

Why Everyone Should Get at Least 7 Hours of Sleep -- And What Happens If You Don't

The Sleep Pandemic

Data from the [National Institutes of Health](#) indicate that 50-70 million Americans have sleep disorders and that over one in three adults regularly fail to get the recommended seven-to-nine hours of sleep each night. Up to 30% of adults, and up to almost 50% of older adults, struggle with chronic [insomnia](#), and according to [Gallup](#) this is a worsening phenomenon.

We're not sure the problem of sleeplessness has gotten worse, given what we've read in a [recent study](#), but we are sure of one thing: too many people sleep too little, and the physiological, social and economic costs are enormous.

Now, you may be thinking to yourself, *seven hours is an absolute luxury, an absurd expectation even* -- and if you're like the military folks on our team, you may be familiar with the oft-used refrain, *it only takes four to function*. So what's the big deal with consistently not getting at least seven hours of sleep?

The CDC, the American Academy of Sleep Medicine and the Sleep Research Society warn that getting less than seven hours of shuteye per night not only makes it more difficult for our bodies to recover and maintain important metabolic and cellular functions, but also is associated with much higher risks of developing a range of serious health conditions from obesity to mental illness. This plethora of sleep-related ailments includes:

- [Impaired focus and cognition](#)
- [Impaired memory and learning](#)
- [Mood disorders](#)
- [Obesity](#)
- [Type-2 diabetes](#)
- [Increased stress](#)
- [Increased pain and inflammation](#)
- [Impaired immune functioning](#)
- [Induced hypertension in offspring in late pregnancy](#)
- [Cardiovascular disease](#)
- [Arrhythmias](#)
- [Impaired testosterone production](#)
- [Impaired sexual performance](#)
- [Infertility](#)

Given their profound impact on the biology of the brain in particular, [sleep disorders are also linked to a variety of neurodegenerative diseases](#). In fact, the NIH now says that chronic sleep deprivation is considered to be a significant lifestyle factor that contributes to [Alzheimer's disease](#), which impacts an estimated [44 million people](#) worldwide and [killed more than double](#) the number of people in 2019 than it did in 2000. Maybe the sleep problem is getting worse...

All these physiological costs are of course associated with significant social and financial costs, too, from memory lapses to not being present in our social interactions to falling asleep at work -- or worse, at the wheel. How has poor sleep impacted your ability to perform your job, to connect with your loved ones, to show up as your most capable self?

A look at some of the physiological, social and economic costs of sleep problems

Graphic on obesity (139)

Graphic on car crashes (177)

Graphic on lost gdp output (?)

Further, major disparities in adequate quality sleep can be seen [across racial and socioeconomic groups](#), making it all the more important that we address our sleep issues at the societal level. In [one study](#), Black adults were almost twice as likely to report sleeping too little compared to white adults; additionally, short sleep duration was higher among Native Hawaiians/Pacific Islanders (46.3%), non-Hispanic blacks (45.8%), multiracial non-Hispanics (44.3%), and American Indians/Alaska Natives (40.4%) compared with non-Hispanic whites (33.4%), Hispanics (34.5%) and Asians (37.5%).

Of course, the very description of the problems related to sleep deficiency also contains their solution -- get more sleep! [Sleep alleviates neuroinflammation](#) and helps clear the brain of the metabolic toxins, like [beta-amyloid](#) that accumulate while we are awake each day, and the buildup of which is directly linked to Alzheimer's. Think of sleep as a bath that washes over your brain each night and causes the exact reverse of the problems mentioned above to happen and help us feel, look and perform better.

Want to get more sleep? Check out our [guide to getting the best night's sleep ever](#).

A Comprehensive Guide to Getting the Best Night's Sleep of Your Life

A look at the performance benefits of sleep

Graphic on sports performance

Graphic on attractiveness

So how do you maximize your chance of getting your 40 winks? Here is our attempt at putting together the most comprehensive list of tips you can employ to ensure you're falling asleep faster and staying asleep longer.

