REAL SIMPLE

SPECIAL EDITION

The Power of Sleep

Sleep Better. Feel Better. Live Better.

Get More out of Your Waking Hours

REAL SIMPLE

SPECIAL EDITION

The Power of Sleep

Natural light is best for getting
you energized. Open your curtains
or blinds soon after waking.

—“Wake Up Right!” page 16

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The Power of Sleep

Your nightly slumber is one of the core ways your body keeps itself in peak operating condition.

BY LISA LOMBARDI

FEW THINGS IN LIFE feel as good as your head hitting the pillow after a long day. It also *does* the body—and mind—good. "Sleep is an incredibly important foundation of health," says Kien Vuu, MD, assistant clinical professor of medicine at UCLA and author of *Thrive State*.

Maybe because sleep is one of our most natural functions, people often don't give it the consideration it deserves. You probably do it on autopilot most nights: Wash face, brush teeth, lights out. (Hopefully, "scroll social media" isn't on that list too—if it is, you'll find solutions ahead.)

Prioritizing sleep is right up there with eating well and exercising when it comes to staying healthy and helping your body ward off disease. When we don't get enough shut-eye night after night, our body pays the price. Lack of sleep is linked to inflammation and obesity (both of which may contribute to health problems) and puts us at a higher risk of developing type 2 diabetes and other conditions.

On the flip side, getting a healthy amount of sleep—adults need around seven hours, according to the CDC—can bolster our immune response and help us fend off viruses and other invaders. Researchers tested this theory by having people track their sleep habits over a two-week period and then exposing them to a cold virus. The folks who slept poorly were more likely to get sick, according to the study, published in *JAMA Internal Medicine*.

The benefits don't end there, though. After a good night's rest, we often feel more optimistic (so Mom was right about everything looking better in the morning!). Many studies have found a connection between insomnia and the development of depression.

Even the odd bad night's sleep seems to throw us, mood-wise: A 2021 study in older adults found that when people got fewer than six to eight hours a night, they paid a price the next day, feeling angry, frustrated, and lonely.

Yet one in three adults don't get enough sleep, according to the CDC. Another study said 70 percent of Americans have had trouble sleeping in the previous month. While sleep problems have been on the rise for decades, living through a global pandemic only made us toss and turn more—a phenomenon dubbed "coronasomnia."

Sometimes our sleep gets thrown by a temporary situation or phase of life (hello, college finals, new baby, or work travel). In other cases, sleep suffers due to certain habits—say, binge-watching *Succession* or eating a bowl of pasta at 9 p.m.

Improving your nighttime experience could entail anything from tweaks to your diet to using a supplement such as melatonin to setting up your bedroom so it's more conducive to zonking out. Your best remedy might even involve checking in with your doctor. Sleep issues range from harmless albeit disruptive challenges, such as snoring or talking in your sleep, to bouts of insomnia to serious disorders like sleep apnea.

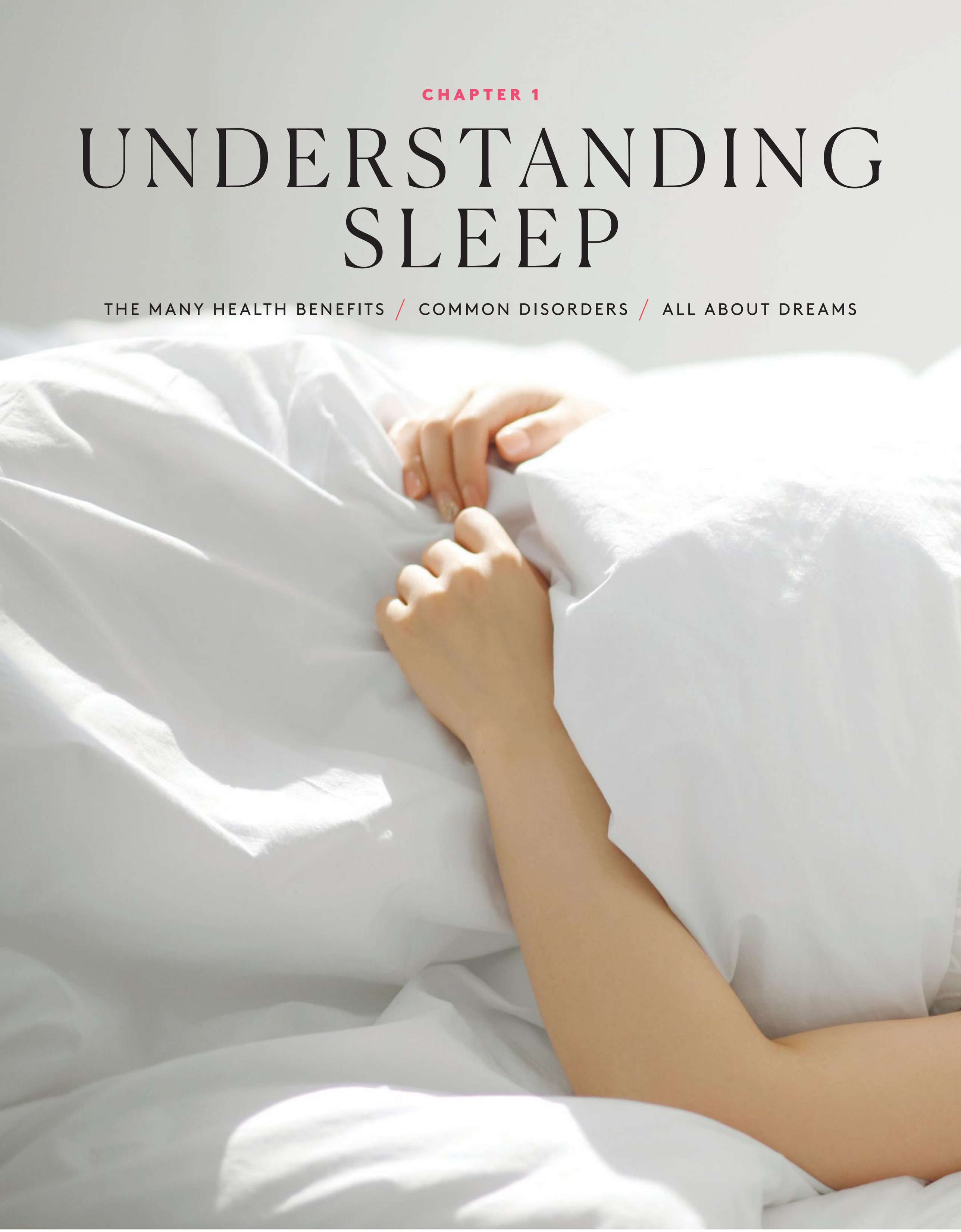
One universal culprit for bad sleep is screen time before bed. "These devices emit artificial blue light that stimulates your body to increase the secretion of daytime hormones like cortisol and decrease the secretion of nighttime hormones like melatonin," explains Vuu. "It's like they're telling you that you should be awake, when, in fact, you should be preparing for sleep." The fix: Turn off all screens at least 90 minutes before bed. Other tweaks that can make a difference include investing in blackout shades or curtains and ensuring your bedroom is not too warm. If you find yourself kicking off the covers during the night, you may want to get cooling sheets.

Sure, these seem like small steps, but they can make a huge difference, starting tonight. Ready to give yourself this core form of self-care? Read on, choose your favorite sleep-better strategies—and don't be surprised if you start waking up feeling like a whole new (well-rested) person. ■

CHAPTER 1

UNDERSTANDING SLEEP

THE MANY HEALTH BENEFITS / COMMON DISORDERS / ALL ABOUT DREAMS



What Happens When We Sleep

It may be our most natural body function—think how much babies do it—and it is essential to so many aspects of our health.

BY MARKHAM HEID

BACK WHEN HE WAS in medical school, W. Chris Winter, MD, attended a lecture on "garbage disposal" in the human body. "I remember we learned about this awesome thing called the lymphatic system, which helps get rid of the toxins and waste that build up in our bodies," he says. "We also learned that the brain doesn't have anything like the lymphatic system."

It turns out that was wrong. Winter is now a neurologist and sleep expert based in Charlottesville, Virginia, and the author of several books about sleep, including *The Sleep Solution* and *The Rested Child*. He says that in just the last decade, researchers have identified something similar to the lymphatic system that clears waste from the brain and central nervous system. It's known as the glymphatic system, and its discovery is a big deal. "Not only did we figure out that the brain has this glymphatic system, but we know this system is 10 to 15 times more active when we sleep," Winter says.

Why do we sleep? It's a question human beings have probably always pondered. And it's a question that sleep scientists like Winter have long struggled to answer. "Sleep is so fundamental to our survival, and it's involved in so much—energy balance and tissue repair and metabolic functioning and immune regulation—that it's hard to point to just one thing," he says.

The discovery of the glymphatic system (which some sleep researchers have called a "missing link") brings the picture of sleep into sharper focus. Research has long found associations between sleeping problems and cognitive or neurological disorders—everything from migraine headaches and memory impairments to epilepsy and Alzheimer's disease. The waste-clearing action of the glymphatic system seems to explain the connection between sleep and brain health.

"One of our newer understandings of the last few years is that sleep allows the byproducts of cellular metabolism to get washed out of our brains—sort of cleaned or flushed out—so that they're not causing damage to brain

cells," says Jeanne Duffy, PhD, a neuroscientist at Brigham and Women's Hospital in Boston and associate professor of medicine at Harvard Medical School.

But Duffy says that more than this—much, much more—is going on when we sleep. "[Sleep] is not only doing something for our brain, it's also having impacts on all of our body systems," she says. "And when you think about it, this makes sense. We wouldn't spend so much of our time sleeping if it weren't so critical."

A multifaceted impact

Apart from helping the brain clear out waste, sleep either directly or indirectly supports the healthy function of the digestive, immune, and cardiovascular systems and pretty much every other physiological process, large or small, that keeps us alive and ticking.

How can sleep touch so many parts of our biology? "Sleep helps reinforce our circadian system, which is a kind of internal timekeeping system," Duffy says. Believe it or not, just about every cell in your body is equipped with such a "clock." Experts know this because the activity of your cells follows a predictable schedule, and their associated organs and tissues function differently at different times of the day.

"Life on our planet evolved in the presence of strong environmental cycles—daily light-dark cycles and temperature cycles and humidity cycles," says Duffy. "If an organism can predict when those are going to happen"—for example, if energy and alertness peak at times when food sources are most likely to be available—"that confers a kind of fitness, meaning a greater ability to survive and pass on your genes."

In simple terms, everything your body does requires energy. All its operations, from the production and release of hormones to digestion to its immune defenses, rely on a fixed supply of valuable resources.

It would be wasteful and inefficient if all these systems were fully on and operational at all times. So they're not. Their activity shifts in coordinated ways based on a precisely timed schedule, similar to how musicians in an orchestra must coordinate their playing in order to make beautiful music. Sleep, by regulating the body's circadian system, is like the conductor that keeps the orchestra playing in sync.

"When you don't sleep enough or when your sleep schedule is a mess, it's like an orchestra without a conductor," Winter says. "It's not a symphony—it's a mess, and that's not a healthy situation for your body to be in."

To his point, a 2020 study in the journal *Frontiers in Cellular and Infection Microbiology* linked circadian disruptions caused by shift work to irregularities in the activity of cytokines—immune system chemicals that produce inflammation in response to injury or illness. These irregularities can lower a person's defenses against pathogens, including viruses. More recent research has suggested that shift workers, such as nurses, may be at heightened risk for COVID-19 because of these disruptions.

On the other hand, when you get good, consistent sleep, it helps regulate and align all of your body's internal systems. "Within the body, the circadian system governs everything," Winter says. "Anything you can do to support that system is going to be good for your health." And nothing, he adds, has a greater influence on that system than your sleep.

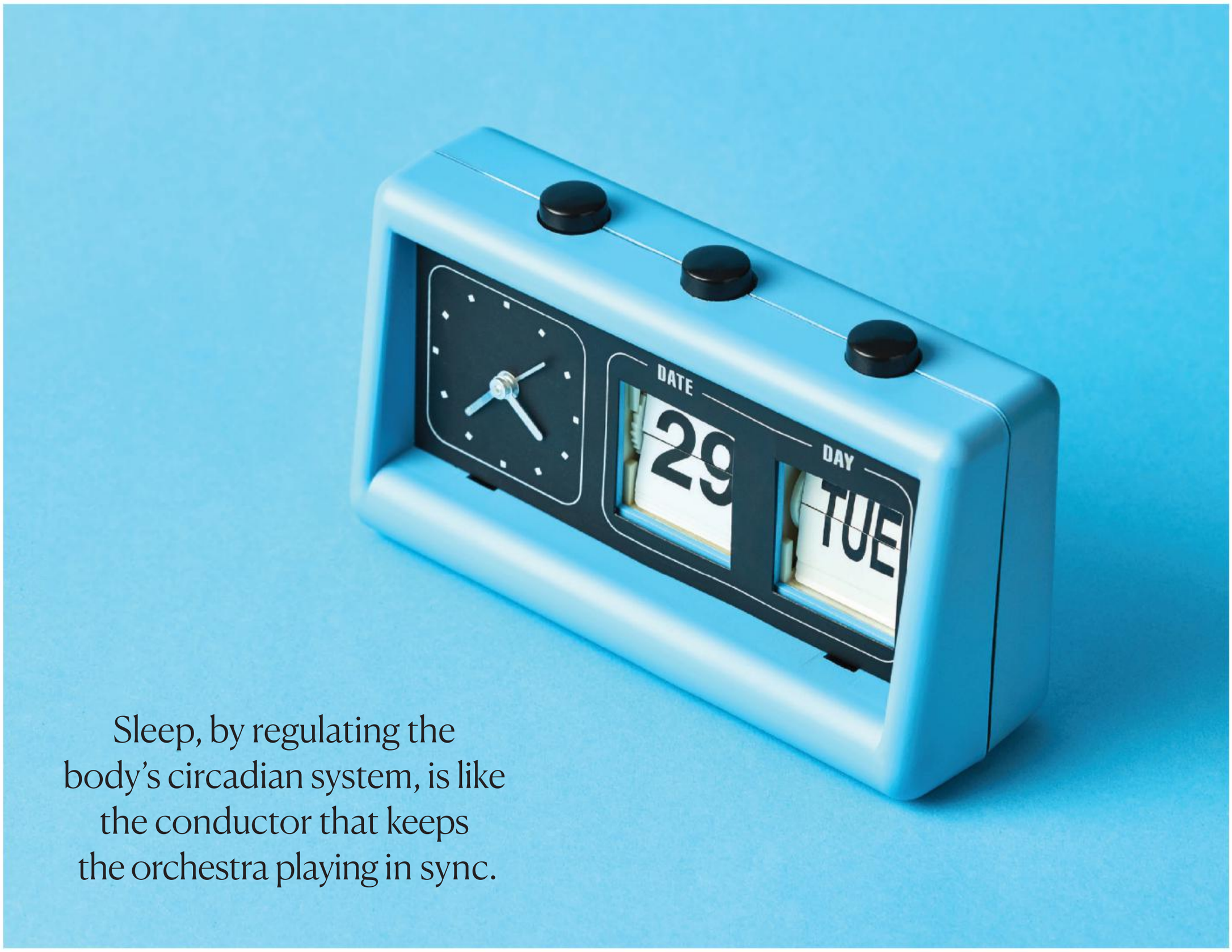
Risks of sleep deprivation

You've surely heard that people need roughly seven to nine hours of sleep each night. You probably also know people who say they need much less. In most cases, these people are kidding themselves. "If we bring them into the lab and remove all constraints or distractions, most sleep a lot more," says Duffy. "There are certainly natural short-sleepers out there, but most people who say they only need five or six hours are either getting by with caffeine or they constantly have some kind of stimulation that's keeping them awake."

Older adults may be less affected by sleep loss. "We've found in some of our work that when you take an older adult who's healthy and you sleep-deprive them, they tend to function better than young adults do in those situations," Duffy says.

But this resiliency to sleep deprivation doesn't necessarily mean that older adults require less sleep. "In order to optimize outcomes, older adults still need seven to eight hours of nighttime sleep," says Junxin Li, PhD, RN, a sleep researcher and assistant professor at the Johns Hopkins University School of Nursing. "But the reality is that when people get older, they often have multiple chronic medical conditions and are taking medications that can decrease sleep ability."

Li also says that as people age, their circadian "diurnal curve" flattens out. This means that the robustness of the body's internal sleep-wake signals grows weaker, which can interfere with sleep. "It's especially important for older adults to get morning daylight exposure, as well as daytime physical activity and social activity," she says.



Sleep, by regulating the body's circadian system, is like the conductor that keeps the orchestra playing in sync.

"These external cues tell the brain and body when it's daytime and when it's nighttime."

If you're wondering how to tell if you're getting enough sleep, experts say there are a few reliable signs. Feeling drowsy during the morning hours is a big one, according to Michael Grandner, PhD, director of the Sleep and Heath Research Program at the University of Arizona. Though it's natural to feel a little sleepy in the afternoon, nodding off before lunch—even if you're doing something boring like driving or sitting in a meeting—is a sign of inadequate sleep.

