

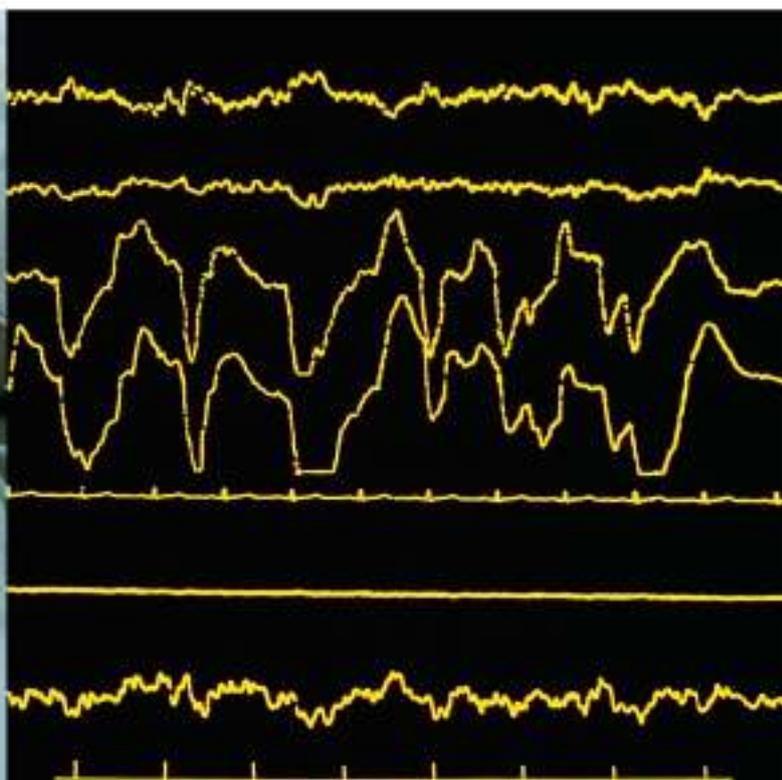
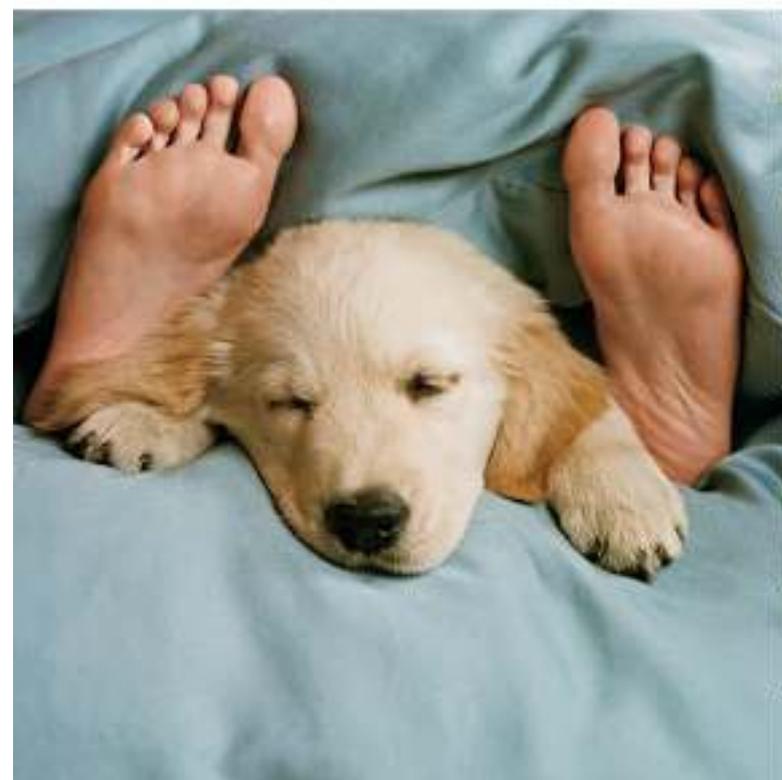


**TIME**

# The Science of Sleep

*How Rest Works Wonders • What Kids Need • The New Dream Therapy*

FOREWORD BY ANDREW WEIL, M.D.







