

Examine.com

Fat Loss

Medical Disclaimer & Important Note

This guide is a general health-related information product, intended for healthy adults over the age of 18.

This guide is for educational purposes only. It is not medical advice. Please consult a medical or health professional before you begin any exercise, nutrition, or supplementation program, or if you have questions about your health.

Participating in exercise activities or using products mentioned in this guide may pose risks for people in poor health or with pre-existing physical or mental health conditions.

Do not use any products or participate in any activities if you are in poor health or have a pre-existing mental or physical health condition. If you choose to participate, you do so of your own free will, and you knowingly and voluntarily accept the risks.

While we will mention major known drug interactions, it may be possible for any supplement to interact with medications or other drugs. If you are currently taking medication, consult a health professional prior to using any supplement in this guide.

Specific study results described in this guide should not be considered representative of typical results. Not all supplements provide the exact amount of compounds as listed on the label. Always investigate supplement companies, as well as the supplement itself, before purchasing anything. Herbs, rather than isolated compounds, may also have some variability from one batch to the next that can alter the efficacy.

To read the evidence supporting claims mentioned in this guide, please visit [Examine.com](https://www.examine.com).

Table of Contents

04	How to use this Guide
05	Base Supplements
06	Proven Options
12	Unproven Options
15	Cautionary & Overhyped Options
17	Assembling Your Supplement Stack
19	Stack Modification FAQ
21	Precautions & Troubleshooting

How to use this Guide

The team at Examine.com has been publishing research on nutrition and supplementation since March 2011. In that time, we've learned a great deal about supplements, especially how they can work together to help you with health goals.

This stack guide help you figure out which supplements can help you and which will hinder and/or be a waste of your money for your desired goals.

The following four sections present information on supplements that are relevant to *Cardiovascular & Heart Health*:

1. Base Supplements
2. Proven Options
3. Unproven Options
4. Cautionary and Overhyped Options

Base Supplements are recommended for the majority of people with this goal. They are either effective on their own or are required to boost the effects of another supplement. These are the first supplements to consider for your stack. Base Supplements are more researched and have less adverse drug interactions than options.

Proven Options are supplements that will provide a lot of benefits, but only in the right context. They cannot be recommended for everyone, but if you read the entry and find that you meet the criteria, feel free to add the supplement to your stack.

Unproven Options are another group of potentially beneficial supplements, but they lack evidence for their effects. They cannot be recommended with the same confidence as proven options. They could work or be a waste of your money - there is not enough evidence to know for sure. Keep unproven options in mind, but approach them cautiously when incorporating them into your stack.

Cautionary and Overhyped Options are supplements that are claimed to provide benefits but have been shown to be ineffective. If a supplement is deemed too risky to be used, it will also be found in this section. **Do not** add these compounds to your stack; they tend to be a waste of money or potentially harmful to your health.

Once we have explained the various supplements that you need to be aware of, the **Assembling your Supplement Stack** section will outline how different supplements can be combined, based on your objectives.

After that, we follow up with the **Stack Modification 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 a supplement stack best suited for your goals and objectives.

Base Supplements

There are no base supplements in this fat burning stack because effective fat burners can potentially interact negatively with medications. See the Proven Options below.

Caffeine

Why it is a proven option

Caffeine has several potentially beneficial effects. It is not just a powerful stimulant, it is also a fat burner. When ingested, caffeine causes adrenaline and dopamine to be released, which improves mood, induces euphoria, and increases excitability. However, after prolonged supplementation, these effects fade and only the ability to ward off sleep remains.

Caffeine has two distinct effects that contribute to its fat burning properties. Caffeine consumption has a thermogenic effect, which means it increases heat production. Prolonged consumption of caffeine also has a lipolytic effect, which means caffeine causes triglycerides to release fatty acids, which can then be used for fuel by the body.

