

Is It OK to Take Melatonin Every Night?

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✓ Fact Checked

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STORY AT-A-GLANCE

- › Melatonin, a hormone produced naturally by your body's pineal gland, is a popular supplement used by an estimated 3.1 million Americans
- › Melatonin has a very safe track record, with few reports of adverse events, and may offer additional benefits beyond sleep, including metabolic, anti-inflammatory, immunomodulatory and antioxidant effects
- › While melatonin is thought to be relatively safe when used for short or even medium periods (up to 18 months), the long-term effects of melatonin, including in children, are largely unknown
- › If you're having trouble falling asleep or staying asleep, pay attention to sleep hygiene first, even before trying a natural supplement like melatonin

This article was previously published October 24, 2019, and has been updated with new information.

Melatonin, a hormone most believe is produced primarily by your body's pineal gland, is a popular supplement used by an estimated 3.1 million Americans.¹ One of its primary roles is regulating your body's circadian rhythm, and melatonin supplements are often used as sleep aids or to help sleep problems related to shift work, jet lag and sleep disorders.

The reality however is that over 95% of the melatonin your body produces is through near infrared light exposure on your skin which causes your mitochondria to produce

melatonin. I discuss this in my [landmark article published earlier this year](#).

Can Melatonin Be Taken Every Night?

Melatonin has a very safe track record, with few reports of adverse events, especially when taken at low doses between 0.5 milligrams (mg) and 5 mg. Michael Grandner, director of the Sleep and Health Research Program at the University of Arizona, noted in *Time*, "melatonin is very safe if taken in normal doses."²

In fact, melatonin appears to exert numerous beneficial "side effects," and it's even been suggested that, originally, this hormone may have primarily functioned as an antioxidant.³

"Some of the emerging science is showing that in people with higher levels of inflammation – which could be because they're obese, or because they're in the [intensive care unit] for a transplant – melatonin in the range of 6 mg to 10 mg may decrease markers of inflammation," Helen Burgess, co-director of the Sleep and Circadian Research Laboratory at the University of Michigan, told *Time*.⁴

A deficiency in melatonin, for instance, is associated with obesity. When 30 obese patients on a calorie-restricted diet took a daily dose of 10 mg melatonin for 30 days, a significant reduction in body weight was seen – something that did not occur in the non-melatonin group.⁵

Further, melatonin supplementation lowered oxidative stress and regulated adipokines, which are involved in the inflammatory process.

The researchers noted, "Melatonin supplementation facilitated body weight reduction, improved the antioxidant defense, and regulated adipokine secretion. The findings strongly suggest that melatonin should be considered in obesity management."⁶

Additional beneficial effects of melatonin include:⁷

- Plays a role in the regulation of metabolism and energy balance
- Preserves mitochondrial functions

- Anti-inflammatory and immunomodulatory actions
- Direct and indirect antioxidant properties

Melatonin's Anti-Diabetic Effects

There is some evidence that melatonin could be beneficial for hyperglycemia in people with diabetes. In an animal study, melatonin decreased oxidative stress and increased adiponectin, a hormone known to decrease glucose levels and increase the breakdown of fat.⁸ It also improved dyslipidemia, or an abnormal amount of fats in the blood, especially at high doses.

At the same time, the effect of melatonin is stronger in people who carry a gene variant to melatonin receptor 1B (MTNR1B), which may be responsible for increased diabetes risk. In a study of 23 carriers of the genetic variant and 22 non-carriers, both groups received 4 mg of melatonin at bedtime for three months.

The variant carriers had lowered insulin secretion and significantly higher blood sugar levels after melatonin supplementation.⁹ So while overall melatonin appears to be very safe, there are some contradictory findings, particularly at higher doses. However, for most people using melatonin as a sleep aid, only a very small dose is required – typically 0.25 mg or 0.5 mg to start with, which can be adjusted up from there.

Even in the treatment of jet lag, daily doses of melatonin between 0.5 mg and 5 mg were found to be similarly effective, and doses above 5 mg were no more effective.¹⁰ Researchers again concluded that, aside from causing sleepiness if taken at the wrong time early in the day, "the incidence of other side effects is low" ... "and occasional short-term use appears to be safe."¹¹

Long-Term Effects of Melatonin Are Unknown

While melatonin is thought to be relatively safe when used for short or even medium periods (up to 18 months), the long-term effects of melatonin, including on children, are

largely unknown. Possible negative interactions have been suggested to occur in people with epilepsy or those taking warfarin – associations that need further investigation.¹² Melatonin is also sometimes used for children and has been found to benefit children with sleep disorders.¹³

However, there is some research that suggests it could interfere with the production of hormones related to puberty when used long term.¹⁴ Further, according to one study, caution is warranted even in children with attention deficit hyperactivity disorder (ADHD) and chronic insomnia:¹⁵

"Very little systematic research has been done into the possible impact of melatonin intake on puberty and the endocrine system. Therefore, treatment with melatonin in children with ADHD and (C)SOI [chronic sleep-onset insomnia] is best reserved for children with persistent insomnia which is having a severe impact on daily functioning, particularly in cases where is an obvious phase-shift of the endogenous circadian rhythm."

It's important to remember that melatonin is a hormone, which could have unknown effects. "Melatonin has an incredible safety record, no doubt about it," Dr. Mark Moyad, Jenkins/Pomkempner director of preventive and alternative medicine at the University of Michigan, told Time. "But it's a hormone, and you don't want to mess around with hormones until you know what they're doing."¹⁶

This is why I personally do not take any melatonin supplements. However, I aggressively expose my skin to loads of near infrared all day long, From my near IR sauna four times a week, to my 90 minute walks in the sun, to the near IR bulb on in my office while I am at my computer, to the 20 minute dose of near IR and red light from my photobiomodulation panel before I go to bed every night when I am at home.

