

Examine.com

Sleep Quality

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
08	Unproven Options
11	Cautionary & Overhyped Options
12	Assembling Your Supplement Stack
14	Stack Modification FAQ
16	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.

Magnesium

Why you should take it

Magnesium is an important dietary mineral, and deficiencies are associated with impaired sleep quality. Magnesium deficiencies are more common in athletes because magnesium is lost through sweat.

Supplementation of magnesium can improve sleep quality, but it is most effective for sleep deprived people who also have low dietary magnesium intake. People with healthy magnesium levels may not experience benefits to sleep quality after supplementation.

Even though magnesium can help improve sleep quality in people who have low magnesium levels, it does not have a sedative effect. Therefore, you don't need to worry about getting sleepy after taking a magnesium supplement.

How to take it

Magnesium is not a time-dependent supplement, and does not need to be taken immediately before bed. The standard dose for magnesium is 200 mg of elemental magnesium, though doses of up to 400 mg can be used. Elemental magnesium content is found on the supplement label. It is the amount of magnesium in the supplement, excluding other compounds that may be included.

Magnesium can be supplemented through magnesium citrate, magnesium malate, magnesium diglycinate, and magnesium gluconate. Magnesium oxide is not recommended for supplementation because it is more likely to cause intestinal discomfort and diarrhea, and is known to have less absorption than other forms.

Magnesium gluconate should be taken with a meal to increase the absorption of the supplement, but other forms of magnesium can be taken either with food or on an empty stomach. Some antibiotics such as the quinolone class (ie. ciprofloxacin) and tetracyclines should not be taken alongside magnesium.

Melatonin

Why it is a proven option

Melatonin is a hormone responsible for regulating sleep. When you dim the lights, melatonin production increases. High levels of melatonin will put you to sleep. This hormone is involved in the circadian rhythm, which dictates sleeping and waking cycles (as you wake up in the morning, melatonin levels go down).

For some people, melatonin can reduce the time it takes to fall asleep. If it frequently takes you a long time to fall asleep, melatonin supplementation can help improve sleep quality by helping you fall asleep faster.

Melatonin is not considered a base supplement because it does not provide any benefits for people who have no problem falling asleep quickly. If you fall asleep within five minutes of your head hitting the pillow, you do not need to supplement melatonin.

How to take it

To supplement melatonin, take 500 mcg (not mg) for a few nights before increasing the dose to 1 mg. Continue to increase the dosage by 500 mcg until you find the lowest effective dose. If you suspect your latest increase has not provided you with any additional benefits, drop back down to your previous dose. If it's effective, you have found your lowest effective melatonin dose. Do not take more than 5 mg of melatonin while determining your lowest effective dose.

Melatonin should be taken roughly 30 minutes before sleep. Time release melatonin capsules may be more effective at sustaining sleep throughout the night.

Lavender

Why it is a proven option

Lavender oil has been traditionally used in aromatherapy for its relaxing scent. Recently, it has been used as an oral supplement to treat anxiety. Lavender supplementation can also improve sleep quality.

Lavender can help ease anxiety and reduce intrusive thoughts, which can increase the time it takes to fall asleep. Lavender also improves sleep quality itself, though more research is needed to determine the mechanism behind this effect.

How to take it

To supplement lavender, take 80 mg of lavender oil, 30 - 45 minutes before bed. Studies investigating oral lavender supplementation used the lavender oil supplement brand Silexan. Oral supplementation of lavender has been shown to reduce intrusive thoughts and may treat general anxiety.

Lavender aromatherapy has been found to benefit sleep quality if used either at night or in the afternoon. An aromatherapy machine is needed to use aromatherapy at night. Candles or an aromatherapy machine can be used for afternoon aromatherapy sessions. It is difficult to estimate a typical dose of lavender using aromatherapy, but studies on lavender use, at minimum, thirty minutes of exposure in a well-ventilated room.

Note: Lavender can be supplemented alongside [lemon balm](#). The two supplements, taken together, may be synergistic and may have a more powerful effect.

Glycine

Why it is an unproven option

Studies on glycine haven't found supplementation to improve sleep quality or reduce the amount of time it takes to fall asleep, but people supplementing glycine do report feeling significantly more rested the following morning.

Though glycine does not provide the health benefits that result from improved sleep quality, the perception of having had a good night's sleep provides for a comfortable and energetic morning. Plus, it's cheap and safe, making it a viable supplement option.

It should be noted that currently the studies on glycine are all short term (four days or less) and anecdotal reports suggest that the benefit is short lived when used nightly. Glycine may be best used intermittently.

How to take it

To supplement glycine, take 3 g, 30 – 60 minutes before sleep. Glycine is usually taken with food, but further research is needed to determine how important mealtime supplementation really is. If eating too close to bedtime disrupts your sleep, take glycine on an empty stomach instead.

Glycine can be purchased either as pills or as a bulk powder and taken with water. It tastes very sweet.

Valerian

Why it is an unproven option

Valeriana officinalis, also known as valerian, was one of the first sleep aids on the market. While it is not certain how this herb influences sleep on a neural level, it is one of the most well researched sleep aids, second only to melatonin.