Caffeine supplementation can inhibit enzymes called phosphodiesterases (PDEs). Suppressing PDEs can increase levels of cyclic adenosine monophosphate (cAMP) in the body. Elevated cAMP levels are associated with lower triglyceride levels in fat cells, as well as improved protein synthesis in muscle cells. Moreover, if PDEs are inhibited, supplements that increase cAMP levels, like [syneprhine](#), might be even more effective at increasing heat production.

Despite its common usage, caffeine should not be used alongside pharmaceuticals like monoamine oxidase inhibitors (MAOIs), a kind of antidepressant, and medications like tizanidine or dipyridamole to avoid negative interactions with these medications.

How to take it

To supplement caffeine for a prolonged period of time, take 100 – 200 mg twice a day, for a daily dose range of 200 – 400 mg. People unused to caffeine should start at the low end of the dosage range. Supplementing caffeine in the evening can disrupt sleep.

People sensitive or new to stimulants should supplement caffeine by itself before introducing other stimulants, like synephrine. Caffeine can be consumed in the above doses through coffee or tea. Anyone that gets enough caffeine through dietary sources does not need to supplement caffeine.

White Willow Bark

Why it is a proven option

White willow bark is a plant source of salicin, which is metabolized into salicylic acid, a cousin of acetylsalicylic acid, better known as aspirin. Salicylic acid is very similar to aspirin. The only significant difference is that aspirin is less harmful when taken in excess.

Salicylic acid is thought to be synergistic with the synephrine-caffeine stack, since aspirin has been demonstrated to be synergistic with the caffeine-ephedrine stack.

Salicylic acid can inhibit prostaglandin production in neurons, which can improve stimulatory signaling and increase the effects of adrenaline.

It is not included as a base supplement because of potential drug interactions. As an antiplatelet agent, it may interact negatively with other blood thinners, like warfarin. White willow bark should not be supplemented by people with stomach ulcers. It may be more effective at improving the effects of synephrine and caffeine in people with a higher body fat percentage, as compared to lean users.

How to take it

White willow extract is ideally used in this stack alongside synephrine and caffeine supplementation. It can be taken at the same time as these two, and the combination can be taken with a meal to lessen the side-effects of heartburn or an upset stomach.

The standard dose for white willow extract is based on the extract's salicin content. This translates to a standard dose of 90 mg of salicin. For example, to supplement 90 mg of salicin through a white willow extract containing 15% salicin, take 600 mg of the extract.

Coleus Forskohlii

Why it is a proven option

Coleus forskohlii is an herbal supplement that can elevate cyclic adenosine monophosphate (cAMP) levels, one of the molecules responsible for the feeling of stimulation from supplements like [caffeine](#).

Elevated cAMP levels are associated with lower triglyceride levels in fat cells and increased protein synthesis in muscle cells. Preliminary evidence suggests *Coleus forskohlii* supplementation can cause both of these effects, though there is currently no evidence that links *Coleus forskohlii* supplementation and muscle gain.

Coleus forskohlii can be taken alongside other supplements that increase cAMP, like caffeine, to increase their effectiveness.

Coleus forskohlii supplementation should not last longer than twelve weeks. More research is needed to determine the long-term effects of *Coleus forskohlii* supplementation. Short-term use has been shown to be safe.

Do not supplement *Coleus forskohlii* if you are currently taking blood pressure medications or blood thinning medication.

How to take it

The main bioactive compound in *Coleus forskohlii* is called forskolin. Most *Coleus forskohlii* extracts contain 10% forskolin, by weight. The standard dose for forskolin is 50 mg, taken in 25 mg doses twice a day. To supplement 25 mg of forskolin, assuming a 10% forskolin *Coleus forskohlii* extract, take 250 mg of extract. This comes out to 500 mg of the extract total, split up into two daily doses of 250 mg each, taken four to six hours apart.

More research is needed to confirm that this is the ideal dose for *Coleus forskohlii* supplementation. Overweight people may experience more benefits from *Coleus forskohlii* supplementation than lean people.

