



MELATONIN

Improves duration and quality of sleep

SLEEP DISTURBANCE AND ITS RISKS

If you are having trouble sleeping, you're not alone. The 2002 Canadian Community Health Survey found about one in seven adults has difficulty falling asleep or staying asleep. Insomnia affects one in three seniors and is 40% more common in women than in men.

Insomnia can be very frustrating and leave one feeling tired, inattentive, and irritable. It affects quality of life and relationships. People who get insufficient sleep are less creative and less productive. For most people, insomnia is a temporary annoyance, often triggered by stress. But if it persists and is not addressed, it can become chronic. Chronic sleep disturbance is a risk factor for premature aging and many diseases, including diabetes, obesity, cardiovascular disease, and certain cancers in shift workers (Litinski).

Many people have used sleeping pills, but they can interfere with REM sleep, disrupt the deeper stages of sleep, and lead to confusion, sluggishness, anxiety, and drug dependency.

MELATONIN FOR NATURAL, RESTFUL SLEEP

Melatonin is a safe and effective alternative to ease the way into restful sleep. It is a natural hormone that can normalize sleep patterns when insomnia is caused by a disruption of the body's circadian rhythm. Supplemental melatonin and bright light therapy are considered a standard medical treatment for cases of jetlag, shift work, age-related insomnia, delayed sleep-phase disorder, advanced sleep-phase disorder, and non-24-hour sleep-wake disorder (Bjorvatn).

HOW MELATONIN WORKS

Humans, like most animals and plants, have an internal biological clock that controls the daily circadian rhythms of sleep, body temperature, alertness, appetite, immune function, and hormone secretion. The biological clock is located in one tiny part of the brain, the suprachiasmatic nucleus (SCN) of the hypothalamus. The SCN receives signals from light-sensitive cells in the retinas of the eyes. When these cells register darkness, the SCN signals the pineal gland, which then releases melatonin. Melatonin initiates the sleep cycle by causing drowsiness and lowering the body temperature. When the retinas sense light, melatonin production is inhibited.

This cycle of melatonin production by the biological clock can be disrupted by external factors such as jet travel, shift work, a bedroom that is not dark, or physiological factors such as aging. The usual result is a sleep disturbance. Fortunately, taking a quality melatonin supplement can help reset the body's "clock".

NATURAL, ABSORBABLE MELATONIN

Natural Factors Melatonin is derived from non-animal sources and is available in 3 mg and 5 mg tablets to address individual needs. The sublingual tablets are absorbed directly into the blood stream, unlike oral tablets, which pass through the digestive system. This ensures faster and more complete absorption.

Successful treatment of sleep disturbance often includes light therapy, dimming the lights before bedtime, sleeping in a fully dark room, and exposure to bright light upon waking. Maintaining regular eating times and exercising in the morning can also help restore normal sleep patterns.

THE HEALTH BENEFITS OF MELATONIN

- Helps reduce the time it takes to fall asleep
- Helps increase total sleep time
- Helps reset the body's sleep-wake cycle following shift work or jetlag
- Reduces sleep disturbance caused by periodic limb movement disorder
- Relieves the symptoms of Seasonal Affective Disorder (SAD)
- Protects brain cells and mitochondria against free radical damage
- Reduces migraine headaches

JETLAG AND SHIFT WORK

With modern jet travel, people fly long distances across multiple time zones. Within a single day of travel, the body's clock is thrown off by several hours, leading to jetlag, characterized by the following symptoms: fatigue, insomnia, reduced alertness, and cognitive skills, loss of appetite, and mood disturbance. One study that reviewed the scientific research found that for flights crossing up to seven time zones, melatonin taken before bedtime in the new time zone can resynchronize the body's clock and restore a normal sleep cycle (Srinivasan).

For people taking longer flights, an Argentinian study suggests a more comprehensive approach is needed. The researchers combined melatonin supplements with a program of light therapy and morning exercise. They found that for people flying across twelve time zones the period of jetlag was reduced from ten days to just two days (Cardinali). A placebo-controlled American study showed that melatonin can help people adapt to night work. During the study, 32 people went to bed in the afternoon, advancing their sleep schedule by seven hours. Before bedtime they took a melatonin supplement or a placebo. Three quarters of those who received 3 mg of melatonin advanced their circadian sleep cycle by an average of four hours (Sharkey).

AGE-RELATED INSOMNIA

With age, the body's production of melatonin in the pineal gland decreases. As a result, insomnia is a common problem for many older people. Supplemental melatonin can restore the normal sleep-wake cycle. A randomized, double-blind, placebo-controlled study in Scotland found that patients with primary insomnia experienced significant improvement in their condition when taking supplemental melatonin. 354 insomnia patients, aged 55 to 80 years, were divided into two groups. For three weeks they received either 2 mg of melatonin or a placebo two hours before bedtime. Those receiving melatonin showed a significant shortening of the period of sleep latency and improvement in quality of sleep, level of morning alertness, and quality of life (Wade).

In another randomized, double-blind, placebo-controlled study, 791 patients with insomnia received melatonin or a placebo for six months. Among the elderly patients receiving melatonin, sleep latency time was reduced by an average of 19 minutes. They also slept longer and experienced improved quality of life, as measured using the Quality of Life (WHO-5) index. No side-effects were found (2010).

DELAYED SLEEP-PHASE SYNDROME

Delayed sleep-phase syndrome (DSPS) is a chronic circadian rhythm disorder. It affects the timing of many of the body's daily rhythms, including the onset of sleep, peak period of alertness, core body temperature, and hormonal rhythms. People with DSPS generally cannot fall asleep until several hours after midnight and have difficulty waking up in time for a typical school or work day. When they can follow their own schedules, e.g., sleeping from 4 a.m. till noon, they sleep soundly, awaken spontaneously, and experience normal alertness during the day.