## The Science of Sleep

*How Rest Works Wonders • What Kids Need • The New Dream Therapy*

# Contents

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Cover  
Title  
Copyright  
FOREWORD / The Power of Sleep  
Maintenance for Your Mind  
The 9 New Sleep Rules  
Can You Sleep Yourself Slim?  
Bedtime Battles  
Sleep and the Teenage Brain  
Doctor's Orders: Go Back to Bed  
The Dream Therapist  
Tuning Out Bad Dreams  
Sleep Like a Pro  
The Truth About Sleeping Pills  
A Simple Plan for Rest  
Wake Up to Your Creativity  
PHOTO ESSAY / A World of Slumber  
Credits

*Parts of this book were previously published in TIME and on Time.com.*



*ART AND SCIENCE* Ted Spagna's time-lapse photography is paired with an electroencephalogram to illuminate what it means, for one man, to sleep through the night.

# The Power of Sleep

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*Bedtime advice from the father of integrative medicine*

BY ANDREW WEIL, M.D.



WHO HAS NOT EXPERIENCED THE RESTORATIVE power of a good night's sleep? And how many of us have longed for that experience when it was not available?

Sleep of sufficient quantity and quality is an integral element of a healthy lifestyle. Lacking it, both physical and emotional well-being suffer. Despite a great deal of research on the physiology of sleep, no one really knows why we sleep. How odd that we spend a third or so of each day in an unconscious state or, perhaps more accurately, a state in which ordinary waking consciousness is suspended.

The brain is quite busy during sleep, cycling through various levels of neuronal arousal each night. Is this activity a necessary sort of housekeeping to maintain optimum function? We do not know. Perhaps the daily rhythm of sleeping and waking will always be a mystery: something we experience but will never fully understand.

Most adults need seven to eight hours of uninterrupted sleep a night, but some individuals need more and some much less. In general, young people require more; some teenagers need to sleep nine hours a day, which would likely not surprise people who have adolescents in the house. Patterns of sleep—what experts call “sleep architecture”—change as we age. Older people tend to get sleepy earlier but have more difficulty falling asleep and staying asleep, and they often feel tired during the day.

Good sleep includes dreaming, another mysterious experience and one that is poorly understood. Everyone dreams, even those who say they don't. Not everyone can recall their dreams regularly unless they practice relating them immediately on waking to a bed partner or a recording device or writing them down in a journal. (For more about dreaming, see [John Cloud's “Tuning Out Bad Dreams,”](#) in which he tries to put an end to a lifetime of nightmares, and [“The Dream Therapist,”](#) about the field of dreaming as therapy.)

A heated debate currently rages between followers of Sigmund Freud, who believe that dreams reveal unconscious conflicts and desires, and neuroscientists, who regard dreams as meaningless productions of the sleeping brain. In any case, if people are deprived of the opportunity to dream—by waking them at the onset of the phase of sleep associated with dreaming—their well-being suffers, even if they get the amount of sleep they are used to.

But whatever its purpose, good sleep too often eludes us. Judging by sales of prescribed and over-the-counter sleep medications, numerous people in our society have difficulty falling asleep and staying asleep. Sadly, none

of these drugs reproduce natural sleep. All suppress dreaming, many interfere with cognition, and some are highly addictive. (To learn about the pharmaceuticals on the market, see [“The Truth About Sleeping Pills.”](#))

So many factors can interfere with sleep: excessive use of caffeine and other stimulants, bodily aches and pains, ambient noise and light, an uncomfortable mattress, anxiety and depression, an overactive mind. The term “sleep hygiene” covers all the habits, practices and environmental influences that determine how we sleep, and if you suffer from chronic insomnia, analysis of your sleep hygiene by a professional may highlight changes that will solve the problem without resorting to drugs.