Yohimbine

Why it is a proven option

Yohimbine is a compound derived from the bark of the *Pausinystalia yohimbe* plant. Yohimbine supplementation makes body fat cells more susceptible to fat loss.

Yohimbine is an effective fat burner for young and athletic people, which is uncommon for fat burners. It is also said to help burn ‘stubborn fat’, like love handles, because the receptors it acts on are found in higher levels around the oblique muscles. Further research is needed to confirm this effect.

Though it is effective, yohimbine is not a base supplement because it is significantly more dangerous than synephrine, and cannot be used effectively for long periods of time. Excessive yohimbine doses can cause elevated heart rate and may cause both anxiety symptoms and panic attacks. People with anxiety should be cautious when supplementing yohimbine, since even the regular dose can exacerbate pre-existing conditions. Yohimbine can act as a powerful fat burner, but it must be used carefully, especially when combined with other stimulants. Yohimbine should not be used by people not accustomed to stimulants.

Yohimbine is recommended for supplementation over the bark of *Pausinystalia yohimbe* itself, since the isolated compound has fewer side-effects than the bark. This supplement should also not be used alongside antidepressants like monoamine oxidase inhibitors (MAOIs) and tricyclic antidepressants (TCAs). Do not take yohimbine if you take ergotamines to treat migraines.

How to take it

Yohimbine is dosed differently depending on if it is supplemented by itself or as part of a stack. The typical yohimbine dosage range, as part of a stack, is 2.5 – 7.5 mg (250 – 750 mcg), taken twice a day for a total daily dose of 5 - 15 mg. It is strongly recommended to start at the low end of the range before supplementing higher doses.

[Rauwolscine](#) is a compound with a similar structure and function as yohimbine. Rauwolscine may provide the same effects as yohimbine and can be seen as an alternative, but it has only preliminary evidence for its effects and should be supplemented with caution.

Note: People with anxiety disorders should be especially careful when supplementing yohimbine, as it can exacerbate pre-existing symptoms of anxiety or panic disorder.

[5-HTP](#)

Why it is a proven option

5-HTP is an intermediate in serotonin production. Supplementing 5-HTP improves serotonin signaling, which may reduce carbohydrate cravings. Evidence suggests 5-HTP is especially effective when supplemented by obese and diabetic people.

Fewer and less intense carbohydrate cravings are associated with weight loss, since this effect reduces overall food intake. Further research is needed to confirm whether this effect can occur in lean people.

5-HTP should not be taken alongside antidepressants, antipsychotic medications, or other medications that affect serotonin, like dextromethorphan and tramadol.

How to take it

The optimal daily dose for 5-HTP is 300 – 500 mg. This dose can be split into two over the course of a day. A split dose should be between 150 – 250 mg.

5-HTP for appetite reduction is best taken with a meal containing carbohydrates. People on a low carbohydrate diet should still supplement 5-HTP with a meal.

5-HTP can be supplemented with an evening meal, as it can reduce food cravings before bed and may also improve sleep quality by helping the body produce [melatonin](#), a hormone that regulates sleep.

L-Theanine

Why it is a proven option

Though L-theanine does not possess any fat burning properties on its own, it does offer benefits for people supplementing stimulants like [caffeine](#).

Supplementation of L-theanine can help calm the nervous system and reduce excitability while retaining the stimulant-derived benefits to attention span and focus.

Theanine can be added to any stack that provides too much of a stimulating effect at the standard dose.

How to take it

L-Theanine should be supplemented at the same time as caffeine, in a similar or slightly higher dose. For the purposes of this guide, take 200 mg of L-theanine alongside the twice-daily dose of caffeine, for a 400 mg total daily dose.

Synephrine

Why it is an unproven option

Synephrine (specifically, *p*-synephrine) is a compound found in citrus fruits. Most citrus fruits, except for bitter oranges, do not have a high enough synephrine concentration to have an effect on the body. When synephrine is consumed, either by eating a bitter orange – not to be confused with the oranges you see at the grocery store – or through a bitter orange/synephrine supplement, it causes a stimulatory and fat burning effect in the body.

