

## COMPOUNDED OPTIONS FOR IMPROVED SLEEP

More than one-third of adults get fewer than seven hours of sleep each night, making sleep deficiency a top concern in today's world. The ability to fall asleep, stay asleep, and wake up feeling rested extends beyond the repercussions of a busy lifestyle. Stress, anxiety, pain level, hormone balance, adequate oxygen delivery, and blood flow are all key players in restful and restorative sleep.

At Physicians Preference Pharmacy, we have many compounded prescription options available to improve sleep, but here we will highlight two frontrunners: melatonin and oxytocin.

### Melatonin

Melatonin is a hormone naturally produced by the pineal gland in response to darkness. Declines in melatonin production, which are increasingly common with age, can disrupt sleep, which is why taking melatonin at bedtime is so helpful. In fact, 88% of adults who take melatonin say it helps them fall asleep faster.<sup>1</sup> Melatonin also corrects disrupted circadian rhythms and can be used to treat jet lag, night shift work, and delayed sleep phase syndrome, marked by falling asleep and waking up later than normally.

### Additional Benefits of Melatonin

In addition to facilitating sleep, melatonin promotes normal circadian and metabolic rhythms in tissues and organs throughout the body. It also acts as a potent antioxidant, protects against cancer and other diseases, and boosts autophagy, an important process for clearing out and recycling damaged cellular components. Suboptimal melatonin levels are linked with inflammation and chronic diseases, notably dementia, mood disorders, severe pain, cancer, and type 2 diabetes.

### Know Your Melatonin Source

Many people select melatonin products based on price without consideration of quality and potency, but over-the-counter melatonin should be chosen with caution. According to a 2023 study published in *JAMA*, 88% of over-the-counter melatonin products are inaccurately labeled. Some products contained 347% more melatonin per dose than what was stated on the label.<sup>2</sup> Compounding pharmacies are required by law to include the dose of melatonin as stated on the product label.

### Long-Term Use of Melatonin

We are frequently asked if using melatonin long term reduces the body's own production of melatonin. Research on long-term melatonin administration has found that it does not. In fact, long-term usage appears to benefit certain patient populations, such as those with autism spectrum disorder.<sup>3</sup>

## HOW TO ORDER

### You may place refills:

📞 281.828.9088

🖱️ [physicianspreferencerox.com](https://physicianspreferencerox.com)

## TAKE A VIRTUAL TOUR

👉 [Click here to view an inside look at our compounding labs.](#)

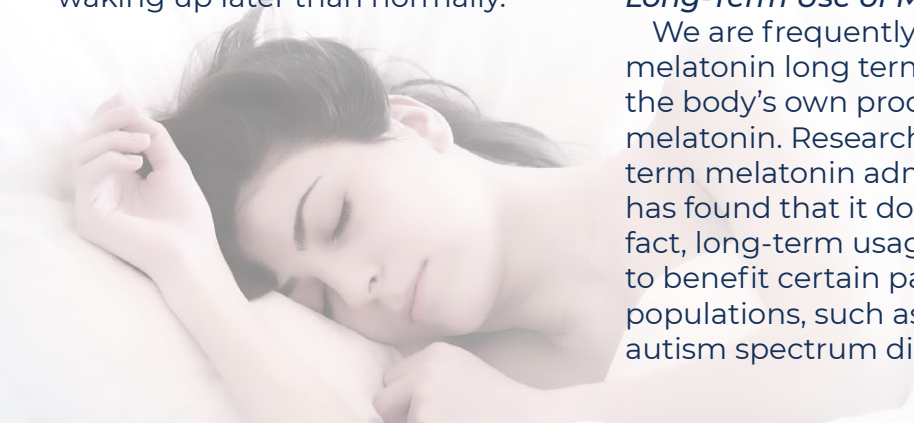


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*Physicians Preference Pharmacy standards are more stringent than those of the United States Pharmacopeia (USP). In addition to onsite weight testing, we send multiple samples per week to an outside laboratory for potency testing. Physicians Preference Pharmacy ranks first in Houston for the number of samples sent for potency testing and in the top 8% of pharmacies nationwide.*

*Physicians Preference Pharmacy is a Houston-based, PCAB-accredited compounding pharmacy serving physicians and patients since 2001. We are licensed to work with doctors and ship to patients in 49 states (excludes AL).*



Furthermore, melatonin is overwhelmingly safe and very well tolerated. When side effects are reported, they are usually limited to drowsiness or bad dreams if the dose is too high.<sup>4</sup>

### *Compounded Melatonin*

At Physicians Preference Pharmacy, we compound immediate-release melatonin sublingual tablets as well as sustained-release melatonin capsules. If you have trouble *falling* asleep, your doctor will prescribe an immediate-release formulation. If *staying* asleep is the problem, or if you are seeking melatonin's many other benefits, sustained-release capsules will be prescribed.

