walking time and quality of life in persons with this condition.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	There appears to be reduced symptoms of intermittent claudication with ginkgo supplementation, although it seems to vary significantly from one individual to another and despite some persons experiencing large benefit the overall 'net' benefit is relatively minor.
	<a href="#">L-Carnitine</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Symptoms of intermittent claudication are notably reduced with L-Carnitine supplementation (the rate of improvement over time, as assessed by walking distance, seems to be doubled; ie. from 40% to 60% or 60% to 90%) and associated with the Propinyl-L-Carnitine form (found in the supplement GPLC). The role of propinoic acid cannot be ruled out at this time, and studies have note used basic L-carnitine or ALCAR
	<a href="#">Alpha-Lipoic Acid</a>	 Notable	- <a href="#">See study</a>	The reduction of claudication symptoms appears to be fairly potent with ALA supplementation, although there is not a large body of evidence overall.
	<a href="#">Arginine</a>	 Minor	- <a href="#">See 2 studies</a>	Both an improvement and an impairment have been noted on walking distance in persons with intermitten claudication, and it is not exactly known why this occurs (may be related to time, with prolonged usage being impairing)
	<a href="#">Policosanol</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Possible benefits to intermittent claudition, 'notable' rating is being held until it is replicated outside of Cuba

Back to: [Supplements](#) | [Health Outcomes](#)















# Symptoms of Irritable Bowel Syndrome







LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Peppermint</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	In persons with IBS, supplementation of peppermint oil appears to reliably and effectively reduce abdominal pain for as long as it is taken. Benefits are no longer seen two weeks after supplement cessation and abdominal pain is the only symptom notably reduced.
	<a href="#">Pycnogenol</a>	 Minor	- <a href="#">See study</a>	One open-label study (lacks blinding for investigators or subjects and no placebo-control) indicated that pycnogenol efficacy for IBS symptoms was on par with some of the common pharmacological antispasmodic agents. Although the study design was weak, other studies demonstrating that pycnogenol has a relaxing effect on intestinal smooth muscle tissue lends some increased confidence that it may also be effective as a treatment for IBS.

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Menopause

Symptoms of menopause (climacteric symptoms) are issues that affect women around the time of menopause (both before and after, such as hot flashes or disturbed sleep. Supplements that reduce these symptoms on self-report surveys are thought to help women cope with menopause.











LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Black Cohosh</a>	 Minor	<b>Very High</b> <a href="#">See all 13 studies</a>	Although there appears to be some benefit over placebo, more recent studies note that the magnitude of benefit is much less than previously though (in the past, a false positive occurred when unblinded studies noted remarkable benefits with black cohosh; the placebo effect appears to be quite potent in regards to menopause)
	<a href="#">Red Clover Extract</a>	-	<b>Moderate</b> <a href="#">See all 12 studies</a>	While isolated studies have noted some benefits, the best evidence at this moment in time (Independently conducted and larger, better conducted, studies) tend to note no significant influence on the main climacteric symptoms such as hot flashes with supplementation.
	<a href="#">Panax ginseng</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	May decrease some symptoms associated with menopause, mostly related to libido, but this is unreliable.
	<a href="#">Pueraria mirifica</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	The effects of Pueraria Mirifica on menopausal symptoms appear to be potent, with one study suggesting comparable efficacy to estrogen replacement therapy itself. Requires more robust evidence, however.
	<a href="#">Maca</a>	 Minor	- <a href="#">See study</a>	One study noted reduced symptoms associated with menopause; libido was possibly independently increased, but anxiety and depression appear to also be reduced.
	<a href="#">Pycnogenol</a>	 Minor	- <a href="#">See study</a>	A decrease in some symptoms of menopause has been noted with Pycnogenol supplementation
	<a href="#">Valeriana officinalis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Limited evidence suggests efficacy in the treatment of menopausal symptoms with valerian extract, with one study measuring benefits to hot flash frequency and the other insomniac symptoms.
	<a href="#">Yamabushitake</a>	 Minor	- <a href="#">See study</a>	Menopausal symptoms have been reduced, but this was mostly due to the reported antidepressant and anxiolytic properties of the mushroom.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dehydroepiandrosterone</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Decreases in menopausal symptoms have been noted with DHEA supplementation
	<a href="#">Royal Jelly</a>	 Minor	- <a href="#">See study</a>	A decrease in symptoms related to menopause have been noted with Royal Jelly ingestion
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	One study found no apparent effect on hot flashes.
	<a href="#">Pueraria lobata</a>	-	- <a href="#">See study</a>	No significant influence detected on symptoms of menopause (as assessed by rating scales)

Back to: [Supplements](#) | [Health Outcomes](#)












# Symptoms of Multiple Sclerosis

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Marijuana</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	While cognitive symptoms have not yet been found to be treated with marijuana usage, physical symptoms and some parameters secondary to them (fatigue, energy, sleep quality) may be benefited with marijuana usage.
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	Some symptoms associated with multiple sclerosis are noted to be reduced with carnitine ingestion.
	<a href="#">Modafinil</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Memory impairment in multiple sclerosis may be attenuated with supplementation of modafinil (250mg armodafinil), although other cognitive impairments associated with MS do not appear significantly affected.
	<a href="#">Ginkgo biloba</a>	-	- <a href="#">See study</a>	Supplementation of ginkgo has failed to significantly benefit the cognition of persons with multiple sclerosis
	<a href="#">Vitamin B2</a>	-	- <a href="#">See study</a>	Symptoms of multiple sclerosis do not appear to be affected by supplementation of 10mg riboflavin relative to placebo.
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See study</a>	There appears to be a lower relapse rate in multiple sclerosis patients when Vitamin D is present at higher concentrations





Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of OCD

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Inositol</a>	 Minor	- <a href="#">See study</a>	Although a small decrease, there appear to be benefits to OCD symptoms associated with high dose inositol supplementation
	<a href="#">Valeriana officinalis</a>	 Minor	- <a href="#">See study</a>	The lone study assessing the effects of valerian and OCD found a benefit with treatment relative to placebo.
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	High dose zinc (220mg twice daily) may have a minor additive role to standard OCD therapy (fluoxetine), although the small magnitude of benefit and the high dose used suggest that it is not the best supplemental option.
	<a href="#">N-Acetylcysteine</a>	-	- <a href="#">See study</a>	
	<a href="#">Ashwagandha</a>	 Notable	- <a href="#">See study</a>	A reduction has been found in one study, which needs replication.

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Orthostatic Hypotension

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Marijuana</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	While not affecting all users, some new users may experience symptoms of orthostatic hypotension associated with a global <i>decrease</i> of blood flow to the brain (rather than the expected increase)
	<a href="#">Yohimbine</a>	 Minor	- <a href="#">See study</a>	Orthostatic hypotension (light headedness upon rapidly standing up) appears to have reduced symptoms associated with yohimbine usage




Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Osteoarthritis

Symptoms of osteoarthritis (OA) tend to reflect mobility, joint pain and stiffness, as well as quality of life in persons with OA. Supplements that benefit these symptoms according to self-reported rating scales are prophylactic.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Glucosamine</a>	 Minor	<b>Very High</b> <a href="#">See all 19 studies</a>	There appears to be a small decrease in osteoarthritis symptoms associated with glucosamine (as sulfate, not hydrochloride) which is somewhat unreliable but consistently outperforms placebo on meta-analyses. The magnitude of reduction, however, is somewhat minor but still comparable to acetaminophen
	<a href="#">Boswellia serrata</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	The reduction observed with Boswellia serrata for pain and other symptoms of osteoarthritis are more profound than other supplements including that of glucosamine (reference), but study robustness is limited by industry influence.
	<a href="#">Curcumin</a>	 Notable	<b>Very High</b> <a href="#">See all 12 studies</a>	Supplementation with curcumin resulted in a notable, consistent reduction in osteoarthritis symptoms across many studies. Of the osteoarthritis symptoms, it seems to be most effective for pain and physical function, while it's less clear if it reduces stiffness. Caution should be taken due to many of the studies not being high quality.
	<a href="#">S-Adenosyl Methionine</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Decreases in symptoms of osteoarthritis appear to be reduced to similar levels with SAME as with pharmaceuticals like Naproxen, although SAME requires a longer period of time for efficacy to occur
	<a href="#">Ginger</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	There may be a small reducing effect, but it does not appear to be greater than the active control of Ibuprofen
	<a href="#">Rose Hip</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be benefit to osteoarthritis symptoms with supplementation of rose hip relative to placebo, with benefits more apparent over longer periods of supplementation.
	<a href="#">Pycnogenol</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	The preliminary evidence at this point in time (promising and independent, but limited) support the usage of pycnogenol in reducing all symptoms of osteoarthritis, reaching up to a halving of symptoms but requiring 90 days for effects to occur

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Minor	- <a href="#">See study</a>	Functionality seems to improve, although not to a remarkable degree.
	<a href="#">Methylsulfonylmethane</a>	 Minor	- <a href="#">See study</a>	A decrease in symptoms of osteoarthritis has been noted and seems to be somewhat comparable in potency to <a href="#">glucosamine</a> sulfate
	<a href="#">Microlactin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to reduce pain symptoms and improve functionality associated with osteoarthritis, with one study suggesting comparable efficacy to <a href="#">glucosamine</a> sulfate
	<a href="#">Type-II Collagen</a>	 Minor	- <a href="#">See 2 studies</a>	Limited research suggests a reduction in pain, but the studies available don't provide evidence for an improvement in the other symptoms.
	<a href="#">Bromelain</a>	-	- <a href="#">See study</a>	No significant influence on symptoms of osteoarthritis when tested
	<a href="#">Feverfew</a>	-	- <a href="#">See study</a>	No significant interaction between supplemental Feverfew and osteoarthritic symptoms
	<a href="#">Stinging Nettle</a>	-	- <a href="#">See all 4 studies</a>	Highly difficult to assess the efficacy of stinging nettle on osteoarthritic symptoms due to a wide degree of variance in study methodology
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	
	<a href="#">Ashwagandha</a>	 Notable	- <a href="#">See study</a>	In one study in people with knee joint pain, both 250 and 500 mg of a standardized extract (10% withanolide glycosides minimum) seemed to improve pain, physical function, stiffness, and swelling notably, with the 500 mg dose being more effective. Much more research is needed.
	<a href="#">Guggul</a>	 Minor	- <a href="#">See study</a>	Possible reductions in the symptoms associated with osteoarthritis

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Harpagophytum procumbens</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Symptoms of osteoarthritis appear to be reduced following ingestion of devil's claw, but insufficient robust evidence exists
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	No significant influence on the symptoms of osteoarthritis

Back to: [Supplements](#) | [Health Outcomes](#)



# Symptoms of PMS

Premenstrual symptom (PMS) appears to be affected by a few supplements, with continual usage of these supplements able to reduce the symptoms of PMS including bloat and emotional instability.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitex agnus castus</a>	 Strong	<b>Very High</b> <a href="#">See all 11 studies</a>	It appears to be quite potent in numerous placebo-controlled trials, and studies are overwhelmingly in agreement. However, the studies are generally at notable risk for bias, and publication bias was found in one meta-analysis from 2017, suggesting the possibility that its efficacy is inflated.
	<a href="#">Melissa officinalis</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Studies are supportive a notable improvement in symptoms, largely psychological but even physical. However, the current research is of fairly low quality and largely conducted by many of the same authors, thus more research is needed.
	<a href="#">Saffron</a>	 Notable	- <a href="#">See study</a>	One study assessing saffron on PMS symptoms noted that supplementation caused 76% of the participants to have more than a halving of overall symptoms (placebo reaching 8%), suggesting relatively potent effects.
	<a href="#">Calcium</a>	 Minor	<b>Very High</b> <a href="#">See all 10 studies</a>	Studies are largely in agreement that calcium supplementation in high doses (500-1000 mg daily) can reduce the symptoms of PMS, largely when it comes to affective and pain-related outcomes.
	<a href="#">Ginkgo biloba</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appear to be reductions in the symptoms of PMS associated with ginkgo supplementation, the degree of reduction being reported at up to 23.68%
	<a href="#">Inositol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	<i>Myo</i> -inositol supplementation appears to be effective in reducing dysphoric and depressive symptoms during PMS
	<a href="#">Krill Oil</a>	 Minor	- <a href="#">See study</a>	PMS and its symptoms (breast tenderness, stress, and irritability mostly) have been reduced with krill oil supplementation
	<a href="#">Magnesium</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A moderate reduction in symptoms of PMS has been noted with magnesium supplementation in most trials, though evidence quality tends to be low and it's difficult to have great confidence in the results. One study found an apparent additive effect of magnesium and vitamin B6.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Valeriana officinalis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Abdominal pain associated with menstruation appears to be reduced relative to placebo in women who complained of above average levels of pain during their menstrual cycles. Another study found a notable reduction in PMS symptoms broadly, though much more research is needed to confirm this.
	<a href="#">Vitamin B6</a>	 Minor	<b>Very High</b> <a href="#">See all 10 studies</a>	Many studies have found reductions in symptoms, both physical and psychological, with doses of 50 to 100 mg daily. While most studies have found a reduction, the reduction in symptoms tends to be small, and evidence quality is frequently low. As usual with a vitamin, any potential benefits will depend on the degree of deficiency.
	<a href="#">Vitamin D</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Most studies have found a decrease in general symptoms when given to women with vitamin D deficiency, some finding notable reductions and some finding small reductions. It's currently not known why studies differ, and more research is needed.
	<a href="#">Vitamin B1</a>	 Strong	<b>Very High</b> <a href="#">See 2 studies</a>	One study found a staggering reduction in symptoms with 100 mg of vitamin B1 daily. It wasn't clear what the baseline vitamin B1 status of the participants was. Another study found a notable benefit of 100 mg daily over 2 months, and also that the improvement was additive with calcium, with the combination being notably more potent than either separately. Much more research is needed.
	<a href="#">Curcumin</a>	 Notable	- <a href="#">See study</a>	One study found a notable reduction in symptoms from 200 mg of curcumin daily, taking one week before until 3 days after menstrual bleeding. Much more research is needed to confirm curcumin's efficacy.
	<a href="#">Ginger</a>	 Notable	- <a href="#">See study</a>	One study found a notable improvement in mood, physical, and behavioral symptoms with 500 mg of ginger daily. This study needs replication.
	<a href="#">Royal Jelly</a>	 Notable	- <a href="#">See study</a>	One study found a notable reduction with 1000 mg, but it needs replication.
	<a href="#">Zinc</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Preliminary research suggests notable improvements in psychological symptoms, and possibly physical symptoms, but more detailed evaluation of specific physical symptoms is needed.
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	One study found ambiguous results and didn't provide meaningful evidence to evaluate chromium's efficacy.











LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>Low</b> <a href="#">See all 3 studies</a>	<p>Mixed evidence. One study found a notable improvement in a wide range of symptoms with 360 mg of EPA and 240 mg of DHA daily, and the other didn't find notable differences with a similar dose. The positive study gave omega-3 for the entire first month and then for 10 days before and after menstruation in the following two months, while the negative study only gave fish oil for 10 days during each cycle. Thus, it's possible that the positive study is more reflective of higher omega-3 levels. More research is needed. A third study found a small improvement that was statistically significant with 40 mg daily for 3 months.</p>
	<a href="#">Vitamin E</a>	-	<b>Low</b> <a href="#">See all 3 studies</a>	<p>Mixed evidence. Some research suggests an improvement from daily supplementation, but another study didn't, and the negative study was more reliable. More research is needed.</p>

Back to: [Supplements](#) | [Health Outcomes](#)




# Symptoms of Parkinson's Disease

Parkinson's Disease is a form of dementia characterized by cell loss (usually dopamine producing cells) in a brain region called the substantia nigra, resulting in movement abnormalities. Some supplements may reduce movement and cognitive impairment of this state.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Mucuna pruriens</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	Possible symptoms reduction in Parkinson's Disease related to the L-DOPA content and theorized (but not proven) peripheral dopamine decarboxylase inhibitor; this is notable as a L-DOPA and carbidopa combination supplement is the reference for reducing parkinson's symptoms
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	
	<a href="#">D-Serine</a>	 Minor	- <a href="#">See study</a>	Preliminary evidence suggests that the standard dosage of D-Serine can alleviate some symptoms of Parkinson's disease
	<a href="#">Ketogenic diet</a>	 Minor	- <a href="#">See study</a>	In one study, nonmotor and motor daily living experienced improved more in a ketogenic group, while the other group improved more in the motor examination and motor complications. More research is needed.

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Peripheral Vascular Disease




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Garlic</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although there may theoretically be some benefit with higher doses, currently the available evidence has not found a protective effect with 900mg of raw garlic extract.
	<a href="#">Cocoa Extract</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There is mixed evidence as to suggest benefits to peripheral vascular disease when cocoa (40-50g dark chocolate) is ingested acutely before walking tests.

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Rheumatoid Arthritis

Rheumatoid arthritis is an autoimmune form of arthritis that is associated with increases in inflammation and edema at joints, usually the more flexible and softer joints such as the hands. Some supplements target rheumatoid arthritis.















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Krill Oil</a>	 Notable	- <a href="#">See study</a>	500mg Krill oil reduced symptoms of osteoarthritis up to 30%, which is a pretty significant effect size that requires future research to investigate.
	<a href="#">Andrographis paniculata</a>	 Minor	- <a href="#">See study</a>	Reductions in joint pain and swelling were somewhat minimal in magnitude
	<a href="#">Hesperidin</a>	 Minor	- <a href="#">See study</a>	Preliminary evidence suggests a mild decrease in symptoms of rheumatoid arthritis seen with high (3,000mg) supplemental doses of G-hesperidin.
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	A modest reduction in symptoms of rheumatoid arthritis (9%) has been noted with ingestion of the seeds
	<a href="#">Rose Hip</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be mild benefits to joint symptoms in rheumatoid arthritis when rose hip is supplemented over the course of months, and these benefits may be seen at low (5g) dosages. Short term supplementation has not shown much benefit.
	<a href="#">Type-II Collagen</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Limited research suggested an improvement in pain, swelling, stiffness, and tenderness.
	<a href="#">Alpha-Lipoic Acid</a>	-	- <a href="#">See study</a>	No significant interaction between ALA supplementation and symptoms of rheumatoid arthritis
	<a href="#">Feverfew</a>	-	- <a href="#">See study</a>	Preliminary evidence has failed to find an effect of Feverfew on reducing symptoms of Rheumatoid arthritis





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Velvet Antler</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of velvet antler on symptoms of rheumatoid arthritis
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A small improvement in one study and a large improvement in another. Much more evidence is needed.

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Schizophrenia

Schizophrenia is a disorder with positive (hallucinations and delusions) and negative (anhedonia and depression) symptoms alongside slight cognitive impairment, and some supplements are currently being investigated to aid in these symptoms.





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Sarcosine</a>	 Notable	<b>High</b> <a href="#">See all 4 studies</a>	While the magnitude of benefit seen with Sarcosine is comparable to both D-serine and glycine, it appears to require a much lower (more practical) dose than does glycine and is more reliable than D-serine
	<a href="#">D-Serine</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	D-Serine supplementation is able to reduce symptoms of schizophrenia (more efficacy on negative and cognitive symptoms rather than positive) in a dose-dependent manner between 30-120mg/kg, but possibly due to the unreliable increases in blood D-serine its benefits are also unreliable
	<a href="#">Inositol</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	At the dose that showed anti-depressant effects, inositol failed to improve any symptoms associated with schizophrenia.
	<a href="#">Ginkgo biloba</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Symptoms of schizophrenia appear to be reduced with supplementation of ginkgo biloba (EGb-761 at 240-360mg daily), although all studies currently use ginkgo alongside standard antipsychotic therapy. It appears effective as an add-on
	<a href="#">Glycine</a>	 Minor	- <a href="#">See study</a>	Is able to decrease symptoms of schizophrenia similar to both D-serine and sarcosine, but this occurs at an impractically high dose (minimum effective dose being around 800mg/kg bodyweight)
	<a href="#">Theanine</a>	 Minor	- <a href="#">See study</a>	Activation and anxiety symptoms of schizophrenia appear to be reduced with high dose (400mg) Theanine
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	The addition of low dose chromium to antipsychotic therapy in schizophrenic persons failed to augment the efficacy of treatment.
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	One study found an improvement but needs to be replicated.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">CBD</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	These trials don't look at impact on development of schizophrenia, but of symptom reduction in those with schizophrenia.
	<a href="#">Folic Acid</a>	 Minor	- <a href="#">See study</a>	One small study found a decrease in a non-standard measure of symptoms of schizophrenia in people with folate deficiency when using methylfolate.

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of Systemic Lupus Erythematosus

Systemic Lupus Erythematosus (SLE or just Lupus) is an autoimmune disorder associated with outbreaks on skin tissue (and other immunological side-effects). Some supplements are thought to improve quality of life in persons with lupus.








LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Notable	<b>Very High</b> <a href="#">See all 7 studies</a>	The decrease in symptoms of lupus as assessed by SLAM-R and BILAG at times reaches up to 50% symptom reduction and tends to exceed 30%, and the first pilot studies noted remission in all subjects (although they have not been replicated since). Oddly, benefit may come from lower doses (160mg EPA and 140mg DHA) with higher doses conferring less benefit
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See study</a>	Inflammatory symptoms associated with Lupus appear to be reduced with Vitamin D ingestion

Back to: [Supplements](#) | [Health Outcomes](#)



# Symptoms of Tinnitus













Tinnitus (pathological ringing of the ears) is known to be affected by various supplements, which may reduce the degree tinnitus disturbs sleep or impairs quality of life.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Melatonin</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Melatonin may reduce symptoms associated with tinnitus in persons who suffer from the state, as assessed by questionnaire
	<a href="#">Ginkgo biloba</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	There does not appear to be a significant and reliable therapeutic effect of ginkgo on tinnitus symptoms, although limited evidence suggests that if tinnitus is a side-effect of cognitive decline that it may be attenuated.
	<a href="#">Zinc</a>	 Minor	- <a href="#">See study</a>	Zinc supplementation at higher levels (50mg) appears to be able to reduce subjective symptoms of tinnitus in most persons supplemented with zinc.
	<a href="#">Magnesium</a>	 Minor	- <a href="#">See study</a>	Decreased symptoms associated with tinnitus have been noted following magnesium supplementation

Back to: [Supplements](#) | [Health Outcomes](#)






# Symptoms of Ulcerative Colitis

Ulcerative colitis (UC) is a subset of inflammatory bowel disease (the other being Crohn's Disease), and supplements that are thought to be preventative or therapeutic to UC are those that increase remission chance or prolong the time until symptoms arise.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Andrographis paniculata</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to be quite effective based on preliminary evidence, with one study being comparable to sustained release mesalazine in potency.
	<a href="#">Colostrum</a>	 Notable	- <a href="#">See study</a>	One study using a solution of colostrum (as enema) in persons with distal colitis noted a large suppression of symptoms and inflammation relative to placebo. No studies available on oral supplementation of colostrum for inflammatory bowel diseases.
	<a href="#">Curcumin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Symptoms of ulcerative colitis reduced with supplementation of curcumin
	<a href="#">Psyllium</a>	 Notable	- <a href="#">See study</a>	The potency of psyllium husk in controlling remission of ulcerative colitis is comparable to the reference drug mesalamine.
	<a href="#">Vitamin E</a>	 Notable	- <a href="#">See study</a>	Rectal administration of high doses of vitamin E appears to be effective in reducing symptoms of ulcerative colitis, with preliminary research noting remission in the majority of patients.
	<a href="#">CBD</a>	 Minor	- <a href="#">See study</a>	Remission rates, however, were not impacted at all.

Back to: [Supplements](#) | [Health Outcomes](#)






# Symptoms of Vitiligo

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Picrorhiza kurroa</a>	 Notable	- <a href="#">See study</a>	The one study using <i>picrorhiza kurroa</i> for the purpose of treating vitiligo noted that after daily usage that 27% of the subjects experienced complete resolution of symptoms (curative effect)
	<a href="#">Ginkgo biloba</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Egb-761 appears to be associated with skin repigmentation in persons suffering from vitiligo, although the degree of this effect is fairly modest
	<a href="#">Polypodium leucotomos</a>	-	- <a href="#">See study</a>	Currently no evidence to support a role of <i>polypodium leucotomos</i> in the treatment of vitiligo

Back to: [Supplements](#) | [Health Outcomes](#)

# Symptoms of the Common Cold






Symptoms of the common cold refer to the actual symptoms experienced during sickness, rather than the risk of developing URTIs or the length of sickness. Reducing symptoms of sickness tends to make the process to health more tolerable despite not actually affecting the healing rate.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Echinacea</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Insufficient evidence to support modification of symptoms of sickness
	<a href="#">Pelargonium sidoides</a>	 Notable	- <a href="#">See study</a>	All symptoms appear to be reduced with treatment of the standard dose of EPs7630. With symptom reduction after five days and the amount of persons with full resolution of symptoms being more than doubled relative to placebo.
	<a href="#">Garlic</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Similar to symptoms of sickness in general and the length of sickness, the therapeutic efficacy of garlic appears to be modest at best.

Back to: [Supplements](#) | [Health Outcomes](#)

# T Cell Count

T-lymphocytes are a subset of white blood cells that mediate active immunity, and their reduction with immunosuppressants precedes an increased risk of getting sick. Conversely, elevating T-cells is thought to support the immune system (but may aggravate autoimmune disorders).

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Although there is some evidence to suggest an immunosuppressive effect on T cells, most evidence suggest no significant effect. When the immunosuppression does occur, it is due to the EPA content
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	In otherwise healthy individuals, colostrum does not alter overall levels of T cells relative to baseline or control proteins.
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	There do not appear to be any significant influence on the overall count of T Lymphocytes (collectively referring to Th1 and Th2 cells) with hesperidin supplementation.
	<a href="#">Polypodium leucotomos</a>	-	- <a href="#">See study</a>	The increase in T cell count does not appear to be statistically significant, although a possibly relevant increase cannot be ruled out.
	<a href="#">Tinospora cordifolia</a>	-	- <a href="#">See study</a>	Overall concentrations of T-cells (including CD4+ Lymphocytes) do not appear to be significantly influenced

Back to: [Supplements](#) | [Health Outcomes](#)

# TNF-Alpha

Tumor necrosis factor alpha (TNF- $\alpha$ ) is a proinflammatory cytokine that is used as a marker of inflammation. Its reduction is thought to reflect a lesser state of inflammation in the body.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	May decrease TNF-a
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Insufficient evidence to support changes in TNFa, a biomarker of inflammation.
	<a href="#">Ganoderma lucidum</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A reduction in TNF-alpha levels have been noted in persons with elevated baseline TNF-alpha levels
	<a href="#">Garlic</a>	 Minor	- <a href="#">See 2 studies</a>	Decreases have been noted in inflammatory states (indicative of antiinflammatory effects) and increases seen in healthy persons; suggesting an immunomodulatory effect
	<a href="#">Japanese Knotweed</a>	 Minor	- <a href="#">See study</a>	A decrease in TNF-a has been noted following oral consumption of japanese knotweed
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	A significant decrease in circulating TNFa levels have been detected with resveratrol supplementation; linked to antiinflammatory effects of resveratrol
	<a href="#">Tetradecyl Thioacetic Acid</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in serum levels of TNF-a has been noted with supplemental TTA
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See study</a>	A decrease has been noted over time relative to placebo, of relatively minor magnitude

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Zinc</a>	 Minor	- <a href="#">See 2 studies</a>	A zinc deficiency is associated with reduced circulating TNF- $\alpha$ concentrations, which are normalized upon zinc sufficiency.
	<a href="#">Blueberry</a>	-	- <a href="#">See study</a>	No significant changes in TNF- $\alpha$ concentrations
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	The circulating biomarker of inflammation TNF- $\alpha$ does not appear to be altered in response to supplementation from cocoa flavanols.
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	TNF- $\alpha$ is not affected by supplementation of colostrum.
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	
	<a href="#">L-Carnitine</a>	-	- <a href="#">See study</a>	No significant influence on TNF- $\alpha$
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Punicic Acid</a>	-	- <a href="#">See study</a>	No significant influence on serum TNF- $\alpha$ levels
	<a href="#">Rose Hip</a>	-	- <a href="#">See study</a>	At this point in time, there is no evidence to suggest modifications in the circulating levels of TNF- $\alpha$ relative to control.
	<a href="#">Stinging Nettle</a>	-	- <a href="#">See study</a>	No apparent effect on circulating TNF- $\alpha$ at baseline (may reduce TNF- $\alpha$ secretion from proinflammatory signals, see inflammation)

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant influence on TNF-α concentrations following supplementation of betaine to persons with fatty liver.
	<a href="#">Vitamin B3 (Niacin)</a>	-	- <a href="#">See study</a>	No significant influence of niacin supplementation on circulating TNF-α concentrations.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	TNF-α does not appear to be influenced with supplementation of vitamin E relative to placebo.
	<a href="#">Curcumin</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	A small reduction is possible, but much more evidence is needed.
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	No apparent effect in one study.
	<a href="#">Perilla Oil</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)





# Testosterone












The manly man hormone, testosterone is the most well known androgen that mediates androgenic processes such as muscle building, fat loss, some aspects of cognition and hair loss in some persons; important in puberty, it is sought after for its muscle building potential in men.







LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dehydroepiandrosterone</a>	 Notable	<b>High</b> <a href="#">See all 18 studies</a>	There appears to be an increase in testosterone following DHEA supplementation, but the <b>vast</b> majority of literature is in menopausal women (where testosterone contributes to libido). There is variability in the results, and DHEA is unreliable in increasing testosterone, but this unreliability extends to all demographics and subjects (with limited evidence of DHEA increasing testosterone in all studies including youthful athletes, which are less studied).
	<a href="#">Alcohol</a>	 Minor	- <a href="#">See all 9 studies</a>	There appears to be a time-dependent influence on testosterone, with acute doses of alcohol increasing testosterone secondary to creating energy influx in the liver (small enough of an increase to be 'somewhat' effective but may contribute to libido) whereas abuse is known to reduce testosterone levels more notably. The acute increase in testosterone is thought to be related to spikes in libido
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Testosterone may be increased in infertile men (who have a reduction in testosterone) and men undergoing strength training, but there is currently no evidence to suggest an inherent testosterone boosting effect in otherwise normal men.
	<a href="#">Caffeine</a>	 Minor	<b>High</b> <a href="#">See all 4 studies</a>	A very small (usually 12%) increase is noted in trained athletes consuming caffeine above 250mg prior to exercise, this may be dependent on exercise as studies without exercise fail to find alterations in testosterone. This increase is unlikely to lead to significant testosterone-like effects
	<a href="#">Creatine</a>	 Minor	<b>High</b> <a href="#">See all 6 studies</a>	Degree of testosterone spike is not overly notable, although it appears to be present
	<a href="#">Zinc</a>	 Minor	<b>High</b> <a href="#">See all 5 studies</a>	Both chronic/excessive exercise as well as a zinc deficiency are associated with abnormally low testosterone concentrations, and in these states supplementation of zinc increases testosterone. There is no inherent increase in testosterone with zinc if either of those two conditions are not met
	<a href="#">Fenugreek</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although there is limited evidence to support an increase in testosterone, more evidence than not denies such an increase

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">HMB</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence of acute usage on testosterone levels
	<a href="#">Maca</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No significant influences on testosterone in any tested demographic
	<a href="#">Red Clover Extract</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	The majority of evidence has suggested no significant influence of red clover supplementation on the testosterone concentrations in postmenopausal women
	<a href="#">Tribulus terrestris</a>	-	<b>High</b> <a href="#">See all 8 studies</a>	In otherwise healthy males, testosterone is not influenced with supplementation of <i>tribulus terrestris</i> . There may be an increase in infertile men, but this is weak. There may be a small effect in postmenopausal women with low libido, however, the difference wasn't statistically significant.
	<a href="#">Velvet Antler</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Repeated trials have failed to find an increase in testosterone associated with velvet antler supplementation
	<a href="#">Coenzyme Q10</a>	 Minor	- <a href="#">See study</a>	Not the largest increase, and was in infertile men; may not apply to fertile men.
	<a href="#">Coleus forskohlii</a>	 Minor	- <a href="#">See study</a>	Increase of testosterone observed in men not overly potent and is highly variable.
	<a href="#">D-Aspartic Acid</a>	 Minor	- <a href="#">See all 3 studies</a>	There appears to be an increase in testosterone in most subjects acutely (6-12 days), and while this may persist to the tune of 30-60% in infertile men it is reduced to baseline within a month in otherwise healthy men with normal testosterone at baseline. However, high doses also seem to decrease free testosterone and total testosterone in resistance trained men.
	<a href="#">Licorice</a>	 Minor	<b>Moderate</b> <a href="#">See all 6 studies</a>	There appears to be a testosterone reduction associated with intake of licorice above 500mg, but the magnitude of this reduction is quite variable and there is no robust information on the topic
	<a href="#">Mucuna pruriens</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in testosterone is seen in infertile men. It is unsure if this increase in testosterone occurs in fertile and otherwise healthy men

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Panax ginseng</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May increase testosterone in infertile men, has also failed in fertile men to influence testosterone; likely a mere antioxidative effect in damaged testicles
	<a href="#">Royal Jelly</a>	 Minor	- <a href="#">See study</a>	A small increase in testosterone has been noted with 3g Royal Jelly for 6 months in older men and women, no studies in youth currently and practical significance of such a small increase unknown
	<a href="#">Shilajit</a>	 Minor	- <a href="#">See study</a>	A 23.5% increase has been noted in infertile men, it is not certain if this applies to fertile men.
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See study</a>	An increase in testosterone has been noted in men with 3,332 IU of Vitamin D over the course of a year
	<a href="#">7-Keto DHEA</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in testosterone following 7-keto supplementation.
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	Secretion of testosterone the day surrounding an exercise trial are not influenced by alanylglutamine any differently than water.
	<a href="#">Arachidonic acid</a>	-	- <a href="#">See study</a>	
	<a href="#">Arginine</a>	-	- <a href="#">See study</a>	No significant influence on circulating testosterone concentrations
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Beta-Alanine</a>	-	- <a href="#">See study</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	Testosterone is not affected by chromium in women with PCOS. Currently no evidence in otherwise healthy men.
	<a href="#">Chrysin</a>	-	- <a href="#">See study</a>	Has failed to increase testosterone levels in one study.
	<a href="#">Colostrum</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	While one study noted a preservation of testosterone circadian rhythm during a five day cycling race (where testosterone tends to flatline), other studies have failed to find any influence on basal testosterone concentrations.
	<a href="#">Ecdysteroids</a>	-	- <a href="#">See study</a>	No alterations noted in serum testosterone associated with ecdysterone consumption
	<a href="#">Eurycoma Longifolia Jack</a>	-	<b>Moderate</b> <a href="#">See all 3 studies</a>	Although the protective effects of tongkat ali on the testicles and the profertility effects may result in a slight increase in testosterone in infertile men and the adaptogenic effects may cause a preservation of testosterone in stressed men, there is no evidence in otherwise healthy and unanxious men.
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	No detectable influence on testosterone levels in serum
	<a href="#">Gamma Oryzanol</a>	-	- <a href="#">See study</a>	No detectable influence on testosterone levels in otherwise healthy men
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No significant influence on testosterone levels following ingestion of Reishi
	<a href="#">Garcinia cambogia</a>	-	- <a href="#">See study</a>	Testosterone appears to be unaltered following ingestion of garcinia cambogia
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	No significant alterations in testosterone noted






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Green Tea Catechins</a>	-	- <a href="#">See study</a>	No significant influence on serum testosterone
	<a href="#">L-Carnitine</a>	-	- <a href="#">See study</a>	No significant alterations noted
	<a href="#">Magnesium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influences on testosterone levels noted with magnesium intake
	<a href="#">Nicotine</a>	-	- <a href="#">See study</a>	No significant influence on testosterone levels
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on testosterone noted with PS supplementation
	<a href="#">Saffron</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Neither aromatherapy nor oral supplementation appear to significantly influence testosterone concentrations in serum.
	<a href="#">Saw Palmetto</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	
	<a href="#">Stinging Nettle</a>	-	- <a href="#">See study</a>	No detectable influence on testosterone levels
	<a href="#">Boron</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There appears to be an interaction with Boron and testosterone in both genders, but it is seemingly unreliable
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	An increase in testosterone has been noted to reach 17.7% in infertile men given an undisclosed amount of ginger over three months.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Calcium</a>	-	- <a href="#">See study</a>	
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	No apparent effect in prostate cancer patients who had temporarily ceased androgen deprivation therapy.
	<a href="#">Grape Seed Extract</a>	-	- <a href="#">See study</a>	
	<a href="#">Punicalagins</a>	-	- <a href="#">See study</a>	No significant influence on testosterone levels in men at risk for prostate cancer
	<a href="#">Rubus coreanus</a>	-	- <a href="#">See study</a>	Despite the highly promising evidence in rats, there is no significant influence of the berries on testosterone levels of otherwise healthy men.
	<a href="#">Yohimbine</a>	-	- <a href="#">See study</a>	No significant influence on testosterone seen with yohimbine supplementation

Back to: [Supplements](#) | [Health Outcomes](#)






# Thermic Effect of Food

Some of the calories in the food you ingest will be used to digest, absorb, and metabolize the rest of the food, and some will be burned off as heat. This process is known under various names, notably diet-induced thermogenesis (DIT), thermic effect of food (TEF), and specific dynamic action (SDA).

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Green Tea Catechins</a>	-	- <a href="#">See study</a>	No significant influence on the thermic effect of food
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	Ginger has been found to increase the thermic effect of coingested food products
	<a href="#">Medium-chain triglycerides</a>	-	- <a href="#">See study</a>	Insufficient evidence to support alterations in the thermic effect of food compared to other oils
	<a href="#">Psyllium</a>	-	- <a href="#">See study</a>	Failed to modify the thermic effect of food.

Back to: [Supplements](#) | [Health Outcomes](#)








# Thromboxane B2

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	- <a href="#">See study</a>	An increase in thromboxane B2 is noted with fish oil supplementation
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	The production of thromboxane B2 does not appear to be significantly altered in type II diabetic adults.
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	No significant interactions with Thromboxane A2 are currently known.
	<a href="#">Grape juice</a>	-	- <a href="#">See study</a>	No apparent effect in one study.

Back to: [Supplements](#) | [Health Outcomes](#)



# Thyroid-Stimulating Hormone


















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Iodine</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	An increase in Thyroid Stimulating Hormone (TSH) occurs both at the doses that suppress T3 and T4 and sometimes at lower doses where thyroid function is not impaired
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	No significant influence of betaine on circulating TSH concentrations in serum.
	<a href="#">Ashwagandha</a>	 Notable	- <a href="#">See study</a>	There was a notable reduction in one study where patients with subclinical hypothyroidism took 600 mg of a standardized extract (5% withanolides) for 8 weeks. More research is needed.
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See 2 studies</a>	There was a small decrease in one study with substantial weight loss and a slight increase in one study with slight weight loss.
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)

# Total Cholesterol

Total Cholesterol is a phrase used to refer to all circulating cholesterol molecules, and is totalled by adding LDL-C, HDL-C and vLDL-C together. It is distinct from Triglycerides.











LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Garlic</a>	 Notable	<b>Very High</b> <a href="#">See all 17 studies</a>	Garlic supplementation or the raw garlic bulb appears to reduce cholesterol (total cholesterol, mostly due to LDL reductions) reliably and in the range of 10-15%
	<a href="#">Policosanol</a>	 Minor	<b>Moderate</b> <a href="#">See all 12 studies</a>	There may be some limited efficacy of policosanol on cholesterol (when excluding the studies from cuba, which are highly suspicious, there is still some scattered but unreliable evidence) whereas it does not appear to be potent in any way.
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 18 studies</a>	Similar to its actions on LDL and HDL individually, chromium does not appear to have a significant role in improving total cholesterol levels in type II diabetic subjects.
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 14 studies</a>	Although LDL-C may be decreased mildly, alterations in total cholesterol did not appear to occur; this may be due to unreliable but mild increases in HDL-C balancing out the numbers.
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See all 18 studies</a>	Although some decreases have been noted, overall there does not appear to be a significant clinical reduction in total cholesterol like there is with triglycerides
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See all 14 studies</a>	The majority of evidence does not support a role for reducing total cholesterol with supplementation of red clover extract, except perhaps a minor (less than 10%) reduction in overweight postmenopausal women.
	<a href="#">Berberine</a>	 Notable	<b>Very High</b> <a href="#">See all 4 studies</a>	Total cholesterol appears to be decreased by around $-0.58\text{mmol/L}$ (95% CI $-1.02$ to $-0.14$ ), which is not overly potent. The reduction is notable as if this mechanism is via PCSK9 inhibition then it would work very well with statin drugs.
	<a href="#">Ketogenic diet</a>	 Notable	<b>Very High</b> <a href="#">See all 16 studies</a>	Due to the increase in LDL, total cholesterol tends to be notably higher on a ketogenic diet than diets lower in fat, Even when ketogenic diets lead to more weight loss, total cholesterol and LDL still tend to be higher on ketogenic diets. Some of this effect is likely to be due to lower fiber intake, but some is inherent to diets high in palmitic acid.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Grape Seed Extract</a>	 Minor	<b>Low</b> <a href="#">See all 3 studies</a>	May decrease total cholesterol to an unremarkable degree when taken either at high (600mg) doses or in high risk populations; reductions in cholesterol are definitely not reliable
	<a href="#">Nigella sativa</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	Decreases have been sporadically noted in persons with high cholesterol initially, the cholesterol reductions are mild at best and do not affect persons with normal cholesterol.
	<a href="#">Olive leaf extract</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	There appears to be somewhat of a decrease in total cholesterol (mostly due to LDL) with olive leaf consumption; it is not overly reliable
	<a href="#">Psyllium</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Not unique to psyllium, but has the standard slight reduction of cholesterol that affects persons with high cholesterol. Not strong enough for monotherapy, can be a nice addition to more potent supplements or drugs
	<a href="#">Royal Jelly</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in total cholesterol is noted in the range of 10% associated with 50-100mg of Royal Jelly daily; the evidence this conclusion was drawn from (via a meta-analysis) is a bit lacklustre
	<a href="#">Spirulina</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	Reductions in cholesterol seen are positive, but not overly remarkable
	<a href="#">Trimethylglycine</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	One study noted a stasis in total cholesterol when placebo decreased (a relative increase). Reasons for this unknown and the data needs to be replicated.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">Creatine</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	No effect on overall cholesterol levels in otherwise healthy males.
	<a href="#">Curcumin</a>	-	<b>Very High</b> <a href="#">See all 28 studies</a>	More robust evidence suggests no significant influence of curcumin on total cholesterol, although there may be a potential role in people with elevated lipids.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Hesperidin</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	While there may be a slight decrease which only applies to those with very elevated cholesterol at baseline, in normal persons or those with mild to moderately high cholesterol there is no significant influence.
	<a href="#">L-Carnitine</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	For the most part, there does not appear to be a significant influence of carnitine on total cholesterol levels
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See all 13 studies</a>	No significant influence on total cholesterol seems apparent with vitamin C supplementation
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	There does not appear to be a significant influence of vitamin E supplementation on cholesterol levels whether used by a healthy person or one with elevated cholesterol.
	<a href="#">Ashwagandha</a>	 Notable	<b>High</b> <a href="#">See all 4 studies</a>	There is a decrease in total cholesterol of around 10% when ashwagandha (water extract of the roots) is ingested. It is notable, however, since this appears to occur in all persons regardless of whether they have high cholesterol or not
	<a href="#">Soy lecithin</a>	 Notable	- <a href="#">See study</a>	A decrease in total cholesterol, mostly due to LDL-C, has been noted to the magnitude of 40.66-42.00% which is astounding; requires replication.
	<a href="#">Artichoke Extract</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Despite its traditional usage, the decreases in cholesterol are not remarkable and are quite small in magnitude.
	<a href="#">Cissus quadrangularis</a>	 Minor	- <a href="#">See study</a>	Reductions in total cholesterol not overly remarkable relative to placebo and confounded with weight loss which occurred with cissus
	<a href="#">Citrullus colocynthis</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There may be a reduction in total cholesterol in those with high cholesterol, but it has a large degree of variability.










LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Dehydroepiandrosterone</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	There may be a decrease in cholesterol seen with DHEA in hypercholesterolemics, but it is not overly reliable
	<a href="#">Ecklonia cava</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A possible reduction in total cholesterol concentrations
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	Possible cholesterol reducing effects associated with ginger consumption
	<a href="#">Grapefruit</a>	 Minor	- <a href="#">See study</a>	A decrease in total cholesterol has been noted, this is confounded with weight loss (also occurred)
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	A decrease in cholesterol is noted with green tea catechins, but to a small degree
	<a href="#">Guggul</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible decrease in total cholesterol, but this is unreliable (and paired with a possible increase in LDL-C, this is likely to be not desirable)
	<a href="#">HMB</a>	 Minor	- <a href="#">See 2 studies</a>	One underpowered study noted an increase in total cholesterol while another suggested no significant effect. The exact effect of HMB on total cholesterol is not currently known and required replication
	<a href="#">Inositol</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	A small decrease in total cholesterol has been noted with supplementation of inositol in women with PCOS
	<a href="#">Irvingia gabonensis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in total cholesterol has been noted, but is confounded with weight loss
	<a href="#">Krill Oil</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in total cholesterol has been noted with krill oil, to a fairly normal degree (reduction is lessened from the remarkable increase in HDL)

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Microlactin</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	May be able to reduce total cholesterol by a moderate to low degree (8-10%), but requires more robust evidence
	<a href="#">Panax ginseng</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible cholesterol reducing effect, but appears unreliable
	<a href="#">Pterostilbene</a>	 Minor	- <a href="#">See study</a>	An increase in total cholesterol, attributable to LDL, has been seen in hypercholesterolemic adults given pterostilbene.
	<a href="#">Pyruvate</a>	 Minor	- <a href="#">See study</a>	A reduction in total cholesterol has been noted once in response to a high fat hypercaloric diet; practical relevance unknown
	<a href="#">Rooibos</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	May decrease total cholesterol to a small degree in unhealthy persons
	<a href="#">Rose Hip</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	A decrease in total cholesterol has been noted to a mild degree in obese persons, although a study in rheumatic patients without any abnormalities in cholesterol metabolism failed to find such an effect.
	<a href="#">Tetradecyl Thioacetic Acid</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	Possible reductions in total cholesterol with supplementation of TTA
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	<b>Moderate</b> <a href="#">See all 3 studies</a>	Total cholesterol is decreased with pharmacological doses of niacin owing to decreases of LDL and vLDL cholesterol, although the overall reduction is lesser due to a concomitant increase in HDL cholesterol.
	<a href="#">Zinc</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in cholesterol, due to LDL-C being reduced, seems to occur following oral supplementation of zinc in persons who are obese and likely zinc deficient
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See 2 studies</a>	

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Benfotiamine</a>	-	- <a href="#">See study</a>	No significant changes in total cholesterol
	<a href="#">Biotin</a>	-	- <a href="#">See study</a>	
	<a href="#">Blueberry</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on total cholesterol concentrations in the blood.
	<a href="#">Citrulline</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol concentrations
	<a href="#">Coenzyme Q10</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant or consistent effects on total cholesterol levels noted with CoQ10
	<a href="#">Conjugated Linoleic Acid</a>	-	- <a href="#">See study</a>	
	<a href="#">ECA</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol levels
	<a href="#">Ecdysteroids</a>	-	- <a href="#">See study</a>	In resistance trained males, no significant influence of ecdysterone supplementation on cholesterol
	<a href="#">Eleutherococcus senticosus</a>	-	- <a href="#">See study</a>	No significant influences yet known for total cholesterol
	<a href="#">Gamma Oryzanol</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations seen in total cholesterol levels with supplementation

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No significant alterations in total cholesterol observed with reishi ingestion
	<a href="#">Garcinia cambogia</a>	-	- <a href="#">See study</a>	No significant alterations seen in total cholesterol levels
	<a href="#">Grape juice</a>	-	<b>High</b> <a href="#">See all 9 studies</a>	Studies overall don't support an effect. One study that used a highly concentrated juice found a reduction, and it may be a dosing issue, but we don't know yet.
	<a href="#">Green Coffee Extract</a>	-	- <a href="#">See study</a>	No significant alterations in total cholesterol seen with green coffee extract
	<a href="#">Hibiscus sabdariffa</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant changes in total cholesterol noted
	<a href="#">Japanese Knotweed</a>	-	- <a href="#">See study</a>	No significant alterations in cholesterol seen with Japanese Knotweed ingestion
	<a href="#">Lactobacillus casei</a>	-	- <a href="#">See study</a>	
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol is observed following licorice ingestion
	<a href="#">Magnesium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on total cholesterol levels seen with magnesium supplementation
	<a href="#">Melatonin</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol levels



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nattokinase</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol seen with supplementation
	<a href="#">Phosphatidylcholine</a>	-	- <a href="#">See study</a>	
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence with PS supplementation on total cholesterol
	<a href="#">Punicic Acid</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol levels
	<a href="#">Resveratrol</a>	-	- <a href="#">See study</a>	No significant effect on total cholesterol levels
	<a href="#">Salvia hispanica</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on total cholesterol levels after inclusion of chia seeds into the diet
	<a href="#">Sea Buckthorn</a>	-	- <a href="#">See study</a>	Total cholesterol does not appear to be affected with supplementation of sea buckthorn in otherwise healthy persons.
	<a href="#">Stevia</a>	-	- <a href="#">See study</a>	No significant effect on total cholesterol levels have been detected with stevia consumption
	<a href="#">Theaflavins</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol levels with theaflavins supplementation
	<a href="#">Tribulus terrestris</a>	-	- <a href="#">See all 3 studies</a>	A decrease in cholesterol levels has been noted with tribulus supplementation in some studies. However, the largest study found no significant decrease, and none of the studies have made cholesterol their primary endpoint.


LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vanadium</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in the levels of total cholesterol <i>per se</i> , but a decrease has been noted to be secondary to attenuating diabetic symptoms
	<a href="#">Vitamin K</a>	-	- <a href="#">See study</a>	No significant interactions with total cholesterol concentrations in persons given vitamin K supplementation
	<a href="#">Whey Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on circulating cholesterol has been demonstrated with whey protein
	<a href="#">Yacon</a>	-	- <a href="#">See study</a>	No significant influence on total cholesterol has been noted despite changes in LDL and accompanying weight loss.
	<a href="#">Aronia melanocarpa</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Requires more studies before conclusions can be made, appears to simply be exerting anti-oxidant effects.
	<a href="#">Coffee</a>	 Minor	- <a href="#">See study</a>	An increase in cholesterol has been noted in one study which attributed most of the increase to HDL
	<a href="#">Colostrum</a>	 Minor	- <a href="#">See study</a>	A mild decrease in total cholesterol has been noted with supplementation of colostrum in type II diabetics.
	<a href="#">Eclipta alba</a>	 Minor	- <a href="#">See study</a>	A decrease in total cholesterol has been noted with supplementation of eclipta alba
	<a href="#">Emblica officinalis</a>	 Minor	- <a href="#">See study</a>	A decrease in cholesterol has been noted and appears to affect both healthy controls as well as diabetics
	<a href="#">Medium-chain triglycerides</a>	 Minor	- <a href="#">See study</a>	A decrease in total cholesterol (both the LDL and HDL portions) has been noted with purified MCTs to a minor degree, relative to longer chain fatty acids.





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pycnogenol</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible cholesterol lowering effects of small magnitude, but these are not wholly reliable
	<a href="#">Quercetin</a>	 Minor	- <a href="#">See study</a>	An increase in total cholesterol has been noted, but mostly attributed to HDL
	<a href="#">Ruscus aculeatus</a>	 Minor	- <a href="#">See study</a>	A decrease in total cholesterol (9.4%) has been noted in diabetic persons alongside an increase in HDL-C. Requires replication.
	<a href="#">Tauroursodeoxycholic Acid</a>	 Minor	- <a href="#">See study</a>	A decrease in total cholesterol in serum has been noted secondary to treating cholestasis
	<a href="#">Yerba mate</a>	 Minor	- <a href="#">See study</a>	A decrease of total cholesterol has been noted with Mate consumption
	<a href="#">Apple Cider Vinegar</a>	-	<b>Low</b> <a href="#">See all 3 studies</a>	Slightly greater reduction with 15 ml and 30 ml as compared with placebo in one study, while there was a slight, inconsequential increase in another.
	<a href="#">Perilla Oil</a>	-	- <a href="#">See study</a>	
	<a href="#">Pueraria lobata</a>	-	- <a href="#">See study</a>	No significant influence have been detected on total cholesterol
	<a href="#">Rubus coreanus</a>	-	- <a href="#">See study</a>	Currently the only study is in otherwise healthy men with no cholesterol problems, and there was no influence of berry consumption.
	<a href="#">Vitamin B1</a>	-	- <a href="#">See study</a>	No change noted in people with high blood sugar



# Training Volume


Training volume refers to the amount of physical work that can be conducted in one session, either by enhancing recovery between sets or increasing the amount of work performed in one set. Supplements that enhance training volume may improve gains from exercise.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Caffeine</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be an increase in training volume (overall work performed during a workout) associated with caffeine ingestion relative to placebo, extending to both weightlifting and anaerobic cardiovascular exercise
	<a href="#">Sodium Bicarbonate</a>	 Minor	<b>Moderate</b> <a href="#">See all 10 studies</a>	There might be an increase in work output conducted in tests that are anaerobic (high intensity) and associated with metabolic acidosis ('the burn') but may not extend to other contexts
	<a href="#">HMB</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence on training volume when used acutely
	<a href="#">Citrulline</a>	 Notable	- <a href="#">See study</a>	The increase in work capacity seen with citrulline supplementation appears to be time dependent. While there are no inherent and immediate effect, the reduction of fatigue later in a weight lifting workout causes a relative increase that has at least one doubled reps conducted (on set 8 of exhaustive exercise)
	<a href="#">Trimethylglycine</a>	 Minor	- <a href="#">See study</a>	One study noted an increase in overall training volume (6.5%) when the whole workout was assessed, and this was without any apparent changes in the volume conducted in any individual set or any changes in the rate of perceived exertion.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Choline</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant improvements in training volume independent of choline depletion
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No effect on the training volume of swimmers.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Methylsulfonylmethane</a>	-	- <a href="#">See study</a>	No significant influence on the total training volume able to be conducted
	<a href="#">Ornithine</a>	-	- <a href="#">See study</a>	No significant influence on the amount of work that can be conducted on a cycle ergometer during short-term testing
	<a href="#">Pyruvate</a>	-	- <a href="#">See study</a>	No significant influence on training volume in otherwise healthy persons given an exercise protocol
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	Training volume does not appear to be significantly influenced with quercetin supplementation.