P-synephrine affects dopamine, adrenaline, and noradrenaline systems to cause its fat burning effects. This is why *p*-synephrine is compared to [ephedrine](#), another supplement that can increase metabolic rate, and subsequently burn more fat. Like ephedrine, supplementing *p*-synephrine over a long period of time will not diminish its fat burning effects, though the feeling of stimulation may fade over time.

P-synephrine can be supplemented through bitter orange extract, which contains flavonoids like narigenin and [hesperidin](#), which may further increase the metabolic increase seen after *p*-synephrine supplementation. However, hesperidin interacts with several drug metabolizing enzymes, which means it may interact negatively with pharmaceuticals. For this reason, bitter orange extract is not recommended over isolated *p*-synephrine supplementation.

When used carefully, *p*-synephrine is safe and can reliably cause a mild increase in metabolic rate. It should be noted that this applies to *p*-synephrine. Other variants, like *o*-synephrine and *m*-synephrine, have less evidence for their safety. It is considered an unproven supplement despite all the above evidence because it has mostly been studied in the context of overweight and obese supplementation.

Note: As mentioned above, some compounds in bitter oranges, like hesperidin, may interact with drug-metabolizing enzymes. Synephrine can also interact negatively with monoamine oxidase inhibitors (MAOIs), a kind of antidepressant.

How to take it

The standard synephrine dose when taken alongside other stimulants is 10 – 20 mg, taken twice a day for a total daily dose of 20 – 40 mg. Anyone supplementing synephrine with other stimulants should start at the low end of the dosage range and slowly work up to avoid overstimulation.

Synephrine should be supplemented on an empty stomach in the morning, and again six to eight hours later. If supplementing synephrine on an empty stomach causes nausea, take it with a meal instead.

Synephrine can also be supplemented through an extract called bitter orange. The extract dosage should correspond to the synephrine content. For example, to supplement 10 mg of synephrine through a bitter orange extract containing 6% synephrine, take 166 mg of the extract. Supplementation of synephrine through bitter orange extract is ***not recommended alongside pharmaceuticals*** because of potential interactions with drug-metabolizing enzymes.

Atypical Caffeine Sources ([Guarana](#), [Yerba](#))

Why it is an unproven option

Both *Paullinia cupana*, also known as guarana, and *Ilex paraguariensis*, also known as yerba mate, are caffeine-containing herbs. These supplements may be used as alternate caffeine sources, but it's important to note that they also contain unknown bioactive compounds.

Both herbs have preliminary evidence suggesting that they may improve cognition on top of the cognitive benefits caffeine provides, but further research is needed to confirm this effect. Avoid atypical sources of caffeine if you are taking amphetamine compounds. See the [caffeine](#) section of this guide for more compounds that may interact negatively with caffeine.

Guarana and yerba mate are popular caffeine sources, but much more research is needed before they can be recommended specifically for fat loss.

How to take it

Despite being caffeine replacements, guarana and yerba mate should not be compared to caffeine and are dosed very differently.

To supplement guarana, assuming a 9% caffeine content supplement, take 50 – 70 mg twice a day before slowly working up to 150 – 200 mg a day, taken in two daily doses of 75 - 100 mg each.

To supplement yerba mate, take 1,000 mg of the leaf extract. This provides approximately 17.5 mg of caffeine, but this dosage should be increased very cautiously due to the presence of unknown bioactive compounds.

These herbs may be supplemented by brewing a tea, but this may make it difficult to maintain accurate dosages. Too high of a dose can lead to excessive stimulation and cardiac complications like arrhythmia.

Note: When supplementing alternate caffeine sources, start at very low dosages to avoid the risks that come with batch variability and the possible side effects that could arise in people not used to caffeine.

