

## **Melatonin**

Melatonin is a hormone secreted by the pineal gland in the brain. It helps regulate other hormones and maintains the body's **circadian rhythm**. The circadian rhythm is an internal 24-hour "clock" that plays a critical role in when we fall asleep and when we wake up. When it is dark, your body produces more melatonin; when it is light, the production of melatonin drops. Being exposed to bright lights in the evening or too little light during the day can disrupt the body's normal melatonin cycles. For example, jet lag, shift work, and poor vision can disrupt melatonin cycles.

Melatonin also helps control the timing and release of **female reproductive hormones**. It helps determine when a woman starts to menstruate, the frequency and duration of menstrual cycles, and when a woman stops menstruating (menopause).

Melatonin has **strong antioxidant effects**. Preliminary evidence suggests that it may help **strengthen the immune system**.

Melatonin has been approved by the TGA for use in Australia to treat insomnia.

### **Uses**

#### **Insomnia**

Studies suggest that melatonin supplements may help people with disrupted circadian rhythms (such as people with jet lag or those who work the night shift) and those with low melatonin levels to sleep better.

Clinical studies suggest that melatonin is more effective than a placebo in reducing the time it takes to fall asleep, increasing the number of sleeping hours, and boosting daytime alertness. One study of 334 people found that sustained-release melatonin seemed to help people fall asleep faster, sleep better, be more alert in the morning, and improve quality of life in people with primary insomnia.

#### **Menopause**

Melatonin supplements may help with sleep problems associated with menopause.

#### **Breast Cancer**

Several studies suggest that **low melatonin levels** may be associated with **breast cancer risk**. For example, women with breast cancer tend to have lower levels of melatonin than those without the disease. Laboratory experiments have found that low levels of melatonin stimulate the growth of certain types of breast cancer cells, while adding melatonin to these cells slows their growth.

In another small study of women who were taking tamoxifen for breast cancer but seeing no improvement, adding melatonin caused tumors to modestly shrink in more than 28% of the women.

## **Prostate Cancer**

Studies show that people with prostate cancer have lower melatonin levels than men without the disease. In test tube studies, melatonin blocks the growth of prostate cancer cells. In one small-scale study, melatonin -- combined with conventional medical treatment -- improved survival rates in 9 out of 14 men with metastatic prostate cancer. Interestingly, since meditation may cause melatonin levels to rise it appears to be a valuable addition to the treatment of prostate cancer. More research is needed before doctors can make recommendations in this area.

## **Attention Deficit Hyperactivity Disorder (ADHD)**

Some evidence suggests that melatonin may help promote sleep in children with ADHD, although it does not seem to improve the behavioral symptoms of ADHD.

## **Irritable Bowel Syndrome**

Some preliminary studies suggest that people with IBS who take melatonin reduce some symptoms of IBS, such as abdominal pain.

### **Available Forms:**

Melatonin is available as tablets, capsules, cream, and lozenges that dissolve under the tongue.

### **Adult**

- Insomnia: 1 to 3 mg 1 hour before bedtime is usually effective, although doses as low as 0.1 -0.3 mg may improve sleep for some people. If 3 mg per night does not work, 5 - 6 mg 1 hour before bedtime can be tried. The right dose should produce restful sleep with no daytime irritability or fatigue.
- Jet lag: 0.5 - 5 mg of melatonin 1 hour prior to bedtime at your final destination has been used in several studies. Another approach that has been used is 1 - 5 mg 1 hour before bedtime for 2 days prior to departure and for 2 - 3 days upon arrival at final destination.

## **Precautions:**

Some people may have vivid dreams or nightmares when they take melatonin.

Melatonin can cause drowsiness if taken during the day. If you are drowsy the morning after taking melatonin, you may require a lower dose.

Uncommon side effects include stomach cramps, dizziness, headache, irritability.

Pregnant or nursing women should not take melatonin.

## **Possible Interactions:**

If you are being treated with any of the following medications, you should not use melatonin without first discussing it with your Australian Menopause Centre health care provider.

**Antidepressant medications** -- Melatonin may reduce the antidepressant effects of fluoxetine (Prozac).

**Benzodiazepines** -- The combination of melatonin and some benzodiazepines improved sleep quality in one study. In addition, a few reports have suggested that melatonin supplements may help people stop using long-term benzodiazepine therapy. (Benzodiazepines are habit-forming.)

**Blood pressure medications** -- Medications in a class called calcium channel blockers may lower melatonin levels. Calcium channel blockers include:

- Amlodipine (Norvasc)
- Verapamil (Isoptin)
- Diltiazem (Cardizem)
- Felodipine (Plendil)

**Beta-blockers** -- Use of beta-blockers may lower melatonin levels in the body. Beta-blockers include:

- Atenolol (Tenormin)
- Metoprolol (Lopressor, Toprol XL)
- Propranolol (Inderal)

**Blood-thinning medications (anticoagulants)** -- Melatonin may increase the risk of bleeding from anticoagulant medications such as warfarin (Coumadin).

**Nonsteroidal anti-inflammatory drugs (NSAIDs)** -- NSAIDs such as ibuprofen may lower levels of melatonin in the blood.

**Steroids and immunosuppressant medications** -- Melatonin may cause these medication to lose their effectiveness. Do not take melatonin with corticosteroids or other medications used to suppress the immune system.

**Other** -- Caffeine, tobacco, and alcohol can all lower levels of melatonin in the body.

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