More evidence is needed to determine valerian's actual influence on sleep.

Similar to glycine, however, valerian seems to improve the subjective reports of sleep the morning after supplementation. Like glycine, valerian can be supplemented if you find it improves well being and alertness the morning after supplementation.

Like St. John's Wort, valerian interacts with the enzyme CYP3A4, which means it interacts with many non-psychoactive drugs.

How to take it

To supplement valerian, take a capsule or brew a tea, 30 - 60 minutes before bed.

While it is hard to dose tea due to variations in steeping, oral supplementation usually uses 450 mg of valerian (containing 0.8-1% valerenic acid).

Lemon Balm

Why it is an unproven option

Melissa officinalis, also known as lemon balm, is an herb with sedative properties. Lemon balm supplementation has a relaxing effect and can soothe anxiety. However, it can also disrupt working memory and reduce attention span. These are normal effects of sedatives, but it does mean lemon balm should not be supplemented during the day.

Lemon balm's anti-anxiety effects can prevent intrusive thoughts, which can reduce the time it takes to fall asleep.

How to take it

To supplement lemon balm, take between 300 – 1,200 mg, 30 minutes before bed. As with all supplements, start supplementation at the low end of the range and slowly work your way up until you find the dosage you are most comfortable at. The most common dose for lemon balm is 600 mg.

Lemon balm is at times consumed in tea form, which appears to also confer sedative effects. The usage of lemon balm as aromatherapy for this purpose has not been investigated.

Unproven Options (cont.)

Note: Lemon balm can be supplemented alongside [lavender](#). The two supplements, taken together, are synergistic and may have a more powerful effect.

Caffeine

People with a caffeine tolerance may still be able to fall asleep after ingesting caffeine, but caffeine will still negatively affect sleep quality. Caffeine should not be consumed before sleep even by the most veteran coffee drinkers.

Caffeine does not improve sleep quality or reduce the time it takes to fall asleep.

Assembling Your Supplement Stack

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

Incorporating Base Supplements

The only base supplement in the sleep stack is **magnesium**.

Before constructing your stack, make sure that you need magnesium. Though most people do not consume enough magnesium through their diets, it is possible, and requires a large and consistent intake of certain vegetables, nuts, cocoa, and seeds. Many tea and/or coffee users may be getting a moderate amount via those liquids.

Magnesium supplementation is recommended for anyone that eats below 50% of the recommended daily allowance (RDA). Athletes may require more magnesium than the average person because magnesium is lost through sweat.

Magnesium can be supplemented at any time of day.

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 anxiety and intrusive thoughts

Take the base **magnesium** (200 mg) with **lemon balm** (600 mg) and **lavender** (80 mg of the oil or aromatherapy). All three supplements can be taken thirty minutes before bed, or in two doses, one in the afternoon and one in the evening.

Assembling Your Supplement Stack (cont.)

For people who take a long time to fall asleep

Take the base **magnesium** (200 mg) with **melatonin** (500 mcg), 30 minutes before bed. This stack can also alleviate jet lag.

For people that don't have trouble falling asleep, but never feel rested in the morning

Take the base magnesium (200 mg) daily and use glycine (3 g) 30 minutes before bed on days where restfulness in the morning is a higher priority.

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.

What if I fall into both categories?

The sleep stack is simpler than other Examine.com stacks. If you fall into multiple categories for modifying your stack, you can freely combine supplements for multiple sleep quality goals.

As an athlete with a low dietary intake of magnesium, I took 400 mg of magnesium and experienced diarrhea. Did I take too much?

This kind of side-effect from magnesium could mean two things. The most likely scenario is that you just took too large a dose. Diarrhea is caused by magnesium reaching the colon. This could also happen if your body's magnesium levels are fine and you do not need to supplement additional magnesium.

To avoid future side effects, split the dose into multiple daily doses. If the side effects persist, reduce your magnesium dose to 200 mg. If you are using magnesium oxide, consider using a different form of magnesium for supplementation.

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.

After taking any supplementation for the purpose of improving sleep, don't log onto Facebook or check work emails. Just relax and prepare to fall asleep. Minimize the noise in your bedroom, since not only will noise make it harder to fall asleep, but it will reduce sleep quality during the night as well. Darkness will maximize melatonin production, so make sure to turn off any disruptive light sources. It should be noted that even while asleep, exposure to light can reduce melatonin in your body.

Dark therapy (minimizing light exposure and using amber/orange light) can replace supplementation. Supplementation for sleep is a last resort, reserved for people that have no more lifestyle changes to make to improve sleep. If you need to use a computer or mobile device before bed, consider using software like f.lux, which will redden light and get your body ready for sleep.

Supplementing for sleep quality can take a lot of personal testing to find a maximally beneficial stack of supplements. Sleep quality stacks do not need to be taken every night.

If, after a week of supplementation, you are not experiencing sleep quality benefits, pause supplementation and use them three to five nights a week. It may take up to two months to find an ideal supplementation schedule.

If taking daily supplements continues to provide benefits for sleep quality, pause after a month of supplementation to determine if non-supplemented sleep quality has improved.