Back to: [Supplements](#) | [Health Outcomes](#)

# Treatment of Amyotrophic Lateral Sclerosis (ALS)

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	Short term usage may increase power output like usual, but prolonged supplementation of creatine has failed to alter the deterioration of muscle and lung function. While no reduction in mortality has been noted statistically, two studies have noted a trend towards reductions in mortality suggesting an unknown protective effect.

Back to: [Supplements](#) | [Health Outcomes](#)







# Treatment of COPD

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">N-Acetylcysteine</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	N-Acetylcysteine may reduce some symptoms of COPD by acting as a mucolytic agent and reducing sputum formation, but it does not appear to be effective at aiding the lungs themselves or reducing disease progression.
	<a href="#">Creatine</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	No effect on cardiovascular exercise performance and lung and heart functions, the main parameters of concern when treating COPD.

Back to: [Supplements](#) | [Health Outcomes](#)





# Treatment of Headaches

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pelargonium sidoides</a>	 Minor	<b>Very High</b> <a href="#">See all 10 studies</a>	Headaches as a side effect of acute bronchitis are pretty much abolished with the treatment of acute bronchitis from this herb; it is doubtful that headaches from other causes aside from sickness are treated in a similar manner.
	<a href="#">Peppermint</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Preliminary evidence suggests that topical application of peppermint oil is effective in reducing tension headache severity when applied at the start of the headache (can work within 15 minutes), and is comparable to 1,000mg acetaminophen in potency
	<a href="#">Creatine</a>	 Notable	- <a href="#">See study</a>	400 mg/kg/day in children and adolescents subject to traumatic brain injury reduces headache frequency from around 90% down to near 10%.

Back to: [Supplements](#) | [Health Outcomes](#)



# Treatment of Hepatic Encephalopathy

Hepatic Encephalopathy is a liver condition associated with excessive ammonia which impairs cognitive function, and supplements that either aid liver function or independently reduce ammonia are seen as therapeutic.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">L-Carnitine</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	Cognitive side effects of hepatic encephalopathy are alleviated with carnitine supplementation, notably fatigue and cognitive performance.

Back to: [Supplements](#) | [Health Outcomes](#)

# Treatment of PCOS

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Inositol</a>	 Notable	<b>Very High</b> <a href="#">See all 14 studies</a>	Supplementation of inositol in the range of 200-4,000mg daily appears to be effective in improving fertility in women with PCOS, while doses in the 2,000-4,000mg range appear effective in improving testosterone levels and insulin sensitivity.














Back to: [Supplements](#) | [Health Outcomes](#)

# Triglycerides

Triglycerides is a term used to refer to the circulating levels of fatty acids (similar in structure to dietary fatty acids, and fat mass) that can be measured via a blood test. Although crucial for energy usage, excessively high circulating Triglycerides is a risk factor for circulatory problems.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Strong	<b>Very High</b> <a href="#">See all 44 studies</a>	Fish oil, both EPA and DHA, are reference drugs for the purpose of reducing triglycerides with highly reliable reductions in the range of 15-30% (higher reductions seen in persons with higher baseline triglycerides)
	<a href="#">Garlic</a>	 Minor	<b>Very High</b> <a href="#">See all 15 studies</a>	There appears to be quite an unreliable decrease in triglycerides following garlic supplementation. When looking at meta-analyses, there is either a significant but small decrease or a reduction that fails to reach statistical significance.
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 17 studies</a>	Chromium does not appear to have a role in reducing triglyceride concentrations in the serum of subjects, including diabetic subjects given chromium supplementation.
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 16 studies</a>	The vast majority of studies assessing either dark chocolate products or isolated polyphenolics from cocoa fail to find any influence on triglycerides relative to placebos or control chocolates.
	<a href="#">Hesperidin</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	There is no significant influence on triglycerides noted with supplementation of hesperidin; if an effect occurs, it is of very minor magnitude and only lasts for as long as supplementation persists.
	<a href="#">Red Clover Extract</a>	-	<b>High</b> <a href="#">See all 11 studies</a>	Isolated reports have noted minor (less than 10%) reductions in triglycerides in overweight or hyperlipidemics mostly, but overall there is not a significant reduction in triglycerides noted with Red clover extract.
	<a href="#">Ketogenic diet</a>	 Strong	<b>High</b> <a href="#">See all 19 studies</a>	A pronounced and persistent decrease in circulating triglycerides is seen the majority of keto diet trials. Importantly, this drop is seen in what long-term trials are available.
	<a href="#">Spirulina</a>	 Notable	<b>Moderate</b> <a href="#">See all 8 studies</a>	In populations with metabolic syndrome or related morbidities (diabetes, hyperlipidemia, hypertension, etc.) spirulina in a variety of doses between 1-8g daily is able to reduce triglycerides up to 10-15%.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin B3 (Niacin)</a>	 Notable	<b>Very High</b> <a href="#">See all 8 studies</a>	There appears to be a large decrease of triglycerides in subjects with dyslipidemia given pharmacological doses of niacin; the magnitude being greater than most supplements (but lesser than fish oil)
	<a href="#">Berberine</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	Degree of reduction according to meta-analysis was $-0.48\text{mmol/L}$ (95% CI $-0.57$ to $-0.39$ ) which was not overly remarkable.
	<a href="#">Conjugated Linoleic Acid</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	May possible increase triglycerides, but is unreliable in doing so and not overly potent.
	<a href="#">Curcumin</a>	 Minor	<b>Moderate</b> <a href="#">See all 27 studies</a>	Some reducing effects have been noted, but they seem to be unreliable and not overly potent
	<a href="#">Inositol</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	There may be a small decrease in triglycerides associated with supplementation of inositol to women with PCOS
	<a href="#">Nigella sativa</a>	 Minor	<b>Moderate</b> <a href="#">See all 8 studies</a>	The decreases in triglycerides only affect those with high triglycerides, and the decrease scales with severity of hyperlipidemia (mild elevation of TGs is met with a 1-5% decrease, significantly elevated TGs are met with a 15-20% reduction).
	<a href="#">Astaxanthin</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">Dehydroepiandrosterone</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Mixed evidence, but it seems that DHEA doesn't have a significant influence on triglycerides
	<a href="#">Grape Seed Extract</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	No significant influence of grape seed extract on triglycerides even in a high risk population at a high oral intake of GSE (600mg)
	<a href="#">L-Carnitine</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on triglycerides

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Magnesium</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	For the most part, no significant influence of magnesium supplementation on triglycerides
	<a href="#">Olive leaf extract</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	The majority of the evidence suggests that there is no impressive effect on triglycerides with olive phenolic consumption
	<a href="#">Policosanol</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	When excluding older cuban studies (which are highly suspicious) there is no evidence to support a reduction of triglycerides.
	<a href="#">Psyllium</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Currently, it does not seem like there is a significant influence of psyllium on circulating triglycerides
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See all 12 studies</a>	No significant influence on fasting or postprandial triglycerides seems apparent with Vitamin C
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 8 studies</a>	No evidence to support changes in triglycerides associated with vitamin E supplementation in any tested person.
	<a href="#">Hibiscus sabdariffa</a>	 Notable	<b>Moderate</b> <a href="#">See all 4 studies</a>	Mixed effects on triglycerides, but the lone study that noted a decrease noted comparable potency to pravastatin; requires more literature
	<a href="#">Tetradecyl Thioacetic Acid</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	The one trial using TTA to reduce triglycerides noted a reduction of around 15%, which is notable and requires replication
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	The best evidence at this point in time suggests a slight decrease in triglycerides seen with Ashwagandha supplementation, although it does not appear to extend to persons with normal triglyceride levels but occurs in those with metabolic impairments.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Cissus quadrangularis</a>	 Minor	- <a href="#">See study</a>	Reduction in triglycerides is not overly potent and occurred alongside weight loss, which was likely a confounding factor.
	<a href="#">Citrullus colocynthis</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	The decrease seen in triglycerides in one study was statistically significance, but the average reduction in hyperlipidemics (16%) has a very large range
	<a href="#">Ephedrine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be a decrease in triglycerides over time with ephedrine ingestion, which may be due to either the fat burning effects of ephedrine or the weight loss that tends to ensue
	<a href="#">Fenugreek</a>	 Minor	- <a href="#">See study</a>	May reduce triglyceride levels
	<a href="#">Fucoxanthin</a>	 Minor	- <a href="#">See study</a>	A decrease in circulating triglycerides is noted with fucoxanthine
	<a href="#">Ganoderma lucidum</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There may be a small decrease in triglycerides (8% or so) in unhealthy persons, but this has not been observed in otherwise healthy individuals
	<a href="#">Ginger</a>	 Minor	- <a href="#">See study</a>	May decrease triglycerides
	<a href="#">Irvingia gabonensis</a>	 Minor	- <a href="#">See study</a>	A decrease in triglycerides has been noted, confounded with weight loss
	<a href="#">Krill Oil</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A decrease in triglycerides has been noted with krill oil
	<a href="#">Melatonin</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible reduction in triglycerides to a minor degree is noted with melatonin supplementation, but this is not reliable















LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Punicic Acid</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A possible slight reduction in triglycerides has been noted with pomegranate oil, but this appears to be unreliable
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	A decrease in triglycerides has been noted with resveratrol supplementation
	<a href="#">Rooibos</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A minor reduction of triglycerides occurs with daily ingestion of Rooibos tea only in unhealthy persons
	<a href="#">Shilajit</a>	 Minor	- <a href="#">See study</a>	Minor decrease in triglycerides has been noted with shilajit
	<a href="#">Vanadium</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A slight increase in triglycerides has been noted with vanadium supplementation
	<a href="#">Vitamin D</a>	 Minor	- <a href="#">See study</a>	The decrease in triglycerides is present after long term ingestion of Vitamin D, although it isn't to a highly significant degree
	<a href="#">Whey Protein</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Possible reductions in triglycerides, but it is not sure if this is exclusive to whey protein or due to protein in general.
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Artichoke Extract</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	The two better controlled trials noted no change, whereas a decrease and increase has been noted otherwise. Unclear overall effects on triglycerides
	<a href="#">Benfotiamine</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides.





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Biotin</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Black Cohosh</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant effect on triglyceride concentrations in serum
	<a href="#">Blueberry</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No known interactions with serum triglycerides following supplementation of blueberries.
	<a href="#">Caffeine</a>	-	- <a href="#">See study</a>	No significant influence on triglyceride levels
	<a href="#">Creatine</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Ecdysteroids</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides
	<a href="#">Ecklonia cava</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides noted with ecklonia cava
	<a href="#">Eleutherococcus senticosus</a>	-	- <a href="#">See study</a>	No significant influences yet known for triglycerides
	<a href="#">Gamma Oryzanol</a>	-	- <a href="#">See study</a>	No significant alterations in plasma triglycerides seen with supplementation
	<a href="#">Garcinia cambogia</a>	-	- <a href="#">See study</a>	No detectable influence on triglyceride levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Grape juice</a>	-	<b>High</b> <a href="#">See all 9 studies</a>	No apparent effect overall.
	<a href="#">Green Coffee Extract</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides following oral intake
	<a href="#">Green Tea Catechins</a>	-	- <a href="#">See study</a>	No apparent influence on triglycerides
	<a href="#">Guggul</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of Guggul on triglycerides is detectable
	<a href="#">Gynostemma pentaphyllum</a>	-	- <a href="#">See study</a>	No significant alterations in triglycerides noted with supplementation
	<a href="#">Hemp Protein</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of oral hemp seeds on triglycerides
	<a href="#">Japanese Knotweed</a>	-	- <a href="#">See study</a>	No significant influence of Japanese Knotweed on triglycerides
	<a href="#">Lactobacillus casei</a>	-	- <a href="#">See study</a>	
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides
	<a href="#">Microlactin</a>	-	- <a href="#">See study</a>	No significant influence on fasting triglycerides noted

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nattokinase</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides
	<a href="#">Panax ginseng</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in triglycerides and fatty acids in the fasted state or during exercise
	<a href="#">Phosphatidylcholine</a>	-	- <a href="#">See study</a>	
	<a href="#">Phosphatidylserine</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides seen at rest or during exercise with PS supplementation
	<a href="#">Pterostilbene</a>	-	- <a href="#">See study</a>	There do not appear to be any interactions on triglycerides in adults with normal triglyceride levels given pterostilbene supplementation.
	<a href="#">Rose Hip</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of rose hip on triglyceride concentrations has been noted.
	<a href="#">Royal Jelly</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Although there may be a reduction in triglycerides associated with Royal Jelly, currently the best evidence suggests no such change
	<a href="#">Salvia hispanica</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on triglycerides
	<a href="#">Sea Buckthorn</a>	-	- <a href="#">See study</a>	Although it may attenuate postprandial lipidemia (spikes in triglycerides following a meal), supplementation does not appear to significantly affect fasting triglyceride concentrations.
	<a href="#">Soy lecithin</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Stevia</a>	-	- <a href="#">See study</a>	No significant influence on circulating triglycerides has been noted with stevia consumption
	<a href="#">Theaflavins</a>	-	- <a href="#">See study</a>	No significant influence of theaflavins on triglycerides (hypercholesterolemic persons)
	<a href="#">Trimethylglycine</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No significant alterations in serum triglycerides are noted with prolonged supplementation of betaine supplementation.
	<a href="#">Vitamin K</a>	-	- <a href="#">See study</a>	No significant influence on circulating triglycerides seen with MK-4 supplementation
	<a href="#">Yacon</a>	-	- <a href="#">See study</a>	Despite a triglyceride reducing effect of fructooligosaccharides in rats, the limited evidence in humans (with mildly elevated triglycerides) failed to find any appreciable effect despite weight loss.
	<a href="#">Zinc</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant reduction in circulating triglycerides has been detected with zinc supplementation.
	<a href="#">Apple Cider Vinegar</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	One study found a notable reduction in both 15 ml and 30 ml groups, but not for placebo, while another found a small increase. More research is needed to determine what can be expected from apple cider vinegar.
	<a href="#">Aronia melanocarpa</a>	 Minor	- <a href="#">See study</a>	Requires more studies before conclusions can be made, appears to simply be exerting anti-oxidant effects.
	<a href="#">Colostrum</a>	 Minor	- <a href="#">See study</a>	In type II diabetics, triglycerides in fasting conditions were noted to be reduced relative to baseline with colostrum ingestion.
	<a href="#">Eclipta alba</a>	 Minor	- <a href="#">See study</a>	Decreases in triglycerides have been noted, but not to a remarkable degree