"Another one is if you fall asleep as soon as your head hits the pillow, like within one or two minutes," he says. While tossing and turning for 30 minutes or more is a symptom of insomnia, it normally takes a few minutes for a healthy sleeper to drift off. Conking out immediately indicates that your body is starving for sleep, he says.

Increased hunger (especially for junk food), irritability, and problems thinking or concentrating are other signs that you're sleep-deprived.

When it comes to the benefits of sleep, the list is long. It's not much of an exaggeration to say that just about everything that can go wrong with you is more likely to happen with—or be worsened by—insufficient sleep.

"Sleep is a nonnegotiable biological state required for the maintenance of human life," Grandner and his co-author wrote in a 2021 study that appeared in the journal *Science* and described the numerous functions of sleep.

One major role sleep plays in your well-being has to do with immune health. Poor sleep can stoke systemic inflammation and interfere with the activity and action of immune system molecules—including cytokines, lymphocytes, and antibodies. A 2021 study in the journal *Frontiers in Psychology* linked sleep deficiencies to increased rates of infection, slower recovery times, and blunted vaccine response.

Losing sleep also impairs your brain's ability to sort and store new memories, according to a 2021 study in *Proceedings of the National Academy of Sciences*. You may struggle to recall new information if you don't sleep sufficiently after acquiring the info. Other research has linked poor sleep to deficits in problem-solving,

decision-making, concentration, and logic. Basically, all the tools in your cognitive tool kit don't work as well when you skimp on sleep.

Detrimental shifts in the makeup of the microbiome (the trillions of bacteria that occupy the gastrointestinal tract) could also result from poor sleep, a 2019 study in the journal *PLOS ONE* found. Such changes in the microbiome could in turn lead to inflammation, immune dysregulation, or a huge range of other problems—from inflammatory bowel diseases, such as colitis, to mental health disorders, including anxiety and depression.

Link to weight management

Research in the journal *Metabolism* has linked insufficient sleep to a heightened risk for obesity, type 2 diabetes, and other metabolic diseases. Sleep loss seems to disrupt the normal action of insulin, glucose, and metabolic hormones (such as leptin and ghrelin) that help regulate appetite—which can lead to greater hunger, especially for calorie-rich foods.

If you're trying to stay in shape, getting enough sleep is beneficial not only to your eating habits, but also to your workouts. A single night of poor sleep is enough to lower endurance and make exercise seem more arduous, said a study in the *European Journal of Applied Physiology*. Research has also linked poor sleep to a drop-off in strength, usually measured by performance on weight lifting exercises.

As for skin—the largest organ of your body—its barrier function (protectiveness) and membranes can be harmed if you don't get enough sleep. Research has also found that sleep deprivation makes skin appear older and reduces its ability to withstand damage caused by sunlight and other stressors. Another study suggested inadequate sleep can make acne worse, perhaps by stimulating immune hyperactivity and inflammation.

Sleep even has an effect on the most intimate aspects of your life. A 2019 study led by Duffy, the Harvard med professor—among other research—showed that poor sleep decreases sex drive and contributes to erectile dysfunction and other sexual problems. Sleep may reduce circulating testosterone levels or interfere with other hormones that are involved in sexual functioning.

Moods and emotions

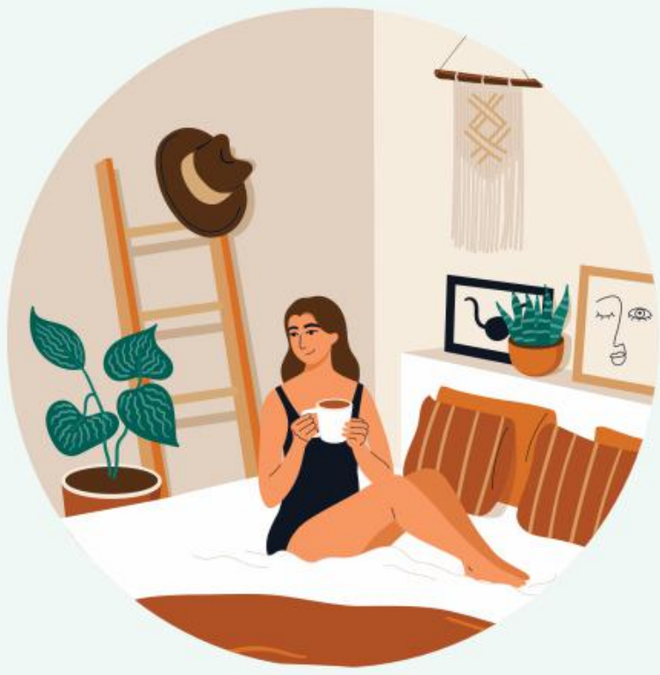
Mental health can be compromised when somebody doesn't sleep well or enough. Many studies have found that sleep issues are associated with an increased risk for depression and suicide, as well as anxiety and attention deficit hyperactivity disorder. The journal *Sleep and Affect* reported a correlation between insufficient sleep and problems in emotion regulation, reasoning, and mood. These issues could be caused by the disruptive effect poor sleep has on the activity of neurotransmitters, brain chemicals that help regulate mental functioning.

In addition to keeping so many of our physiological systems running normally, sleep can stave off certain deadly diseases, research has indicated. There's evidence linking sleep-related factors—including low levels of the hormone melatonin—to the development and growth of cancer cells. Poor sleepers are at increased risk for breast cancer, and research has found that night-shift workers are more likely than others to develop prostate, colon, and endometrial cancer. Some researchers have pointed to sleep's role in cell health and immune functioning as possible explanations for the sleep-cancer ties.

Despite all the possible health problems associated with poor sleep, some people still don't set aside time to sleep or make it a priority. "We have this idea that sleep is a time when we're turned off or when nothing's happening," Winter says. "But the truth is that the brain is busy doing all kinds of things during sleep, just like it is when we're awake."

Duffy echoes this, saying that during sleep, the brain sorts and makes sense of new information and experiences. Biochemically, sleep is when our body produces red blood cells and some growth hormones and when it repairs cellular and tissue damage.

Far from being downtime for our bodies, sleep is incredibly fruitful. "The more we study sleep," Duffy says, "the more we realize how much it's doing for us." ■



HOW LOW CAN YOU GO?

Scientists are exploring how to get the benefits of adequate quality sleep with fewer hours of shut-eye.

WHETHER IT'S A COLLEGE student pulling an all-nighter, a sleep-deprived new mom, a truck driver trying to stay alert for the long haul, or a club kid on the party circuit, people have their own good reasons to want to stay awake.

The desire for more waking hours is hardly new. Benjamin Franklin opined that "in the grave will be sleeping enough." R. Buckminster Fuller, who was described by *Time* magazine in 1943 as a "futurific inventor," saw sleep as a waste. "Two hours of sleep a day," said Fuller, "is plenty."

Which may not be so far from the truth—though only for a select few. Ying-Hui Fu, PhD, a professor of neurology at the University of California, San Francisco, first identified a genetic mutation responsible for an unusually abbreviated sleep schedule. She found that individuals with this "early-lark" behavior went to bed early and woke up in the wee hours feeling refreshed and alert despite getting a fraction of what's considered a good night's sleep.

Fu has since found hundreds of other families who exhibit this extreme early-lark behavior, as well as at least 50 families known as "natural short-sleepers."

Blame genetics, but very few of us can claim to be among the sleepless elite, able to function optimally after what amounts to a long nap. Yet, as scientists learn more about how and why we sleep, it's hard not to fantasize about a future of boundless energy and incredible focus achieved through a shorter, more efficient sleep.

One possibility would be to enhance deep sleep non-pharmacologically, by stimulating the brain with electrical currents or magnetic fields. "There are a couple of new devices that attempt to induce delta [deep] sleep by either electrical or magnetic stimulation. The verdict's still out, but it's potentially very interesting," says Chris Berka, CEO and cofounder of Advanced Brain Monitoring, a medical device development company in Carlsbad, California.

Giulio Tononi, MD, PhD, a professor of psychiatry at the University of Wisconsin–Madison and the director of the Wisconsin Institute for Sleep and Consciousness, has investigated the role of transcranial magnetic stimulation and acoustic stimulation in enhancing sleep slow waves in humans, which play an essential role in memory consolidation. Again, however, though the technique could potentially be effective, the methods are currently impractical and their safety is uncertain, especially for long-term exposure.

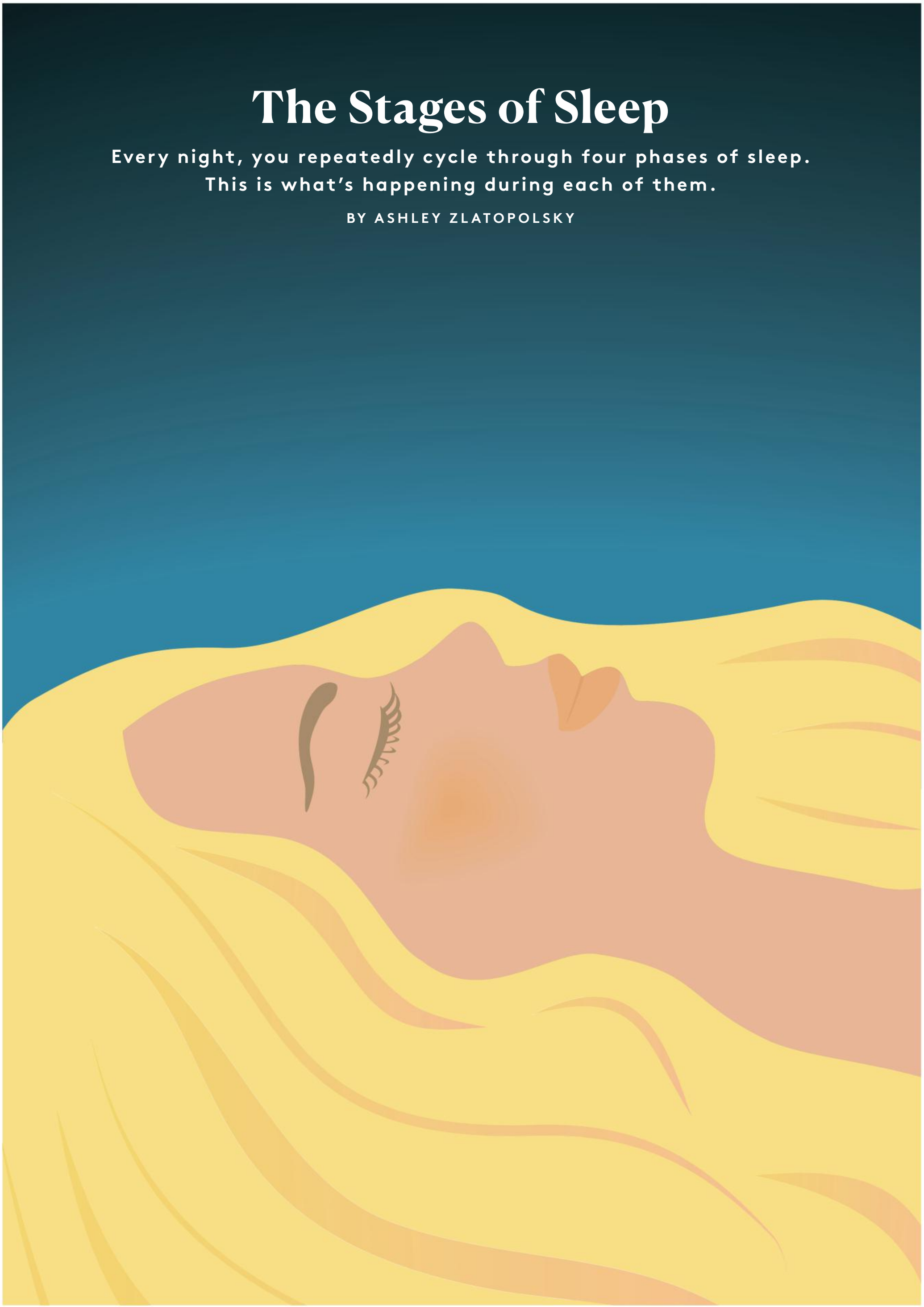
At the end of the day, what does this mean for the future of sleep, be it natural or enhanced? Do we rest easy knowing that researchers will continue to learn more about the complex neurobiological mechanisms that regulate transitions between sleep and wakefulness? Dare we dream of waking up refreshed after a few hours, feeling alert and energized for a longer day? At the very least, these are questions worth sleeping on.

—Kathryn Satterfield

The Stages of Sleep

Every night, you repeatedly cycle through four phases of sleep. This is what's happening during each of them.

BY ASHLEY ZLATOPOLSKY



WHILE WE TEND to focus on the number of hours we're in bed, remember: The purpose of sleep is to restore your mind and body, so getting high-quality zzz's matters as much as quantity. There are four stages of sleep that a person usually cycles through between four and six times a night. Each cycle lasts roughly 90 minutes.

It starts with non–rapid eye movement (non-REM or NREM) sleep. The first stage is the lightest sleep, when you're nodding off. Your brain activity begins to slow and your muscles relax and might twitch. It typically lasts just a few minutes.

Then you enter the second stage of light sleep, where you may be able to respond to someone speaking to you or claim you're not really asleep. Breathing, heart rate, and body temperature drop as you enter this slightly deeper stage of NREM sleep.

You spend about 25 minutes in stage 2 initially, but the time lengthens with each sleep cycle, up to around 60 minutes. You spend more time in this sleep stage than any other.

Your deepest sleep

In the third stage of non-REM—which can be divided into two stages, one even deeper than the next—you enter slow-wave sleep, sometimes referred to as delta sleep. This deep, restorative sleep lasts for around 20 to 40 minutes.

Your brain wave activity during the deep-sleep stage is about 10 times slower than it is when you're awake, writes Matthew Walker, PhD, director of the University of California, Berkeley's Center for Human Sleep Science, in his book *Why We Sleep: Unlocking the Power of Sleep and Dreams*.

Although the brain slows down and sleep deepens in NREM stages, "during non-REM sleep, our body is working hard to strengthen our immune system, rebuild bone and muscle, and repair and regenerate tissues," says Ruth Varkovitzky, PhD, a licensed clinical psychologist and owner of Renewal Psychology.

REM, the dreaming stage

Finally, you enter REM sleep—when brain activity, heart rate, and blood pressure pick up almost to the same levels as when you're awake.

While your eye movements remain active during REM (thus the name), your muscles are temporarily paralyzed. Dreaming occurs in this stage, which lasts between 10 and 60 minutes; the stage is shorter during early sleep cycles and lengthens as the night goes on.

REM is crucial for cognitive functions like memory, learning, and creativity. "This important stage of sleep helps with consolidation of learning as well as emotional processing," says Varkovitzky.

A balanced amount of REM and NREM sleep is essential for both physical and mental health. Bruce Forman, PhD, a psychologist in Weston, Florida, explains that when the balance is off, it can result in cognitive decline, exhaustion, and even accident-proneness.

"It is also a risk factor in health issues such as hypertension, obesity, and diabetes, as well as mood disorders," he says.

Fluctuations in the cycle

Not only do you need to go through each sleep cycle multiple times, but every time the cycle repeats, the ratio of non-REM to REM sleep changes, with a higher proportion of non-REM sleep at the beginning of the night and a higher proportion of REM sleep taking over in the morning hours.

The brain craves different sleep types at different parts of the night, so shortchanging at either end can seriously disrupt quality sleep.

Though brief awakenings during the night are normal, Varkovitzky says the human body can get more rest and feel more recharged from one continuous span of sleep.

"Having an extended sleep period allows us to naturally move through all the stages of sleep," she says. "The ability to go through this cycle multiple times is important for sleep quality, which is another reason consolidation of sleep to one span is essential." ■

Wake Up Right!

What you do first thing in the morning can prime your brain for success and make you feel energized and happy.

BY TULA KARRAS

FOR A GREAT DAY, start with a morning routine that stacks the deck in your favor. "We want to use the strongest tools that work the fastest to help set our brain to a motivated and productive mode first thing," says Wendy Suzuki, PhD, a neuroscientist and author of *Good Anxiety: Harnessing the Power of the Most Misunderstood Emotion.* Creating a wake-up routine can also help you tap into the benefits of ritual: Research finds that people who perform repeated behaviors that have meaning attached to them feel more in control and can better cope with anxiety and stress. To build the perfect mindset to fuel your next 12 hours, try any of these strategies.

Look on the bright side

Open your curtains or blinds immediately after getting up, and have your coffee or smoothie on the porch or by a window. Exposing the optic nerves (in your eyes) to light activates your cortisol arousal systems, releasing energizing neurotransmitters, peptides, and hormones, including adrenaline, dopamine, serotonin, and testosterone, says Kristen Willeumier, PhD, a neuroscientist

Research finds that natural sounds, such as rain falling or wind rustling leaves, can lower stress and boost your mood.

and author of *Biohack Your Brain: How to Boost Cognitive Health, Performance & Power*. Natural light is best—sunshine is the most intense trigger for alertness.

Picture a day of success

"Visualization helps us form mental images that haven't been experienced or perceived by the senses but that you may have witnessed someone else doing and want to emulate," Willeumier says.

When you imagine something, you're laying the neural pathways for it to actually happen: MRIs have shown that certain areas of the brain look similar whether we're experiencing an activity (playing an instrument or hitting a tennis ball, for instance) or imagining doing so.