X things you can do now to improve your sleep

Get your mind right

1. **Start believing that you actually need at least seven hours.** If you're like many people we knew in the military or throughout our athletic and professional careers, you're no stranger to the mentality that being able to operate on just a few hours is a display of strength. You may even feel that way yourself, perhaps because you believe there are exceptions to the rule. But *everyone* needs quality sleep, and even though you may lose a few hours of wakefulness, the enhanced health and cognitive abilities that come with restfulness should more than make up for the lost time.
2. **Establish a routine.** Go to sleep and wake up at the same time each day. Try setting an alarm at bedtime. That fact is, sleep consistency results in more sleep. Fitness company [Whoop](#) revealed that their most consistent sleepers are getting more (about 1.25 hours) and better sleep (more slow wave sleep and REM sleep) per night than are their least consistent sleepers.
3. **Give yourself enough time in bed.** Many of us confuse time slept with sleep opportunity time. If you only give yourself five to six hours of sleep opportunity, you may actually only be getting four to five hours of real sleep, given the time required to fall asleep and disturbances that happen throughout the night. Therefore, if you need seven to nine hours of sleep, give yourself an extra 30 minutes to an hour in bed.
4. **Don't continue lying in bed if you can't fall asleep.** Break the pattern
5. **Get a fitness tracker.** Fitness trackers like Oura, Whoop and the Apple watch are increasingly able to offer you detailed insights on your sleep duration and quality. If you can measure your sleep, you can manage your sleep.
6. **Consider cognitive behavioral sleep therapy.**

During the day

- 7. Limit your caffeine intake well in advance of bedtime:** Caffeine, in whatever drink of choice you pay too much for, wakes you up by blocking adenosine -- a naturally occurring molecule that makes you feel tired -- from being broken down in the brain. Caffeine also has a half-life of five to six hours for the average adult. That means 50% of the caffeine you consume is still circulating in your system five to six hours later. It also means that caffeine has a quarter-life of 10 to 12 hours. So if you have a cup of coffee at 3PM, a quarter of that caffeine can still be circulating in your brain at 1AM. In other words, drinking a cup of coffee in the late afternoon can be the equivalent to drinking a quarter cup of coffee immediately before you hit the sack.
- 8. Exercise.** A 2018 [meta-analysis](#) of insomniac participants incorporating exercise into their return noted “significant effect[s] in favor of the intervention” with regard to sleep quality and insomnia severity. Supplementing this activity with proper hydration throughout the day also has shown reports of longer sleep times.
- 9. Hydrate.**
- 10. Eat a healthy diet.**
- 11. Don’t nap late in the day, especially if you have problems falling asleep at night.** Studies have shown that we may have evolved to be biphasic sleepers -- that is, we function best with extended sleep at night with a short nap during the day. That said, late afternoon naps (ie, after 3pm) can make it harder to fall asleep at night.
- 12. Optimize your exposure to sunlight.** Sunlight is a critical factor in regulating our circadian rhythm. Sleep experts therefore recommend getting 30 minutes of natural sunlight, and preferably one hour of morning sunlight, each day.

Prior to bed

- 13. Avoid lots of fluids and large meals.** Loading up on any drink right before bed can cause frequent disturbances and several trips to the bathroom throughout the night. Large meals can cause indigestion, which negatively impacts sleep.
- 14. Relax.** If you’re still feeling that anxiousness in the final hours, try adding yoga, stretching, meditation, or mindful breathing to your pre-bed routine. Along with alleviating tension in your body, these activities can help your mind settle from stress and other thoughts.

15. Read on paper, not a screen. If you're not quite ready to give up the usual scroll through Twitter before bed, consider blue-light-blocking glasses and adjusting the device's brightness.

16. Minimize cardiovascular exercise.

17. Avoid blue light. Once it's time to get some rest, your body sends you that message through the hormone melatonin. Bright lights and especially blue light — which is released by the sun and through electronic screens — stops melatonin production in its tracks.

