



[Home](#)

2. Melatonin

Melatonin

Generic name: melatonin [*meh-lah-TOE-nin*]

Drug classes: [Minerals and electrolytes](#), [Miscellaneous anxiolytics, sedatives and hypnotics](#), [Nutraceutical products](#)

Medically reviewed by [Leigh Ann Anderson, PharmD](#). Last updated on Oct 24, 2024.

[Uses](#) [Before taking](#) [Dosage](#) [Side effects](#) [Interactions](#) [Cost](#) [FAQ](#)

What is melatonin?

[Melatonin](#) is an oral, over-the-counter (OTC) dietary supplement available without a prescription in the U.S. It is often used to help with jet lag or trouble sleeping and comes as tablets, capsules, an oral liquid and chewable gummies.

Melatonin is also a natural hormone your body secretes in response to darkness to help maintain your wake-sleep cycle (also called “biological clock”). The wake-sleep cycle is the process of sleep and wakefulness; in humans this averages 8 hours of nighttime sleep and 16 hours of daytime activity.

Natural melatonin levels usually peak between 11PM and 3AM. Nighttime levels are roughly 10 times higher than in the daytime. Levels fall sharply before daylight, and are barely detectable in the daylight hours. The rise and fall in natural levels signal wake and sleep times, known as our circadian rhythm.

Shorter periods of natural melatonin production occur in the summer with longer days, and longer periods of production occur in the winter. Light at night (such as from smartphones or the TV) blocks production and can lead to sleep disturbances. Age also lowers nighttime melatonin release, which may contribute to the problem of insomnia and early awakening often seen in older adults.

What is melatonin used for?

Melatonin is most commonly used to treat:

- [insomnia](#) (trouble sleeping)
- [jet lag](#) due to travel
- sleep cycles in the blind ([non 24-Hour Sleep Wake Disorder](#))
- [shift-work sleep disorders](#) in people with alternating work schedules

Melatonin dietary supplements may be promoted for many other uses, from eczema, to bowel disorders to cancer treatment, but adequate studies are lacking. It has been widely studied for treatment of jet lag and other sleep disorders.

How does melatonin work?

Natural melatonin is a hormone produced in the pineal gland in the brain. It is made from the amino acid tryptophan and then released into the blood and cerebrospinal fluid, crossing into the brain. It sends messages to areas in the brain and body to help control the sleep and wake cycles.

When taken as a dietary supplement, its function is to act like the natural sleep hormone. Drowsiness generally occurs within 30 minutes after taking a dose.

Taking supplemental melatonin for sleep before bedtime may not be the best strategy for all sleep disorders and may not work for everyone. Trouble with sleep may be a symptom of other medical disorders, like depression, anxiety or sleep apnea, so check with your doctor if your insomnia persists. Also check with a child's doctor before use.

Is melatonin a hormone or a vitamin?

Melatonin is a natural hormone when produced in the body and is not a vitamin. Melatonin supplements you take by mouth - like pills, liquids or chewable gummies - are man-made products available without a prescription at the pharmacy, nutrition stores, and other retail shops.

Before taking this medicine

Do not use melatonin if you are allergic to it.

Before using this medication or giving it to your child, talk to your healthcare provider. This medication may not be recommended if you have certain medical conditions, such as:

- diabetes
- depression
- a bleeding or blood clotting disorder such as hemophilia
- taking a blood thinner like warfarin
- high or low blood pressure
- epilepsy or other seizure disorder
- if you are using any medicine to prevent organ transplant rejection
- an autoimmune condition
- using other sedatives or tranquilizers

It is not known whether this medication will harm an unborn baby. **Do not use this product without medical advice if you are pregnant.**

High doses of this medicine may affect ovulation, making it difficult for you to get pregnant.

It is not known whether melatonin passes into breast milk or if it could harm a nursing baby. **Do not use this product without medical advice if you are breast-feeding a baby.**

Do not give any herbal or dietary supplement to a child without medical advice from a qualified healthcare provider.

Melatonin dosage

Melatonin is considered an effective short-term treatment for jet lag and may aid with sleep during times when you would not normally be awake.

