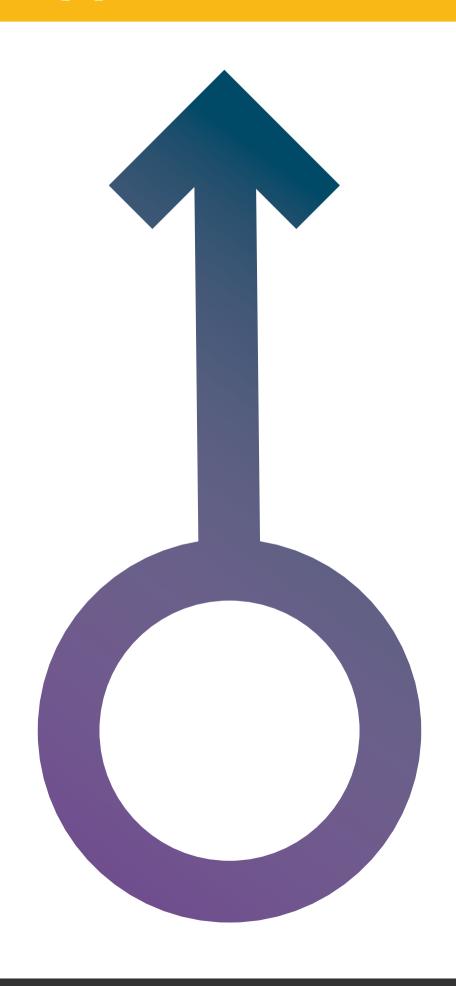
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Libido & Sexual Enhancement Supplement Guide



Medical Disclaimer

This guide 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 guide is built on scientific studies, but study outcomes are never homogeneous: individual results do vary. If you engage in any activity or take any product mentioned herein, you do so of your own free will, and you knowingly and voluntarily accept the risks. While we mention major known interactions, it is possible for any supplement to interact with other supplements, as well as with foods and pharmaceuticals.

A product may not contain the exact compounds and amounts listed on its label. Before you decide whether to take it, investigate it and its manufacturer. More than isolated compounds, herbs are prone to batch-to-batch variability, which can alter their efficacy and safety.

For evidence supporting the claims mentioned in this guide, please visit Examine.com.

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How to Use This Guide

The Examine.com team has been publishing research on nutrition and supplementation since March 2011. Drawing from all we've learned, we've designed this Stack Guide to help you figure out which supplements can help you reach your health goal, and which can hinder you or just waste your money.

Core supplements have the best safety-efficacy profile. When used responsibly, they are the supplements most likely to help and not cause side effects.

Primary options may provide substantial benefit, but only in the right context. A primary option is not for everyone, but if you read the entry and find that you meet the criteria, consider adding the supplement to your stack.

Secondary options have less evidence for their effects. They could work or be a waste of money. Keep them in mind, but think twice before adding them to your stack.

Promising supplements are backed by tradition or by mechanistic, animal, epidemiological, or anecdotal evidence, but not yet by convincing human trials.

Inadvisable supplements are either potentially dangerous or simply ineffective, marketing claims notwithstanding. Do not add them to your stack. At best, they'll be a waste of money; at worst, they can cause you harm.

Now that you've been presented with various supplements worthy of your interest, the time has come to combine them based on your objective. We'll guide you in **assembling your stack**.

Then comes the **FAQ**, in which we cover common questions that may arise when assembling your stack.

Lastly, we include information on **precautions and troubleshooting**.

With all this combined, you should be able to identify and assemble the supplement stack best suited to your objective.

Core Supplements

Maca

Why it's a core supplement

Multiple studies show that maca, a root vegetable, enhances libido in both men and women. Libido keeps improving for 8 weeks before plateauing.

Maca can serve to treat sexual dysfunction caused by selective *serotonin reuptake inhibitors* (SSRIs), a kind of antidepressant. It can also mildly benefit men with erectile dysfunction from other causes. Moreover, preliminary animal evidence suggests that red maca might improve prostate health and reduce anxiety.