Cautionary & Overhyped Options

Senna alexandrina

Senna alexandrina, or just senna, is an herb frequently marketed as a dietary cleanser and detoxifier. Senna is a potent laxative, so while it can induce temporary weight loss in that way, senna does not have an inherent fat loss effect.

Daily or chronic usage of any potent laxative can result in colon damage. This excludes caffeine and fiber.

Raspberry Ketones

Raspberry ketones are a molecule initially derived from raspberries. They were then mass produced synthetically for use in the cosmetic industry.

Early evidence suggested that raspberry ketones could cause fat loss and oxidation, but the concentration of ketones required for this effect is too high to be achieved through oral supplementation.

Moreover, the fat loss claim stems from animal toxicity testing evidence, which is not appropriate to use for fat loss claims in humans.

There has been no direct or adequate testing done on raspberry ketones and there is no evidence for any fat loss effects. Raspberry ketones should not be included in any stack.

Hoodia gordonii

Hoodia gordonii, also known as hoodia, is an African cactus that has been marketed as an appetite suppressant.

Though preliminary animal evidence showed that a bioactive found in hoodia could suppress appetite, follow-up research has confirmed that oral supplementation does not deliver the needed bioactive to the brain. Moreover,

hoodia supplementation is associated with substantial blood pressure increases and minor, but still concerning, increases in heart rate and liver enzymes.

Hoodia gordonii has no evidence to support any fat burning effects, but it has plenty of evidence to support the damage it can do to the liver and cardiovascular system. *Hoodia gordonii* should not be used as a part of any supplement stack.

Green Coffee Extract

Green coffee extract (GCE) is a supplement made up primarily of [chlorogenic acid](#). While it may provide benefits for blood flow and improved circulation, there is no strong evidence that suggests GCE supplementation supports fat loss.

Though GCE is a popular supplement and marketed as a fat burner, it does not have any fat burning effects and should not be included in a fat burning stack.

Assembling Your Supplement Stack

The following outlines how to incorporate this supplement stack into your daily nutrition habits.

Incorporating Base Supplements

There are no base supplements in this stack, since every effective fat burner can interact negatively with monoamine oxidase inhibitors (MAOIs), a kind of antidepressant.

Incorporating Supplement Options

Supplementing multiple compounds should always be done cautiously, but people supplementing multiple stimulants should be especially careful. Stimulant compounds can be synergistic, which means that even low doses can provide powerful effects when taken with other supplements.

For people with little to no stimulant experience

Take **caffeine** (100 – 400 mg) until tolerance builds up, then add **synephrine** (two doses of 10 mg each) and **white willow extract** (two doses of 90 mg of salicin each). People not used to caffeine should start at the low end of the dosage range. After synephrine and white willow extract are added, the caffeine dose should be changed to two doses of 150 – 200 mg each.

For people with stimulant experience

Take **caffeine** (two doses of 200 mg each) and **synephrine** (two doses of 20 mg each), with **white willow extract** (two doses, each of 90 mg of salicin). Maintain this supplement protocol for a week before introducing **yohimbine** (2.5 mg, twice a day, increasing to 2.7 mg, twice a day, over the course of a week). Add *Coleus forskohlii* if 7.5 mg of daily yohimbine causes no significant side effects.

Assembling Your Supplement Stack (cont.)

For people that want to burn fat with minimal stimulation

Take **caffeine** (two doses of 150 – 200 mg each) and **synephrine** (two doses of 10 mg each). Caffeine can be supplemented by itself until tolerance sets in, at which point synephrine can be added. Once you are accustomed to both supplements, add ***Coleus forskohlii*** (two daily doses, each 25 mg of forskolin).

For people interested in appetite suppression:

Take **caffeine** and **synephrine** as detailed above. After a week of supplementation, add **5-HTP** (two doses of 150 mg each, increasing to 250 mg over a week). Do not use 5-HTP alongside other supplements or pharmaceuticals that influence serotonin.