18. Take a hot bath. Seemingly counterintuitive, the warm water actually promotes the decrease in core temperature in your body through a process called [vasodilation](#), where blood is pumped to the outer extremities. You can't fall asleep until that temperature lowers, so taking that shower along with making your bedroom cool can help speed up the process.

19. Minimize alcohol and nicotine. While one instance of drinking alcohol before bed might make you sleepy, repeating this habit will eliminate the effects and prevent you from getting quality sleep. Even further, studies have worked to further determine the link between [alcohol and insomnia](#), a condition that makes it difficult to fall and stay asleep.

20. Avoid medicines that impact your sleep -- even sleeping pills. Common medicines for heart, blood pressure, coughs, colds, ADHD and other ailments often impact your sleep quality and quantity. If you're prescribed something that diminishes your sleep, ask your doctor if you can take it earlier in the day.

21. Take a sleep aid. [Link to Stoned Ape](#)

Invest in your environment

22. Block out exposure to light and noise. Nightshade, blackout curtains, earplugs, etc.

23. Invest in quality bedding. Spend 1/3 your life in bed, invest in quality mattress, sheets, etc.

24. Adjust your thermostat. Optimal temp in 60s

25. Hide your alarm clock. Anxiety producing clock watching

Unless you live close to the north and south poles, your body is used to calibrating its biological clock based on the amount of light surrounding you. Once it's time to get some rest, your body sends you that message through the hormone melatonin. Bright lights and especially blue light — which is released by the sun and through electronic screens — stops melatonin production in its tracks. To lessen these disruptors, try to make your sleeping area as dark as possible, using either blackout curtains or a sleep mask. If you're not quiiiiite ready to give up the usual scroll through Twitter before bed, consider blue-light-blocking glasses and adjusting the device's brightness.

It's been a long day, you've dealt with some bs, and you want to take your coworker up on their offer of a night cap. Sure, alcohol is a depressant that allows your body to relax, so why not go for a drink or two? While one instance of drinking alcohol before bed might make you sleepy, repeating this habit will eliminate the effects and prevent you from getting quality sleep. Even further, studies have worked to further determine the link between [alcohol and insomnia](#), a condition that makes it difficult to fall and stay asleep. So if you want to indulge, it might be best to cap it before it's a habit.

Being active during the day is a no-cost solution therapy for individuals who experience insomnia or its symptoms, including difficulty initiating sleep and early morning awakening. A 2018 [meta-analysis](#) of insomniac participants incorporating exercise into their return noted “significant effect[s] in favor of the intervention” with regard to sleep quality and insomnia severity. Supplementing this activity with proper hydration throughout the day also has shown reports of longer sleep times.

It's understandable that there might be a little trepidation when you're first locking in your nightly routine. Is the temperature of the room right? Did I look at my phone too long? Did I eat too late? Chances are if you're asking yourself these questions, you're already responding to factors that inhibit sleep in a way that will make your routine more individualized.

Before the onesie gets on, try taking a warm shower or bath before bed. Seemingly counterintuitive, the warm water actually promotes the decrease in core temperature in your body through a process called [vasodilation](#), where blood is pumped to the outer extremities. You can't fall asleep until that temperature lowers, so taking that shower along with making your bedroom cool can help speed up the process.

If you're still feeling that anxiousness in the final hours, try adding yoga, stretching, meditation, or mindful breathing to your pre-bed routine. Along with alleviating tension in your body, these activities can help your mind settle from stress and other thoughts.

What else can you do?