### **Oxytocin**

Oxytocin is a neuropeptide commonly known as the “love hormone” for its role in physical touch, sexual intimacy, childbirth, lactation, and social bonding. It is also involved in cognitive functioning, the fight-or-flight response, and sleep. Levels of oxytocin naturally decline with age but may be depleted for a variety of reasons. Causes of oxytocin deficiency include the modern American diet high in carbohydrates and sugars, environmental endocrine disruptors such as BPA, childhood trauma, social isolation, and prolonged cortisol release in response to chronic stress.

### *Oxytocin, Stress, and Sleep*

Insomnia is a common result of oxytocin deficiency and excess cortisol release. Oxytocin and cortisol share an inverse relationship, so when cortisol levels are high and approaching burnout, oxytocin levels decrease. Chronically elevated cortisol has a notably negative impact on mental

and physical health including sleep, memory, mood, and the immune system. Oxytocin slows the activity of ACTH (adrenocorticotropin hormone), which signals the adrenals to release cortisol. By regulating cortisol, oxytocin helps improve sleep, anxiety, and other symptoms.

### *Oxytocin and Obstructive Sleep Apnea*

Oxytocin can also help with sleep apnea. Studies suggest it helps keep the airway open during sleep by increasing tongue muscle and diaphragm activity. Taking oxytocin at bedtime has been shown to help balance the nervous system and prevent or reduce the repeated involuntary airway closures that occur during sleep in patients with obstructive sleep apnea.<sup>5</sup>

### *Compounded Oxytocin*

Oxytocin is available at Physicians Preference Pharmacy as an intranasal spray and sublingual tablets. Oxytocin is a very delicate compound and would be destroyed by stomach acid if oral administration was attempted. Your doctor may prescribe either form, although intranasal spray is recommended for some conditions. Oxytocin is a versatile neuropeptide hormone that offers significant potential improvements for insomnia, stress, sleep apnea, and other symptoms that impact sleep.

### **REFERENCES**

- <sup>1</sup>Suni E, et al. 100+ Sleep Statistics. *Sleep Foundation*. September 26, 2023. <https://www.sleepfoundation.org/how-sleep-works/sleep-facts-statistics>.
- <sup>2</sup>Cohen PA, et al. Quantity of Melatonin and CBD in Melatonin Gummies Sold in the US. *JAMA*. 2023;329(16):1401–1402. doi:10.1001/jama.2023.2296.
- <sup>3</sup>Givler D, et al. Chronic Administration of Melatonin: Physiological and Clinical Considerations. *Neurol Int*. 2023 Mar 15;15(1):518–533. doi: 10.3390/neurolint15010031.
- <sup>4</sup>Melhuish Beaupre LM, et al. Melatonin's neuroprotective role in mitochondria and its potential as a biomarker in aging, cognition and psychiatric disorders. *Transl Psychiatry*. 2021 Jun 2;11(1):339. doi: 10.1038/s41398-021-01464-x.
- <sup>5</sup>Jain V, et al. Benefits of oxytocin administration in obstructive sleep apnea. *Am J Physiol Lung Cell Mol Physiol*. 2017 Nov 1;313(5):L825–L833. doi: 10.1152/ajplung.00206.2017.
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## SLEEP STATISTICS



- In a normal sleep period, a person experiences **four to six sleep cycles**.
- On average, we spend about **two hours per night dreaming**, mostly during REM sleep.
- More than **one-third of adults** sleep **fewer than seven hours per night** on average.
- **54%** of adults say **stress and anxiety** were the top reasons they have trouble falling asleep.
- As many as **91%** of adults with post-traumatic stress disorder (PTSD) have symptoms of insomnia.
- **Up to 70%** of snorers have been diagnosed with **sleep apnea**.
- Women are **40%** more likely to have insomnia than men.
- **95%** of adults lose at least an hour of sleep to pain in any given week.
- Sleep disorders affect **39% to 47%** of perimenopausal women and **35% to 60%** of postmenopausal women.
- An estimated **50 to 70 million people** have ongoing sleep disorders. The most common are insomnia, sleep apnea, and narcolepsy.
- One study estimates the annual cost of workplace errors and accidents linked to insomnia is **\$31.1 billion**.

Source: <https://www.sleepfoundation.org/how-sleep-works/sleep-facts-statistics><sup>6</sup>