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Emblica officinalis</a>	 Minor	- <a href="#">See study</a>	Appears to have triglyceride reducing properties
	<a href="#">HMB</a>	-	- <a href="#">See study</a>	No significant influence on triglycerides
	<a href="#">Mangifera indica</a>	-	- <a href="#">See study</a>	
	<a href="#">Medium-chain triglycerides</a>	-	- <a href="#">See study</a>	Insufficient evidence to support changes in serum triglycerides.
	<a href="#">Perilla Oil</a>	-	- <a href="#">See study</a>	
	<a href="#">Pycnogenol</a>	-	- <a href="#">See study</a>	No significant alterations on triglycerides
	<a href="#">Pyrroloquinoline quinone</a>	-	- <a href="#">See study</a>	Short term supplementation of PQQ has failed to significantly influence triglycerides in otherwise healthy adults
	<a href="#">Rubus coreanus</a>	-	- <a href="#">See study</a>	No significant influence of this berry on the triglycerides of otherwise healthy men.
	<a href="#">Ruscus aculeatus</a>	-	- <a href="#">See study</a>	No significant influence on circulating triglycerides in diabetic persons given <i>ruscus aculeatus</i> supplementation.
	<a href="#">Safflower Oil</a>	-	- <a href="#">See study</a>	No significant alterations in triglyceride concentrations






LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Tribulus terrestris</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	While a modest reduction is possible, the results of two studies didn't find significant differences relative to placebo.
	<a href="#">Vitamin B1</a>	-	- <a href="#">See study</a>	No observed changes in a population with hyperglycemia

Back to: [Supplements](#) | [Health Outcomes](#)

# Upper Respiratory Tract Infection Risk

Upper respiratory tract infections (URTIs) are sicknesses that mostly affect the lung and breathing capacities, and is the cause of many cold symptoms. Supplements that reduce the risk of developing URTIs are said to promote immunity.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Echinacea</a>	 Notable	<b>High</b> <a href="#">See all 11 studies</a>	The reduction in rate of sickness seen with echinacea as a daily supplement is highly effective in some instances, but subject to a high degree of variability. It is notable due to it being a comparator.
	<a href="#">Andrographis paniculata</a>	 Minor	- <a href="#">See study</a>	Appears to be better than placebo, although it is difficult to assess potency.
	<a href="#">Colostrum</a>	 Minor	- <a href="#">See all 3 studies</a>	There may be a minor reduction in the incidence of upper respiratory tract infections (URTIs) seen with colostrum, although more evidence is needed to confirm this activity as current trials are usually underpowered.
	<a href="#">Garlic</a>	 Minor	- <a href="#">See study</a>	There appears to be a reduction in the lung infection risks with garlic supplementation.
	<a href="#">Vitamin E</a>	 Minor	- <a href="#">See study</a>	Supplementation of 200 IU vitamin E in elderly persons has been noted to reduce overall occurrence of upper, but not lower, respiratory tract infections.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See study</a>	
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on the rate of acquiring sickness
	<a href="#">Vitamin D</a>	-	- <a href="#">See study</a>	Lack of efficacy in reducing rate of sickness












LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Zinc</a>	-	- <a href="#">See study</a>	Despite having lower sickness rates overall, the reduction seen in URTIs specifically does not appear to reach significance.
	<a href="#">Lactobacillus casei</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	16 weeks supplementation reduced risk of URTI symptoms in endurance athletes undergoing winter training.
	<a href="#">Polypodium leucotomos</a>	 Minor	- <a href="#">See study</a>	Appears to reduce infection risk, although it did not appear to be overly remarkable in doing so.

Back to: [Supplements](#) | [Health Outcomes](#)



# Urea

Urea is a metabolic byproduct of amino acid metabolism that is excreted by the kidneys.













LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Citrulline</a>	 Minor	- <a href="#">See study</a>	An increase in urea is seen with citrulline supplementation (possibly due to increased serum <a href="#">ornithine</a> sequestering ammonia)
	<a href="#">Glutamine</a>	 Minor	- <a href="#">See study</a>	An increase in urea has been noted with glutamine supplementation
	<a href="#">Ornithine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Mixed effects, but it appears that when ammonia is decreased that urea is also increased but if ammonia is unchanged whatever reason for this also means that urea is unchanged.
	<a href="#">Arginine</a>	-	- <a href="#">See study</a>	Although it is theoretically plausible that arginine can increase urea concentrations (secondary to the actions of ornithine), it does not appear to reliably occur
	<a href="#">Astaxanthin</a>	-	- <a href="#">See study</a>	
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	The lone study assessing urea failed to find a significant interaction between it and supplementation of chromium.
	<a href="#">Citrullus colocynthis</a>	-	- <a href="#">See study</a>	No significant alterations in serum urea, suggesting no renal toxicity with the low doses (300mg) of this supplement
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Urea is not altered in the blood when compared to control.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	-	- <a href="#">See all 4 studies</a>	
	<a href="#">Curcumin</a>	-	<b>Very High</b> <a href="#">See all 5 studies</a>	No apparent effect in studies.
	<a href="#">HMB</a>	 Minor	- <a href="#">See study</a>	A slight increase in urea has been noted, requires replication
	<a href="#">Ketogenic diet</a>	 Minor	<b>Very High</b> <a href="#">See all 4 studies</a>	The increase is consistent across all studies
	<a href="#">Ashwagandha</a>	-	- <a href="#">See study</a>	No apparent effect in one study in healthy, active participants taking 500 mg of a potent extract.
	<a href="#">Hibiscus sabdariffa</a>	-	- <a href="#">See study</a>	No significant influence on urea
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	It's simply not clear from one study and a small, non-significant reduction.


Back to: [Supplements](#) | [Health Outcomes](#)

# Uric Acid

Uric acid is a molecule (a byproduct of purine metabolism) that, in excessive levels, can contribute to gout and kidney stones. Despite this, uric acid is a potent antioxidant compound.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	A minor reduction has been observed.
	<a href="#">Glutamine</a>	 Minor	- <a href="#">See study</a>	An increase in serum urate has been noted in the range of 10-20% acutely, but attenuates with time and is likely not a concern within a week. Practical significance of this increase unknown.
	<a href="#">L-Carnitine</a>	 Minor	- <a href="#">See study</a>	A decrease in uric acid has been noted
	<a href="#">Psyllium</a>	 Minor	- <a href="#">See study</a>	An 11% decrease in uric acid has been noted in diabetics supplementing with psyllium husk.
	<a href="#">Cocoa Extract</a>	-	- <a href="#">See study</a>	Serum uric acid/urate seems unaltered in response to cocoa flavanol supplementation.
	<a href="#">Cordyceps</a>	-	- <a href="#">See study</a>	
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No changes in serum uric acid seem apparent
	<a href="#">Gynostemma pentaphyllum</a>	-	- <a href="#">See study</a>	No significant influences on uric acid

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Nigella sativa</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	No statistically significant alterations in uric acid concentrations in serum
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	No significant influence on uric acid concentrations
	<a href="#">Rooibos</a>	-	- <a href="#">See study</a>	No significant influence on uric acid is seen with Rooibos tea ingestion.
	<a href="#">Vitamin B2</a>	-	- <a href="#">See study</a>	The uric acid/urate balance is not affected by supplementation of riboflavin.
	<a href="#">Grape juice</a>	 Notable	<b>Moderate</b> <a href="#">See 2 studies</a>	A notable increase in uric acid (nearly 30%) after a month of grape juice supplementation in one study, and no change, but less of a reduction than in a control group in hemodialysis patients.
	<a href="#">Curcumin</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	A small decrease in patients with non-alcoholic fatty liver disease has been noted. Much more evidence is needed.
	<a href="#">Garlic</a>	-	- <a href="#">See study</a>	No significant interactions with uric acid concentrations in serum.
	<a href="#">Hibiscus sabdariffa</a>	-	- <a href="#">See study</a>	Does not appear to influence uric acid concentrations in serum
	<a href="#">Ketogenic diet</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	There's unlikely to be a notable change on a ketogenic diet, though uric acid declined considerably more on a control diet in one study.
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations in serum uric acid seen with supplemental TTA

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin C</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Possibly attenuates an increase from extreme exercise but it's unclear and especially unclear for other circumstances.









Back to: [Supplements](#) | [Health Outcomes](#)

# VO2 Max

VO<sub>2</sub> Max refers to the maximal oxygen consumption during exercise, and is thought to reflect the abilities of the cardiorespiratory system (heart and lungs) to handle high intensity cardiovascular exercise (anaerobic exercise).

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Minor	<b>Low</b> <a href="#">See all 6 studies</a>	Improvements in VO <sub>2</sub> max are not wholly reliable, and appear to be low in magnitude.
	<a href="#">Beta-Alanine</a>	-	<b>Moderate</b> <a href="#">See all 5 studies</a>	Effects on VO <sub>2</sub> max are highly unreliable and not currently thought significant.
	<a href="#">Colostrum</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	All studies assessing the effects of colostrum in athletes subject to cardiovascular training have failed to find any difference between colostrum and whey protein (control) for influencing VO <sub>2</sub> max.
	<a href="#">Fish Oil</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	There is no evidence to support an improvement of VO <sub>2</sub> max when fish oil is consumed alongside an exercise routine
	<a href="#">Sodium Bicarbonate</a>	-	<b>High</b> <a href="#">See all 7 studies</a>	For the most part, peak VO <sub>2</sub> consumption is not significantly influenced by supplemental sodium bicarbonate (although VO <sub>2</sub> kinetics that are not referring to VO <sub>2</sub> max may be influenced somewhat)
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	A slight increase in VO <sub>2</sub> max has been detected in otherwise untrained persons and in elite cyclists.
	<a href="#">Coenzyme Q10</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	An increase in VO <sub>2</sub> max of untrained persons has been noted following CoQ10 supplementation.
	<a href="#">Echinacea</a>	 Minor	- <a href="#">See study</a>	Not an astounding increase in VO <sub>2</sub> max, requires replication.








LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Green Tea Catechins</a>	 Minor	- <a href="#">See study</a>	An increase in VO2 max has been noted in untrained persons
	<a href="#">Resveratrol</a>	 Minor	- <a href="#">See study</a>	150mg resveratrol taken shortly after a workout appears to hinder the improvements in VO2 max seen with exercise alone; effects of resveratrol at other times uncertain.
	<a href="#">Caffeine</a>	-	- <a href="#">See study</a>	No significant influence on VO2 max ratings
	<a href="#">Capsaicin</a>	-	- <a href="#">See study</a>	
	<a href="#">Cordyceps</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on VO2 max in otherwise healthy persons.
	<a href="#">Curcumin</a>	-	- <a href="#">See study</a>	In postmenopausal women, curcumin supplementation does not improve VO2 max.
	<a href="#">L-Carnitine</a>	-	- <a href="#">See study</a>	No detectable influence on VO2 max associated with carnitine supplementation
	<a href="#">Rhodiola Rosea</a>	-	- <a href="#">See study</a>	May slightly improve oxygen consumption during submaximal exercise in untrained persons, but overall the improvement in VO2 max does not appear to be highly potent or reliable.
	<a href="#">Trimethylglycine</a>	-	- <a href="#">See study</a>	Although a minor increase in oxygen uptake was noted in certain situations (final sprint of testing), overall VO2 max is not significantly affected.
	<a href="#">Vitamin C</a>	-	- <a href="#">See study</a>	Does not appear to have a role in altering VO2 max

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Yerba mate</a>	-	- <a href="#">See study</a>	Supplementation of yerba mate prior to a VO2 max test does not appear to have any effect relative to placebo.
	<a href="#">Eleutherococcus senticosus</a>	 Minor	- <a href="#">See study</a>	Possible increases in VO2 max, but requires more evidence to ascertain potency and reliability
	<a href="#">Iron</a>	 Minor	- <a href="#">See study</a>	Both relative and absolute VO2max increased moderately in people with iron deficiency but not anemia who were undergoing exercise training. This isn't a systematic assessment of studies.
	<a href="#">HMB</a>	-	- <a href="#">See study</a>	No significant influence on VO2 max in trained athletes
	<a href="#">Ketogenic diet</a>	-	- <a href="#">See study</a>	Absolute VO2 peak declined slightly and relative VO2 peak was unchanged in one uncontrolled study of 6 weeks on a ketogenic diet.
	<a href="#">Marijuana</a>	-	- <a href="#">See study</a>	Despite a reduction in endurance (cycling until voluntary failure) the measured VO2 max between groups did not differ.