Effective starting doses of melatonin for jet lag range from 0.3 to 0.5 mg. One milligram tablets can be cut in half to achieve a 0.5 mg dose of melatonin if smaller doses are not available for purchase. Higher doses are commonly marketed in the U.S. (up to 10 mg), but higher doses may be associated with more side effects such as headache, next day drowsiness, or vivid dreams. Side effects of melatonin may occur more frequently or worsen in older adults.

Always start with the lowest dose. According to a [Cochrane review](#), doses over 5 mg appear to be no more effective than lower doses. Higher doses may result in excessively high levels of physiologic melatonin.

Melatonin for jet lag

Jet lag is an air travel problem that causes trouble with falling and staying asleep, fatigue, trouble concentrating, constipation, and other symptoms. Jet lag is much more likely if you cross over several time zones, and can worsen the more time zones you cross.

Effective starting doses for jet lag range from 0.3 to 0.5 mg. Smaller doses may work for some while others may need a higher dose. It may be more difficult to fly east, when time is lost, rather than to fly west, when you gain it back. High doses, such as 20 mg pills are available for purchase on the Internet, but such high doses are not normally recommended or needed, and may greatly increase side effects.

- **Eastbound:** If you are traveling east, say from the US to Europe, take supplemental melatonin for sleep after dark, 30 minutes before bedtime in the new time zone or if you are on the plane. Then take it for the next 4 nights in the new time zone, after dark, 30 minutes before bedtime. If you are still feeling drowsy the day after using this medication, try a lower dose.
- **Westbound:** If you are heading west, for example, from the US to Australia, a dose is not needed for your first travel night, but you then may take it for the next 4 nights in the new time zone, after dark, 30 minutes before bedtime. Melatonin may not always be needed for westbound travel.

Given enough time (usually 3 to 5 days), jet lag will usually resolve on its own, but this is not always optimal when traveling.

Melatonin for sleep disorders

Primary Sleep Disorders (Insomnia):

- Dosage: Take 0.1 mg to 0.5 mg thirty minutes before bedtime. Studies suggest supplemental melatonin for primary sleep disorders may be effective in promoting but not maintaining sleep (early morning awakening). It is not usually recommended for long-term use. If insomnia continues, seek the advice of a healthcare provider.

Shift-Work Sleep Disorders

- Dosage: Take 1 to 3 mg thirty minutes prior to the desired onset of daytime sleep; melatonin may NOT lead to improved alertness during the nighttime work shift.

Delayed Sleep-Wake Phase Disorder

Delayed sleep-wake phase disorder (DSWPD) most often occurs in adolescents, possibly due to reduced production

and melatonin deficiency at this age. Sleep onset is delayed by 3 to 6 hours compared with conventional bedtimes (10 to 11 pm). DSWPD can negatively affect school performance, daily activities, and lead to morning drowsiness which can be dangerous for teen drivers. Any sleep disorder in an adolescent should be evaluated by a physician.

- Dosage: No consensus is available for dosing in DSWPS. Some clinicians recommend 3 to 5 mg taken in the early evening, at least 1.5 hours before the desired bedtime. Bright light therapy and behavioral management may enhance results. Be aware drowsiness may occur after the melatonin dose, so avoid hazardous activities such as driving.

Non-24-Hour Sleep Wake Disorder (Non-24)

More than 70% of people who are totally blind have Non-24, a circadian rhythm disorder. For people who are totally blind, there are no light cues to help reset the biological clock. The sleep time and wake up time of people who have Non-24-Hour Sleep Wake Disorder shifts a little later every day. Sleep times go in and out of alignment compared to a normal sleep-wake phase. Extra minutes add up each day by day and disrupt the normal wake-sleep pattern.

Use of melatonin in Non-24 is to aid in stimulation to reset the biological clock with one long sleep time at night and one long awake time during the day.

- Dosage: Studies on people who are the blind suggest 0.5 mg/day, taken either at a fixed time before bed or one hour before bedtime.