A placebo-controlled study of 44 adults aged 19 to 45 found that the body's sleep cycle could be advanced by almost one hour per day. The participants were given a three-day treatment that included waking up one hour earlier each day, bright light in the morning and melatonin taken in the afternoon. When treatment was completed the researchers measured a 2.6 hour advance in the biological clocks of the people who had received melatonin, compared to only 1.7 in the placebo group. The researchers concluded this program would be an effective treatment for DSPS (Revell).

Many DSPS patients suffer from depression due to their sleep disturbance. A Canadian clinical trial found that melatonin supplements not only improved the sleep of patients, but also significantly reduced their depression, as measured by the CES-D and Hamilton Depression Rating Scale-17 (Rahman).

NON-24-HOUR SLEEP-WAKE SYNDROME

Non-24-hour or "free-running" sleep-wake syndrome is a chronic circadian rhythm sleep disorder. The body's clock runs freely, operating as though the day is longer than 24 hours and failing to adjust to the external light/dark cycle. The onset of sleep drifts later each day, putting the person further and further out of step with the rest of society and making it difficult to hold a job or participate in daily social activities. Most people with this syndrome are blind, and it affects more than half of all people who are totally blind.

In a small study in England, ten totally blind patients took a melatonin supplement each day at 9 pm. For seven of the patients the melatonin returned their circadian rhythm to a normal 24-hour cycle and increased their sleep duration. Most of them were in the "phase advance" portion of their circadian cycle when treatment started. The melatonin treatment failed on three people, all of whom were in the "phase delay" portion of their circadian cycle at the start of the treatment. This suggests that treatment should commence during phase advance (Hack). In cases of free-running sleep-wake syndrome, melatonin is an effective treatment, though not a cure. Patients revert back to a free-running cycle when treatment stops.

DOSAGE

At or before bed time, allow to dissolve under the tongue 1–2 tablets or as directed by a health care practitioner. For continued use beyond four weeks, consult a health care practitioner. If this dosage is ineffective, gradually increase the dosage, up to 10 mg. If you feel sluggish in the mornings, reduce the dosage. You may wish to start off with a minimal dosage and increase it only if the desired results are not achieved. Natural Factors Melatonin is available in 3 mg and 5 mg tablets to address individual needs.

SAFETY

Melatonin is completely safe at recommended doses and no toxic level has been

identified. Do not drive or use machinery for five hours after taking melatonin. For use beyond four weeks, consult a health care practitioner. If symptoms persist continuously for more than four weeks or if pain or other factors appear to be the cause of sleeplessness, consult a health care practitioner.

Pregnancy and lactation: Not recommended for women who are pregnant or breastfeeding, or who want to become pregnant.

Children: Not recommended for children.

Drug interactions: If you are taking blood pressure, sedative, or immunosuppressive medication, consult a health care practitioner prior to use.

Contraindications: If you have severe allergies, a hormonal disorder, diabetes, liver or kidney disease, cerebral palsy, seizure disorder, migraines, autoimmune disease, depression, or hypertension, consult a health care practitioner prior to use.

Natural Factors Melatonin is a natural hormone that safely and effectively eases the way into restful sleep and increases total sleep time without side effects.

KEY REFERENCES

- Bjorvatn B., et al., "A practical approach to circadian rhythm sleep disorders", *Sleep Med Rev*, 2009 Feb; 13(1): 47-60, Epub 2008 Oct 8
- Cardinali D.P., et al., "The use of chronobiotics in the resynchronization of the sleep-wake cycle", *Cancer Causes Control*, 2006 May; 17(4): 601-9
- Hack L.M., et al., "The effects of low-dose 0.5-mg melatonin on the free-running circadian rhythms of blind subjects", *J Biol Rhythms*, 2003 Oct; 18(5): 420-9
- Litinski M., et al., "Influence of the Circadian System on Disease Severity", *Sleep Med Clin*, 2009 Jun 1; 4(2): 143-163
- Rahman S.A., et al., "Antidepressant action of melatonin in the treatment of Delayed Sleep Phase Syndrome", *Sleep Med*, 2010 Feb; 11(2): 131-6, Epub 2009 Dec 30
- Revell V.L., et al., "Advancing human circadian rhythms with afternoon melatonin and morning intermittent bright light", *J Clin Endocrinol Metab*, 2006 Jan; 91(1): 54-9, Epub 2005 Nov 1
- Sharkey K.M., et al., "Melatonin phase shifts human circadian rhythms in a placebo-controlled simulated night-work study", *Am J Physiol Regul Integr Comp Physiol*, 2002 Feb; 282(2): R454-63
- Srinivasan V., et al., "Jet lag: therapeutic use of melatonin and possible application of melatonin analogs", *Travel Med Infect Dis*, 2008 Jan-Mar; 6(1-2): 17-28, Epub 2008 Jan 28
- Wade A.G., et al., "Efficacy of prolonged release melatonin in insomnia patients aged 55-80 years: quality of sleep and next-day alertness outcomes", *Curr Med Res Opin*, 2007 Oct; 23(10): 2597-605
- Wade A.G., et al., "Nightly treatment of primary insomnia with prolonged release melatonin for 6 months: a randomized placebo controlled trial on age and endogenous melatonin as predictors of efficacy and safety", *BMC Med*, 2010 Aug 16; 8(1): 51, [Epub ahead of print]