Maca does not interact with any major hormones, such as testosterone, estrogen, or DHEA. It is not known to interact with any pharmaceuticals.

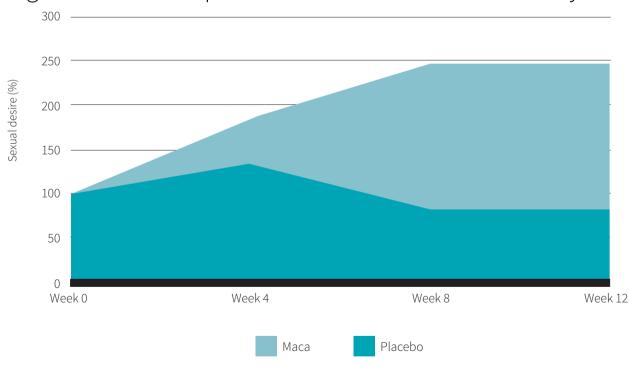


Figure 1: Maca vs. placebo on sexual desire in healthy men

Source: Gonzales et al. Andrologia. 2002 Dec.

How to take it

Take 1.5–3 g of maca root powder at breakfast. For the purpose of improving libido, there is no difference between red, black, and yellow maca.

Primary Options

Cocoa

Why it's a primary option

Low nitric oxide (NO) levels can cause blood vessels to narrow, leading to poor circulation, which can result in erections that are softer and more difficult to maintain. Like the flavonoids in grape seed and pine bark, (-)-epicatechin and other flavonoids in cocoa can help support NO levels, thus improving blood flow and alleviating this type of erectile dysfunction.

Judging from a study on a grape seed extract, the improvement in blood flow from cocoa might be negated by the flavonoid <u>quercetin</u>, whose concurrent supplementation should therefore be avoided.

How to take it

Take 1 g of **cocoa polyphenols**, for instance by consuming about 30 g of cocoa powder or 40 g of dark chocolate with a 75% cocoa content. Neither milk chocolate nor white chocolate is a good source of polyphenols.

Yohimbine

Why it's a primary option

Yohimbine is a an alkaloid found in the bark of the African tree yohimbe (*Pausinystalia johimbe*). It is a stimulant often used as a fat burner. It is also supplemented by men wishing to increase virility and erectile rigidity.

Yohimbine can have a variety of side effects, such as elevated heart rate and anxiety. In fact, studies on anxiety commonly use yohimbine to *induce* anxiety. In people with panic disorders, it can even induce panic attacks. *Anyone susceptible to anxiety should steer clear of yohimbine.*

Yohimbine should not be used alongside antipsychotics. It should not be used alongside antidepressants, such as monoamine oxidase inhibitors (MAOIs)

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or tricyclic antidepressants (TCAs). It should not be used by people who treat their migraines with ergotamines.

Yohimbine must be used carefully, especially when combined with other stimulants, such as <u>caffeine</u> or <u>synephrine</u>. People unaccustomed to stimulants should avoid yohimbine.

Yohimbine is not a reliable treatment for chronic erectile dysfunction, so it should only be used by otherwise healthy men looking for a sexual boost. Although sometimes called "herbal Viagra", it is less effective than Viagra (sildenafil citrate) or Cialis (tadalafil). These two pro-erectile drugs are also safer, so they can be used *instead of* yohimbine.

Although Viagra and Cialis make for better erections, they have no direct effect on libido (sex drive). Yohimbine *might* have a direct, positive effect on libido, but more research is needed to confirm this benefit, which at best appears unreliable.

How to take it

To supplement yohimbine by itself, without other stimulants, take 0.2 mg of yohimbine per kilogram of bodyweight (0.09 mg/lb). This translates to approximately:

- 14 mg for a 150-lb person
- 18 mg for a 200-lb person
- 23 mg for a 250-lb person

If you take other stimulants, reduce the yohimbine dose by half. Despite being a stimulant, yohimbine does not seem to impair sleep, but should your body tell you otherwise, pay heed and avoid supplementation too close to bedtime.