Visualization techniques such as mentally rehearsing an event the way you'd like it to go, envisioning having qualities you admire in a role model, or seeing yourself making healthy food choices for the day can improve performance in sports, work, and personal goals, as they build confidence and focus.

Go outside

If you're someone who opens your eyes and instantly starts to worry about your to-do list, Mother Nature can pump the brakes on the stress pedal. Just being outdoors—watering the garden, strolling through a park—activates the parasympathetic nervous system, helping you feel chill.

Research also finds that natural sounds, such as rain falling or wind rustling leaves, can lower stress, decrease pain, and boost your mood and cognitive performance.

"A little stress and cortisol is OK, since it's activating and makes us productive, but you want to pair that with a sense of calm so you can move forward in the most positive way," says Suzuki.

Get up and get moving

Exercising first thing delivers daylong mind and body benefits. "Exercise bathes the brain in a chemical bubble bath of serotonin and dopamine, which helps with focus and mood," says Suzuki, who switched her workout routine from p.m. to a.m. based on her research on the exercise/mood/productivity link.

Another reason to rise and sweat: It sets you on "active" for the whole day. Dopamine is a reward chemical, and the more you get, the more you want to do the thing that delivered it in the first place. "We have evidence that the more movement you do, the more motivated you are to keep moving throughout the day," Suzuki says.

Starting your morning with a workout predicts better brain functioning too. One study found that those who worked out for 30 minutes after they woke up and moved three minutes every half hour all day were better at focusing, decision-making, organizing, and planning.

Turn caffeination into meditation

Doing something that has several steps to it, like making a pour-over coffee or brewing tea, gives meditation some shape, rhythm, and purpose and provides something to focus on as you guide your mind. Meditating regularly can relieve stress, improve learning, and increase volume in areas of the brain associated with attention and memory, says Willeumier.

Suzuki sets aside 45 minutes each a.m. for a tea ritual and an open-monitoring meditation, which she learned on vacation from a monk in Bali. "As I brew, wait, pour, taste, and drink, I observe what comes into my mind," she says. "It helps me wake up gently and gives me the time to ask myself, *How am I feeling*? I tune in to what my body needs for that day.

"The tea ritual is the engine that keeps me in the meditation," Suzuki says. "There's always a next step to focus on."

If you're short on time, even five minutes of deep breathing will benefit your brain health, science shows. ■

ADDITIONAL WAKE-UP WISDOM

Here are more tips to avert morning grogginess.

BY BRITTNEY BURKE

AVOID HITTING SNOOZE

Studies show you're better off just setting your alarm for later or getting out of bed when it goes off than using the snooze button. Why? When you go in and out of sleeping and waking up, it worsens what's known as sleep inertia—the groggy feeling that comes from jolting yourself out of sleep.

NIX WEEKEND LINGERING

Instead of adjusting your sleeping pattern to what's on your calendar, find a regular one that works for your life. Yup, that means you really shouldn't be sleeping in super late on weekends. The goal is to wake up and go to bed around the same time every single day so your body gets used to it.

DO WHAT YOU LOVE

Ever notice on days you have something exciting planned, it's easier to pop right out of bed? Re-create that feeling on a daily basis by doing something you enjoy in the morning: Read, put on your favorite songs, do a crossword puzzle, or treat yourself to a flavored coffee drink, for example.

START WITH WATER

A glass of water with lemon could have the same stimulating effect as caffeine. "Lack of energy can be caused by dehydration," says Jo Lichten, PhD, RDN, a Florida-based nutrition and productivity expert. "Shake the feeling of drowsiness by guzzling first thing, and your body will respond."

The Hows and Whys of Dreaming

We dream to reflect on recent experiences and sort out our emotions. And it may be possible to exert some control over what we dream about.

BY JENNIFER KING LINDLEY

MONTHS INTO THE pandemic, my dreams started changing. Instead of flunking my unstudied-for algebra exam, I faced a fresh horror: I was being jostled by a large crowd, panicked I had forgotten my mask. Another night, I dreamed I was building a house alongside Dr. Fauci.

My friends were sharing similarly themed nocturnal escapades. And sure enough, #quarantinedreams became a hashtag. "People reported unusually active dream lives, and those dreams were especially vivid and bizarre," says Deirdre Barrett, PhD, an assistant professor of psychology at Harvard Medical School and author of *Pandemic Dreams*.

The uncertainty of the COVID crisis not only charged our days with anxiety, it infected our slumber too: Nightmares about hazmat suits and crawling bugs indicated our brains were working around the clock to process a rapidly changing world.

Though COVID-inspired visions may have receded, they helped inspire our fascination with dreams—which, it turns out, may be far more useful than we realize. "Dreaming is thinking in a different biochemical state," Barrett says. "The preoccupations of our day make their way into our dreams. It's just a different mode of making sense of them. It's more visual and more intuitive." And if we can learn to discern the meaning in our dreams, we can apply it to the issues that matter to us most.

Spinning stories

Most dreams occur during the REM (rapid eye movement) stage of sleep, says Jade Wu, PhD, a sleep researcher at Duke University School of Medicine. While narratives build, your closed eyes dart back and forth, and the rest of your body lies immobilized (so you don't actually run away from nightmare tigers).

"Your dreams get more elaborate as the night goes on," says Michelle Carr, PhD, a researcher at the University of

Rochester Sleep and Neurophysiology Laboratory. "REM periods last longer, the story lines themselves get more vivid and more emotional, and associations become more bizarre." Your whiny neighbor may take the form of a yowling cat, for instance.

These strange mash-ups materialize because the prefrontal cortex—the part of your brain in charge of logic—is less active while you're dreaming. "You don't have a censor saying, 'This does not make sense,'" explains Barrett. At the same time, the visual cortex ramps up its activity. These shifts in the brain set the stage for surreal scenarios to unfurl.

Some people suspect they don't ever dream, but dreams are universal, says Rebecca Spencer, PhD, a professor in the Department of Psychological and Brain Sciences at the University of Massachusetts Amherst. "Everyone dreams. The question is: Do you remember them?"

Dreams are stored in our short-term memory and typically dissipate quickly, which means you're more likely to remember them if you wake up right in the middle of them. (This could be another reason it seemed as if we were dreaming more during the pandemic, experts say: Anxiety may have caused more frequent wee-hour awakenings.)

Why we dream

Scientists are still debating the biological purposes of dreaming. One leading theory is that it plays a part in storing important memories. In our dreams, we connect meaningful events from the day—say, a kind gesture from your spouse or an argument with a friend—to prior experiences, which helps the brain figure out where to stow these fresh occurrences.

"It is like your brain is saying, 'Where should I file this? Have I felt something like this before?'" says Spencer. For example, if you are disoriented by a friend's out-of-character behavior, you might dream you are wandering through the woods, hopelessly lost.

Experts also believe dreams may help us work through our emotions. Matthew Walker, PhD, a professor of neuroscience and psychology at the University of California, Berkeley, has called dreams "overnight therapy." According to his research, dreams allow us to relive the day's stings when our stress hormones are naturally low; the next morning, the events feel less upsetting than they did the day before.

Perhaps most intriguingly, our dreams may trigger insights and creative breakthroughs. (Paul McCartney has famously said the lyrics to "Let It Be" came to him in a dream.) During our uncensored nocturnal imaginings, full of loose associations, our minds can wander in new directions.

Barrett points to one of her early studies, published in 1993 in the journal *Dreaming*: When she asked participants to contemplate a personal problem before bed for a week, about a quarter of them went on to have a dream that they felt provided a good solution to that problem.

"Dreams both reflect our waking lives and help us improve them, if we pay attention," says Carr. She herself had a dream-inspired epiphany not too long ago that changed the course of her career. "I was wrestling with whether to take on a huge professional responsibility," she recalls. "I felt unprepared and indecisive.

"One night, I had a dream I was being engulfed by a tidal wave and was terrified. Just as the wave was about to crash on top of me, a trusted colleague took my hand and showed me how to dive and come up the other side safely." She woke with a feeling of calm—and decided to take the leap at work.

Lessons in lucidity

But what if, rather than having dreams influence your actions while awake, you could direct your actions in your dreams? That's the idea behind lucid dreaming.

"It is the experience you have when you become aware you are dreaming. Once you have that insight, you can gain influence over what happens," says Josie Malinowski, PhD, author of *The Psychology of Dreaming*. It sounds like some sort of superpower, but experts say lucidity is a learnable skill that improves with practice.

A first step in lucid dreaming is to ask yourself repeatedly during the day, "Am I dreaming?" Get in the habit of questioning your state of consciousness and you may start doing it in your sleep too, says Malinowski.

> In our dreams, we connect meaningful events from the day to prior experiences, which helps the brain store memories.

Also look for tip-offs in your recurring dreams: What do you do in them that's not possible in waking life? "I often dream I am flying," says Carr. "If I notice I am flying, that's a pretty big clue I am not awake."

Pay attention as well to any text that appears: "Often, writing in dreams changes when you look away and look back," says Malinowski.

Once you start to recognize you're dreaming, try choosing what happens next. Maybe imagine a magical door and walk through it. Eventually, you might learn to guide your own wild adventures from start to end. (Two popular pursuits among lucid dreamers: taking flight and sex.)

Harness your visions

In addition to attempting lucid dreaming, there are other things you can do to make the most of these nighttime sessions: What you think about in the moments just before you conk out can influence your dreams, research suggests.

Say you're hoping to push past a creative block—visualize your project as you lie in bed, drifting off to sleep. Longing to visit your favorite beach? Picture that place in your mind.

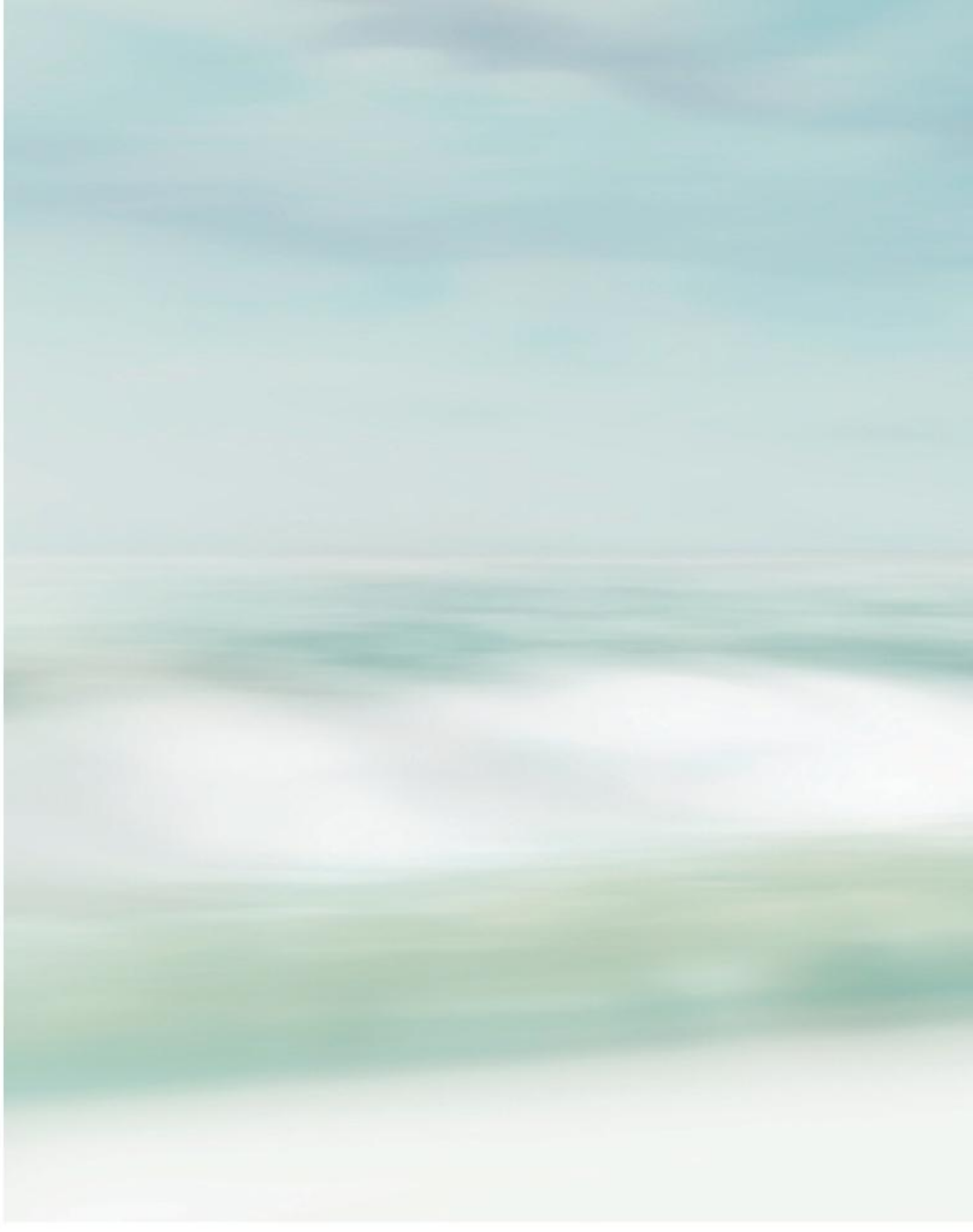
Dreams are fragile, so before you even open your eyes in the morning, try to piece yours together. You may start with just a thread (I was on a ferryboat) or an emotion (enthusiasm!). Dwell on that detail or feeling to coax the story out, suggests Malinowski. Telling yourself "I want to remember my dreams" at bedtime may prime your brain, she adds.

Write down what you can recall of your dream—even if it's just a fragment—in a journal. Try using the present tense ("I am racing through the neighborhood…"), which can make you feel as if you are reliving the experience. Draw pictures too. ("Dreams are very visual, so you might want to sketch them," says Barrett.)

Keeping a log makes it easier to pick up on themes, which may lead to insights. For example, if an ex makes repeated cameos in your dreams, you may still be processing your emotions around that breakup.

Consider sharing your dreams with others. Rattled by a distressing nightmare or confused by a peculiar plot twist in your dream? "Talking with someone else can give you a fresh perspective [on your dreams] and make you think about them in a different way," Malinowski explains.

You can also try to keep unpleasant thoughts and occurrences out of your dreams. Wu suggests writing down your fears and concerns before bed to help get them out of your head and your dreams. "Anxieties are like little children tugging at our sleeves all day," she says. "In the middle of the night, they come out and say, 'Now it's our turn!'" ■



FINDING MEANING

Alas, there's no secret decoder ring for the symbols or story lines in dreams. "Meanings are very individualized," says Katie Mason, a psychotherapist in Denver. Here, experts share prompts to help you explore your mind's conjurings.

You're visited by a dead loved one.

"These [dreams] are common and can feel very healing," says Mason. "Enjoy the experience, and reflect on if this person might have wisdom for your life right now. What would they say to you about your current situation?"

You experience sex differently.

"With sex dreams, the best thing is to focus on the feeling you had during the dream," says Eliza Boquin, a psychotherapist and sex therapist in Houston. "Did you feel shame, excitement, confusion?" Then ponder what that emotion might be connected to. If the sex felt taboo, could there be a part of yourself you're afraid to reveal?

You find a new room in a house.

"I often see this dream show up to represent new opportunities at hand," says Boquin. "What might be a next step for you in your life?"

Out of Order

What you need to know about the most common sleep disorders: snoring, insomnia, apnea, and more

BY RICH SANDS

STRUGGLING TO GET A GOOD night's sleep is nothing new. In the Old Testament, Job obsesses over his restless evenings: "When I lie down, I say: 'When shall I arise?' But the night is long, and I am full of tossings to and fro unto the dawning of the day."

In today's frenetic, combative world, poor or insufficient sleep has become a public health epidemic. About a third of American adults suffer from short sleep duration, defined by the CDC as less than seven hours in a 24-hour period. Sometimes it's just a matter of working too much, going to bed too late, or the proverbial tossing and turning all night. Or it could be caused by a sleep disorder.

If you have difficulty falling asleep or staying asleep, it's best to see a sleep specialist, as your regular doctor may not be well-versed on sleep issues (the subject historically has not gotten much attention in med schools). There are prescription medications for many sleep-related conditions, but they should be taken with guidance from a doctor and not seen as a miracle cure.

What follows is an overview of common sleep disorders, including their symptoms, possible causes, and treatments.

Insomnia

The most common of all sleep disorders, insomnia is often confused with sleep deprivation. The latter refers to not making or having enough time for proper rest; insomnia, by contrast, is a frustrating psychological condition in which the mind is so consumed by emotion and stress that it prevents a person from falling or staying asleep or causes early awakening.

