

## Supplement Sampler Melatonin

### Best Indications

- Sleep/Wake Cycle Disturbances
- Delayed Sleep Phase Syndrome (DSPS)
- Insomnia
- Jet lag
- Breast/Prostate Cancer (likely related more to the sleep-wake cycle than melatonin (forest or tree?))

### Mechanism of Action

Darkness stimulates production in the pineal gland that then circulates throughout the CSF and vascular system. It is produced from tryptophan, which is converted to 5-hydroxytryptophan, then to serotonin, then to N-acetylserotonin, and finally to melatonin. Its main function is to influence the body's circadian rhythm, endocrine function and sleep patterns. It also has a number of positive effects on hormone-related cancers that help explain the association of low melatonin levels with breast cancer in night shift workers. It is a strong anti-oxidant, stimulates cell apoptosis, acts similar to a SERM (Selective Estrogen Receptor Modulator) and reduces estrogen synthesis and tumor angiogenesis.

### Best Study

A meta-analysis of exogenous melatonin for sleep disorders showed a reduction in sleep latency by about 12 minutes. Most benefit was seen in those with delayed sleep phase syndrome (the night owl). There were no significant side effects, and duration of therapy was recommended at less than three months.

(Buscemi N, et al. The efficacy and safety of exogenous melatonin for primary sleep disorders. A meta-analysis. *J Gen Intern Med.* 2005; 20(12): 1151-8.)

Melatonin appears to work better to improve the sleep-wake cycle (circadian rhythm) than to induce sleep onset.

### Dose

**Improving sleep/wake cycle:** 0.5-3.0 mg at bedtime for 4-12 weeks. Lower doses (0.5-1 mg have been found to work just as well as higher doses)

**Jet Lag:** 3-5 mg at bedtime upon arrival at the destination and continuing nightly (new night) for 3-5 days. Doses of 3-5 mg have more of a hypnotic effect and appear to be better for jet lag.

**Breast Cancer:** 20-40 mg given with tamoxifen was found to improve one year survival rates. This may worsen quality of life due to somnolence and it is not recommended until further studied. In the meantime, you can encourage a good sleep-wake cycle which will promote endogenous melatonin production.

Immediate release is best for improving sleep latency; sustained release melatonin is better for sleep maintenance.



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## Melatonin

### **Side Effects**

Generally well tolerated. Daytime somnolence and fatigue are most common particularly with higher doses. Headache and dizziness can also occur.

### **Cost**

Two hundred, 3 mg tablets costs about \$10. The price does not go up significantly for sustained release formulations.

### **Disclaimer**

*The health benefits of getting 7-8 hours of sleep in complete darkness that resonates with the rhythm of the sun is likely much more important and beneficial than taking exogenous melatonin.*

*Brought to you by your colleagues in the UW Department of Family Medicine Integrative Medicine Program.*

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