

UC Davis

UC Davis Previously Published Works

Title

Are melatonin, sleep, and neurologic disorders connected?

Permalink

<https://escholarship.org/uc/item/2r59n98t>

Journal

Brain & Life, 17(5)

ISSN

2576-2273

Author

Oyegbile-Chidi, Temitayo

Publication Date

2021-10-01

DOI

10.1097/01.nnn.0000797100.76467.e8

Peer reviewed

By continuing to use our site, you agree to the [Terms of Use](#) and acknowledge that you've read our [Privacy Policy](#). Also, this site uses cookies. Some are essential to make our site work properly, others perform functions more fully described in our [Privacy Policy](#). By continuing to use our site, you consent to the use of these cookies.

[COVID-19 Articles and Resources](#)

Advertisement

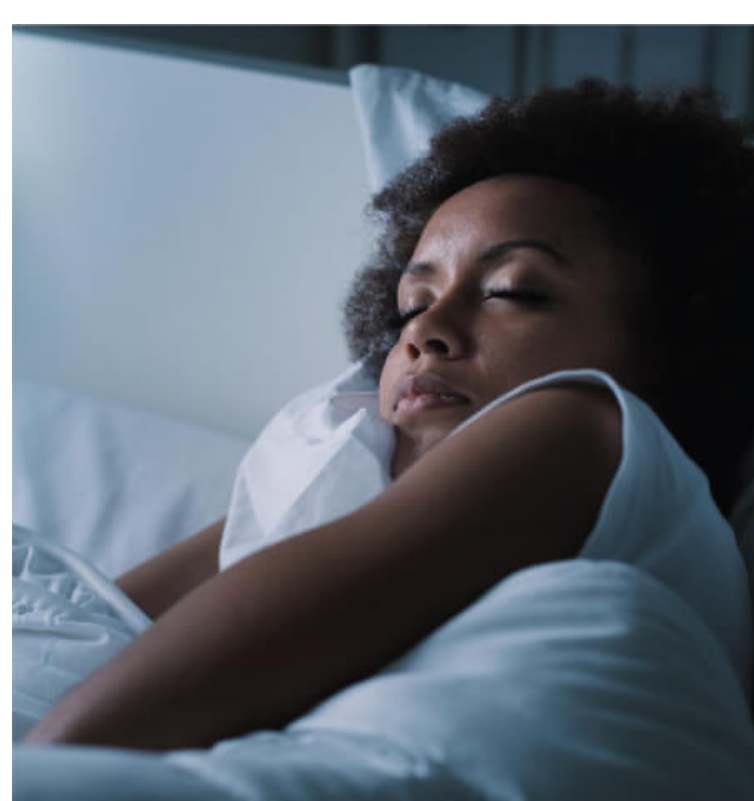
ASK YOUR NEUROLOGIST, SLEEP OCTOBER/NOVEMBER 2021

BY TEMITAYO OYEGBILE-CHIDI, MD, PHD

Are Melatonin, Sleep, and Neurologic Disorders Connected?



Yes, there are strong links among low melatonin levels, poor sleep, and worse neurologic symptoms, according to research. Melatonin is a hormone produced by the pineal gland in the brain. Darkness prompts the pineal gland to start producing and secreting melatonin into the bloodstream, while light causes it to stop. That's how melatonin synchronizes the sleep-wake cycle with night and day.



DEMAERRE/ISTOCKPHOTO

Studies in the last few years have indicated that lower melatonin levels may increase seizures in patients with [epilepsy](#) and affect cognition in people with [Alzheimer's disease](#). They also may worsen symptoms related to [stroke](#), [migraine](#), [autism](#), [multiple sclerosis](#), [Parkinson's disease](#), and [attention deficit-hyperactivity disorder](#).

Some animal studies and a few human studies suggest that melatonin may protect cells and DNA from damage by free radicals—unstable molecules produced as a byproduct of metabolism or by exposure to toxins such as tobacco smoke. Melatonin also may decrease inflammation in the brain after damage from a stroke or [traumatic brain injury](#). And recent animal studies indicate that melatonin may reduce amyloid levels, which contribute to Alzheimer's disease. Additional research is needed to clarify these findings and to determine if there is any therapeutic benefit to humans.

Current studies suggest that melatonin improves sleep in children and adults with epilepsy or autism.

Ask your neurologist if melatonin is appropriate for you. A sleep study may reveal other problems, such as snoring or airway obstruction, that could be interfering with sleep.

More research is expected to be published in the next few years on the genetic basis of melatonin levels; the connection among melatonin, neurologic disorders, and sleep; and precision dosing. In the meantime, these tips may help to ensure longer, more restful sleep.

Set a schedule. Plan a bedtime and wake-up time and stick with them—and avoid napping during the day if possible.

Create a sleep-inducing environment. Keep your bedroom dark and cool (around 70 degrees in winter) and remove any electronic devices, including televisions. Bright screens can throw off your sleep cycle. Invest in comfortable bedding and extra pillows. If pets thrash or make noise, train them to sleep elsewhere. If household or outside sounds distract you, consider getting a white noise machine to muffle those sounds, or wear earplugs.

Limit caffeine and alcohol. Stop drinking caffeinated beverages at least six hours before going to bed, and don't overindulge in alcohol. While alcohol may help you sleep at first, you might awaken once it wears off and have trouble falling asleep again.

Use light wisely. Open blinds and shades during the day and close them at night to reinforce your sleep cycle.

Up your physical activity. Exercise is good for overall health, and it can help make you tired at bedtime.

Rule out other conditions. Ask your doctor about a sleep study; in such studies, patients are monitored overnight in a hospital or clinic or at home to see if obstructed airways or similar problems are disrupting sleep.

Review your medications. Some drugs, such as certain antidepressants, can interfere with sleep. Work with your neurologist and pharmacist to adjust doses so the drugs don't keep you awake. If other symptoms such as nighttime stiffness are a problem, ask your doctor if a nonprescription pain reliever is appropriate.

Consider cognitive behavioral therapy (CBT). A targeted form of talk therapy, CBT helps patients identify and reframe thoughts that have negative behavioral effects. Once identified, these thoughts are modified and replaced with rational ones.

Brain&Life Subscribe to Our Email Newsletter!

Email Address

Subscribe Now

By signing up, you agree to our [Privacy Policy](#) and [Terms](#).

Join a support group. Worrying about being able to sleep can keep you awake. Talking about it with others may be helpful. If you hear of any tips, discuss them with your doctor first to be sure they're safe for you.