Yohimbine has fewer side-effects than yohimbe (bark powder). For that reason, and because the yohimbine content of yohimbe can vary greatly, supplementing yohimbine is considered safer than supplementing yohimbe. However, companies selling "yohimbine" often use a bark extract whose yohimbine content has been estimated rather that ascertained, so the actual yohimbine content of a product can differ dangerously from the number on the label. Should you decide to supplement yohimbine, start with the lowest possible dose (often, 2.5 mg), then slowly work your way up.

Secondary Options

Eurycoma Longifolia

Why it's a secondary option

Eurycoma longifolia is also known by several other names, such as longjack and tongkat ali. Preliminary evidence supports its traditional use as a libido enhancer for both men and women, but more research is needed to make it more than a secondary option.

Preliminary evidence also supports the use of *Eurycoma longifolia* as a male fertility enhancer. This herb does not seem to increase testosterone, however, or only to a small extent in men suffering from infertility or severe erectile dysfunction. If it does increase testosterone in infertile men, its antioxidant content may be responsible, since <u>vitamin E</u> and <u>coenzyme Q10</u> have the same effect.

In "sexually sluggish" male rats, Eurycoma longifolia significantly increased the desire to mate.

Figure 2: The sexually sluggish male rat

There is too little evidence to ascertain what effects Eurycoma longifolia has on human libido.

Source: Zanoli et al. J Ethnopharmacol. 2009 Aug.

Source: Ismali et al. Evid Based Complement Alternat Med. 2012 Nov.

How to take it

To supplement *Eurycoma longifolia*, take 200–300 mg of a 100:1 extract (concentrated for eurycomanone) daily, preferably in two separate doses.

Fenugreek

Why it's a secondary option

In Ayurvedic medicine, fenugreek is called *methi* (its Hindi name) and is used notably to increase virility. While the leaves and seeds are both used, most supplements favor the latter.

When supplemented by healthy men, high doses of fenugreek appear to significantly increase libido and sexual satisfaction. A small increase in testosterone was noted in some studies, but not in others. When dihydrotestosterone (DHT) was assessed, no significant change was reported.

Fenugreek has the interesting property of causing bodily fluids (saliva, semen, sweat, urine ...) to smell like maple syrup. More importantly, fenugreek contains coumarin, a blood-thinning compound that could interact with blood-thinning medication, such as warfarin (Coumadin).

Figure 3: Graphic summary of trials on fenugreek and testosterone

RESULT	DOSE	DURATION	SAMPLE	SOURCE
Testosterone				Steels et al. <i>Phytother Res</i> . 2011 Sep.
No change in testosterone.	Testofen (patented fenugreek extract): 600 mg/day	6 weeks	60 healthy males	
Testosterone DHT				Wilborn et al. <i>Int J Sport Nutr</i> Exerc Metab. 2010 Dec.
Increase in testosterone, but no change in DHT. Decrease in body fat, but no change in lean mass.	Fenugreek: 500 mg/day	8 weeks	30 resistance-trained males	
Testosterone DHT				Poole et al. <i>J Int Soc Sports Nutr</i> . 2010 Oct.
No change in testosterone or DHT.	Fenugreek extract: 500 mg/day	8 weeks	49 resistance-trained males	
Testosterone DHT				Bushey et al. <i>IJESAB.</i> 2009 Feb.
Decrease in DHT, but no change in testosterone.	Fenugreek extract: 500 mg/day	8 weeks	45 resistance-trained males	

Sources:

Steels et al. *Phytother Res.* 2011 Sep.
Wilborn et al. *Int J Sport Nutr Exerc Metab.* 2010 Dec.
Poole et al. *J Int Soc Sports Nutr.* 2010 Oct.
Bushey et al. *IJESAB.* 2009 Feb.