Back to: [Supplements](#) | [Health Outcomes](#)









# Vaccine Augmentation

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Colostrum</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Tenuous evidence for an increase in vaccine efficacy, as while the one study assessing antibody titres failed to find any influence (suggesting no benefit) there does appear to be a reliable increase in the secretion of IgA and IgG in response to the vaccine.
	<a href="#">Panax ginseng</a>	 Minor	- <a href="#">See study</a>	Has been noted to increase the antibody response to vaccinations when taken prior
	<a href="#">Vitamin E</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	There appears to be an increased antibody response to vaccinations in otherwise healthy persons who supplement with a low dose of vitamin E relative to those receiving placebo with their vaccination; this applies to both youth and the elderly.
	<a href="#">Chlorella</a>	-	- <a href="#">See study</a>	Has once failed to act effectively as a vaccine adjuvant







Back to: [Supplements](#) | [Health Outcomes](#)

# Verbal Fluency

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Oxiracetam</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Appears to favor improvements in verbal fluency in persons with cognitive dementia, despite benefiting most parameters measured
	<a href="#">D-Serine</a>	-	- <a href="#">See study</a>	In a category fluency test, 2.1g D-serine taken two hours earlier appears to improve fluency. The increase was larger than seen with placebo, but comparing the two groups did not yield a significant benefit with D-serine over placebo statistically
	<a href="#">Ginkgo biloba</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence of supplemental ginkgo on verbal fluency even in persons with cognitive injuries.
	<a href="#">Polygala tenuifolia</a>	-	- <a href="#">See study</a>	No significant improvements in verbal fluency noted in elderly adults with memory complaints supplementing this herb.
	<a href="#">Vitamin E</a>	-	- <a href="#">See study</a>	Verbal fluency does not appear to be significantly altered with vitamin E supplementation relative to placebo.










Back to: [Supplements](#) | [Health Outcomes](#)

# Viral Load

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	When a high dose is given to subjects with HIV, their viral loads do not appear to be modified.
	<a href="#">Colostrum</a>	-	- <a href="#">See study</a>	Administration of colostrum to persons with HIV already on antiretroviral therapy does not further modify viral titres.
	<a href="#">Nigella sativa</a>	 Notable	- <a href="#">See study</a>	A pilot study in hepatitis C noted that the viral load was reduced to 38.6% of baseline with a modest dosage of the seed oil, a fairly drastic reduction.
	<a href="#">Chromium</a>	-	- <a href="#">See study</a>	In persons with HIV, supplementation of chromium did not alter the levels of the virus in their body despite showing actions on glucose disposal rates.
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)













# Visual Acuity

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	Improvements have been noted in the visual field in persons with normal tension glaucoma, which is characterized by damage to this parameter. It is uncertain whether ginkgo increases visual acuity in otherwise healthy persons.
	<a href="#">Saffron</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Supplementation of saffron appears to increase visual acuity in persons with age-related macular degeneration.
	<a href="#">Caffeine</a>	-	- <a href="#">See study</a>	No significant influence on visual acuity has been noted with caffeine on hand-eye or target-based visual tasks
	<a href="#">CDP-choline</a>	 Minor	- <a href="#">See study</a>	In persons with glaucoma, CDP-Choline ingestion appears to be somewhat protective of vision and has been noted to cause improvements in visual acuity
	<a href="#">Marijuana</a>	-	- <a href="#">See study</a>	During treatment of glaucoma with THC, visual acuity did not appear to be hindered.
	<a href="#">Ruscus aculeatus</a>	-	- <a href="#">See study</a>	The improvement in visual acuity seen with supplementation of this herb failed to reach statistical significance in diabetic persons with retinopathy.

Back to: [Supplements](#) | [Health Outcomes](#)

# Weight

Weight is the result of your body's fight against Earth's gravity. It is sometimes used as a measurable parameter in some studies as it is cheap to measure the weight of many people, but more expensive to measure fat mass and lean mass separately.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Creatine</a>	 Strong	<b>Very High</b> <a href="#">See all 28 studies</a>	Appears to have a large effect on increasing overall weight due to water retention in persons who respond to creatine supplementation. Degree of increase is variable.
	<a href="#">Chromium</a>	-	<b>Moderate</b> <a href="#">See all 33 studies</a>	There is no significant influence of chromium on weight in either healthy persons or those with diabetes, and although a possible interaction may occur in some instances of better glucose control or reduced appetite they are not frequent enough to establish a solid relationship to chromium.
	<a href="#">Colostrum</a>	-	<b>High</b> <a href="#">See all 13 studies</a>	The majority of studies fail to find any significant influence of colostrum on body weight that is atypical of protein sources, although as it confers protein and calories it remains possible to gain weight from colostrum.
	<a href="#">Conjugated Linoleic Acid</a>	-	<b>High</b> <a href="#">See all 22 studies</a>	CLA is considered ineffective for weight loss to the high degree of unreliability in the results, with most evidence suggesting no effects and some sparse evidence to suggest both increases and decreases.
	<a href="#">Fish Oil</a>	-	<b>High</b> <a href="#">See all 14 studies</a>	For the most part, no significant influence on body weight over time
	<a href="#">Ephedrine</a>	 Notable	<b>High</b> <a href="#">See all 10 studies</a>	Ephedrine tends to result in reliable weight loss over time relative to control (assuming calories are held equal), which is mostly due to a loss of body fat
	<a href="#">5-HTP</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	The reduction in weight appears to be mostly secondary to a reduction in food intake, and is not too remarkable in magnitude
	<a href="#">Inositol</a>	 Minor	<b>High</b> <a href="#">See all 7 studies</a>	Decreases in body weight have been noted in women with PCOS, as inositol is effective in treating PCOS. They seem to influence leaner and overweight women more than obese women.





LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Ketogenic diet</a>	 Minor	<b>Moderate</b> <a href="#">See all 15 studies</a>	In studies where calories are matched, there isn't generally a difference between ketogenic diets and control diets, and what differences there are can generally be attributed to a loss in water. Ketogenic diets often lead to spontaneous weight reduction even when the aim isn't to reduce calories.
	<a href="#">Nigella sativa</a>	 Minor	<b>Low</b> <a href="#">See all 4 studies</a>	One study has noted weight loss, but due to the reduction in appetite and no records of food intake the possibility of subjects losing weight due to eating less cannot be ruled out. Other studies have failed to find an influence of treatment.
	<a href="#">Astaxanthin</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See all 10 studies</a>	Beyond one study suggesting benefits, the majority of studies including cocoa flavanols in the diet have failed to note significant weight loss compared to isocaloric controls.
	<a href="#">Curcumin</a>	-	<b>Very High</b> <a href="#">See all 15 studies</a>	It's unclear if the reductions found in some studies are genuine effects or random variance.
	<a href="#">Garcinia cambogia</a>	-	<b>High</b> <a href="#">See all 3 studies</a>	Although there is some counter evidence, it tends to be less robust and for the most part there is no significant weight reducing effect of garcinia cambogia supplementation
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See all 3 studies</a>	
	<a href="#">Magnesium</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No evidence to support a role for magnesium in inducing alterations in body weight
	<a href="#">Psyllium</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No convincing evidence for a weight reducing effect of psyllium.
	<a href="#">Pyruvate</a>	-	<b>Low</b> <a href="#">See all 5 studies</a>	Most evidence suggests that standard oral doses of Pyruvate supplementation do not have a reducing effect on weight, but the effects of high dose pyruvate during severe caloric restriction cannot be ruled out

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Red Clover Extract</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	No studies, even those using up to 120mg total isoflavones for up to a year, have noted significant weight loss associated with Red Clover supplementation in postmenopausal women.
	<a href="#">Trimethylglycine</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No significant alterations in weight are seen with supplementation of betaine, which is different than what is seen with another popular sports osmolyte (creatine).
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 7 studies</a>	There does not appear to be any influence of vitamin E supplementation at any tested dose in any subject on weight loss nor gain.
	<a href="#">Vitamin K</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	In studies that measure weight changes over time (usually as a secondary piece of data), there do not appear to be any significant alterations associated with vitamin K supplementation.
	<a href="#">Whey Protein</a>	-	<b>Moderate</b> <a href="#">See all 8 studies</a>	The influence of whey protein on weight <i>per se</i> is highly unreliable, and is subject to the overall context of the diet. Protein in general can aid weight loss attempts and is required to build lean mass, with whey not having any demonstrated benefit over other protein sources.
	<a href="#">ECA</a>	 Notable	- <a href="#">See study</a>	Due to both the increase in metabolic rate and reduction in appetite reported, there are notable weight reductions with the ECA stack
	<a href="#">Fucoxanthin</a>	 Notable	- <a href="#">See study</a>	The lone study in obese, premenopausal women noted a large degree of weight loss over time relative to control, which was thought to be due to increasing the metabolic rate (secondary to alleviating fatty liver). Needs to be replicated in other demographics
	<a href="#">7-Keto DHEA</a>	 Minor	- <a href="#">See study</a>	A weight loss of 2.88kg (1.8% body fat) was seen with 7-keto over placebo (0.97 kg loss with 0.28% bodyfat) which is significant but not overly notable, since the study used obese persons and exercise
	<a href="#">Alpha-Lipoic Acid</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	It is possible that high doses (1,800mg) may have a body weight reducing effect in obese persons, but this requires more evidence.
	<a href="#">Ashwagandha</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	A decrease has been noted in one study where overweight persons with anxiety were being treated, and while the 1-2kg loss over 8 weeks was significant it is not sure if this applies to otherwise normal weight non-anxious persons.




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Chlorogenic Acid</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Although the reductions seen with chlorogenic acid seem remarkable, the studies conducted at this moment in time are somewhat industry influenced
	<a href="#">Cissus quadrangularis</a>	 Minor	- <a href="#">See study</a>	There may be a small weight loss associated with 300mg cissus (2.5% ketosteroids) which was seen alongside a reduction in appetite in obese persons; no known direct fat burning properties.
	<a href="#">Coleus forskohlii</a>	 Minor	<b>Moderate</b> <a href="#">See all 4 studies</a>	Mixed effects on overall weight, may be more effective in men rather than women. Overall, it requires more evidence to see if it has a role in weight loss regimens.
	<a href="#">Eurycoma Longifolia Jack</a>	 Minor	- <a href="#">See study</a>	A decrease in weight has been noted in overweight and obese men, but did not extend to men of normal weight. Mechanisms unknown.
	<a href="#">Grapefruit</a>	 Minor	<b>Very High</b> <a href="#">See all 3 studies</a>	There appears to be a weight reducing effect of grapefruit consumption relative to isocaloric controls (such as apple juice)
	<a href="#">Green Coffee Extract</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	There may be a weight reducing effect, but currently the literature is too influenced by industrial producers of GCE and the magnitude of effect seems too large. Independent replication is needed.
	<a href="#">Gynostemma pentaphyllum</a>	 Minor	- <a href="#">See study</a>	Long term, but not short term, ingestion of gynostemma tea appears to reduce fat mass in diabetics; no studies in healthy persons yet
	<a href="#">Irvingia gabonensis</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	Decreased body weight has been noted when african mango is consumed before meals, which may be secondary to reduced food intake; studies are somewhat confounded by industry influence.
	<a href="#">Leucic Acid</a>	 Minor	- <a href="#">See study</a>	The lone study using leucic acid in athletes has noted a minor but statistically significant increase in weight, attributable to lean mass (muscle plus water; bone mass unchanged)
	<a href="#">Nicotine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Possible minor weight reducing effects occur in interventions using nicotine, but they are highly unreliable and likely mediated by lesser food intake rather than inherent fat burning effects




LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Pterostilbene</a>	 Minor	- <a href="#">See study</a>	A slight decrease in weight has been seen in adults given pterostilbene supplementation alongside an increase in cholesterol; the two appear linked, as the addition of grape seed extract appeared to mitigate both.
	<a href="#">Rose Hip</a>	 Minor	- <a href="#">See 2 studies</a>	Two human trials have found mixed results. One study in obese humans failed to find evidence for weight loss, whereas one study in overweight humans found some effect.
	<a href="#">Saffron</a>	 Minor	- <a href="#">See study</a>	A reduction in weight has been noted to a very mild degree which may be wholly related to a reduction in snacking that has been observed with saffron supplementation in overweight women.
	<a href="#">Yacon</a>	 Minor	- <a href="#">See study</a>	A decrease in weight has been noted in obese women given Yacon, although this study could potentially be explained by a reduction in food intake (due to an increase in self-reported satiety and no tracking of calories noted).
	<a href="#">Zinc</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	In children who are likely deficiency, zinc supplementation can reduce body weight.
	<a href="#">Alanylglutamine</a>	-	- <a href="#">See study</a>	10 days supplementation of alanylglutamine in subjects with HIV does not modify overall bodyweight.
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See study</a>	
	<a href="#">Biotin</a>	-	- <a href="#">See study</a>	
	<a href="#">Caralluma fimbriata</a>	-	- <a href="#">See study</a>	Study was too short for the appetite suppressing effects to manifest as weight loss, and thus no evidence exists for weight reducing effects.
	<a href="#">Chlorella</a>	-	- <a href="#">See study</a>	No significant effects on body weight

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Citrullus colocynthis</a>	-	- <a href="#">See study</a>	In assessing the influence of the fruit extract on blood glucose, there was no significant influence on weight
	<a href="#">D-Aspartic Acid</a>	-	- <a href="#">See study</a>	No significant alterations in body weight when D-aspartic acid is taken alongside resistance training.
	<a href="#">Dehydroepiandrosterone</a>	-	- <a href="#">See study</a>	No significant influence on weight noted with DHEA supplementation
	<a href="#">Ganoderma lucidum</a>	-	- <a href="#">See study</a>	No significant alterations in body weight seen with ganoderma ingestion
	<a href="#">Garlic</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although there are theoretical benefits of garlic to weight loss, prolonged supplementation of garlic in other studies (where weight is measured as a secondary parameter of interest) is not altered. The weight loss effects are either small or nonexistent in otherwise normal conditions
	<a href="#">Grape juice</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	No apparent difference compared with a non-fruit sugar drink.
	<a href="#">Green Tea Catechins</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	
	<a href="#">Hesperidin</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In studies measuring weight as well as other parameters, weight is not influenced by supplementation of hesperidin relative to placebo
	<a href="#">Hibiscus sabdariffa</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Weight appears to be unaffected following ingestion of Roselle tea
	<a href="#">Hoodia gordonii</a>	-	- <a href="#">See study</a>	No significant influence on overall body weight (due to no fluctuations in appetite and thus no significant fat loss)