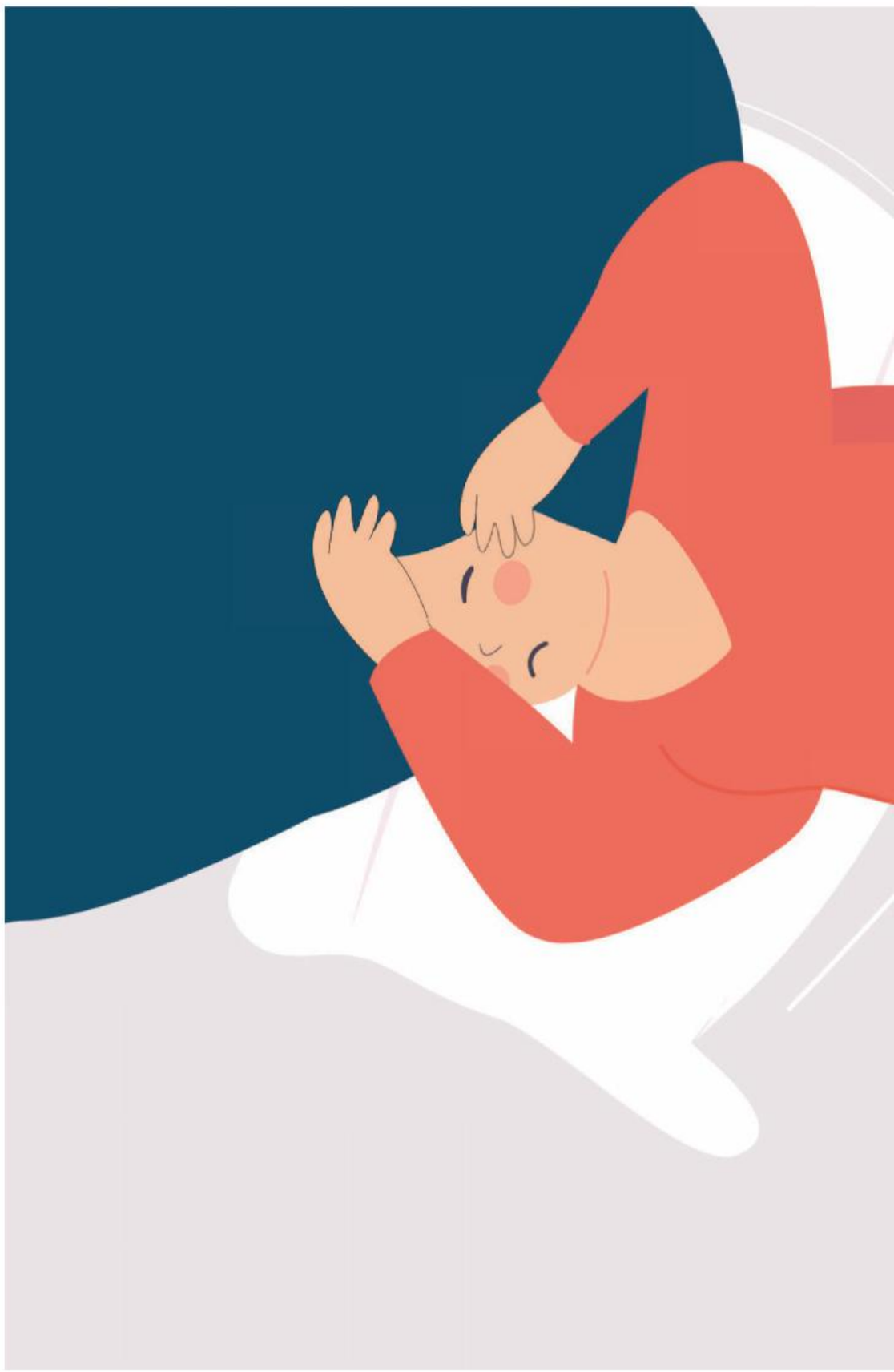
"Insomnia is really a symptom that becomes a syndrome over time," says Rafael Pelayo, MD, a clinical professor of psychiatry and behavioral sciences at the Stanford Center for Sleep Sciences and Medicine in Palo Alto, California, and author of *How to Sleep: The New Science-Based Solutions for Sleeping Through the Night.*

"The ability to push off sleep is built into our DNA," he says—it's a feature of the fight-or-flight response cultivated in our prehistoric ancestors, who had to remain hypervigilant against predators throughout the night. "Insomniacs have triggered this protective mechanism and become stuck in a gear where they know they are awake. It doesn't matter what their [source of] stress is; they have painted themselves into a corner."

While sleep should be a chance to hit pause on daily stressors and clear the mind, insomnia often stands in the way. "One of the few times that we stop our persistent informational consumption and inwardly reflect is when our heads hit the pillow. There is no worse time to consciously do this," Matthew Walker, PhD, director of the Center for Human Sleep Science at the University of California, Berkeley, writes in his book *Why We Sleep: Unlocking the Power of Sleep and Dreams.* "Little wonder that sleep becomes nearly impossible to initiate or maintain when the spinning cogs of our emotional minds start churning, anxiously worrying."

The worst thing you can do for insomnia is fight it. "Don't sit in the dark forcing sleep to happen. It won't be useful and worsens it," says Shelby Harris, PsyD, a clinical psychologist in White Plains, New York, and author of *The Women's Guide to Overcoming Insomnia: Get a Good Night's Sleep Without Relying on Medication.* "If you're not sleeping—after 20 or so minutes, but guesstimate, don't clock-watch—get up and do something quiet, calm, and relaxing in dim light in another room. Return to bed once you're sleepy or think you may fall asleep."

To set yourself up for sleepiness at bedtime, avoid taking naps or consuming alcohol or caffeine late in the day. It's also important to follow some basic good sleep practices: Sleep in a cool room and minimize screen time before bed. Harris also repeats the popular advice to use your bed only for sleep and sex.



Most sleep experts advocate sleep medication as a last resort in trying to conquer chronic insomnia. Instead, a more proactive treatment is cognitive behavioral therapy for insomnia (CBT-I), where you work with a therapist to analyze the thoughts keeping you up, attempt to reframe any misconceptions, and adopt skills for calming your mind and managing stress.

"A goal of CBT-I is to teach patients the tools they need to maintain improvements in sleep, particularly when they experience events that previously contributed to insomnia," Harris says. "Although each person's situation is unique, on average 4 to 12 sessions are typically required to improve upon sleep and continue sleeping well."

Snoring

In many cases, snoring—which occurs when breathing is compromised during sleep—is more of a nuisance than a bona fide disorder. In fact, it may be more of a problem for the snorer's bedmate than for the snorer himself.

Snoring is more common in men and among those who are overweight, and could be triggered by biological abnormalities (in the mouth or nose) or behavioral factors, like alcohol consumption too close to bedtime. Habitual snoring, however, could be a problem if disruptions to sleep lead to other issues or if it's a sign of a more serious disorder, such as sleep apnea.

If your (or your partner's) snoring is not connected to a larger problem, some simple tips to curtail snoring include sleeping on your side rather than your back and using over-the-counter nasal strips to help open the

SUPPORT GROUPS: AN ADDITIONAL RESOURCE

People experiencing, and possibly being treated for, a sleep disorder do not have to go through it alone. They can find solidarity with fellow sufferers at a support group.

Several patient advocacy organizations, including the Restless Legs Syndrome Foundation and the Narcolepsy Network, offer support groups, which are typically organized locally and run by volunteers. A few years ago, the American Sleep Apnea Association (ASAA) expanded its long-running support group program, named A.W.A.K.E.—for Alert, Well, and Keeping Energetic—to serve people with various sleep disorders, not just apnea.

At support group meetings, people can voice their concerns, get answers to questions about their disorder, and learn tips and strategies for dealing with it.

Medical centers and sleep clinics also run sleep disorder support groups, sometimes in conjunction with groups like ASAA. The Circadian Sleep Disorders Network's group operates online, with members communicating via email and having access to archived posts.

Other support groups had to switch to Zoom during the pandemic but usually meet in person. For more information, visit the patient organization's website. The American Sleep Association has links to support groups on its website. *—Adrienne Onofri*

Sleep apnea, which causes continual rousing throughout the night, often gets mistaken for insomnia and goes undiagnosed.

nasal passages. More holistic changes that can help include losing weight, quitting smoking, and reducing alcohol intake or cutting it out altogether.

Another treatment for snoring is wearing a mouthpiece at night such as a mandibular advancement device, which moves the jaw and tongue forward to allow for better breathing. This mouth-guard-like device can be purchased at pharmacies and online without a doctor's prescription/referral—or, for a lot more money, one can be custom-made by a dentist or sleep specialist.

Sleep Apnea

Snoring is often a sign of sleep apnea, a condition where the airways become obstructed and the body's oxygen supply is limited, which can result in gasping for breath and continual rousing from sleep.

"Our brains use a lot of oxygen," W. Chris Winter, MD, a sleep medicine specialist and neurologist in Charlottesville, Virginia, writes in his book *The Sleep Solution: Why Your Sleep is Broken and How to Fix It.* "Despite our brains weighing only about three pounds, they use about 20 percent of our body's oxygen.

"Because of this dependence, our brain gets cranky when it is deprived. When someone has sleep apnea, she is repeatedly depriving her brain of oxygen throughout the night. In some cases, these spells of not breathing can happen 20, 40, 60 times per hour or more. Much more in some cases."

As prevalent as sleep apnea is—upward of 20 million Americans suffer from it, per estimates—it often goes undiagnosed because people aren't aware of the problem and assume they have insomnia. "Sometimes, poor sleep is because you awaken from pauses in breathing and just don't know," Harris says. "And a lot of the times people are treated with sleep medications for insomnia, but if they have undiagnosed apnea, they might sleep fine with the medication but the quality of the sleep can worsen."

Obstructive sleep apnea is the most common form and results from the muscles in the back of the throat relaxing, causing airways to tighten or close as you inhale. Central sleep apnea is scarier, because with this disorder, the brain fails to direct the body to breathe.

According to Mayo Clinic, the risk for sleep apnea is higher for middle-aged and older people, particularly men. A history of heart disorders or stroke also increases the chances, as does the use of opioid medications.

Many apnea patients use a continuous positive airway pressure (CPAP) machine, which involves wearing a face mask that's connected to a device delivering or regulating steady air pressure into the mouth and nose during sleep. While a CPAP takes some getting used to, recent innovations have made masks more comfortable and reduced the noise that comes out of the machine.

An emerging treatment for apnea known as hypoglossal nerve stimulator is catching on because it does not require a mask or bulky equipment. Instead, a small device Pelayo calls "a pacemaker for the tongue" is surgically implanted. "It forces the tongue to move forward and open up the airways," he says. "It's remote-controlled—you turn it on at night and off in the morning."

Restless Legs Syndrome

In an episode of *Seinfeld*, Kramer can't sleep because of his girlfriend's "jimmy legs," one of many examples of restless legs syndrome (RLS) being played for laughs. "Restless legs syndrome is a neurological condition, characterized by a sensation of an urge to move when you're resting," says Pelayo. That urge is often uncomfortable (if not outright painful) and is temporarily relieved by movement, including walking.

While RLS—also known as Willis-Ekbom disease—is not strictly confined to sleep, that is when it is typically most pronounced, making it difficult, if not impossible, to fall (and stay) asleep.

The cause is not known, but RLS is believed to be triggered when the brain produces insufficient levels of dopamine, a neurotransmitter that is most commonly associated with pleasure and motivation but also plays a key role in your body's circadian rhythms. There's also evidence RLS can be caused by iron deficiency or difficulty in metabolizing iron.

To treat the disorder, a doctor may direct you to take iron supplements (if blood tests indicate a deficiency). An FDA-approved medication such as ropinirole, rotigotine, pramipexole, or gabapentin enacarbil may be prescribed to either stimulate or act in place of dopamine. Sleep medications will not treat the condition but may help you get some rest.

REM Sleep Behavior Disorder

When the temporary paralysis that normally occurs during REM sleep fails to kick in, a person could experience REM sleep behavior disorder. They will try to act out their dreams, physically or vocally (talking, yelling, laughing).

To treat this condition, a doctor may recommend a melatonin supplement or prescribe more powerful sedative medication. Patients also need to eliminate potential hazards from their sleeping space—by, for example, padding the floor near the bed, removing dangerous objects from the bedroom, or placing barriers or rails along the sides of the bed.

REM sleep behavior disorder can exist on its own or as a symptom of Parkinson's disease, Lewy body dementia, multiple system atrophy, and other neurologic conditions.

Narcolepsy

Most sleep disorders prevent sleep, but narcolepsy is one where the patient sleeps too much. Narcolepsy is a neurological condition in which the brain cannot effectively control the sleep-wake cycle. Its primary symptom is excessive daytime sleepiness, including an overwhelming urge to conk out, regardless of how much sleep a person has had.

"When a patient with narcolepsy wakes up to start the day, she stretches and immediately starts to figure out when she can sleep again," Winter states in *The Sleep Solution*. Other symptoms include sleep paralysis—a brief inability to move when awake (much like when the body protectively locks up during REM sleep)—and cataplexy, a sudden loss of muscle control, which can cause a person to collapse as if asleep. Cataplexy does not involve a loss of consciousness; the person is aware of what is happening.

Narcoleptic patients don't produce sufficient quantities of hypocretin (also known as orexin), a hormone released by the hypothalamus that signals the body into a stage of wakefulness. There is no cure for narcolepsy, but some stimulant medications can increase wakefulness during the daytime, and some antidepressants can alleviate sleep paralysis and cataplexy. ■

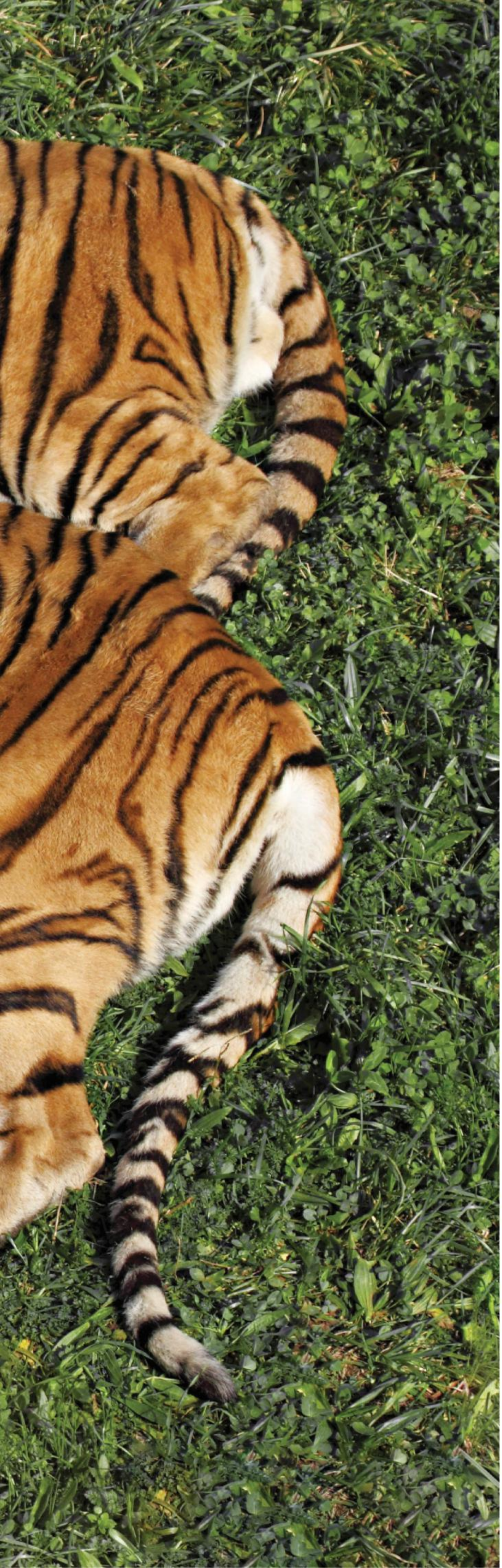
WHEN IT'S TIME FOR A SLEEP STUDY

If you've already tried all the usual sleep-hygiene tips—sticking to a consistent schedule, getting enough activity during the day, and unplugging and dimming the lights before bed—but still struggle to sleep, or feel drained rather than rested once you wake, then you'd likely benefit from a sleep study.

Also called polysomnography, this noninvasive procedure collects data via painless electrodes and monitors a number of physiological parameters including eye movements, brain waves, and limb movement, says Vivek Cherian, MD, an internal medicine physician with Amita Health in Chicago.

The study takes place overnight at a sleep center (or, in some cases, at home using sensors you stick on yourself) and may reveal that you have one of 90 distinct sleep disorders, including sleep apnea, insomnia, or restless legs syndrome. You can talk to your primary care doctor about getting a referral or prescription.
—Petra Guglielmetti

Tigers may sleep
away as many as
20 hours in a day.



Animal Slumbers

Animals show surprising variety in how—and how much—they sleep. Researchers are coming to understand more about it.

BY COURTNEY MIFSUD INTREGLIA

THE LARGEST LAND MAMMAL gets by on astonishingly little sleep. In 2017, researchers in Botswana tracked two African elephants and discovered they rested for only two hours a day and in some cases went several days without rest. Paul Manger, PhD, and his research team at the University of the Witwatersrand in South Africa fitted trackers under the skin of the elephants' trunks to record sleeping patterns. If the trunk stayed still for five minutes or longer, the animal was asleep.

"We had the idea that elephants should be the shortest-sleeping mammal because they're the largest," Manger told BBC News at the time of the research. "Why this occurs, we're not really sure. Sleep is one of those really unusual mysteries of biology, that along with eating and reproduction, it's one of the biological imperatives. We must sleep to survive."

In the wild, elephants spend most of their sleeping hours standing up, the researchers found. They lie down to sleep only every third or fourth night.