Hetlioz, a prescription-only melatonin agonist is approved for use in Non-24-Hour Sleep Wake Disorder in adults and for the treatment of Nighttime Sleep Disturbances in Smith-Magenis Syndrome (SMS) in patients 3 years of age and older.

- [Hetlioz \(tasimelteon\)](#)

Rozerem (ramelteon), also a melatonin agonist, has been approved to treat insomnia characterized by difficulty with sleep onset in adults.

- [Hetlioz \(tasimelteon\)](#)

[Rozerem \(ramelteon\)](#)

Fast-dissolving Tablets

Some melatonin tablets are available in fast-dissolving formulations in the U.S. To take the orally disintegrating tablet:

- Use dry hands to remove the tablet and place it in your mouth.
- Do not swallow the tablet whole. Allow it to dissolve in your mouth without chewing. If desired, you may drink liquid to help swallow the dissolved tablet.

Call your doctor if the condition you are treating with this medication does not improve, or if it gets worse while using this product.

Store at room temperature away from moisture and heat.

Melatonin for Children

Parents may consider using melatonin to help their child who has a trouble falling asleep. **Only use this medication for your child under the care of a pediatrician or other medical sleep specialist.** Insomnia or other sleeping disorders in children should always be evaluated by a medical professional.

Melatonin should not be used as a substitute for good sleep hygiene and consistent bedtime routines in children. According to Yale sleep specialist Dr. Craig Canapari, use of this medication results in less difficulty with falling asleep, earlier time of sleep onset, and more sleep at night.

Products containing lower-dose melatonin for kids do exist on the U.S. market. Long-term use of this medication has not been studied in clinical trials for children and possible side effects with prolonged use are not known. The use of melatonin in children with autism spectrum disorder or attention-deficit hyperactivity disorder should involve behavioral interventions and should be directed by a physician.

Delayed sleep phase disorder often occurs in teenagers and young adults, possibly due to alterations in endogenous production. Sleep onset is delayed by 3 to 6 hours compared with normal bedtime hours of 10 to 11 PM. Maintaining a consistent bedtime free of electronics for at least one hour prior to bedtime is especially important for insomnia in children and adolescents.

Melatonin Side Effects in Children

The most common melatonin side effect in children is morning drowsiness. Other common side effects in children include:

- Bedwetting
- Headache
- Dizziness
- Nausea
- Diarrhea
- Possible [increased risk for seizures](#) in children with severe neurological disorders.

Dietary melatonin supplements can still have drug interactions or health risks if you have certain medical conditions, upcoming surgery, or other health concerns.

 [Melatonin side effects](#) (more detail)

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What to avoid

- Avoid driving or operating machinery for at least 4 hours after taking melatonin, or until the drowsy effects are no longer present.
- Avoid using this medication with other prescription medications, over-the-counter drugs, or dietary supplements without asking your doctor, pharmacist or other healthcare provider.
- Avoid alcohol while taking this medication.
- Avoid coffee, tea, cola, energy drinks, or other products that contain caffeine, as it may counteract the effects of the melatonin.

What Happens if I Miss a Dose?

If you miss taking a dose there is no cause for concern, but melatonin may impair your thinking and reaction time. If you will be driving or doing any hazardous activity, skip your dose as melatonin can cause drowsiness.

Otherwise, use the missed dose as soon as you remember. Skip the missed dose if it is almost time for your next scheduled dose. Do not use extra medicine or double your dose to make up the missed medication.

Can You Overdose?

Melatonin is thought to be very safe in the short-term with a low risk for overdose. If you suspect an overdose or serious adverse effects or allergic reactions, seek emergency medical attention from your health care provider or call the Poison Help Line at 1-800-222-1222.

Is Melatonin Safe?

Melatonin is a relatively safe supplement when used in the short-term, and [melatonin side effects](#) are uncommon. Its

safety in the long-term has not been determined in randomized, controlled studies. In general this medication appears to be relatively nontoxic, even at higher doses such as 3 to 5 mg once a day.

