



# Melatonin

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## What's the Bottom Line?

### How much do we know about melatonin supplements?

Researchers have conducted many studies on whether melatonin supplements may help people with various sleep disorders. However, important questions remain about its usefulness, how much to take, when to take it, and its long-term safety.

### What do we know about the usefulness of melatonin supplements?

Melatonin supplements may help some people with certain sleep disorders, including jet lag, sleep problems related to shift work, and delayed sleep phase disorder (one in which people go to bed but can't fall asleep until hours later), and insomnia.

### What do we know about the safety of melatonin supplements?

Melatonin supplements appear to be safe when used short-term; less is known about long-term safety.

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## What Is Melatonin?

Melatonin is a natural hormone that plays a role in sleep. Melatonin production and release in the brain is related to time of day, rising in the evening and falling in the morning. Light at night blocks its production. Melatonin dietary supplements have been studied for sleep disorders, such as jet lag, disruptions of the body's internal "clock," insomnia, and problems with sleep among people who work night shifts. It has also been studied for dementia symptoms.

For more information about sleep, visit the [National Institute of Neurological Disorders and Stroke website](https://www.ninds.nih.gov/).

## What the Science Says About the Effectiveness of Melatonin

### For Sleep Disorders

Studies suggest that melatonin may help with certain sleep disorders, such as jet lag, delayed sleep phase disorder (a disruption of the body's biological clock in which a person's sleep-wake timing cycle is delayed by 3 to 6 hours), sleep problems related

## Melatonin

to shift work, and some sleep disorders in children. It's also been shown to be helpful for a sleep disorder that causes changes in blind peoples' sleep and wake times. Study results are mixed on whether melatonin is effective for insomnia in adults, but some studies suggest it may slightly reduce the time it takes to fall asleep.

### ***Jet lag***

Jet lag is caused by rapid travel across several time zones; its symptoms include disturbed sleep, daytime fatigue, indigestion, and a general feeling of discomfort.

- In a 2009 research review, results from six small studies and two large studies suggested that melatonin may ease jet lag.
- In a 2007 clinical practice guideline, the American Academy of Sleep Medicine supported using melatonin to reduce jet lag symptoms and improve sleep after traveling across more than one time zone.

### ***Delayed Sleep Phase Disorder***

Adults and teens with this sleep disorder have trouble falling asleep before 2 a.m. and have trouble waking up in the morning.

- In a 2007 review of the literature, researchers suggested that a combination of melatonin supplements, a behavioral approach to delay sleep and wake times until the desired sleep time is achieved, and reduced evening light may even out sleep cycles in people with this sleep disorder.
- In a 2007 clinical practice guideline, the American Academy of Sleep Medicine recommended timed melatonin supplementation for this sleep disorder.

### ***Shift Work Disorder***

Shift work refers to job-related duties conducted outside of morning to evening working hours. About 2 million Americans who work afternoon to nighttime or nighttime to early morning hours are affected by shift work disorder.

- A 2007 clinical practice guideline and 2010 review of the evidence concluded that melatonin may improve daytime sleep quality and duration, but not nighttime alertness, in people with shift work disorder.
- The American Academy of Sleep Medicine recommended taking melatonin prior to daytime sleep for night shift workers with shift work disorder to enhance daytime sleep.

### ***Insomnia***

Insomnia is a general term for a group of problems characterized by an inability to fall asleep and stay asleep.

- **In adults.** A 2013 analysis of 19 studies of people with primary sleep disorders found that melatonin slightly improved time to fall asleep, total sleep time, and overall sleep quality. In a 2007 study of people with insomnia, aged 55 years or older, researchers found that prolonged-release melatonin significantly improved quality of sleep and morning alertness.
- **In children.** There's limited evidence from rigorous studies of melatonin for sleep disorders among young people. A 2011 literature review suggested a benefit with minimal side effects in healthy children as well as youth with attention-deficit hyperactivity disorder, autism, and several other populations. There's insufficient

## Melatonin

information to make conclusions about the safety and effectiveness of long-term melatonin use.