- Cognitive behavioral therapy for insomnia - link to National Sleep Foundation website

*How to get the best night sleep

https://examine.com/nutrition/ten-tips-for-better-sleep/?utm_source=examine-insiders&utm_medium=email&utm_campaign=2021-anniversary-email&utm_term=email2

Causes of sleep problems in athletes: <https://www.ncbi.nlm.nih.gov/pubmed/33144349>

see Examine personalized January report p 216

Impact of sleep deprivation -

https://examine.com/personalized/issue/march-2021/summary-1490/?utm_source=examine-insiders&utm_medium=email&utm_campaign=2021-03-25

How to improve your sleep:

https://www.whoop.com/thelocker/sleep-better-naturally/?utm_source=leads&utm_campaign=the-locker&utm_medium=email&utm_content=sleep-better-naturally&_ke=eyJrbF9jb21wYW55X2IkljogIIBBQm5XSylsICJrbF9lbWFpbCI6ICJzaGFuZXBvd2hhdGFuQGdtYWlsLmNvbSJ9

https://www.whoop.com/thelocker/increase-rem-sleep/?utm_source=members&utm_campaign=the-locker&utm_medium=email&utm_content=increase-rem-sleep&_ke=eyJrbF9jb21wYW55X2IkljogIIBBQm5XSylsICJrbF9lbWFpbCI6ICJzaGFuZXBvd2hhdGFuQGdtYWlsLmNvbSJ9

See appendix in why we sleep

The importance of third party testing (and how to know if your supplements do what they promise)

- Argument for buying quality
- NSF
- Make sure you're not just buying crushed up bird feathers (google that)
- https://fullscript.com/blog/third-party-certifications?utm_source=email&utm_medium=patientcomms&utm_campaign=april-20-2021&mkt_tok=ODE0LUhRWc0xMDAAAF8jv8YzPy7Nh29YXtFuS5nVzLjCJcl9lJmJ_2h42zSE0tBMktNbC6k586-G9qW8ZBXuCMJstwMYz1IKY19Tq58Z5uQwZ9HJOM3UYEGkE

It may seem daunting to approach a new product, even after your own deep dive into reviews, safety standards, ingredients and more. In 1972, the U.S. passed the Consumer Product Safety Act (CPSA) “[to](#) protect the public against unreasonable risks of injury associated with consumer products.”

The CPSA was enacted in part to reduce the [over \\$1 trillion](#) spent annually due to death, illness, injury, and property damage associated with consumer products. While the Act covers around [10,000 types of products](#) from baby cribs to cigarette lighters, other products are regulated by additional federal agencies and groups.

Supplements, for example, are monitored by [third-party organizations](#), independent actors that inspect and test “manufacturing sites, raw materials, and finished products of various consumer goods, such as food, beverages, and dietary supplements.” Usually the Food and Drug Administration oversees inspection of the first two types of products, but supplements fall in their own lane. Some third-party organizations had to step in so that supplements don’t have bacteria, pesticides, or who knows, bird feathers?

The groups range from the nonprofits of U.S. Pharmacopeia (USP), seen as the most widely accepted standard-setter, to National Sanitation Foundation (NSF) International and for-profit organizations ConsumerLab.com and UL. [Dozens](#) more operate in the U.S. to set standards for certification.

Consumer Reports published a December 2019 report outlining the process by which these organizations review and certify products. While ConsumerLab.com purchases its own test samples, NSF, USP and UL take provided samples. Retesting ranges from 1-6 times a year through USP to “at least once per year” with UL. The groups charge anywhere from \$300 to \$15,000 to have products and ingredients verified, and all won’t test products known to be unsafe. You can check out the full breakdown [here](#).

The factors evaluated in these tests center around these topics:

- **Identity:** Consumers depend on labels being accurate, so third-party organizations will ensure that product sites and finished supplements contain the ingredients that are listed. From 2007-2016, an [analysis of FDA supplement warnings](#) showed “unapproved pharmaceutical ingredients were found in over 700 supplements, particularly in products marketed for sexual enhancement, bodybuilding, or weight loss.”
- **Strength:** Some testing is dedicated to ensure that accurate labels show the strength, concentration, weight and measure of a product. [Important to note is the supplement’s testing doesn’t necessarily confirm its efficacy.](#)

- **Purity:** Oversight of production can determine whether supplements are free of contaminants and made in sanitary processes.