If you have trouble sleeping on a regular basis, don’t overlook the possibility that stimulants, including coffee, may be involved. Many of us are unaware of their profound effects on the nervous system, and there’s great individual variability in our sensitivity to caffeine. For the most sensitive, a single cup of coffee in the morning may be the main cause of nighttime insomnia. And aside from familiar beverages like coffee, tea and cola, caffeine is used in various over-the-counter medications, energy drinks and some dietary supplements. If you take these products, you may have no idea how much of the drug you’re actually consuming.

Stimulants can also be non-pharmacological. Noise can be a culprit, as can watching exciting media (including the news) before bed and being in the company of people who are anxious. All of this can stimulate the nervous system and interfere with your body’s winding-down period before rest.

I often give advice about nutrition, and I like to think of it not just in the narrow sense of food for the body but in the broader sense of what we choose to experience and how the choices affect our minds and emotions. An overstimulated mind and inability to disengage from thinking are among the most common obstacles to falling asleep. In addition to reducing mental stimulation, turning your attention toward the breath is a good way to practice withdrawing from the flow of thoughts. Relaxation training and meditation techniques, such as mindfulness-based stress reduction, can be very helpful for people with sleep problems (and for the rest of us too).

When I take a medical history, one of the questions I always ask is “How well do you sleep?” Too often, the answer I get is “Not so well.” I then ask whether the problem is with falling asleep or staying asleep and inquire in depth about sleep hygiene. Usually I can identify the likely cause or causes of the problem and suggest remedies. If not, I will refer the patient to a sleep expert or clinic. Fortunately, as more physicians and allied health professionals are trained in integrative medicine and lifestyle analysis, more are paying attention to how their patients sleep.

This book reviews the science of sleep, an active field of research with great relevance to health and well-being. I believe the information in these pages will increase your understanding of all those hours you spend asleep—and, most important, motivate you to make them more refreshing.



*ANDREW WEIL is the founder and director of the Arizona Center for Integrative Medicine, a clinical professor of medicine at the University of Arizona  
and the author of many books, including Spontaneous Healing and Spontaneous Happiness.*

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# Maintenance for Your Mind

*New research shows that a good night's rest isn't a luxury—it's critical for the health of your brain as you age*

BY ALICE PARK



WHEN OUR HEADS HIT THE PILLOW each night, we tend to think we're surrendering. Not just to exhaustion, though there is that. We're also surrendering our minds, taking leave of our focus on sensory cues, like noise and smell and blinking lights. It's as if we're powering ourselves down like we do the electronics at our bedside—going idle for a while, only to spring back into action when the alarm blasts hours later.

That's what we think is happening. But as scientists are now revealing, that couldn't be further from the truth.

In fact, when the lights go out, our brains start working—but in an altogether different way than when we're awake. At night, a legion of neurons springs into action, and like any well-trained platoon, the cells work in perfect synchrony, pulsing with electrical signals that wash over the brain with a soothing, hypnotic flow. Meanwhile, data processors sort through the reams of information that flooded the brain all day at a pace too overwhelming to handle in real time. The brain also runs checks on itself to ensure that the normally exquisite balance of hormones, enzymes and proteins isn't too far off-kilter. And all the while, cleaners follow in close pursuit to sweep out the toxic detritus that the brain doesn't need and that can cause all kinds of problems if it builds up.

This, scientists are now learning, is the brain on sleep. It's nature's panacea, more powerful than any drug in its ability to restore and rejuvenate itself and the rest of the body. Getting the recommended seven to eight hours each night can improve concentration, sharpen planning and memory skills, and maintain the fat-burning systems that regulate our weight. If every one of us slept as much as we're supposed to, we'd all be lighter, less prone to developing Type 2 diabetes, and most likely better equipped to battle depression and anxiety. We might even lower our risk of Alzheimer's disease, osteoporosis and cancer.