Some people can have side effects from melatonin that may include:

- daytime drowsiness, dizziness, weakness, or confusion
- vivid dreams, nightmares
- feeling depressed, anxious, irritable
- headache
- loss of appetite, diarrhea, nausea, stomach pain
- blood pressure changes
- joint or back pain
- elevated risk for seizures

Higher external doses(>1 mg to 10 mg) can worsen side effects like daytime drowsiness, impaired physical or mental ability, low body temperature, and elevated prolactin levels.

Melatonin and Pregnancy

Most dietary supplements like melatonin have not been studied in pregnant women, during breastfeeding, or in children. Seek advice from your healthcare provider before using any dietary supplement if you are pregnant, nursing, or considering the use of this product in a child under 18 years of age.

Melatonin Drug Interactions

Some important [drug interactions](#) can occur with melatonin even though it is a dietary supplement. Always review for drug, food and disease interactions with your healthcare provider anytime you start, or even stop, a medication.

Always tell your doctor and pharmacist about all of the medications you take, including prescription drugs, over-the-counter medicines, vitamins and herbal supplements. Do not stop using any medications without first talking to your doctor.

Talk to your doctor before using melatonin if you take the blood thinner warfarin. Melatonin has been reported to increase the effects of warfarin in some patients. This is not a complete list of drug interactions that may occur with melatonin.

 [Melatonin drug interactions](#) (more detail)

Does melatonin interact with my other drugs?

Enter medications to view a detailed interaction report using our [Drug Interaction Checker](#).

melatonin

+

Enter a drug name

Add

Is Melatonin Approved by the FDA?

Melatonin is not approved by the FDA for any use. It falls under the FDA's Dietary Health and Education Act as a dietary supplement. Dietary supplements may include vitamins, minerals, amino acids, and herbs or botanicals, plus other substances used to supplement the diet. As with other dietary supplements, melatonin isn't approved by the Food and Drug Administration (FDA) for safety or effectiveness.

Manufacturers must notify FDA about new ingredients prior to marketing. After the supplement is on the market, the FDA will monitor adverse event/s that are reported to them by the manufacturer, consumers or health care professionals. If a manufacturer makes an unproven health claim or if the supplement is found to be unsafe the FDA can remove the OTC from the market.

Avoid buying [dietary supplements from the Internet](#) and from online pharmacies whose authenticity you cannot verify. It is important to remember that an OTC label that says "natural" supplement does not always mean it's "safe" for consumption. Formulations that are United States Pharmacopeial (USP) Convention Verified can be considered most reliable in this regard; the label "USP" is found on the outside of the bottle. For example, all Nature Made products are verified by the USP. The safest way to purchase drugs online is through pharmacies accredited by the Verification of Internet Pharmacy Practice Sites (VIPPS) programs.

Do Electronic Devices Alter Melatonin Levels?

Light at night blocks the production of melatonin, and this has been shown to cause sleep disturbances in people who use electronics that emit light at night. Researchers have found that light from electronic devices can block the release of natural hormone melatonin at night. The effect was most significant for younger children, with nighttime levels reduced by up to 37 percent in certain cases. This can also be problematic for children between ages 9 and 16.

Studies show that light after dark lowers melatonin levels which may lead to difficulty in initiating sleep. Electronic light-emitting devices such as the television, laptops, smartphones and tablets often find their way into the bedroom at night, or are used after dark. Children should not have electronics, including TVs, in their bedroom at bedtime and everyone should avoid use of light-emitting devices and screen time at least one hour before bedtime.

Melatonin Reviews and Studies

For Primary Sleep Disorders

Researchers have conducted many studies on melatonin supplements for various health conditions. Most studies have been conducted in sleep disorders, such as jet lag, shift work sleep disorders, delayed sleep phase disorder, and insomnia. Studies are often not consistent in their results and questions still remain about its usefulness, dosage, length of treatment and long-term safety for some sleep conditions.

Melatonin can be effective for jet lag for many people when dosed at the appropriate time. Studies measuring the effectiveness of melatonin for the treatment of insomnia show a slight reduction in the amount of time needed to fall asleep, but melatonin may not increase the overall quality of sleep. This medication does appear to be safe for short-term use for primary insomnia (less than three months).