Accurate labeling, safe production cycles and independent oversight exist to guide the consumer in making the safest choices. Beyond obvious concerns related to allergies, drug interaction, and nutrition, use these guidelines to pick the products that fit best into your wellness goals and life.

*Why exercising is one of the best things you can do for your sleep

It has long been accepted that exercise promotes better sleep cycles. While researchers still do not know for sure what the link is between sleep and exercise, more studies are pointing to a [bidirectional relationship](#) between the two: where poor sleep may also lead to diminished exercise habits.

Let's take a step back to understand the broader effects of sufficient sleep. The entire body utilizes sleep to perform a number of restorative processes, such as forming long term memories and [removing toxic brain metabolites](#) associated with neurodegenerative diseases. Additionally, the interruption of these activities through insufficient or disturbed sleep can predispose someone to a [laundry list of health issues](#), so where does exercise fit in?

Most research surrounding this question is composed of meta-analyses, where randomized trials are reviewed for common trends. One [study](#) of adults over 40 with sleep problems showed moderately positive effects for those who participated in aerobic or resistance exercise. Another [study](#) of postmenopausal, overweight or obese women showed slightly improved latency times, or the amount of time it takes for you to fall asleep, but other effects were inconsistent.

While these results have been rather inconclusive, studies with participants suffering from diagnosed insomnia or obstructive sleep apnea have been much more consistent, where one [study](#) showed a 4-month addition of aerobic exercise “significantly” improving sleep quality, while also reducing daytime sleepiness and depressive symptoms.

More research needs to be done, especially on the kinds of exercise and consistency of sleep patterns to promote a healthy bidirectional relationship. But in the meantime, let's consider what we do know about exercise and sleep:

- Moderate aerobic exercise can [increase the amount of deep sleep](#) you get, the part of the cycle where the body goes to work on those restorative processes.
- Exercise [reduces levels of stress hormones](#), such as adrenaline and cortisol — inhibitors to a good night's sleep and chemicals that lengthen sleep latency.
- Exercise [catalyzes the production](#) of natural mood elevators and painkillers in the form of endorphins, leading to a state of relaxation.

Not to knock the night owls out there, but those who tend to be more active and wake up earlier in the day were [associated](#) with greater levels of physical activity. One factor that's imperative for your body to fall asleep is a lower core temperature, and this is where the caveat with increased exercise comes in.

Exercise will raise your core body temperature, and many people prefer not to exercise in the evening because it feels too much like a wake up call. And that's basically the point — the higher temperature tells the body that now's the time to be awake.

But starting 30 minutes after exercise, that core temperature starts to lower, and is aided especially by a hot post-workout shower, signalling to the body that now it can start to relax. So if you're not too keen on the wakefulness associated from exercise, it's best to keep your workout outside of that three-hour window as you prepare to go to bed.

-END-

Look up study progressively increased levels of physical activity in healthy males resulted in corresponding progressive increase in amt of deep nrem sleep they got on subsequent nights. Cite.

Other studies: exercise in younger adults increases total sleep time, esp nrem sleep and deepens the equality of sleep. In one study older adult insomniacs were sleeping almost one hour more each night on avg by end of 4 mo period of increased activity. P 294 why we sleep. [Find study](#)

What about the other way: find studies showing how good sleep greatly impacts exercise performance / power, etc. (clear bi-directional relationship between exercise and sleep)

People also felt less depressed after more sleep. Cite.

It is clear that a sedentary life is not compatible with sound sleep

Caveat: exercising right before bed can have detrimental impact on sleep. Increases core body temp. So get your workout in about 2-3 hours before bed Cite

Moral of the story: exercise is not just good for your body but also your sleep

***The link between your immune system and sleep**

See p 183 in why we sleep