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Krill Oil</a>	-	- <a href="#">See study</a>	No significant influence on weight over time
	<a href="#">Lactobacillus casei</a>	-	- <a href="#">See study</a>	
	<a href="#">Licorice</a>	-	- <a href="#">See study</a>	No significant interactions with body weight associated with licorice ingestion
	<a href="#">Modafinil</a>	-	- <a href="#">See study</a>	There is currently no evidence to suggest a significant reduction of weight associated with modafinil, although as a trend to reduce weight has been noted alongside appetite reduction it is thought that modafinil could have a role in weight control.
	<a href="#">Olive leaf extract</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Overall, there does not appear to be a significant effect of olive phenolic consumption on weight
	<a href="#">Panax ginseng</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	Does not appear to have any weight reducing properties, although it has been reported in one study secondary to improving the glycemic profiles of diabetics
	<a href="#">Punicic Acid</a>	-	- <a href="#">See study</a>	No significant influence on weight has been noted
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	No significant alterations detected in body weight with quercetin supplementation.
	<a href="#">Rhodiola Rosea</a>	-	- <a href="#">See study</a>	Unable to modify weight over time
	<a href="#">Royal Jelly</a>	-	- <a href="#">See study</a>	No significant alterations in weight over the long term with Royal Jelly supplementation

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Shilajit</a>	-	- <a href="#">See study</a>	No significant influence detected on weight
	<a href="#">Spirulina</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Currently not enough evidence to support any significant interaction with weight
	<a href="#">Stinging Nettle</a>	-	- <a href="#">See study</a>	No significant influence on body weight with consumption of stinging nettle
	<a href="#">Tauroursodeoxycholic Acid</a>	-	- <a href="#">See study</a>	No significant influence on weight in obese persons
	<a href="#">Vitamin B3 (Niacin)</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Supplementation of pharmacological doses of niacin does not appear to influence body weight in any significant manner.
	<a href="#">Vitamin C</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	Vitamin C does not appear to have a weight reducing effect
	<a href="#">Vitamin D</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant alterations noted in weight, even when fat mass is lost, in obese persons
	<a href="#">Apple Cider Vinegar</a>	 Minor	<b>Very High</b> <a href="#">See 2 studies</a>	One study in overweight participants found a reduction in both 15 and 30 ml groups, and none in the placebo group. The low dose group saw a reduction of 1.2 kg while the high dose group saw a reduction of 1.9 kg over the course of 4 weeks. While both apple cider vinegar groups reported a greater reduction in energy intake than the placebo group, the low-dose group reported the greatest reduction. It's important to note that these records can be inaccurate.
	<a href="#">Marijuana</a>	 Minor	- <a href="#">See study</a>	In hospitalized subjects chronic THC has been noted to increase weight; it should be noted this information differs from epidemiological studies on non-hospitalized subjects (either no change or a decrease in weight being observed).



LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Medium-chain triglycerides</a>	 Minor	- <a href="#">See study</a>	Appears somewhat effective in reducing weight of obese persons to a greater degree than an isocaloric amount of longer chain fatty acids
	<a href="#">Black Cohosh</a>	-	- <a href="#">See study</a>	No significant influences on body weight
	<a href="#">Blueberry</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence on weight when taken as a daily supplement in obese individuals.
	<a href="#">CDP-choline</a>	-	- <a href="#">See study</a>	No significant effects of CDP-Choline on weight, despite the small appetite reducing effect
	<a href="#">Safflower Oil</a>	-	- <a href="#">See study</a>	No significant changes in total body weight appear to be visible following ingestion of safflower oil in the diet
	<a href="#">Sodium Bicarbonate</a>	-	- <a href="#">See study</a>	Despite the potential increase in metabolic rate and increase in ketone body production, there is currently no evidence to support more fat loss with sodium bicarbonate over placebo
	<a href="#">Taurine</a>	-	- <a href="#">See study</a>	No significant influence on weight noted with supplementation
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	Although increased mitochondrial fat oxidation was created for underlying the reductions in lipids and blood pressure, no significant influence on body weight was noted in obese men

# White Blood Cell Count

Total white blood cell count is measured commonly in toxicology testing, and some supplements that are known to support the immune system may also act via increasing levels of immune cells.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Garlic</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	While there are significant modifications in the subpopulations of white blood cells (ie. <i>which</i> immune cells you have) the overall quantity does not appear significantly affected.
	<a href="#">Vitamin E</a>	-	<b>Very High</b> <a href="#">See all 6 studies</a>	Supplementation of vitamin E does not appear to alter overall content of white blood cells relative to placebo.
	<a href="#">Saffron</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	A decrease in white blood cell count has been noted with supplementation of saffron at 60mg for over eight weeks.
	<a href="#">Spirulina</a>	 Minor	- <a href="#">See study</a>	Minor increase, needs more evidence in a non-aged cohort to assess potency
	<a href="#">Anethum graveolens</a>	-	- <a href="#">See study</a>	
	<a href="#">Astaxanthin</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Colostrum</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	White blood cell count does not appear to be chronically modified with colostrum supplementation, although a transient (one day) elevation was noted in one study.
	<a href="#">Curcumin</a>	-	<b>High</b> <a href="#">See all 4 studies</a>	Inconsistent evidence from 3 studies. Much more research is needed.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Glutamine</a>	-	- <a href="#">See study</a>	In safety testing, no significant alterations in white blood cell count is noted.
	<a href="#">Green Coffee Extract</a>	-	- <a href="#">See study</a>	No significant alterations in WBC count
	<a href="#">Hesperidin</a>	-	- <a href="#">See study</a>	No significant influence on total white blood cell count is seen with supplemental hesperidin.
	<a href="#">Lactobacillus reuteri</a>	-	- <a href="#">See 2 studies</a>	
	<a href="#">Ashwagandha</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	During toxicology testing in otherwise healthy persons, there was no significant alterations in white blood cell count seen with supplementation. However, another study found a statistically significant increase in healthy, active participants.
	<a href="#">Ketogenic diet</a>	 Minor	- <a href="#">See study</a>	Somewhat of a decrease after 1 and 2 years, with a greater decrease after to. The control group so no real change.
	<a href="#">Nigella sativa</a>	 Minor	- <a href="#">See study</a>	A normalization of WBC count has been noted in persons with hepatitis C being treated with the seed oil.
	<a href="#">Uncaria tomentosa</a>	 Minor	- <a href="#">See study</a>	An increase in white blood cell count has been noted with Cat's Claw by 9% over 9 weeks with a water extract, which is thought to be related to the immunoenhancing properties. The white blood cells that were increased were not assessed
	<a href="#">Lactobacillus casei</a>	-	- <a href="#">See study</a>	No change in white blood cell count in one study.
	<a href="#">Moringa oleifera</a>	-	- <a href="#">See study</a>	No significant alterations in white blood cell count following ingestion of the seeds of <i>Moringa oleifera</i>

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Stephania tetrandra</a>	-	- <a href="#">See study</a>	No significant alterations in white blood cell count are noted with oral supplementation of this plant.
	<a href="#">Tetradecyl Thioacetic Acid</a>	-	- <a href="#">See study</a>	

Back to: [Supplements](#) | [Health Outcomes](#)













# Working Memory

Working memory is the ability to transiently keep information in the brain until it can be processed into longterm memory, and person's with high working memory capacities are said to have a 'steel trap' mind. Some supplements may improve working memory in particular.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Modafinil</a>	 Minor	<b>Very High</b> <a href="#">See all 5 studies</a>	An improvement in working memory is noted in most persons tested, even otherwise healthy and nonfatigued controls.
	<a href="#">Ginkgo biloba</a>	-	<b>Very High</b> <a href="#">See all 3 studies</a>	Despite the improvement in short term memory and recall, there does not appear to be a significant improvement in working memory.
	<a href="#">D-Serine</a>	 Minor	- <a href="#">See study</a>	Immediate recall appears to be increased from D-serine when 2.1g is supplemented 2 hours prior to testing.
	<a href="#">L-Tyrosine</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Appears to preserve working memory during acute stressors without inherently having a memory boosting effect
	<a href="#">Marijuana</a>	 Minor	<b>Moderate</b> <a href="#">See 2 studies</a>	Acute working memory is decreased in new users of marijuana while under the influence, but during marijuana tolerance this hindering effect does not appear to persist.
	<a href="#">PRL-8-53</a>	 Minor	- <a href="#">See study</a>	Memory acquisition appears to be mildly increased in the range of 18-31% in persons with poorer performance on a word recollection memory test, but is not improved in high performers.
	<a href="#">Phosphatidylserine</a>	 Minor	- <a href="#">See study</a>	Improvement in working memory may be due to improved attention
	<a href="#">Polygala tenuifolia</a>	 Minor	- <a href="#">See study</a>	BT-11 appears to have some efficacy in improving immediate recall in otherwise healthy adults, although it did not have this efficacy in short term recall (cued or free)

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Choline</a>	-	- <a href="#">See study</a>	No significant improvement in working memory
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	In otherwise cognitively well subjects, working memory does not appear to be increased in response to cocoa flavanol ingestion.
	<a href="#">Coconut Oil</a>	-	- <a href="#">See study</a>	Insufficient evidence to support an increase in working memory
	<a href="#">Melissa officinalis</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	No significant influence appears to exist on working memory associated with lemon balm
	<a href="#">Nigella sativa</a>	-	- <a href="#">See study</a>	Despite improvements in logical memory and 30 minute recall, digit span tests are not affected by supplementation of <i>nigella sativa</i> .
	<a href="#">Ashwagandha</a>	 Minor	- <a href="#">See study</a>	A possible small effect has been noted in one study in people with cognitive impairment but needs to be replicated.
	<a href="#">Fish Oil</a>	-	- <a href="#">See study</a>	
	<a href="#">Peppermint</a>	-	- <a href="#">See study</a>	Working memory does not appear to be influenced with the aroma of peppermint

# Wrinkles

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Vitamin A</a>	 Notable	<b>Very High</b> <a href="#">See all 3 studies</a>	The appearance of fine (small) wrinkles appears to be reliably reduced with topical application of a nightly vitamin A cream, with efficacy in all ages assuming fine wrinkles are present.
	<a href="#">Vitamin B3 (Niacin)</a>	 Minor	- <a href="#">See study</a>	Topical application of nicotinamide appears to slightly reduce the appearance of fine wrinkles (crow's feet).
	<a href="#">Ginkgo biloba</a>	 Minor	- <a href="#">See study</a>	There appears to be a slight decrease in skin wrinkling following topical application of 0.3% ginkgo for 28 days
	<a href="#">Moringa oleifera</a>	 Minor	- <a href="#">See study</a>	Application of a 3% moringa leaf cream for three winter months in young adult males appeared to reduce visual wrinkles on the cheeks relative to control cream.
	<a href="#">Rose Hip</a>	 Minor	- <a href="#">See study</a>	3 g of oral rose hip powder decreased the depth of crow's feet wrinkles.

Back to: [Supplements](#) | [Health Outcomes](#)

# vLDL-C

Very low density cholesterol (vLDL-C) is the lipoprotein synthesized in the liver, and is able to convert to LDL-C when in circulation.

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Fish Oil</a>	 Minor	<b>Very High</b> <a href="#">See all 6 studies</a>	May decrease vLDL cholesterol
	<a href="#">Chromium</a>	-	<b>Very High</b> <a href="#">See all 4 studies</a>	No significant influence on vLDL cholesterol seen in diabetics supplementing chromium.
	<a href="#">Vitamin B3 (Niacin)</a>	 Notable	<b>Very High</b> <a href="#">See 2 studies</a>	Alongside decreases in triglycerides and LDL-C, the concentrations of vLDL-C also appear to be decreased in response to niacin supplementation.
	<a href="#">Shilajit</a>	 Minor	- <a href="#">See study</a>	Minor decreases in vLDL concentrations have been noted
	<a href="#">Biotin</a>	-	- <a href="#">See study</a>	
	<a href="#">Cocoa Extract</a>	-	<b>Very High</b> <a href="#">See 2 studies</a>	vLDL-C concentrations in serum do not appear to be altered in response to supplementation of cocoa flavanols.
	<a href="#">Creatine</a>	-	- <a href="#">See study</a>	
	<a href="#">Guggul</a>	-	- <a href="#">See study</a>	No significant influence on vLDL cholesterol levels

LEVEL OF EVIDENCE	SUPPLEMENT	MAGNITUDE OF EFFECT	CONSISTENCY OF RESEARCH RESULTS	NOTES
	<a href="#">Quercetin</a>	-	- <a href="#">See study</a>	No significant changes in vLDL-C are detected with quercetin supplementation.
	<a href="#">Grape juice</a>	 Notable	- <a href="#">See study</a>	One study found an increase in a grape that consumed 10 ml/kg daily, but not in one that took vitamin E. The sugar content may be involved. Much more research is needed.
	<a href="#">Eclipta alba</a>	 Minor	- <a href="#">See study</a>	Decreases in fasting vLDL have been noted
	<a href="#">Ketogenic diet</a>	 Minor	<b>High</b> <a href="#">See all 3 studies</a>	Decreased more than in the control group in 2 studies, and in one study there was no difference. It's unclear why studies differed.
	<a href="#">Ashwagandha</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	A reduction has been noted in one industry-funded study when 250 mg or 500 mg of an extract was used. Another study in healthy, active participants found no change.
	<a href="#">Curcumin</a>	-	<b>Moderate</b> <a href="#">See 2 studies</a>	A notable reduction was found in coronary artery disease patients in a small pilot study, but not in another study in type 2 diabetics that used turmeric. Much more research is needed.

Back to: [Supplements](#) | [Health Outcomes](#)