For Other Conditions

[Multiple areas for melatonin use](#) have been investigated, but not all uses may be accepted or have adequate research to

determine appropriate clinical use. These include:

- Cancer
- Boost the immune system
- Sunburn
- Irritable Bowel Syndrome (IBS)
- Fibromyalgia
- Systemic sclerosis
- Antioxidant and free radical scavenger
- Alzheimer's disease
- Ocular diseases
- Sleep aid for children with autism spectrum disorder or attention deficit hyperactivity disorder (ADHD)
- Amyotrophic lateral sclerosis (ALS)
- Nighttime blood pressure control
- Seasonal affective disorder (SAD)

How Does Melatonin Come at the Store?

In the U.S., melatonin pills can be purchased without a prescription in the pharmacy, grocery, or health food store. Pill strengths range from 1 milligram (mg) to 10 mg, but you should always start with the lowest dose to judge its effects. Some experts suggest to start with 0.3 to 0.5 mg thirty minutes before bedtime, instead of the higher doses. Cut a 1-mg immediate release tablet in half to get a 0.5 mg dose if lower doses are not available; don't do this with time release products. Also, don't drink alcohol with the time-release preparation, as it can disrupt the time-release mechanism.

Does Food Contain Melatonin?

A study published in *Food and Nutrition Research* notes that certain food products do contain various amounts of melatonin as measured by immunological and chromatographic laboratory techniques. How consumption of these various foods might affect endogenous production sleep or was not evaluated:

- Tomatoes
- Walnuts
- Rice/barley cereal
- Strawberries, tart cherries
- Olive oil
- Wine, beer
- Cow's milk

Research finds that melatonin synthesis depends upon availability of the essential amino acid tryptophan, a needed component of the diet. If intake of tryptophan is severely restricted, synthesis of melatonin is significantly reduced in

humans.

In the *Nurses' Health Study*, no link was found between the consumption of various nutrients, such as folate, vitamin B6 and zinc and increased urinary excretion.

Diets rich in vegetables, fruits and grain products will contain considerable levels of dietary melatonin. The overall effect of dietary consumption on nighttime levels of melatonin is very limited. Melatonin production is primarily driven by the effects of light and darkness and by age, declining as we get older.

How Much Does Melatonin Cost?

On average a 120-count bottle costs about \$10.00, but prices can vary, depending upon the manufacturer and strengths purchased. Insurance usually will not pay for over-the-counter (OTC) products, although some plans may allow use of health savings account funds.

Bottom Line: Pros and Cons

Benefits:

- Widely available in the U.S. over-the-counter (OTC) without a prescription
- Short-term use (less than 3 months) is relatively safe with little evidence of toxicity
- Inexpensive product with generics or store brands available
- Lower dose and orally-dissolvable products for children are available
- Comes in a variety of dosage forms and doses

Downsides:

- Not approved for any uses by the FDA (over-the-counter dietary supplement)
- Quality of some products cannot always be assured
- Studies for less common uses are not consistent
- Doses tend to vary between patients; always ask a medical professional or your health care provider for dosing advice in children
- Effective lower doses (0.1 to 1 mg) are not always commercially available
- Higher doses (2 to 10 mg) used over a prolonged period may lead to rebound insomnia and are not well studied.

For More Information

- Jet Lag Disorder Disease Reference
- [Jet Lag Health Guide](#)
- [Melatonin Support Group](#)
- [Sleep Disorders Support Group](#)

Popular FAQ

What are the strongest sleeping pills?



Does Melatonin interact with any drugs?



Can you take melatonin while pregnant?



More FAQ

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- [How long does melatonin keep you asleep?](#)
- [How long does melatonin stay in your system?](#)
- [Is melatonin safe for kids to take?](#)

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Professional resources

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Related treatment guides

- [Insomnia](#)
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- [Jet Lag](#)

Further information

Always consult your healthcare provider to ensure the information displayed on this page applies to your personal circumstances.

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<div><div>Rx</div><div>OTC</div></div>	Availability Rx and/or OTC
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