How to take it

Take a fenugreek supplement standardized for 300 mg of saponins. If you purchase a product with Testofen, aim for 600 mg of this proprietary extract.

Procyanidins

Why they're a secondary option

Low nitric oxide (NO) levels can cause blood vessels to narrow, leading to poor circulation, which can result in erections that are softer and more difficult to maintain. Like the flavonoids in cocoa, procyanidins and other flavonoids in pine bark and grape seeds can help support NO levels, thus improving blood flow and alleviating this type of erectile dysfunction.

Pycnogenol, a patented pine bark extract standardized to 65–75% procyanidin, is the best-studied source of procyanidins. Grape seed extracts are cheaper, but their benefits to blood flow are less reliable and could take longer to develop (up to one month). To improve blood flow, Pycnogenol is a better choice than a grape seed extract, but neither option is as potent as cocoa or can boast as much supporting evidence.

The flavonoid <u>quercetin</u> may negate the improvement in blood flow from grape seed extracts (and, by extension, from pine bark extracts). Concurrent supplementation should therefore be avoided.

How to take them

To supplement **Pycnogenol**, take 100–200 mg once a day with a meal.

To supplement a **grape seed extract**, take 200–400 mg once a day with a meal.

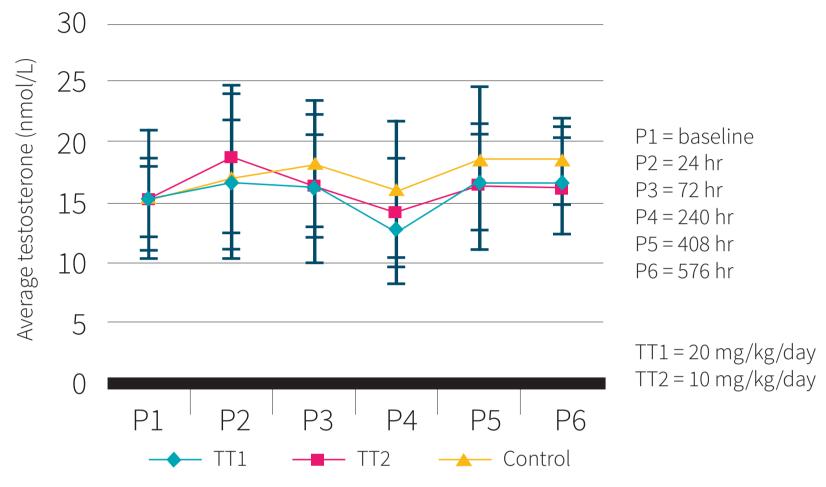
Tribulus Terrestris

Why it's a secondary option

Tribulus terrestris has long been marketed as an herbal testosterone booster, with no supporting evidence. This herb does enhance libido, though, which convinces many men that their testosterone has increased.

Little research has been conducted on the effects of herbs on libido, which is why even the most promising among them can only be secondary options.

Figure 4: Graph showing no difference in testosterone with *Tribulus terrestris* supplementation



Source: Neychev and Mitev. J Ethnopharmacol. 2005 Oct.

How to take it

To supplement *Tribulus terrestris*, take 200–450 mg of an extract standardized for 60% steroidal saponins once a day with a meal.

Inadvisable Supplements

Many are the herbs traditionally used as libido enhancers absent from this guide because of a lack of scientific evidence. Among those herbs, <u>holy basil</u> and *Pedalium murex* can at least boast promising animal research, but human studies are still pending.

Keep in mind that all libido boosters are overhyped to some extent. Sexual enhancement is a lucrative market, so unsubstantiated claims are numerous. As a rule, avoid "proprietary blends" that hide from you how much of each ingredient you are actually getting.