The trouble is, sleep works only if we get enough of it. While plenty of pills can knock us out, none so far can replicate all of sleep's benefits, despite decades' worth of attempts in high-tech pharmaceutical labs.

Which is why, after we've long treated rest as a good-if-you-can-get-it obligation, scientists are making the case that it matters much more than we think. They're not alone in sounding the alarm. With up to 70 million of us not getting a good night's sleep on a regular basis, the Centers for Disease Control and Prevention considers insufficient sleep a public-health epidemic. In fact, experts argue, sleep is emerging as so potent a factor in better health that we need a societal shift—and policies to support it—to make sleep a nonnegotiable priority.

# THE CONSEQUENCES OF SKIMPING

Despite how great we feel after a night's rest—and putting aside what we now know about sleep's importance—we stubbornly refuse to swallow our medicine, pushing off bedtime and thinking that feeling a little drowsy during the day is an annoying but harmless consequence. It's not. Nearly 40% of adults have nodded off unintentionally during the day in the past month, and 5% have done so while driving. Insomnia or interrupted sleep nearly doubles the chance that workers will call in sick. And half of Americans say their uneven sleep makes it harder to concentrate on tasks.

Those poor sleep habits are trickling down to the next generation: 45% of teens don't sleep the recommended nine hours on school nights, leading 25% of them to report falling asleep in class at least once a week, according to a National Sleep Foundation survey. It's a serious enough problem that the American Academy of Pediatrics recently endorsed the idea of starting middle and high schools later to allow for more adolescent shut-eye.

Health experts have been concerned about our sleep-deprived ways for some time, but the new insights about the role sleep plays in our overall health have brought an urgency to the message. Sleep, the experts are recognizing, is the only time the brain has to catch its breath. If it doesn't, it may drown in its own biological debris—everything from toxic free radicals produced by hardworking fuel cells to spent molecules that have outlived their usefulness.

“We all want to push the system, to get the most out of our lives, and sleep gets in the way,” says Sigrid Veasey, a leading sleep researcher and a professor of medicine at Perelman School of Medicine at the University of Pennsylvania. “But we need to know how far we can really push that system and get away with it.”



*CLEAN SLEEP* Maiken Nedergaard, left, and Lulu Xie of the University of Rochester Medical Center found, by studying mice, that our brains do a better job of clearing out cellular waste during sleep.

Veasey is learning that brain cells that don't get their needed break every night are like overworked employees on consecutive double shifts—eventually, they collapse. Working with mice, she found that neurons that fire constantly to keep the brain alert spew out toxic free radicals as a byproduct of making energy. During sleep, they produce antioxidants that mop up these potential poisons. But even after short periods of sleep loss, “the cells are working hard but cannot make enough antioxidants, so they progressively build up free radicals and some of the neurons die off.” Once those brain cells are gone, they're gone for good.

The brains of mice are considered good proxies in lab research for human brains. Veasey found that after several weeks of restricted sleep, the mice she studied were “more likely to be sleepy when they are supposed to be active and have more difficulty consolidating [the benefits of] sleep during their sleep period.”

It's the same thing that happens in aging brains, she says, as nerve cells get less efficient at clearing away their garbage. “The real question is: What are we doing to our brains if we don't get enough sleep? If we chronically sleep-deprive ourselves, are we really aging our brains?” she asks. Ultimately, the research suggests, it's possible that a sleep-deprived brain belonging to a teen or a 20-year-old will start to look like that of a much older person.

“Chronic sleep restriction is a stress on the body,” says Peter Liu, a professor of medicine at Harbor-UCLA

Medical Center and L.A. Biomedical Research Institute. And the cause of that sleep deprivation doesn't always originate in family strife, financial concerns or job-related problems. The way we live now—checking our phones every minute, hyperscheduling our days or our kids' days, not taking time to relax without a screen in front of our face—contributes to a regular flow of stress hormones like cortisol, and all that artificial light and screen time is disrupting our internal clocks. Simply put, our bodies don't know when to go to sleep naturally anymore.