Giraffes don't sleep much either—no more than five minutes at a time, or 30 minutes a day, in the wild. But lions and tigers can rest up to 20 hours a day. It makes

Some species of seabirds can sleep on the wing, which enables them to fly for weeks without touching land. Certain sharks, such as great whites, also can sleep when they're moving.

sense, because herbivores need to spend more time awake and munching on food to get the same energy out of that food than a lion would get from a single hunt. Plus, a giraffe spending hours on end sleeping would be vulnerable to predators.

For an animal in the wild, sleep can seem like a dangerous waste of time. But from an evolutionary perspective, sleep is an adaptive advantage, according to Jerome Siegel, PhD, a professor of psychiatry and biobehavioral sciences at the UCLA Center for Sleep Research.

"There's a misconception that somehow being asleep is maladaptive," says Siegel. "But being efficient often means being inactive because being active uses energy, exposes animals to danger, exposes animals to injury, and so on. So I think different animals in different circumstances have evolved optimal amounts of sleep."

No REM at sea

Siegel and his colleagues studied the sleeping habits of northern fur seals, specifically in regard to REM (rapid eye movement) sleep. Most mammals need REM sleep. Ocean-dwelling mammals seem to be an exception. Research on cetaceans, such as whales and dolphins, has not shown any evidence of REM sleep. But northern fur seals, which live in the north Pacific, experience different kinds of sleep depending on where they're resting, according to what Siegel and his team observed.

These creatures are semiaquatic: They reside on land during breeding season, but the rest of their lives are spent in the water. Siegel's team recorded the seals' brain wave activity during their time on land and found that their sleep consisted of both REM sleep and slow-wave—or non-REM—sleep, similar to humans. The seals had about 80 minutes of REM sleep a day. But when they would go into the water, their average REM sleep fell to only three minutes a day.

Another aquatic mammal, the dolphin, has been known to sleep with only half of its brain at a time, which allows it to keep half of the brain awake to be wary of danger. Dolphins "show EEG changes when they're quiet, and it's always in just one half of the brain, either the right or the left side," says Siegel. "You'll have [brain wave] activity which looks like non-REM sleep in humans and other animals, but it's only in half of the brain."

The ability to power down half of their brains at a time evolved because dolphins cannot breathe underwater and so must be continually conscious in order to take breaths of air from the surface. While "sleeping," a dolphin might linger motionless near the surface.

Dolphins have never been observed turning off this function and sleeping with their whole brain at once, making fur seals the only mammal observed to alternate between sleeping with their whole brain and spending some time sleeping with half of it.

Alertness uncompromised

It might appear logical that seals would sleep for days and days upon getting to land, in an effort to make up the REM sleep they didn't have in the water. According to Siegel, however, they are as alert in the water as they are on land, despite the absence of REM sleep. "When they come back on land, they just go back to their prior amount of REM sleep during breeding season," says Siegel. "So it seems that being in water and having this hemispheric slow-wave pattern substitutes for REM sleep and makes REM sleep unnecessary."

Siegel's research challenges the popular idea about the function of REM sleep and its involvement in some cognitive tasks, at least in certain animals. On land, the creatures are lying around, sleeping and caring for newborns—definitely some work, but their lives are in much more danger when they're in the water. There, they have to look for prey, defend themselves from predators, and maintain social interaction with the group, beyond the mating that takes place on land.

"They have to be on the ball and yet doing this

MANDARIN DUCK

By resting on one foot, ducks and other waterfowl keep their bodies warm. Mandarin ducks sleep with one eye open. To limit energy consumption, they sleep more when temperatures drop.

without any REM sleep at all," says Siegel. He also points out that dolphins have among the biggest brains of any animals and don't experience REM sleep.

Researchers have found that the amount of REM sleep an animal has is related to brain temperature. Brain temperature decreases during non-REM sleep because less energy is being used, but it rises during REM sleep. "This is kind of like the way a thermostat controls the temperature of your house at night," says Siegel. "If the temperature goes down too much, the heater goes on until it reaches a certain temperature and then shuts off."

He explains that this process is the brain's way of attaining energy savings without reducing the temperature so much that the being is entirely unresponsive.

"When you wake up in the morning, if you wake up from REM sleep, you're typically quite alert. When you wake up from non-REM, you are relatively disoriented," says Siegel. "This is partially because your brain has cooled down, and it's not functioning at the highest level."

In the case of the fur seal, since only half of the brain is cooling—specifically, just the cortex—the brain doesn't become cold enough to trigger REM sleep. The animal is able to achieve a portion of the energy savings of non-REM sleep without the risk of being unresponsive.

Impact of hibernation

Animals do not experience REM or non-REM sleep when they hibernate. They go deeper and deeper into non-REM sleep until they're hibernating, a state in which they're almost completely unresponsive. These animals need to make sure they're in an incredibly safe place.

While bears are known to snooze the winter away, they're not true hibernators. During winter, black bears, grizzly bears, and brown bears go into a deep sleep known as torpor. Unlike true hibernators, an animal in torpor can wake up quickly and easily.

The best studied hibernator is the ground squirrel. If a lab has one hibernating in a refrigerator, where its brain stem remains cool, researchers can pick up the animal and it won't respond at all. That doesn't pose a serious risk to the squirrels in the wild, because their hidden burrows in the winter are safe.

The hibernator's body and brain can reach near-freezing temperatures. "It takes about two hours for the ground squirrel to get back to the point where it can defend itself," says Siegel. "But this is highly adaptive because it reduces energy consumption."

By studying animals in environments unlike our own, researchers will continue to explore what goes on in the animal brain in different conditions, and those insights may one day be applied to the human mind as scientists seek treatments for sleep disorders. ■

Elephants do much of their sleeping standing up.

CHAPTER 2

IMPROVING YOUR SLEEP

BEST BEDTIME PRACTICES / TRAVEL TIPS / MELATONIN AND BEYOND

15 Dos and Don'ts for Better Sleep

Certain things you do at night and all day long can help or harm you when you go to bed.

BY JENNIFER BENJAMIN & MAGGIE SEAVER

YOU CAN TAKE steps to improve your sleep not just when you're getting ready to turn in for the night or are already in bed, but also throughout the day. Here are some science-backed and expert-approved strategies for getting the full night's sleep that is so essential to your health and well-being.

Stick to a consistent schedule

We all have busy lives, and it's often tough to get to bed at the same time every day. Yet keeping a consistent bedtime and wake-up schedule is a top recommendation from numerous sleep experts. "It's critical to keeping your circadian rhythm in sync and should even be practiced on the weekends," says Michael Breus, PhD, a Los Angeles–area sleep specialist. If your sleep schedule is currently all over the place, the best way to start working toward a consistent and healthy pattern is to wake up at the same time every day (yes, Saturday and Sunday too!). Your body will gradually start to adjust itself to get sleepy at the same time every night.

Get enough daily sunlight exposure

In his book *Why We Sleep: Unlocking the Power of Sleep and Dreams*, Matthew Walker, PhD, director of the University of California, Berkeley's Center for Human Sleep Science, explains that "daylight is key to regulating daily sleep patterns." He urges everyone to go outside for at least 30 minutes for their daily fix of natural light. "Sleep experts recommend that if you have problems falling asleep, you should get an hour of exposure to morning sunlight and turn down the lights before bedtime," Walker writes.

Eat healthfully

Diets high in sugar and other simple carbs have been associated with lighter, less restorative sleep with more middle-of-the-night awakenings, according to research. "The mechanisms aren't totally clear, but spikes and rapid decreases in blood sugar levels may disturb sleep," says Marie-Pierre St-Onge, PhD, director of Columbia University's Irving Medical Center Sleep Center of Excellence. Excessive sugar consumption can also cause inflammation, and some evidence suggests this may throw off your internal body clock. The same clinical trial that fingered sugar as an enemy of sleep also found that participants whose diets were high in saturated fat spent less time in slow-wave sleep—the "restore and recover" type. St-Onge says inflammation could be at least one of the reasons here too. And if you're not sleeping well, ease off the spicy foods. They may bump up your core body temperature—which ordinarily dips by several degrees at night—and hinder sleep. Plus, they can make you more prone to acid reflux, which isn't conducive to peaceful slumber.

Resist napping after 3 p.m.

Sleep cycles are truly cycles. If you get a bad night's sleep, squeezing in a nap to take the edge off can certainly help. Unfortunately, though, indulging in a nap too late in the afternoon can make it harder to fall asleep at night, and can give you insomnia. If you can't get in a nap before 3 p.m., your best bet is to power through and go to bed a little earlier that night. (Turn to page 60 for more thoughts about napping.)

Exercise, but not too late in the day

Working out can improve your sleep quality, particularly if you work out in the morning or earlier in the afternoon. Evening exercise is OK too, but it should occur at least two to four hours before bedtime to give your body time to cool down before you go to sleep, says Breus. He recommends 20 to 30 minutes of cardio exercise a day to promote better sleep that night.

SLUMBER LINGO

Why do we talk about being "fast asleep"? It doesn't refer to how quickly you nod off: "Fast" comes from the Old German word "fest," meaning firmly stuck or unmovable.

During the day: Spend time outdoors, exercise, eat well, don't make a habit of napping. At night: Keep work and devices out of the bedroom, don't put off sleep.

Keep work and other stressors out

"Working in bed can decrease your quality of sleep, because it will become more and more difficult for your brain to distinguish between work space and rest space," says Nicole Avena, PhD, associate professor of neuroscience at Icahn School of Medicine at Mount Sinai.

If stress is keeping you up at night, take steps to minimize your worries before climbing into bed. "Make a to-do list of the things you'd like to achieve the next day so you don't stress about them at night," says Chelsie Rohrscheib, PhD, a sleep specialist at Wesper, a personal sleep analysis tool. "The brain quickly makes associations between your actions and your environment."

"Worrying, working, and even not sleeping in bed are best avoided," adds Alex Dimitriu, MD, founder of Menlo Park Psychiatry & Sleep Medicine in California. "Keep the bed for sleep and sex only."

Don't procrastinate

Sleep procrastination—also known as bedtime procrastination—is exactly what it sounds like: the decision to put off going to bed when there's no external reason for doing so. (When we say external reason, we mean injuries, illnesses, and emergencies that might keep you up later than intended.)

Sleep procrastination is what we do when we push back our bedtime to catch one more episode of that show we're binge-watching or scroll through Instagram one last time. It can take the form of a few minutes or several hours. While these moments may seem small and unimportant, over time they can add up to sleep deprivation.

"Sleep is like a bank account, and it takes time to build up and time to deplete," says Dimitriu.

Unplug before bed

If you want to ensure a deeper sleep and fewer racing thoughts after lights out, you need to power off phones, TVs, computers, and tablets at least one hour before bedtime. "The blue light stimulates the brain and keeps you alert, so I ask people to try to shut their screens down early," Breus says. (That includes devices with nighttime settings—they also emit blue light.)

If you must use a device at night, Breus recommends blue blocker glasses to filter out some of the wakefulness-inducing light waves on your screens.

Beyond the blue light issue, digital gadgets are simply too stimulating for anyone trying to get to sleep. How can you possibly sleep soundly after scrolling through stressful work emails, seeing what everyone's up to without you on Instagram, or reeling from a particularly thought-provoking article? If you're having trouble disconnecting, place your phone and laptop far away from the bed every night (preferably in another room).

Adjust your pillows

"Pillow up to arrange your body in proper alignment for sleep," states Colleen Louw, a physical therapist in Story City, Iowa. She says the easiest way to keep your body in proper alignment (or neutral spine)—your head, neck, and spine all resting in one line—is to use pillows to pad, prop, and act as bumpers.

If you sleep on your back with your knees out, your lower back is extended—put pillows under

your knees to offset the impact, says Louw. Stomach sleepers should place a pillow under the belly button or pelvis to help their lower back, because tummy sleeping keeps the neck and back in extension, which can restrict blood flow.

"I encourage side sleeping," Louw says. "You should have your shoulder on a flat pillow to prevent your upper body from rotating forward or backward." She also recommends side sleepers put a pillow between their knees and another between their ankles to prevent rolling forward or back, which twists the hips and shoulders.

Try 4-7-8 breathing

Close your mouth and inhale quietly through your nose for 4 seconds. Hold your breath for 7 seconds. Exhale completely through the mouth, making a "whoosh" sound, for 8 seconds. Repeat the cycle four to six times.

This bedtime breathing trick, known as the "4-7-8 method," has been popularized by Andrew Weil, MD, who's well known from his TV appearances and books. Weil likens it to a natural tranquilizer for your nervous system. He says to practice it nightly, as its effects are subtle at first and become stronger with consistent repetition.

Read until you can't stay awake

Janet Kennedy, PhD, a licensed clinical psychologist and sleep expert in New York City, recommends reading in bed to help you fall asleep. Though any book will likely do, she favors fiction. "Reading fiction gives the mind a place to go—away from the thoughts about the day and any anxieties," she says. "With the brain occupied, the body can take over with its natural fatigue and pull you into sleep."

Drift off to the sound of a story

If reading isn't your thing, that's OK. You can still be entertained while going to bed, thanks to apps that offer bedtime stories: A soothing voice lulls you with a meditative exercise and a little tale. There are a number of intentionally soporific podcasts with the sole purpose of putting listeners to sleep with soothing voices—or from sheer boredom. *Get Sleepy* and *Sleep with Me* are two favorites.

Don't stay in bed if you can't sleep

If you've been in bed for more than, say, 30 minutes and can't sleep, don't lie there and stew. Counterintuitively, it can be more helpful to get up and do something relaxing, like reading, journaling, light stretching, or meditating (no phones or TV, please!). Remaining in bed while anxious about your inability to sleep will only create negative associations between bed and sleep, which can even lead to the vicious cycle of insomnia. Your bed should be a sanctuary for sleep, not a trap for tossing and turning.

Trick yourself with reverse psychology

Kennedy has another potentially surprising tip: "Don't try to fall asleep," she says. Instead, try *not* to fall asleep, and then watch sleep come to you. In psychology, this technique is known as paradoxical intention.

Researchers once asked 34 insomniacs to test it out for 14 nights. Half the participants were asked to use paradoxical intention while the other half were not. The study concluded that "participants allocated to paradoxical intention, relative to controls, showed a significant reduction in sleep effort and sleep performance anxiety." Meaning, they fell asleep faster and with less stress.

Beyond this counterintuitive technique, Kennedy suggests, "if you're having trouble sleeping, stop trying and distract yourself until your body is sleepy again. Try deep breathing, reading, coloring, Sudoku—anything that takes your mind away from the frustration of not sleeping."

Quit looking at the clock

If you often wake up in the middle of the night, you know a digital clock can taunt you. When you see that it's 4:30 a.m., you immediately start doing the mental math, stressing about how many hours you have left to catch some zzz's. To sleep better, experts recommend turning the clock's face away from view to curb the anxiety that keeps you awake. ■

Additional writing by Nicole Clancy, Shaun Dreisbach, Lindsey Lanquist, and Stacey Leasca

A Natural Solution

Melatonin leads the way, but it's just one of several plant-based products in the "sleep aids" aisle.

BY ASHLEY ABRAMSON

IF YOU'RE FINDING a good night's rest hard to come by but would rather not resort to a prescription medication or over-the-counter antihistamine, familiarize yourself with non-pharmaceutical remedies, from herbal supplements and teas to aromatherapy and bath soaks.

With all the options available, it can be tough to pinpoint which one's best for you. Some natural sleep products are backed by more evidence than others regarding their efficacy. The FDA does not review supplements for safety and effectiveness before they are marketed, as it does with drugs.

Before you take any supplement, consult your doctor, who can make sure it's safe for you. Most herbs aren't likely to be harmful, says Brent Bauer, MD, director of research for the integrative medicine program at Mayo Clinic in Rochester, Minnesota, but some should not be taken with specific medications or by people with certain conditions.

Think of supplements as add-ons to healthy sleep habits, says Bauer. They won't be all that helpful if you're staring at your iPad for an hour before turning off the lights. To get the most out of your supplement, pair it with a stress-busting activity such as yoga, stretching, meditation, or deep breathing.

Melatonin

Melatonin

Among sleep aids, melatonin is in a category of its own, says David Nelson Neubauer, MD, associate professor of psychiatry and behavioral sciences at Johns Hopkins Medicine, because it's a substance that's already in your body. The hormone melatonin is associated with your circadian rhythm, or your body's 24-hour clock: It's released by the pineal gland (in your brain) as bedtime approaches, telling your body it's time to wind down.

As a supplement, melatonin comes in tablets, liquid, and gummies of 1 to 10 milligrams. Take the supplement an hour or two before bedtime, Neubauer says. The exact dosage isn't so important, he says, because melatonin's primary function is to signal the circadian system.

"Some studies show even a fraction of a milligram is sufficient to help with the ability to fall asleep better," he adds.

The supplement probably won't help if you're restless in the middle of the night—you need to take it before going to bed, as it doesn't usually have the fast sleep-inducing effect of prescription sedatives. "Melatonin is unique in helping to promote sleep by taking away the arousal rather than directly promoting sedation," says Neubauer.

Lavender

Shown in numerous studies to facilitate relaxation and improve sleep quality, lavender is the ingredient or scent of various products—candles, bubble bath, soap, and pillow spray, among them—marketed as sleep-enhancing or calming.

Alison Birks, a nutritionist and clinical herbalist based in Woodbury, Connecticut, says the important thing is to buy pure lavender products rather than synthetically scented ones.