Assembling Your Stack

Incorporating Core Supplements

To keep a healthy libido, you should minimize stress and maintain good habits with regard to sleep, diet, and exercise (intense cardiovascular activity is particularly beneficial). Making positive lifestyle changes should be a priority before supplementation is considered.

The only core supplement in this stack is maca. Take 1.5–3 g of maca root powder at breakfast. Pursue this protocol for a month before you consider making any modification, such as adding one of the following options.

Incorporating Options

For men and women who want to increase their libido

Take the core maca (1.5–3 g) at breakfast. If after a month your problem is not solved, add either fenugreek (in the form of an extract standardized for 300 mg of saponins), *Eurycoma longifolia* (200–300 mg of a 100:1 extract), or *Tribulus terrestris* (200–450 mg of an extract standardized for 60% steroidal saponins); you should not cumulate those three libido boosters, but you can rotate them once a month.

For men without erectile dysfunction who want to improve their erectile rigidity

Take the core maca (1.5–3 g) at breakfast. If after a month your problem is not solved, take <u>yohimbine</u> (0.2 mg per kilogram of bodyweight, so about 0.09 mg/lb) about 30 minutes before sexual activity.

For men with untreated erectile dysfunction caused by impaired blood flow

Take the core $\underline{\text{maca}}$ (1.5–3 g) at breakfast. If after a month your problem is not solved, add $\underline{\text{cocoa}}$ polyphenols (1 g).

Should the cocoa polyphenols fail to help you after a month, you could try replacing them by <u>Pycnogenol</u> (100–200 mg). Should the Pycnogenol fail to help you after a month, you could try replacing it by a <u>grape seed extract</u> (200–400 mg). Take your Pycnogenol or grape seed extract once a day with a meal.

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FAQ

Can I add to my stack a supplement not covered in this guide?

Supplement your current stack for a few weeks before attempting any change. Talk to your doctor and research each potential new addition in advance. Check for known negative interactions with other supplements in your current stack, but also for synergies. If two supplements are synergistic or additive in their effects, you might want to use lower doses for each.

Can I modify the recommended doses?

If a supplement has a recommended dosage range, stay within that range. If a supplement has a precise recommended dose, stay within 10% of that dose. Taking more than recommended could be counterproductive or even dangerous.

Should I take my supplements with or without food? And at what time?

Answers are provided in each supplement entry whenever the evidence permits. Too often, however, the evidence is either mixed or absent. Besides, a supplement's digestion, absorption, and metabolism can be affected differently by different foods. Fat-soluble vitamins (A, D, E, K), for instance, are better absorbed with a small meal containing fat than with a large meal containing little to no fat.

Starting with half the regular dose can help minimize the harm a supplement may cause when taken during the day (e.g., tiredness) or in the evening (e.g., insomnia).

I'm a woman and wish to increase my libido. How does this influence the above recommendations?

Human studies on libido and sexual satisfaction are mostly conducted on men, though maca has been noted to also work on women. A lot more research is needed to determine how the other herbs mentioned in this guide affect women.

If you try a libido booster, keep a journal of the effects you experience. Taking notes will help you determine which supplements are effective and which are not.

Can alcohol influence my libido?

Yes. A little alcohol might decrease your inhibitions and thus increase your libido, but too much alcohol acutely (drunkenness) or chronically (alcoholism) will lead to sexual disorders: loss of libido and less intense orgasms in both men and women, plus some degree of erectile dysfunction and a probable reduction in testosterone production in men.

Can my diet influence my libido?

Yes, and in too many ways to count! To tackle the big issues, though, you should keep in mind that diets very low in calories or fat are likely to lessen your libido over time.

Precautions and Troubleshooting

Stack components are seldom studied together. 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.

Some sexual aids, such as yohimbine and Viagra, have stimulatory properties. Taking those with other stimulants (or any other compound liable to increase diastolic blood pressure) can increase the risk of cardiovascular injury.

If you experience an erection that lasts for more than four hours, see your doctor immediately to avoid permanent penile damage.

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