This is why researchers hope their new discoveries will change once and for all the way we think about—and prioritize—those 40 winks.

## GARBAGEMEN FOR YOUR BRAIN

"I was nervous when I went to my first sleep conference," says Maiken Nedergaard, the chatty and inquisitive co-director of the Center for Translational Neuromedicine at the University of Rochester. "I was not trained in sleep, and I came to it from the outside." In fact, as a busy mother and career woman, she saw sleep the way most of us probably do: as a bother. "Every single night, I wanted to accomplish more and enjoy time with my family, and I was annoyed to have to go to bed."

Because she's a neuroscientist, however, Nedergaard was inclined to ask a seemingly basic question: Why do our brains need sleep at all? There are two competing evolutionary theories. One is that sleeping organisms are immobile and therefore less likely to be easy targets, so perhaps sleep provided some protection from prey. The time slumbering, however, took away from time spent finding food and reproducing. Another points out that sleeping organisms are oblivious to creeping predators, making them ripe for attack. Since both theories seem to put us at a disadvantage, Nedergaard thought there had to be some other reason the brain needs those hours offline.

All organs in the body use energy, and in the process, they spew out waste. Most take care of their garbage with a local system, recruiting immune cells like macrophages to gobble up the garbage and break it down or linking up to the network of vessels that make up the lymph system, the body's drainage pipes.

The brain is a tremendous consumer of energy, but it's not blanketed in lymph vessels. So how does it get rid of its trash? "If the brain is not functioning optimally, you're dead evolutionarily, so there must be an advantage to exporting the garbage to a less critical organ like the liver," says Nedergaard.

Indeed, that's what her research shows. She found that an army of previously ignored cells in the brain, called glial cells, turn into a massive pump when the body sleeps. During the day, glial cells are the unsung personal assistants of the brain. They cannot conduct electrical impulses like other neurons, but they support them as they send signals zipping along nerve networks to register a smell here and an emotion there. For decades, they were dismissed by neuroscientists because they weren't the actual drivers of neural connections.

But Nedergaard found in clinical trials on mice that glial cells change as soon as organisms fall asleep. The difference between the waking and sleeping brain is dramatic. When the brain is awake, it resembles a busy airport, swelling with the cumulative activity of individual messages traveling from one neuron to another. The activity inflates the size of brain cells until they take up 86% of the brain's volume.

When daylight wanes and we eventually fall asleep, however, those glial cells kick into action, slowing the brain's electrical activity to about a third of its peak frequency. During those first stages of sleep, called non-REM (rapid eye movement), the firing becomes more synchronized rather than haphazard. The repetitive cycle lulls the nerves into a state of quiet, so in the next stage, known as REM, the firing becomes almost nonexistent. The brain continues to toggle back and forth between non-REM and REM sleep throughout the night, once every hour and a half.

At the same time, the sleeping brain's cells shrink, making more room for the brain and spinal cord's fluid to slosh back and forth between them. "It's like a dishwasher that keeps flushing through to wash the dirt away,"

says Nedergaard. This cleansing also occurs in the brain when we are awake, but it's reduced by about 15%, since the glial cells have less fluid space to work with when the neurons expand.

This means that when we don't get enough sleep, the glial cells aren't as efficient at clearing the brain's garbage. That may push certain degenerative brain disorders that are typical of later life to appear much earlier.

Both Nedergaard's and Veasey's work also hint at why older brains are more prone to developing Alzheimer's, which is caused by a buildup of amyloid protein that isn't cleared quickly enough.

"There is much less flow to clear away things in the aging brain," says Nedergaard. "The garbage system picks up every three weeks instead of every week." And like any growing pile of trash, the molecular garbage starts to affect nearby healthy cells, interfering with their ability to form and recall memories or plan even the simplest tasks.

The consequences of deprived sleep, says Mary Carskadon, a professor of psychiatry at Brown University, are "scary, really scary."

