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Surprising Health Benefits of Using a Sleep Mask

Analysis by Dr. Joseph Mercola Fact Checked | March 16, 2023

STORY AT-A-GLANCE

- By using a sleep mask at night, your memory and alertness may improve
- Study participants were better able to recall events and experiences, and had improved reaction times, when they wore a sleep mask at night
- Wearing a sleep mask enhanced participants' ability to learn new information and form memories
- Use of sleep masks, as well as ear plugs, by ICU patients significantly improved subjective sleep quality
- Exposure to light at night may increase your risk of cancer, obesity, high blood pressure and diabetes

Sleep masks provide an economical, DIY solution to get the darkness your body requires for optimal sleep, and just by wearing one nightly your memory and alertness may improve. The finding came from research published in the journal Sleep,[1] which underscored that sometimes the simplest interventions have the most powerful effects on health.

This certainly seems to be the case for sleep masks. Blocking out ambient light at night is essential to a good night's sleep — and all of its related benefits — but it can be difficult to make your bedroom pitch black. Sleep masks provide a different means to the same end — a dark environment that's conducive to restful, restorative sleep.

Wear a Sleep Mask to Boost Memory and Alertness

In the first experiment of a two-part study, 89 adults aged 18 to 35 wore an eye mask while sleeping at night for seven days, followed by a period of not wearing an eye mask during sleep and then wearing an eye mask with holes in it, which allowed light to pass through.[2] The participants slept with the eye mask for five nights to get used to it before researchers conducted cognitive tests on the sixth and seventh days.

"Superior episodic encoding and an improvement on alertness"[3] was noted when the participants wore the light-blocking sleep mask. They performed better on a word-pair association test, which measures the ability to recall events and experiences, as well as a test to measure reaction times.[4]

For the second part of the study, 33 people aged 18 to 35 slept with an eye mask one night followed by an eye mask with holes the next night. They also wore a headband to measure brain activity and used a device to measure light upon waking. The cycle was then repeated, with researchers again conducting cognitive tests.

Not only did the light-blocking sleep mask enhance participants' ability to learn new information and form memories, but it was associated with more slow-wave sleep (SWS), which may be beneficial for memory.[5] The researchers explained:[6]

> *"The synaptic homeostasis hypothesis posits that SWA [slow-wave activity] (0.5–4 Hz), a hallmark of SWS, promotes the global down-scaling of synapses that have become saturated during preceding periods of wakefulness and thus restores capacity for the encoding of new information."*

After a night of wearing the eye mask, the participants received higher scores on the Psychomotor Vigilance Test, the most widely used test for alertness and attention. The researchers noted the importance of this finding, since staying alert is crucial for a variety of everyday tasks, such as driving, while educational benefits could also be achieved:[7]

"Overall, our findings suggest that a simple manipulation — the use of an eye mask during sleep — can lead to superior memory performance and higher alertness the next day.

These findings have broad implications for the performance of the many daytime tasks that require learning in educational and cultural contexts, in which particularly effective encoding will determine opportunities for growth, as well as a fast response to external stimuli.

Given the current climate of life-hacking, sleep monitoring, and cognitive enhancers, our findings suggest the eye mask as a simple, economical, and noninvasive way to get more out of a night of sleep."

Sleep Masks Improve Sleep Quality

The featured study is unique in that it measured the effects of sleep masks on an ordinary night at home. However, it's not the first to look at how sleep masks may influence sleep. A 2017 systematic review published in the Journal of Sleep Research analyzed the use of sleep masks for patients in an intensive care unit (ICU).[8]

ICUs are filled with bright lights and noise, and sleep deprivation in ICU settings can lead to worse outcomes, including longer ICU stays and increased complication rates.[9] The study revealed that use of sleep masks, as well as ear plugs, by ICU patients significantly improved subjective sleep quality.

In another example, ICU patients who used a sleep mask and earplugs slept more hours and reported their quality of sleep significantly improved, compared to their own experience of not using a sleep mask in the ICU, as well as to other control group participants, who received routine care only.[10]

Light Has a Significant Effect on Your Sleep-Wake Cycle

Humans have always been exposed to light from sunlight during the day and near-complete darkness at night, except for light from the moon, stars and fire. Now, light exposure at night is virtually inevitable, not only from cellphones, TVs, computers and artificial lighting indoors but also from streetlights and outdoor light pollution.

Light serves as the major synchronizer of your master body clock, which is composed of a group of cells in your brain called the suprachiasmatic nuclei. These nuclei synchronize to the light-dark cycle of your environment when certain wavelengths of light enter your eyes. As noted in the featured study:[11]

> *"In mammals, the sleep–wake cycle is regulated by the suprachiasmatic nuclei (SCN) of the anterior hypothalamus. SCN activity is strongly synchronized by the light–dark cycle via intrinsically photosensitive retinal ganglion cells. The tight interaction between light and sleep regulation is, therefore, clear, with a large body of evidence supporting the impact of light on sleep timing, macro-architecture, and duration."*

Not only does exposure to light at night affect your sleep quality, but it's implicated in a number of chronic diseases. This is where simply wearing a sleep mask may be so beneficial, as simply closing your eyes isn't enough. Even light that shines through closed eyelids can suppress melatonin,[12] which can cause circadian disruptions that play a role in cancer.[13]

It's previously been shown that higher exposure to outdoor light at night may increase the risk of postmenopausal breast cancer,[14] and evidence suggests light at night may increase thyroid cancer risk, too,[15] as thyroid function is regulated by circadian rhythm.