Aromatherapy is one simple way to enjoy lavender's relaxing influence: Put lavender essential oil in an electronic diffuser to spread the aroma around a room or your home.

For a more potent effect, Birks suggests using an aromatherapy inhaler: Soak the wick—the small cottony rod that goes inside the inhaler tube—in lavender oil along with a carrier


Chamomile

oil, like fractionated coconut oil, and sniff the inhaler before bed.

Lavender tastes great, so it's often paired with other sleep-inducing herbs in sleep tea blends. To make your own, steep organic dried lavender in a tea strainer. "I'd combine it with chamomile, holy basil, or other good-tasting herbs, or use it on its own," Birks says.

She also suggests a lavender-infused bath before bed. Make your own soak by adding five drops of pure lavender oil to a cup of Epsom salts and mixing well with a spoon before pouring into a hot bath.

Valerian

In studies, people who took valerian for insomnia had an 80 percent greater chance of reporting improved sleep than those who took a placebo. This flowering plant's "leaves and roots promote healthy sleep and calm jittery nerves," according to the book *Houseplants for a Healthy Home* by master gardener Jon VanZile.

You can drink valerian tea or take a supplement, typically as a gelcap (which should work faster than a caplet). Valerian is also available as an essential oil, which you'd use in a diffuser.

Tinctures containing valerian are sold at natural foods stores and pharmacies, but you can make your own by soaking valerian root in alcohol—the beverage kind, not rubbing alcohol. You consume a tincture by the dropperful.

Birks recommends valerian to people who struggle to fall asleep after a stressful day, as it can also help with muscle tension. She cautions that for a small number of people, valerian can have a stimulating effect, so experiment with what's right for you.

Kava

Sold in tincture or gelcap form, the plant extract kava is known to reduce anxiety—if racing thoughts are keeping you up at night, it may be worth trying, says Bauer. However, he adds, you should be extra cautious with kava as some research has suggested it can cause serious liver damage.

"I always wait until other herbs aren't helping or if people are having a really rough time," Birks says. Other possible side effects of kava include digestive upset, headache, and dizziness.

Hops

Among Birks's favorite treatments for sleeplessness are hops, the flowers of the *Humulus lupulus* plant—in the hemp family—that are used in brewing to keep beer fresh (and give it a bitter taste).

Hops have mild sedative properties and can calm the central nervous system. "Most people benefit from hops and don't have problems tolerating it, and hops can also help to improve digestion," Birks says.

You can find hops capsules or buy a hops tincture. Birks recommends 40 to 60 drops of hops 20 minutes before bed; then, as you get sleepy, repeat the dose.

You can also reap the effects

aromatically. Buy hops at a local brewing supply store, add a few tablespoons to a small muslin bag, and keep it near your bed to smell for relaxation.

Passionflower

While many herbs help induce sleep, Birks says passionflower is especially useful for keeping you asleep—studies show it can increase sleep duration. "It's good for people who wake up several times a night worrying and can't fall back asleep or people who can't fall asleep after waking up early," she explains.

Tinctures with passionflower should be easy to find at a health food store. You can also grow it as a houseplant and make your own tincture or tea. Just make sure it's pure passionflower, not a hybrid, says Birks.

Passionflower tastes bitter, so blend it with other herbs in teas. You could mix it, for example, with chamomile and lemon balm, which itself can be mildly relaxing, especially when combined with other herbs. (Lemon verbena, a separate plant from lemon balm, also is calming, but Birks suggests it as a daytime stress-fighting herb since it's not likely to induce sleep.)

Chamomile

Most teas marketed for sleep contain chamomile, which Birks says has "mild but effective" relaxation qualities. If you're using tea bags, you'll need three or four—and cover the mug while it's steeping to help maintain the medicinal effects. But Birks recommends instead steeping two tablespoons of dried chamomile in six ounces of water for 7 to 10 minutes.

Chamomile is pleasant-tasting, but it's not for everyone: Birks says people allergic to ragweed, which is in the chamomile family, are sometimes also allergic to chamomile. Stop using it if it makes your eyes itchy or you have other allergy symptoms.

If allergy isn't an issue, you can use chamomile oil in aromatherapy. Other essential oils that might aid sleep include sandalwood, ylang ylang, and clary sage.

L-theanine

This naturally occurring amino acid—most notably found in green tea—can help stave off anxiety and enhance relaxation. "There aren't great studies that L-theanine has a direct effect on sleep, but if it helps you calm down a bit, it might help you sleep better," says Bauer.

L-theanine is available as an oral supplement. Just skip the green tea before bed, since most types are caffeinated.

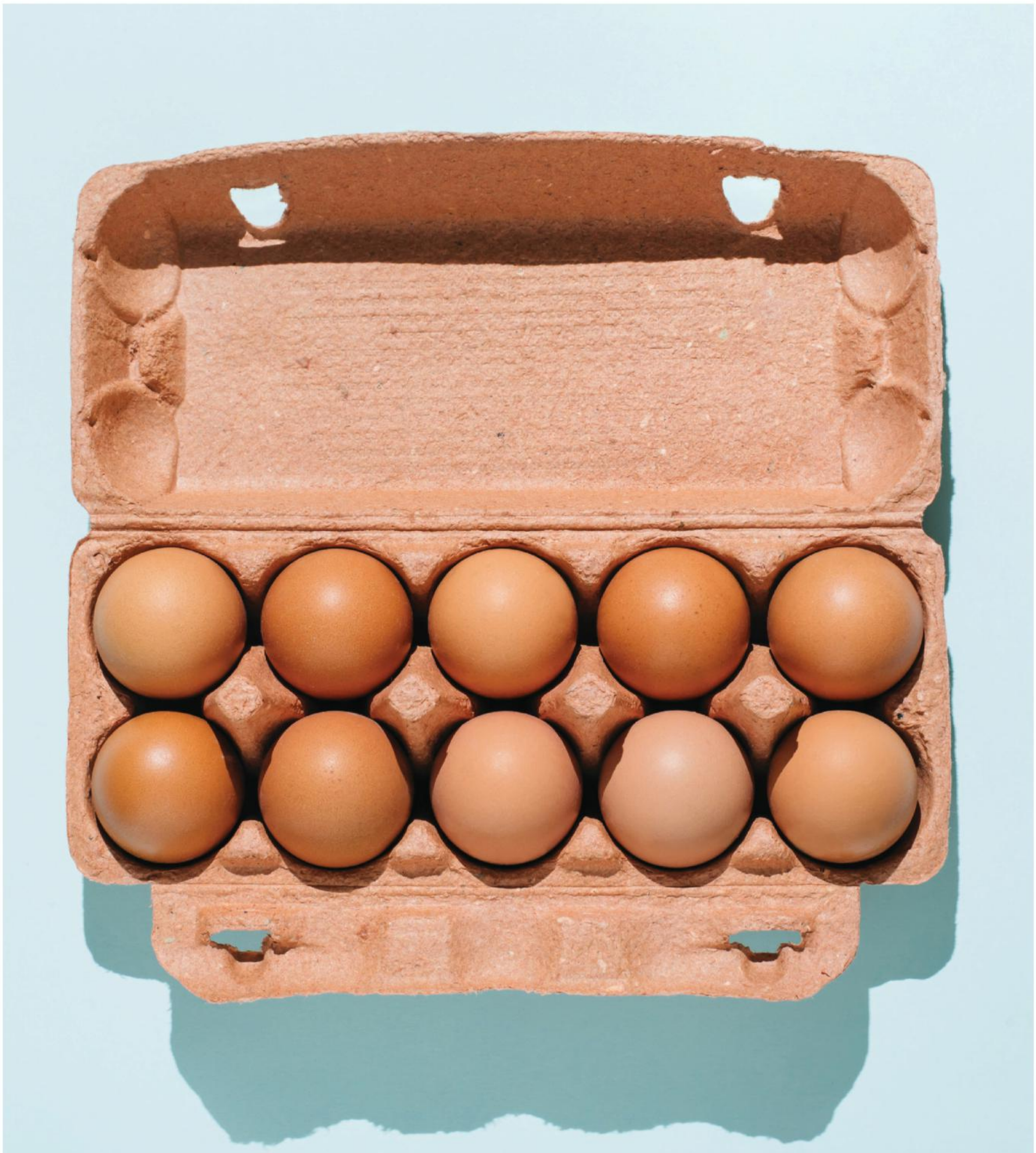
Curcumin

Curcumin, a compound found in turmeric, is widely touted for its anti-inflammatory properties. As a supplement, Bauer says it may indirectly help with sleep, especially if you toss and turn at night due to muscle or joint pain. Curcumin is available in tablet or capsule form. Another way to consume it, Birks suggests, is by adding turmeric and black pepper to warm whole milk or coconut milk and drinking it before bedtime.

CBD/CBN

Cannabidiol (CBD) and cannabinol (CBN)—both nonpsychoactive cannabinoids, or compounds produced by the cannabis plant—may be helpful with relaxation or sleep, although studies on how well they work as a sleep aid aren't solid. They are sold as capsules, gummies, oils, and tinctures. ■

CBD oil



Feed Your Sleep

What you eat during the day can be good for you at night. These are some foods that offer sleep-enhancing nutrients.

Yogurt

As a probiotic food, yogurt can increase the amount of healthy bacteria in your gut. That, in turn, may have an impact on your sleep cycle because a well-balanced gut microbiome keeps serotonin levels from dropping (most serotonin is produced in the gut). You may know serotonin as a "good mood" chemical, but it also plays a role in sustaining the body's circadian rhythms and facilitating sound sleep. Magnesium is involved with the regulation of your circadian rhythms too, and yogurt is a good source of this mineral.

Cereal

Carbs in general are conducive to sleeping, but for various health reasons, complex carbs—like those in whole, high-fiber cereals—are preferable to simple carbs such as sugary snacks and white bread. Or opt for oatmeal made from whole or steel-cut oats; it contains a neurotransmitting compound known as GABA (gamma-aminobutyric acid) that has a relaxing effect.

Bananas

Sleep-promoting nutrients in bananas include magnesium and potassium, both natural muscle relaxants. The fruit is also a good source of carbs, which help make you sleepy by activating tryptophan, the amino acid that produces melatonin.

Eggs

Egg yolks can be a good food source of vitamin D, a nutrient we don't usually get from any food (between 50 and 90 percent of our vitamin D comes from UV exposure, a.k.a. sunlight). Vitamin D has been linked to healthy sleep in research findings. Eggs are also one of the best non-plant-based food sources of melatonin—a key hormone in regulating your circadian clock—and the whites contain tryptophan.

Kiwis

Participants in a small study who ate two of the fuzzy-skinned fruits one hour before bedtime for four weeks slept significantly better and longer. More research is needed, but this is one where you can't go wrong: Kiwi is packed with serotonin, as well as antioxidants, potassium, and vitamin C. The latter can lower your stress hormones, which may ease sleep.

Cherries

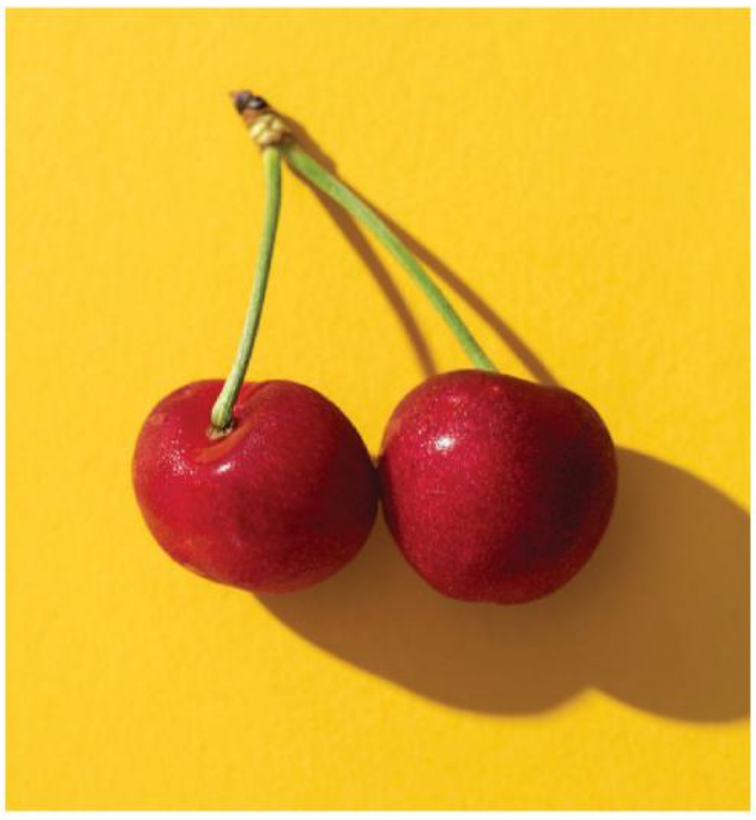
This beloved base for pie and jam has been cited as possibly aiding sleep, and it appears that tart cherries in particular are a good food source of melatonin. In a small study of people with insomnia, those who drank eight ounces of tart cherry juice in the morning and again at night increased their sleep time by an hour and 24 minutes more than those in the placebo group.

Nuts

High-fiber foods in general are beneficial for sleep, and nuts fall in that category. Cashews and almonds are notably high in magnesium. Almonds also contain melatonin, as do pistachios and walnuts. Those three types of nuts, along with cashews, are a source of tryptophan too.

Legumes

Another group of high-fiber foods favorable for promoting sound sleep would be legumes, such as chickpeas, lentils, white beans, and split peas. They're also an excellent source of iron, an essential mineral that's involved in certain chemical processes in the brain linked to sleep physiology. Peanuts, which are legumes (not nuts), are high in magnesium—another mineral that contributes to better sleep. In one study, older adults given 500 mg of magnesium daily for eight weeks fell asleep 12 minutes faster and stayed asleep 36 minutes longer than usual.



Key nutrients related to sleep and relaxation include magnesium, iron, potassium, and vitamins C and D.

Salmon & Other Fatty Fish

Salmon, trout, tuna, and sardines are called fatty fish because of their high concentrations of omega-3 fatty acids. Numerous studies have noted an association between consumption of these "good fats" and improved sleep quality and duration. In a 16-week study, children given 600 mg daily of DHA—an omega-3 mainly found in animal sources of food—slept nearly an hour longer each night, with an average of seven fewer awakenings, than before the trial. Fatty fish are also considered a sleep aid because they contain vitamin D and tryptophan.

Avocados

Omega-3s are found in avocados, and research shows that people with the most omega-3s in their diets have better sleep patterns than those who eat the least. "We know that they help with circadian timing. And they reduce inflammation in the body, which has been linked to better sleep," says Michael Breus, PhD, author of *The Sleep Doctor's Diet Plan*. Avocados also offer vitamin B6, used by your body to produce serotonin.

Spinach

Leafy green vegetables like spinach are the cornerstone of a good diet for many reasons. When it comes to sleep, those reasons include the magnesium and iron in spinach. "Magnesium calms you down," Breus says. "It's an anxiolytic—a substance that prevents and treats anxiety—so it helps you relax and allow the natural sleep process to take over." Meanwhile, in studies, iron deficiency has been correlated to more night wakings, shorter sleep, and disrupted stages of sleep.

Mushrooms

Our favorite fungi are a food source of melatonin and the only produce containing vitamin D. A meta-analysis of studies with more than 9,300 participants, published in *Nutrients*, found that low blood serum levels of vitamin D were associated with poor sleep, fewer hours of zzz's, and daytime drowsiness. Portabella and oyster mushrooms are higher in vitamin D than white mushrooms and shiitakes.

Artichokes, Leeks, Onions

Melatonin is produced in not only the brain, but also the gut, where it helps your organs sync up your circadian rhythms, says Arthur Beyder, MD, PhD, a gastroenterologist at Mayo Clinic in Rochester, Minnesota. To keep your rhythms steady, feed your microbiome prebiotic foods (the foods probiotics feast on), like artichokes, leeks, onions, and raw garlic. When bacteria digest these, they release byproducts that affect your brain, boosting sleep quality, according to *Frontiers in Behavioral Neuroscience*.

Sweet Potatoes

Along with providing sleep-promoting complex carbs and vitamin B6, sweet potatoes contain the muscle relaxant potassium. Other good sources of potassium include regular potatoes (baked, with skin on), lima beans, and papaya. ■

With reporting and writing by Shaun Dreisbach, Amanda Gardner, Adrienne Onofri, Marge Perry, and Marnie Schwartz

TRUTHS AND CONSEQUENCES

You've probably heard—or repeated—this common advice about sleep and eating or drinking. Is it accurate?

Wine and other alcoholic beverages help you fall asleep.

Fall asleep, yes, but not stay asleep. "The quality of sleep is going to be lower," says Frank Scheer, PhD, a professor at Harvard Medical School and director of the Medical Chronobiology Program at Brigham and Women's Hospital. The problem is that once the booze wears off, it has the opposite effect of a sedative—disrupting your sleep later in the night and cutting the amount of REM time you get. "Alcohol almost completely obliterates stages 3 and 4 of sleep, which are tied to immune and cognitive function," says Michael Breus, PhD, one of the country's leading sleep specialists. And the more you have, the worse it gets. His advice: Stick to one or two drinks max, and stop drinking three hours before bedtime.
—Shaun Dreisbach

Never eat close to bedtime.