## RIGHTSIZING YOUR SLEEP

All this isn't actually so alarming, since there's a simple fix that can stop this nerve die-off and slow the brain's accelerated ride toward aging. What's needed, says Carskadon, is a rebranding of sleep that strips away any hint of its being on the sidelines of our health.

As it is, sleep is so undervalued that getting by on fewer hours has become a badge of honor. Plus, we live in a culture that caters to the late-nighter, from 24-hour grocery stores to online shopping sites that never close. It's no surprise, then, that more than half of American adults don't get the recommended seven to nine hours of shut-eye every night.

Whether or not we can catch up on sleep—on the weekend, say—is a hotly debated topic among sleep researchers; the latest evidence suggests that while it isn't ideal, it may help. When Liu brought chronically sleep-restricted people into the lab for a weekend of sleep during which they logged about 10 hours per night, they showed improvements in the ability of their insulin to process blood sugar. That suggests that catch-up sleep may undo some but not all of the damage that sleep deprivation causes, which is encouraging, given how many adults don't get the hours they need each night. Still, Liu isn't ready to endorse the habit of sleeping less and making up for it later. "It's like telling people you only need to eat healthy during the weekends, but during the week you can eat whatever you like," he says. "It's not the right health message."

Sleeping pills, while helpful for some, are not necessarily a silver bullet either. "A sleeping pill will target one area of the brain, but there's never going to be a perfect sleeping pill, because you couldn't really replicate the different chemicals moving in and out of different parts of the brain to go through the different stages of sleep," says Nancy Collop, director of the Emory University Sleep Center. Still, for the 4% of Americans who rely on prescription sleep aids, the slumber they get with the help of a pill is better than not sleeping at all or getting interrupted sleep. At this point, it's not clear whether the brain completes the same crucial housekeeping duties during medicated sleep as it does during natural sleep, and the long-term effects on the brain of relying on sleeping pills aren't known either.

Making things trickier is the fact that we are unaware of the toll sleep deprivation takes on us. Studies consistently show that people who sleep less than eight hours a night don't perform as well on concentration and memory tests but report feeling no deficit in their thinking skills. That just perpetuates the tendency to dismiss sleep and its critical role in everything from our mental faculties to our metabolic health.

The ideal is to reset the body's natural sleep-wake cycle, a matter of training our bodies to sleep similar amounts every night and wake up at roughly the same time each day. An even better way to rediscover our natural cycle is to get as much exposure to natural light as possible during the day, while limiting how much indoor lighting, including from computer and television screens, we see at night. And of course, the best way to

accomplish that is by making those seven to nine hours of sleep a must, not a luxury.



**DAY IS DONE** Spending time with a favorite book, a few minutes of meditation, or doing gentle exercises such as stretching or yoga can all be effective ways to ease into a good night's sleep.

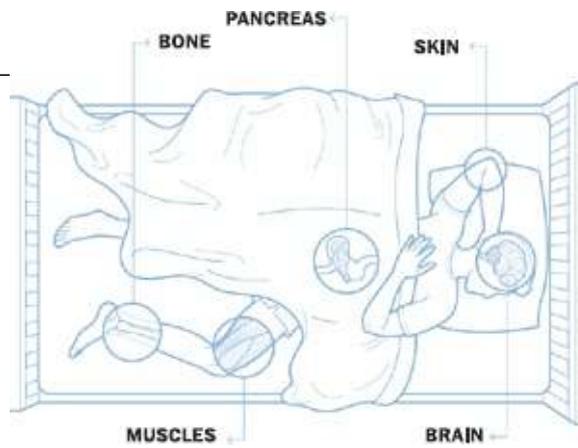
“I am now looking at and thinking of sleep as an ‘environmental exposure,’” says Carskadon—which means we should look at sleep similarly to how we view air-pollution exposure, secondhand smoke or toxins in our drinking water. If she and other researchers have their way, checking up on sleep would be a routine part of an physical exam, and doctors would ask about our sleep habits in the same way they query us about diet, stress, exercise, our sex life, our eyesight—you name it. And if we aren’t sleeping enough, they might prescribe a change, just as they would for any other bad health habit.