Health Risks of Light Exposure at Night

I've long stated that making a conscious effort to eliminate light in your bedroom — and if you can't, wearing a sleep mask — can go a long way toward protecting your health. In March 2022, a study of 20 healthy young adults revealed that even one night of sleep

with moderate light exposure increased nighttime heart rate, decreased heart rate variability and increased next-morning insulin resistance.[16]

"These results demonstrate that a single night of exposure to room light during sleep can impair glucose homeostasis, potentially via increased SNS [sympathetic nervous system] activation," the researchers noted.[17] A 2019 study, involving 43,722 women, also found that exposure to artificial light at night while sleeping was significantly associated with an increased risk of weight gain and obesity.[18]

In another study, exposure to any amount of light at night was linked to detrimental effects on the health of older adults, increasing the risk of obesity, high blood pressure and diabetes.[19] Compared to adults who were not exposed to light at night, those who did experience light exposure at night were significantly more likely to be obese or have high blood pressure or diabetes. Specifically:[20]

- 40.7% of those exposed to LAN were obese, compared to 26.7% of those not exposed
- 17.8% of those exposed to LAN had diabetes, compared to 9.8% of those not exposed
- 73% of those exposed to LAN had high blood pressure, compared to 59.2% of those not exposed

Those exposed to light at night were also more likely to wake after falling asleep, and the researchers suggested more studies should be conducted to understand the long-term effects of light exposure at night on cardiometabolic risks.[21]

Not Getting Enough REM Sleep Increases Risk of Death

Even during sleep, your body has a rhythm. It cycles through light sleep, non-REM (rapid eye movement), multiple additional sleep stages and REM sleep in 90- to 110-minute intervals. Ideally, this cycle will repeat four to six times a night.[22]

Each sleep stage is beneficial, but REM sleep, during which dreaming occurs, is being recognized as increasingly important — and it's also affected by light. One study found that earlier exposure to light increased SWS "at the expense of" REM sleep.[23] During REM, your brain is as active as it is during wakefulness, but your body is paralyzed, which prevents you from acting out your dreams.

Hormonal changes and both memory reconsolidation and emotional processing occur during REM, which Matthew Walker, a professor of neuroscience and psychology at the University of California, Berkeley, told The New York Times is "like a form of overnight therapy."[24] Further, getting less REM sleep is linked to an increased risk of death. In a study of 4,050 people, a 13% increased risk of all-cause mortality was found over 12.1 years for every 5% reduction in REM sleep.[25]

You Can Harness Light and Darkness for Better Sleep

In the video above, Andrew Huberman, a neuroscientist and tenured professor in the department of neurobiology at Stanford University School of Medicine, details how to effectively harness light and darkness, as well as other factors, to **fall asleep faster and stay asleep longer**.

Huberman recommends viewing bright light, ideally from sunlight, within the first 30 to 60 minutes after waking to stimulate wakefulness throughout the day and help you fall asleep at night. Later in the day, there's research showing that if you view light in the early evening hours, it may help mitigate some of the consequences of light exposure later in the evening.[26]

However, from around 6 p.m. or 7 p.m., into the hours when you get into bed and throughout the night while you're asleep, it's important to avoid bright artificial lights of any color.

Once the sun goes down, you should dim the lights in your environment and use as little artificial light as possible, including dimming your computer screen and avoiding

overhead lights — opting for desk lamps instead. Better yet, use candlelight or moonlight after sunset.

If your bedroom is affected by light pollution, be sure to use blackout shades to keep light out and remove all sources of light from your bedroom, including a digital alarm clock or cellphone. You can also use a sleep mask for this purpose. Avoiding light at night will go a long way toward getting a great night's sleep, but it's not the only factor.

Toward that end, I've compiled **33 tips to optimize your sleep routine**, which include not only paying attention to light and darkness, but also to sleep hygiene, temperature, lifestyle choices and more.

Sources and References

- [1, 3, 6, 7, 11, 23] Sleep December 15, 2022
- [2, 4, 5] Science Alert March 1, 2023
- [8, 9] Journal of Sleep Research September 25, 2017
- [10] International Journal of Nursing Practice May 14, 2019
- [12] BMC Res Notes. 2012; 5: 221
- [13, 15] Cancer February 8, 2021
- [14] International Journal of Cancer June 2, 2020
- [16, 17] PNAS March 14, 2022
- [18] JAMA Internal Medicine June 10, 2019
- [19, 20, 21] Sleep June 22, 2022
- [22, 24] The New York Times February 25, 2023
- [25] JAMA Neurol. 2020;77(10):1241-1251. doi: 10.1001/jamaneurol.2020.2108
- [26] Scientific Reports volume 9, Article number: 16064 (2019)