Other Options:

Adding 200 mg of **L-theanine**, supplemented alongside caffeine, can reduce the hyperactivity caused by stimulation while retaining the benefits to attention span and focus. Since caffeine is taken twice a day, the total daily dose for L-theanine is 400 mg.

Synephrine can be replaced with bitter orange extract in any stack. Some of the flavonoids in bitter orange extract may interact negatively with other pharmaceuticals.

White willow bark can be replaced by an equal amount of aspirin, since the two have essentially the same bioactive components. The doses above are equivalent to one baby aspirin dose. The cautions in the white willow section also apply to aspirin.

Atypical caffeine sources, like **guarana** and **yerba mate**, can replace caffeine in any of the above stacks. Caffeine can be supplemented through multiple sources, including tea, coffee, energy drinks, and pills. If you drink several cups of green tea every day, you may not need to supplement L-theanine.

How do I add supplements to my stack that are not covered in this guide?

Before adding a new supplement to your stack, supplement your current stack for a few weeks to determine if you need to make a new addition. If you want to make multiple changes to your stack, pick one supplement to add at a time. Identify the stack change that you think will be the most effective, and do your research:

1. Use [Examine.com](https://www.examine.com) to determine if that supplement would have a negative interaction with your current stack. Talk to your doctor about including a new supplement in your stack.
2. Introduce the new supplement at half of the regular dose.
3. After a week with the new supplement, slowly increase the dose to the recommended dose if you are not experiencing the effects you want.

Stacks are intended to be synergistic, which means taking two supplements together may provide more effects than the supplements by themselves. New supplements should be added carefully, since even low doses can be powerful if other supplements in your stack improve their effects.

Can I modify the recommended doses?

If a supplement has an established advised dosage range, stay within that range. If a supplement has a recommended dose, and not a range, stay within 10% of that dose. Halving or doubling an advised dose could be ineffective or even dangerous.

The safest way to add dietary supplements to your life is one at a time. If you are considering purchasing several supplements, purchase only one and add the others after a week or two of supplementation. This will limit the risk of new supplements, and it will also make it easier to figure out what supplements are providing you with your newfound benefits.

Should I continue using white willow bark if it aggravates my heart burn?

No, white willow bark contains salicylic acid, which can harm your stomach lining. If you experience heartburn after white willow bark supplementation, you should not continue supplementation.

Why isn't ephedrine included in this stack?

[Ephedrine](#), the alkaloid from the plant *Ephedra sinica*, has been used successfully as a fat burner but currently cannot be marketed as a fat burner due to regulations prohibiting its sale in various countries. Though it is not illegal to possess, it is not recommended in this guide.

Synephrine is similar to ephedrine. It is a safer compound, though it is also less effective.

Precautions & Troubleshooting

The safest way to add dietary supplements to your life is one at a time. If you are considering purchasing several supplements, purchase only one and add the others after a week or two of supplementation. This will limit the risk of new supplements, and it will also make it easier to figure out what supplements are providing you with your newfound benefits.

This fat loss supplement guide is based around supplements that influence the brain, so be careful when combining these supplements with other supplements that influence the brain, like those found in the Mood & Depression or the Memory & Focus stack.

Combining multiple stimulants or multiple supplements that affect the brain should be done one at a time to avoid potential side effects and negative consequences of synergism between supplements.

Many stimulants can disrupt sleep and should not be supplemented in the evening. If you experience poor sleep multiple nights in a row, temporarily stop supplement usage and focus on sleep quality. Using a fat burner stack is counterproductive if sleep quality suffers.

Yohimbine should not be taken for more than three to four weeks at a time. Take a month break between each cycle of yohimbine. Due to the lack of data about long term *Coleus forskohlii* supplementation, it should be cycled similarly to yohimbine.

5-HTP does not need to be cycled, but if you are supplementing 5-HTP, take a break once in a while to re-assess if it is still able to reduce carbohydrate cravings.