Some physicians are already taking the initiative, but no prescription works unless we actually take it. If our work schedule cuts into our sleep time, we need to make the sleep we get count by avoiding naps and exercising when we can during the day; feeling tired will get us to fall asleep sooner. If we need help dozing off, gentle exercises or yoga-type stretching can also help. Creating a sleep ritual can make sleep something we look forward to rather than something we feel obligated to do, so we’re more likely to get our allotted time instead skipping it. A favorite book, a warm bath or other ways to get drowsy might prompt us to actually look forward to unwinding at the end of the day.

Given what scientists are learning about how much the body—and especially the brain—needs a solid and consistent amount of sleep, in-the-know doctors aren’t waiting for more studies to prove what we as a species know intuitively: that cheating ourselves of sleep is depriving us of one of nature’s most powerful and beneficial drugs.

“We now know that there is a lasting price to pay for sleep loss,” says Veasey. “We used to think that if you don’t sleep enough, you can sleep more and you’ll be fine tomorrow. We now know if you push the system enough, that’s simply not true.”

## YOUR BODY ON SLEEP



During the day, the body is more focused on getting things done than taking care of itself. That changes when we sleep, as more energy is devoted to repairing cells, churning out helpful proteins, and more.

#### **BONE**

Wear and tear is remedied with intensified bone building

#### **PANCREAS**

Without sleep, we become less able to break down sugar from our diet

#### **SKIN**

Beauty rest is when cells churn out growth factors to repair damage and maintain elasticity

#### **MUSCLES**

Recovery from injuries like muscle tears happens during sleep

#### **BRAIN**

The cells shrink, squeezing out debris from a busy day

## **WHEN SHOULD SCHOOL START?**



The American Academy of Pediatrics supports later school start times for teens. More than 1,000 high schools have already done this, and their students have shown improvements in grades and attentiveness in class.

## IS SCREEN TIME MESSING WITH OUR SLEEP?



Any light at night, including the glow from phones, tablets and laptops, can throw off our body clocks. Our brains are fooled into thinking it's day, so sleep signals don't get heard.

# The 9 New Sleep Rules

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*It's not rocket science, but it does take some diligence to get your best night's sleep—every night.*

*Here's how*

**BY SARAH BEGLEY**

ANYONE WHO HAS NODDED OFF ON THE subway, faked alertness in a meeting at work or skipped a workout because of drowsiness understands the consequences of insufficient sleep. Aside from being unpleasant, however, it can result in weight gain, depression and even decreased brain volume. Scientists are beginning to understand that our health doesn't rely only on the quantity of sleep—a non-negotiable seven to eight hours, by the way—but also quality. So what to do? Some of the proven tips for better sleep are obvious: don't drink coffee too late in the day; give yourself time to wind down before lights-out; keep stress out of the bedroom as much as possible. But as our world adapts to new trends and technologies, so must our sleep habits. Research is yielding new insights and antidotes to the tossing and turning that make sleep less restorative than we need it to be.

# 1. Stop using the snooze button

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Even when you get a solid eight hours, dozing off for a few more minutes after the alarm can have the opposite of its intended effect. That's because you may slide into a new sleep cycle, leading to the groggy sensation that researchers call sleep inertia. This impairs things like alertness, memory and reaction time, and it creates the impression that you got a lot less rest than you did. If you snooze because you're so tired you can't peel yourself out of bed, something else is probably wrong. Try setting a stricter bed- and wake time, and be sure to let more natural light into your bedroom in the morning to reset your circadian rhythm.