A bedtime snack might help you sleep. Go for a combo of carbs and protein, and keep it light (under 250 calories), recommends Lisa Shives, MD, founder of Sleep Solutions, a telehealth sleep and wellness practice. While a big snack might activate your digestive process and keep you awake, a little oatmeal with milk, yogurt drizzled with honey, or a couple of crackers with cheese all make great snoozy snacks.
—Marge Perry

If you're concerned about being able to sleep, avoid coffee.

Caffeine is arguably the biggest culprit when it comes to poor sleep. First of all, it's a stimulant. Plus, research shows that caffeine suppresses melatonin production and blocks receptors for a chemical called adenosine, which induces sleepiness—both of which can negatively affect sleep quality and quantity. Caffeine also hangs around in your body long after you've gulped your morning coffee. Its half-life averages around five hours (but can be up to 10 hours), which means that if you have a cup of joe at 3 p.m., half of that caffeine will still be in your system at 8 p.m. or later. So Breus advises cutting off your caffeine intake at 2 p.m. to make sure it's cleared out by the time you go to bed. And remember, caffeine is also in tea, cola, and certain soft drinks. *—SD*

Turkey makes you sleepy.

Turkey does contain the amino acid tryptophan, which is a precursor to the calming neurotransmitter serotonin. But the amount isn't enough to send you off to dreamland. (Other foods, such as chicken, nuts, and seeds, contain at least as much tryptophan as turkey.) If you feel sleepy after your Thanksgiving feast, it's probably due to eating a large meal. That causes your body to divert blood flow from your brain toward your digestive system, which can leave you ready for a nap.
—Cynthia Sass, MPH, RD

Sleep Tips for Desperate Parents

Get ready to take back your nights with these ideas from sleep experts for putting your baby to bed.

BY KATE ROCKWOOD

1.

Spring into action at the first sign of sleepiness.

Timing is critical. Tuning in to your baby's natural biological rhythms—by reading her telltale drowsy signs—ensures that when she's placed in her crib, melatonin (the powerful sleep hormone) is elevated in her system, and her brain and body are primed to drift off with little fuss. If you wait too long, however, your infant can become overtired, so not only will she have lower melatonin levels, but her brain will begin to release wakefulness hormones like cortisol and adrenaline. This makes it difficult for your baby to fall asleep and stay asleep and can lead to early wake-ups. So don't miss these cues: When your little one is still, quiet, disinterested in her surroundings, and staring off into space, melatonin is peaking in her system and it's time to go to bed. *—Jenni June, a sleep consultant in Los Angeles*

2.

Drown out sound... with sound.

Blackout shades and a white noise machine transform a nursery into a womblike environment—and muffle the noise and light from outside. Half of a baby's sleep is REM (rapid eye movement). This is the light-sleep stage in which dreams occur, so it can seem as if almost anything will wake him: Your phone rings in the living room, you laugh too loudly at your Netflix show, you pull a tissue out of the box. But that is less likely to happen with a white noise machine running because the background noise covers it all. Some have timers, but I prefer machines that plug in so they stay on all night. I tell parents to test the volume by having one person stand outside the door and talk. The white noise should muffle the voice but not drown it out completely. *—Brooke Nalle, founder of Sleepy on Hudson consultants in Dobbs Ferry, New York*

3.

Don't give up on swaddling.

It's the first piece of advice I give to new parents, who often say, "I tried swaddling and my baby hated it." But sleep changes so rapidly in those early weeks that what she hates at four days might work at four weeks. And you'll get better with practice. It's common to swaddle too loosely the first few times or feel flustered if your baby is wailing. Believe me, it's worth another shot, as long as she's still too young to roll over. Try different types of swaddles, such as the Miracle Blanket—which wraps snugly around—or the Swaddle Up, which lets your baby keep her hands up by her face. Maybe make it a little tighter or leave one of her arms out. *—Linda Szmulewitz, a licensed clinical social worker and founder of Sleep Tight Consultants in Chicago*

4.

Drop the temp.

We all sleep best in a cool room, including babies. Aim to keep your thermostat between 68 and 72 degrees to give your baby the most comfortable sleep. If her fingers feel chilly, that's normal. To reassure yourself, put your hand on her chest. If it's warm, she's warm enough. *—Nalle*

5.

Prepare for quick changes.

Hunting for a fresh crib sheet after your baby soaks his diaper or spits up is miserable in the middle of the night, and turning on the lights can wake him up more fully, meaning getting him back to sleep can take an eternity. Instead, double-layer ahead of time: Use a regular crib sheet, then a disposable waterproof pad, then another sheet on top. That way, you can

just peel off the top layer and pad, throw the sheet in the hamper, and toss the waterproof pad. Also be sure to keep a one-piece, a swaddle, or a sleep sack nearby—whatever it is your baby needs to continue the night comfortably—so you're not hunting through drawers every time your baby's diaper leaks. *—Aimi Palmer, cofounder of AB Child Solutions in London*

6.

Take turns.

If you have a partner, there's no reason both of you need to be awake every time the baby is. Divide up the night. Maybe you go to bed at 10 p.m. and sleep until 2 a.m., and your partner sleeps the early-morning shift. Even if you wake to nurse, let your partner handle the diaper change before and soothe the baby after. This way you'll both get four or five hours of uninterrupted sleep, which makes all the difference. *—Nalle*

7.

Send an early riser to a new time zone.

Waking at 5 a.m. is rough, and it's one of the hardest things to fix. Parents often try making their baby's bedtime later, but what you really need to do is shift his circadian rhythm, as if he's flying (abroad) and needs to function in a new time zone. That means everything—lunch, the afternoon nap, bath—needs to move to a later time. If you shift them by 15 minutes each day, you can adjust his body clock in about a week. *—Nalle*

8.

Don't worry if naps are a hot mess.

Consistency is key, and the safest place for your baby to sleep is on her back in a crib. But many babies under 6 months don't nap best there, so don't beat yourself up if she falls asleep on your chest or in a carrier or a car seat (as long as you are alert and watching her) or if you wind up pushing a stroller around the block for 40 minutes so she'll get some shut-eye. You're not wrecking night sleep by letting naps be a little more haphazard in the first six months. Most babies don't start developing a real nap schedule until 5 or 6 months, and even then, some nappers will put up a fight and others will be way more flexible about napping on the go. *—Szmulewitz*

A consistent bedtime routine, usually involving a bath, can work wonders.

9.

Help her find her paci.

If your baby cries because she's hungry or wet, that's understandable, but waking up in the middle of the night because she can't find the pacifier is frustrating for all. You can teach her to find it on her own: Put a couple of pacifiers in one corner of the crib, and every time she loses one in the night, go in and help her reach for it herself by bringing her hand to that corner. This shows her where the pacifiers are, so if one goes missing, she can find another and get back to sleep. She should figure it out in about a week. *—Jodi Mindell, PhD, associate director of the Sleep Center at Children's Hospital of Philadelphia and author of* Sleeping Through the Night

10.

Master the four B's: bath, book, bottle, bed.

A consistent bedtime routine can work wonders. The order is up to you, but it usually involves a soothing bath, a story, and one last feeding. I also like to add a quick massage with lotion, gently squeezing and releasing the baby's knees, wrists, elbows, and shoulders—wherever there's a joint. Then you might do a final "closing up" of the nursery: "Now we turn out the light, now we start the white noise machine, now we sway beside the crib, now I lay you down"—and that's the signal that it's time to sleep. *—Nalle*

11.

Give yourself a break.

If you listen to your best friend, a cousin, or a neighbor talk about how their baby was sleeping through the night at 2 months, you'll just get stressed. Tune out the unhelpful comparisons as much as you can. To solve your own baby's sleep issues, you'll need a bit of observation, a bit of trial and error, and a lot of flexibility. It's so easy to feel as if sleep will never get better, but it does constantly change. Just because you have a terrible sleeper at 2 months does not mean you're fated to have a terrible sleeper at 2 years. *—Palmer*

IT WORKED FOR ME!

Real moms share the hard-won sleep hacks that helped them get a bit more shut-eye.

"I wait one minute."

A baby's cry can feel like a fire alarm in the middle of the night, but before you rush in, count to 60. Babies are really noisy sleepers—they're like little pterodactyls! Sometimes that gurgle or grunt or cry is just a night noise, and if you wait a minute, you'll find she's already gone quietly back to sleep. *—Lauren M., North Richland Hills, Texas*

"I won't fight in the dark."

The worst time to debate anything related to sleep with your partner is between 8 p.m. and 8 a.m. Middle-of-the-night wakings are so much worse if my wife and I are heatedly whispering about whether we should turn off the monitor or if the baby needs to eat. We finally made a rule: No trying out new strategies in the middle of the night, and no second-guessing whatever the plan is. If we think something's not working, we'll talk it out in the morning. *—Naomi G., Ann Arbor, Michigan*

"I avert my gaze."

Making eye contact in the middle of the night was like handing my babies a shot of espresso—it seemed to perk them right up and make them think it was daytime. As crazy as it sounds, I learned to avoid eye contact and not sing or talk. I keep the lights off or dim them. Once I started getting in and out of their room with as little stimulation as possible, I slashed in half the time it took to get them back to sleep. *—Shannon K., St. Johns, Michigan*

Up, Up, and Away... and Asleep?

Traveling can pose a challenge to sleep. Some hotels are addressing the problem, and you can too.

BY KELLY REED

LET'S PUT TO BED a one-size-fits-all approach to getting a good night's rest when you're traveling. The key is finding a routine that works for you.

"People vary a lot in their ability to sleep on airline flights. Some are never able to fall asleep, and others fall asleep before takeoff," says David Nelson Neubauer, MD, a National Sleep Foundation Board member and associate professor of psychiatry at Johns Hopkins Medicine.

"One good strategy to limit the effects of jet lag is to avoid starting a trip already sleep-deprived. Plan ahead, and don't lose sleep because of last-minute packing," he advises. "We all have prominent 24-hour rhythms coordinated by our brain's circadian clock. Our daily exposure to daytime light reinforces the timing of our circadian rhythm, but it does not shift instantly when we rapidly travel to different time zones."

The result, explains Neubauer, is "a mismatch between our internal cycle and the day-night timing of our destination that can lead to poor nighttime sleep, daytime sleepiness, and changes with other bodily rhythms. It can take a few days to just over a week to completely readjust, depending on how

many time zones we have traveled."

Stephanie Arnold, a diplomat for the U.S. State Department in Ivory Coast, frequently goes on long-haul airline trips and is very familiar with the symptoms of jet lag. A foreign service officer since 2005, she's been posted in Ireland and the African nations of Benin and Uganda, among other places.

"I try to catch as many zzz's as possible while on the plane," she says. "Once I reach my destination, I try to resist the urge to take a nap. Rather, I've found it's best to take a refreshing shower and try to keep going until it's a normal bedtime, or pretty close, in my new location." Many sleep specialists recommend adapting your schedule, including mealtimes, to the new time zone as soon as you reach your destination.

When traveling a long distance for work, Arnold likes to arrive two days before meetings are scheduled: "It's still likely that I'll wake up at an odd hour or be a little tired for a couple of days, but I've found this to be the best way to get back on schedule quickly and beat jet lag."

Arnold says she has "no special tricks" when flying, but notes that some people find a neck pillow, eye mask, or earplugs helpful for sleeping on an airplane.

There are other items travelers can bring with them to improve their sleep quality on planes or in hotels, says Neubauer. Since planes are often chilly and that might keep you awake, "I always have a flannel scarf in my carry-on luggage or will keep a sweater or jacket on my lap," he says, adding, "I may wear earphones or headphones, even when not listening to anything, just to block out sounds that might interfere with my sleep." He also mentions taking a small, portable white noise machine on your travels.

"Managing the light, noise, and temperature is important for creating an environment for the best possible sleep at a hotel," says Neubauer. Inquire at booking or check-in if a hotel has blackout curtains (to keep out natural light when you go to bed); light dimmers (softening the light in the evening signals your brain to wind down); and a responsive thermostat, which automatically adjusts based on movement sensors (so when you're in bed the room will be cooler, which is better for sleeping).

Last but not least, "the mattress and pillows can make a big difference," says Neubauer. "I'm always happy to see lots of pillows [in a hotel room], so I can choose whichever seems best for my head and have the others to arrange next to me for a comfortable position."

Managing the light, noise, and temperature is important for creating an environment for the best possible sleep at a hotel.

Let your concerns be known

He also advises: "Don't hesitate to contact the front desk if you have problems with annoying noises, difficulty with the lighting, or challenges with the room temperature. The hotel staff want you to have a comfortable stay, and that certainly includes good sleep."

While Arnold confesses that she can fall asleep easily on a plane, even in the coach section, she remembers a time when she had to stay awake while traveling on business with her husband, their two young children, and pets on long international flights.

"Sometimes my husband and I would take turns alternating between sleep and watching the kids. We usually found it worked best to trap the kids between us in the four seats in the middle section of the plane so they couldn't get out and run through the aisles," she says, admitting that flying "never gets easier."

When traveling for pleasure, Arnold seeks out hotels and resorts away from big cities and a lot of concrete. "My most memorable and relaxing trips by far," she says, "were those that were close to natural beauty—near the ocean, in the mountains, or at a safari lodge. The real secret to a restful and relaxing vacation, at least for me, is to get as far away as possible from the day-to-day hustle and bustle of a city and to get closer to nature."

Hotels in both cities and outdoorsy destinations have added sleep-boosting amenities to their guest services. Some properties provide items such as blue-light-blocking glasses, sleep masks, or weighted blankets, for example, or they allow guests to make their own selections from an inventory of pillows and mattresses.

In certain hotels, room service menus highlight foods rich in sleep-promoting ingredients like magnesium—the Equinox Hotel in New York City has featured a "melatonin smoothie" made with almond milk, bananas, and tart cherries—and a few high-end resorts have sleep coaches on call.

Sleep Inn, a franchise of Choice Hotels with 400-plus properties, gives guests access to the BetterSleep app, which has soothing sound mixes, meditations, and bedtime stories for adults. Sleep Inn began offering the app after a guest poll identified noise as the number one concern related to sleeping in a hotel, with 92 percent of

respondents saying they do worry about being able to sleep in hotels.

"We did research and found a noise-mitigating technology solution that helps guests fall asleep more easily and allows guests to track their sleep," says Mallory Boyle, Sleep Inn brand management director at Choice Hotels in Rockville, Maryland.

Enjoy upgraded bedding

Guest rooms at Sleep Inn hotels have beds with pillow top mattresses and lots of fluffy pillows (five on a king-size bed). The brand features a "Designed to Dream" theme that includes "Dream Tips" signage—sleep advice, such as "A daily dose of exercise early in the day may help you doze off right away" and "Give your bedtime a wake-up call. Consistency is key when it comes to winding down."

A 24-hour hot beverage station in the lobby includes chamomile tea, and decor and artwork are nature-oriented, as a connection to nature is believed to promote sleep. "We offer a calming space that is stylish and inspired by nature," says Boyle.

Another well-known hospitality group, Westin Hotels & Resorts, offers its signature Sleep Well program at 230 properties in nearly 40 countries. Amenities include pillow top mattresses, lavender balm, and sleep-enhancing "superfoods" on the in-room dining menu. The program extends to those traveling with pets: Dogs get cozy in a mini version of Westin's trademark Heavenly Bed.

Individual hotels, especially in the upscale market, have made a good night's sleep a guest service. The historic 122-room Hermitage Hotel in Nashville, for instance, offers an extensive choice of memory foam, buckwheat, and down pillows, along with exclusive Hermitage mattresses, which are made by the bedding supplier to the British royal family, per the hotel's website (you can buy one for your home starting at $3,899 for a twin-size bed).

The Benjamin, a 209-room boutique hotel in New York City, hired a sleep specialist to develop a Rest & Renew program. Adult guests are offered white noise machines, a large collection of specialized pillows, aromatherapy oils, and guided meditation sessions complete with cushions and candles. Children get bedtime storybooks and kid-size pillows. ■

To Nap or Not to Nap?

Forty winks might help if you're dragging during the day, and a study even showed heart health benefits, but napping should be done only in limited circumstances.

NAPPING IS QUITE a divisive topic among sleep specialists: Some are opposed to it except for rare occasions, but others think it's A-OK to snooze during the day, with a few caveats attached.

Those who condone naps cite their potential benefits. "Napping can be a great tool to enhance alertness and productivity in the afternoon," says Rebecca Robbins, PhD, a sleep scientist and instructor in medicine at Harvard Medical School, who points to research that reveals napping may even boost short-term and muscle memory.

The key is to set your alarm and stick to it: 20 to 25 minutes is an ideal power nap—you'll avoid entering deep sleep and feeling groggy upon waking or having the nap interfere with nighttime sleep patterns.

On the occasional day when you're totally beat, a longer nap is fine for playing catch-up. "If you're sleep-deprived from a long week of short sleep or a night of partial sleep deprivation, a 90-minute nap is recommended," Robbins says. For the most benefit, take your nap about halfway between your morning wake-up time and bedtime.

Beyond reducing stress levels during the day, napping may strengthen your immune and cardiovascular systems. A Swiss study published in the journal *Heart* in 2019 revealed that napping in moderation—meaning, one or two times per week—could help reduce the risk of heart disease.