Cannabidiol and 5-HTP for Sleep

Cannabidiol (CBD), the nonpsychoactive component of cannabis, shows promising medical uses, including for sleep. The CBD market in the U.S. was estimated at \$600

million in 2018, with projections shooting up over \$20 billion by 2022.¹⁷ CBD has been found to offer neuroprotective, anti-inflammatory and immunomodulatory benefits,¹⁸ and is being studied as a possible sleep aid.

"Evidence points toward a calming effect for CBD in the central nervous system," researchers wrote in *The Permanente Journal*.¹⁹ Their study involved 103 adults with anxiety or poor sleep who used CBD as a treatment. Sleep scores improved within the first month for 66.7% of the participants; anxiety scores also improved for 79.2%. CBD may also have therapeutic potential for treating insomnia.²⁰

Like melatonin, CBD appears to be overall very safe. "[T]he most notable benefit of cannabis as a form of treatment is safety," the researchers continued. "There have been no reports of lethal overdose with either of the cannabinoids and, outside of concerns over abuse, major complications are very limited. Current research indicates that cannabis has a low overall risk with short-term use, but more research is needed to clarify possible long-term risks and harms."²¹

If you're in search of natural sleep aids, you may have heard about 5-HTP. Your body produces 5-HTP (5-hydroxytryptophan) from the amino acid tryptophan (found in foods like poultry, eggs and cheese). However, eating tryptophan-rich foods is not likely to significantly increase your 5-HTP levels, so 5-HTP supplements (which are made from extracts of the seeds of the African tree *Griffonia simplicifolia*) are sometimes used.

The chemical 5-HTP works in your brain and central nervous system by promoting the production of the neurotransmitter serotonin, and thereby may help boost mood and enhance sleep. 5-HTP has been used therapeutically to treat insomnia,²² which may be because it helps to increase melatonin.

Because 5-HTP makes serotonin, and serotonin can be converted to melatonin, this supplement is used for sleeplessness and works by increasing your body's melatonin production. Combining 5-HTP with GABA was found to reduce falling-asleep time from an average of 32.3 minutes to 19.1 minutes in 18 patients with sleep disorders, as well as increasing sleep time and improving sleep quality.²³

In another study, patients with parasomnia and/or DOA (disorders with arousals), characterized by unusual or abnormal behavior such as night terrors or sleepwalking, were advised that 5-HTP might be a beneficial treatment option.²⁴

Improve Melatonin Levels Naturally

Sleep troubles are widespread among adults and even youth. More adolescents slept less than seven hours a night in 2015 than they did in 2009, a time period during which electronic device and social media use also increased.²⁵ So if you're having trouble falling asleep or staying asleep, pay attention to sleep hygiene first, even before trying a natural supplement like melatonin.

Importantly, avoid watching TV or using your computer/smartphone or tablet in the evening, at least one hour before going to bed. Brightness and exposure to light in the blue and white wavelengths appear to affect the production of melatonin, exactly the wavelengths of light emitted from tablets, laptops and computers.²⁶

Researchers also wrote in the journal *Nature and Science of Sleep*, "Nonpharmacological approaches [for treating sleep disturbances] range from sleep hygiene and psychoeducation, cognitive behavioral therapy for insomnia, physical exercise and mindfulness-based meditation, to relaxation-based therapies."²⁷

In addition, melatonin supplementation may be most effective in people with low melatonin levels. If your levels are optimized, you may not experience additional sleep benefits from added supplementation — and you may be able to improve your sleep naturally.

Toward this end, it makes sense to engage in habits that will increase your natural melatonin production and improve overall health and sleep, no supplements required. This includes:

- **Loads of near IR exposure during the day** — As stated above I aggressively expose my skin to loads of near infrared all day long, From my near IR sauna four times a week, to my 90 minute walks in the sun, to the near IR bulb on in my office while I

am at my computer, to the 20 minute dose of near IR and red light from my photobiomodulation panel before I go to bed every night when I am at home.

- **Sunshine during the morning** – Melatonin is affected by your exposure to light and dark. When it's light, production of melatonin naturally drops. Getting at least 15 minutes of sunlight in the morning hours helps to regulate the production of melatonin, dropping it to normal daytime levels, so you feel awake during the day and sleep better at night.
- **Sleep in the dark** – Your body produces and secretes melatonin in the dark, helping you to go to sleep and stay asleep. Sleeping in a completely darkened room, without lights from alarm clocks, televisions or other sources will improve your sleep quality.

If you get up during the night to use the bathroom, it's important to keep the lights off so you don't shut off your production of melatonin. Also, wear blue-light blocking glasses after sunset to avoid blue-light exposure.

- **Lower your stress level and your cortisol level** – The release of melatonin is dependent on the release of another hormone, norepinephrine. Excess stress, and the resulting release of cortisol, will inhibit the release of norepinephrine and therefore the release of melatonin.²⁸ Stress-reducing strategies you may find helpful before bed include yoga, stretching, meditation and prayer.
- **Increase foods high in magnesium** – Magnesium plays a role in reducing brain activity at night, helping you to relax and fall asleep more easily. It works in tandem with melatonin. Foods containing higher levels of magnesium include almonds, cashews, pumpkin seeds and green leafy vegetables such as spinach.²⁹

Sources and References

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