## 2. Try to see the (day) light

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Speaking of which: a study in the *Journal of Clinical Sleep Medicine* found that the brains of office workers whose desks were far from windows received fewer light/dark cues—and had out-of-whack circadian rhythms as a result. Compared with their windowed colleagues, they got 46 fewer minutes of sleep per night. Though the study looked at a small group of participants, its logic is in line with what scientists have long known about our sleep patterns.

### 3. Shut down that tablet

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You may find that reading before bed helps you wind down, but opt for a paperback over an iPad. A study in *Proceedings of the National Academies of Sciences* found “iPad readers had a delayed circadian rhythm, indicated by melatonin levels, of more than an hour.” Further, “participants who read from the iPad were less sleepy before bedtime, but sleepier and less alert the following morning after eight hours of sleep.” Do your best to avoid electronics that emit blue light (yup, your phone counts) right before bed.

## 4. Nix the nightcap

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Alcohol may make you feel drowsy, but it's bad for your sleep cycles. Research published in *Alcoholism: Clinical & Experimental Research* showed that the brain waves of those who drank before bed had more delta activity (associated with deep sleep) but also more alpha activity (associated with resting, but not sleeping, phases). The benefits of falling asleep quickly were counteracted by these disruptive alpha patterns, which means it's best to set aside the chardonnay earlier in the night.

## 5. Pay attention to the moon

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Strange but true: the moon may impact your sleep. *Current Biology* reported that study participants who slept in a completely dark lab got an average of 20 fewer minutes of sleep per night on the days shortly before or after a full moon and also showed lower levels of melatonin (the hormone that makes you sleepy) and 30% less EEG activity, which is associated with deep sleep. This monthly anomaly seems to be ingrained in our circadian rhythm, and even though you can't do much about it, you might try going to bed extra early the day before a big meeting if it takes place close to the time of a full moon.

## 6. Beware the night shift

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Unfortunately, many workers with overnight schedules have no choice but to be on duty when others are sleeping, but the science is clear: the night shift is bad for your health. A study in the *American Journal of Preventive Medicine* followed nearly 75,000 nurses and found that those who worked rotating night shifts had an 11% higher risk of early death than those who did not. If they worked that schedule for more than 15 years their risk of dying from heart disease was 38% higher than their peers'. They also had heightened risks for several types of cancer. So far, researchers don't know how to counteract the havoc wreaked by uncommon sleep cycles, but they recommend that workers who can't avoid these schedules pursue healthy living with diligence in other areas, like diet and exercise.

## 7. Burn energy

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To catch more z's, you may need to spend more time on the treadmill. A study in the *Journal of Clinical Sleep Medicine* found that older adults who suffered from insomnia were able to sleep 45 to 60 minutes longer per night by exercising for 30 minutes three or four afternoons a week. The catch: on individual days, a workout was not likely to make falling asleep easier. It took regular exercise over an extended period of time (about four months) to significantly and consistently give them longer nights of sleep.

## 8. Take an intermission

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Historians now know that our ancestors slept very differently from us. While most adults today go to bed and stay in bed, in the past people slept for a period, woke up for an hour or so, and then went back to sleep. Virginia Tech professor A. Roger Ekirch reported that this “segmented sleep” made for all kinds of nocturnal break activities, from reading to praying to having sex. There’s no reason to force yourself to switch from consolidated sleep to segmented sleep, but if you find that you wake in the night, don’t stress yourself out trying to doze off again—you’re following in the path of your forebears.

## 9. Seek medical help

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According to the American Academy of Dental Sleep Medicine, 18 million Americans have sleep apnea, a disorder in which the airway becomes blocked, causing sufferers to snore loudly and stop breathing for short periods. This not only results in drowsiness from poor sleep quality but can raise blood pressure to a dangerously high level. The standard treatment, a special mask worn during sleep that facilitates continuous positive airway pressure (CPAP), helps the user sleep better and, research shows, reduces inflammation—thus helping prevent the long-term side effects of the disorder.

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sample content of TIME The Science of Sleep: How Rest Works Wonders, What Kids Need, and The New Dream Therapy

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