### For other conditions

While there hasn't been enough research to support melatonin's use for other conditions:

- Researchers are investigating whether adding melatonin to standard **cancer care** can improve response rates, survival time, and quality of life.
- Results from a few small studies in people (clinical trials) have led investigators to propose additional research on whether melatonin may help to improve mild cognitive impairment in patients with **Alzheimer's disease (AD)** and prevent cell damage associated with **amyotrophic lateral sclerosis (ALS, also known as Lou Gehrig's disease)**. Another study suggested that adding sustained-release melatonin (but not fast-release melatonin) to high blood pressure management reduced **elevated nighttime blood pressure**.

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## Improving Sleep Habits in Children

Sleep problems are one of the most common problems parents encounter with their children. There are some simple steps parents can take to improve their children's sleep, such as having a set bedtime and bedtime routine, avoiding foods or drinks with caffeine, and limiting the amount of screen time. Visit the [National Heart, Lung, and Blood Institute website](#) for additional resources on improving sleep habits in both children and adults.

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## What the Science Says About Safety and Side Effects of Melatonin

Melatonin appears to be safe when used short-term, but the lack of long-term studies means we don't know if it's safe for extended use.

- In one study, researchers noted that melatonin supplements may worsen mood in people with dementia.
- In 2011, the U.S. Food and Drug Administration (FDA) issued a warning to a company that makes and sells "relaxation brownies," stating that the melatonin in them hasn't been deemed a safe food additive.
- Side effects of melatonin are uncommon but can include drowsiness, headache, dizziness, or nausea. There have been no reports of significant side effects of melatonin in children.

## More to Consider

- If you or a family member has trouble sleeping, see your health care provider.
- When you take a melatonin supplement is important because it may affect your biological clock.
- FDA regulates dietary supplements such as melatonin, but the regulations for dietary supplements are different and less strict than those for prescription or over-the-counter drugs.

## Melatonin

- Some dietary supplements may interact with medications or pose risks if you have medical problems or are going to have surgery.
- Most dietary supplements haven't been tested in pregnant women, nursing mothers, or children. If you're pregnant or nursing a child, it's especially important to see your health care provider before taking any medication or supplement, including melatonin.
- To use dietary supplements, such as melatonin safely, read and follow label instructions, and recognize that "natural" does not always mean "safe." For more information, see the NCCIH fact sheet [Using Dietary Supplements Wisely](#).
- Tell all your health care providers about any complementary or integrative health approaches you use. Give them a full picture of what you do to manage your health. This will help ensure safe and coordinated care.

## For More Information

### NCCIH Clearinghouse

The NCCIH Clearinghouse provides information on NCCIH and complementary and integrative health approaches, including publications and searches of Federal databases of scientific and medical literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.

Toll-free in the U.S.: 1-888-644-6226

TTY (for deaf and hard-of-hearing callers): 1-866-464-3615

Web site: [nccih.nih.gov](http://nccih.nih.gov)

E-mail: [info@nccih.nih.gov](mailto:info@nccih.nih.gov)

### PubMed®

A service of the National Library of Medicine, PubMed contains publication information and (in most cases) brief summaries of articles from scientific and medical journals.

Web site: [www.ncbi.nlm.nih.gov/pubmed](http://www.ncbi.nlm.nih.gov/pubmed)

### NIH Clinical Research Trials and You

The National Institutes of Health (NIH) has created a Web site, NIH Clinical Research Trials and You, to help people learn about clinical trials, why they matter, and how to participate. The site includes questions and answers about clinical trials, guidance on how to find clinical trials through [ClinicalTrials.gov](http://ClinicalTrials.gov) and other resources, and stories about the personal experiences of clinical trial participants. Clinical trials are necessary to find better ways to prevent, diagnose, and treat diseases.

Web site: [www.nih.gov/health/clinicaltrials/](http://www.nih.gov/health/clinicaltrials/)

### National Heart, Lung, and Blood Institute (NHLBI)

NHLBI supports research and consumer outreach on diseases of the heart, blood vessels, lungs, and blood.

Web site: [www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)

Telephone: 301-592-8573

E-mail: [nhlbiinfo@nhlbi.nih.gov](mailto:nhlbiinfo@nhlbi.nih.gov)

## Melatonin

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## Melatonin

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