Over five years, nearly 3,500 adults reported how often and for how long they napped. The study's authors also analyzed the incidence of both fatal and nonfatal cardiovascular disease (CVD) among the participants. In the end, 155 people in the study reported heart issues, and researchers "observed a significantly lower risk for subjects napping one to two times weekly for developing a CVD event compared with non-napping subjects."

The National Sleep Foundation says a 10- to 30-minute nap (that's not too close to bedtime) is ideal for restoring alertness, boosting performance, and simply soaking up some "you" time. However, the closer to 30 minutes you nap, the higher the likelihood of grogginess upon waking.

One sleep expert who is firmly anti-nap is Michael Breus, PhD, author of *Good Night: The Sleep Doctor's 4-Week Program to Better Sleep and Better Health*. "Generally speaking, napping is not the answer," says Breus. "It's going to lower your sleep drive and make it difficult for you to fall asleep at night."

A better strategy if you need an energy boost is to take a walk outside (the combination of exercise and daylight can increase alertness) or have some caffeine if it's before 2 p.m.

Breus says a nap would only be appropriate if, for instance, you slept just five hours the night before and have a big presentation for which you need to be "on." He especially counsels against napping if you have insomnia. ■

Contributing writers: Petra Guglielmetti and Maggie Seaver

Anywhere You Lay Your Head...

Taking stock of some alternative sleeping situations

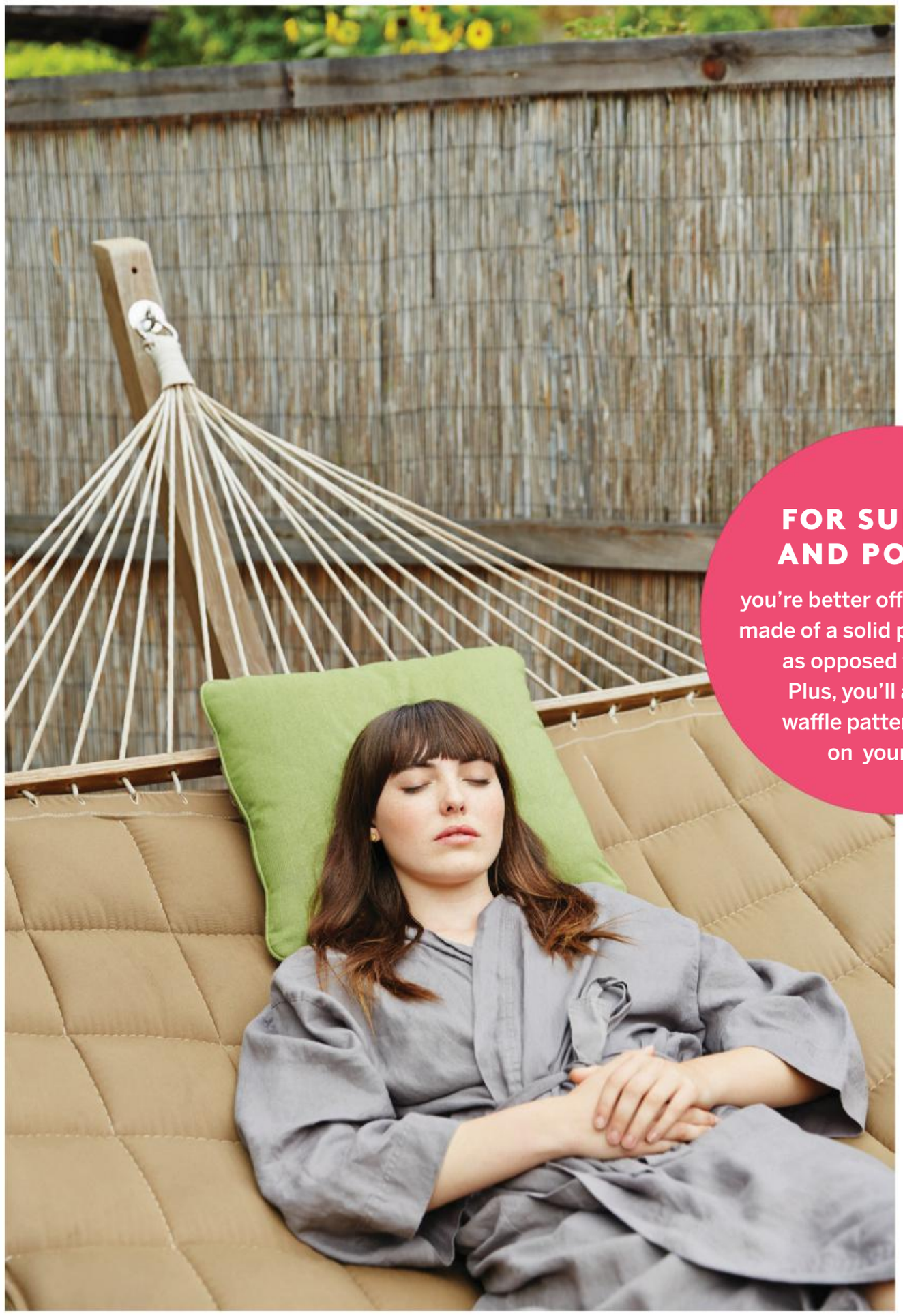
BY ADRIENNE ONOFRI

SOFA ONLY SO GOOD

Dozing off on the couch is a nightly ritual for some people—though they eventually get up and go to bed. And in most cases, that's a good idea. The Sleep Foundation generally advises against lying on a couch all night since, unlike mattresses, sofas are not designed to support the reclining body. You could end up with back or neck pain because sofa sleeping is not usually conducive to proper spinal alignment. A couch *can* make it easier to sleep with your head or upper body elevated (on the armrest), which may be desirable if you have a respiratory or digestive issue such as obstructive sleep apnea or gastroesophageal reflux.

"The quality and quantity of your sleep in large measure determines the success of your waking life."

—James B. Maas, PhD, author of *Sleep to Win!* and *Power Sleep*

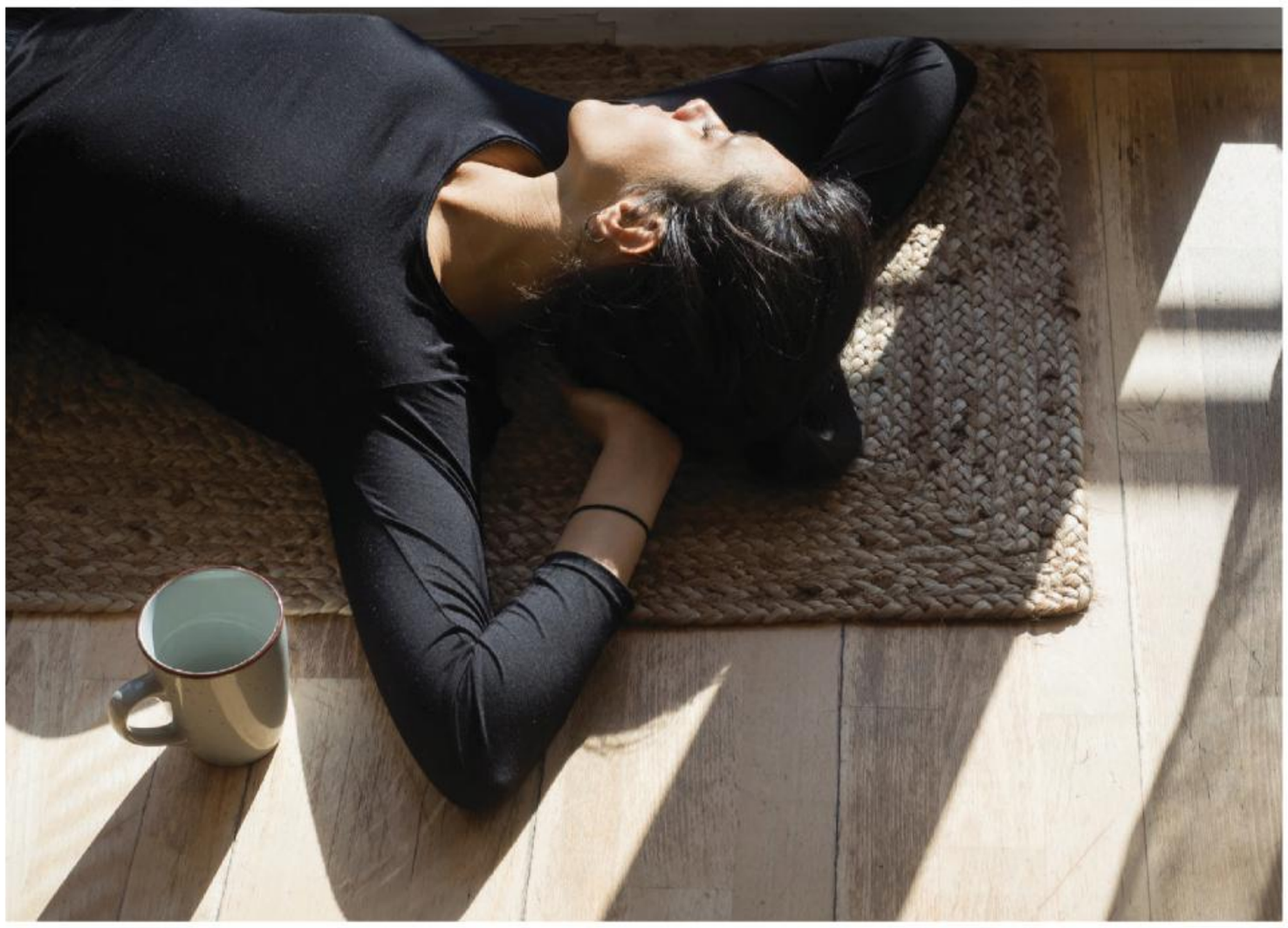


FOR SUPPORT AND POSTURE

you're better off in a hammock made of a solid piece of canvas as opposed to netting. Plus, you'll avoid that waffle pattern pressed on your skin!

SWING AWAY

Sure, Gilligan and the Skipper slept in hammocks during their time on the island, but for many of us they're strictly for backyard relaxing or resort-vacation luxuriating. While the swinging may lull you to sleep, it can be tricky getting in and out of a hammock or changing position once you're in one. A 2011 Swiss study did find that people fall asleep faster and spend more time in deep, non-REM sleep in a hammock versus a bed—but the study involved only 12 participants.



HIT THE GROUND

Orthopedists and other doctors often recommend a firm mattress if you have back pain, and virtually no mattress would be as firm as the floor. Some people with back pain swear by sleeping on the floor for relief. But debate persists over whether the floor eases or aggravates back pain. The argument against it: The floor is *too* hard, lacking the cushioning for shoulders and legs that a mattress provides. In one study published in 2016, more than half the subjects reported stiffness from sleeping on the floor. Indeed, research has suggested that medium-firm rather than firm mattresses provide more relief for lower back pain. Whether you sleep on the floor because of your back, cultural tradition, penchant for minimalist design, or another reason, make sure it's clean: You don't want to snooze near dust and other allergens.

DEBUNKING THE BUNK

Bunk beds offer more variety than the spartan metal models you might associate with summer camp or college dorms (or prison). Beds of different sizes may be "bunked," and they can be perpendicular rather than parallel. The convertible kind can be separated into individual beds. On some units, the higher bed is set back, so it's not directly on top of the lower one. A bunk bed doesn't necessarily have only two beds either; there are also triple bunk beds. Bunk beds might incorporate storage space, a desk, or other furniture. You can even get one with a slide or climbing rope, for extra fun in accessing the upper bunk. No substantial research exists on whether it's more beneficial to sleep on the top or bottom bunk—either way, there's the risk of sleep being delayed by a whisper in the dark: "*Psst,* you awake?" And bedtime may bring a fight over who gets the top bunk.

CHAPTER 3

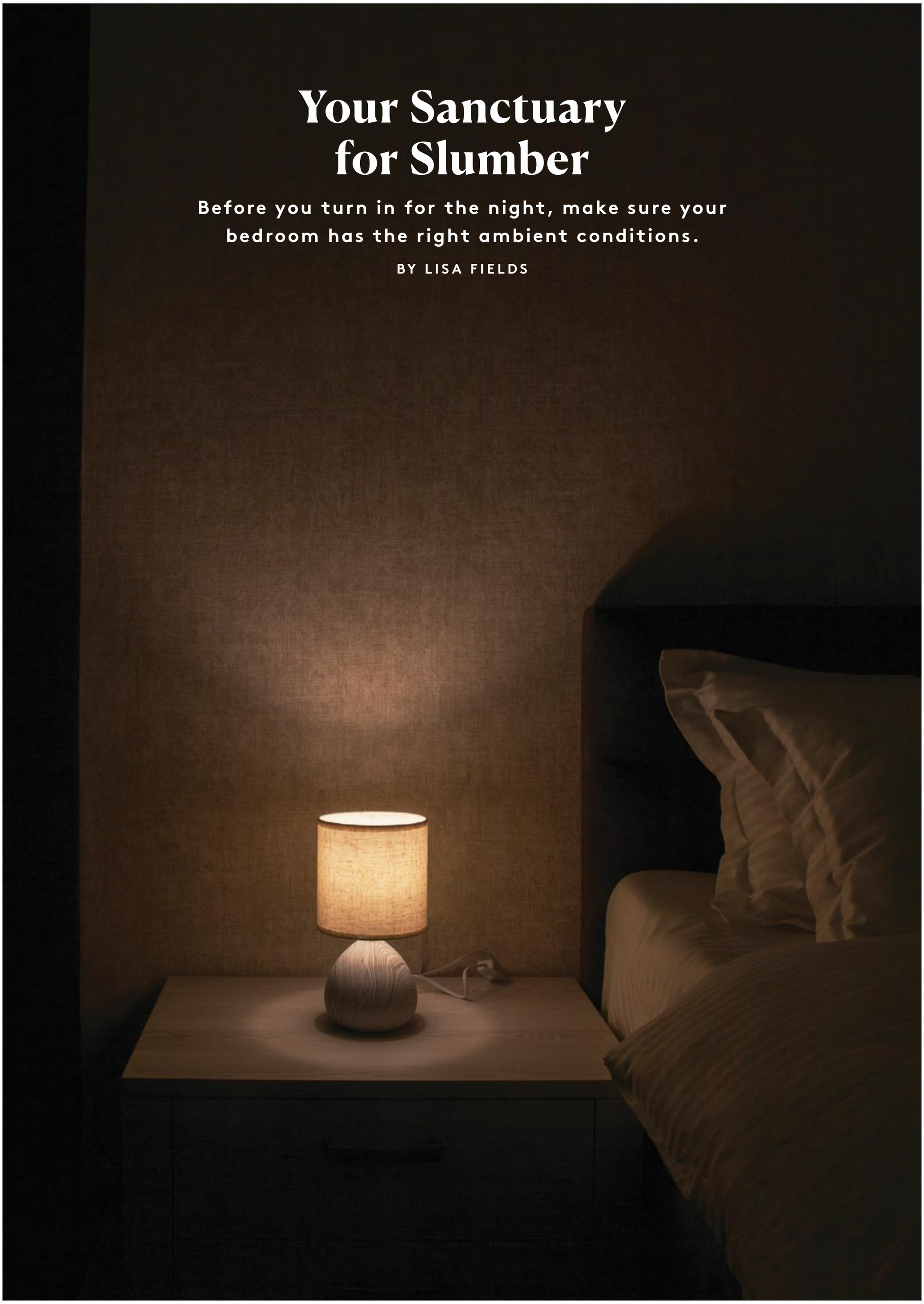
GETTING READY FOR BED

A ROOM MADE FOR SNOOZING / SLEEP TECH / RELAX AND STRETCH

Your Sanctuary for Slumber

Before you turn in for the night, make sure your bedroom has the right ambient conditions.

BY LISA FIELDS



TO MAKE YOUR nighttime environment favorable to sleep, your bedroom should be...

Cool

Your body temperature naturally drops as you drift into sleep, so cooling down your bedroom can jump-start the process and make it easier to sleep. Most experts advise setting your thermostat 5 to 10 degrees lower than your average daytime temperature.

"It's different for every person, but your bedroom should probably be under 70 degrees," says Joyce Walsleben, PhD, co-author of *A Woman's Guide to Sleep*. Menopausal women experiencing hot flashes—or those who like to bundle up in blankets—may want to aim even lower.

Dark

Your body is programmed to sleep when it's dark, so you can encourage that rhythm by easing into nighttime. Light inhibits the secretion of melatonin, a hormone that naturally promotes sleep.

"Even if you doze off, light can be detected through your eyelids—and your brain won't produce melatonin if it's confused between night and day," says Walsleben. "You want as much darkness in your bedroom as you can handle without tripping over things."

Dim the lights while you get ready for bed, or turn off any bright overhead light and switch to a soft bedside lamp. Hide digital clocks and glowing electronics from view. Put a night-light in your hallway or bathroom in case nature calls at 2 a.m.—that's better than turning on a ceiling light, which would disrupt melatonin levels. And if a street lamp or moonlight shines in from outside, consider installing window shades or wearing a sleep mask.

Calm

The more clutter and distractions you're up against at night, the harder it will be to transition into sleep.

Get rid of anything stimulating that distracts from the room's main purpose: sleep. That means no treadmill, no television or computer, and no reminders of anything stressful.

Adding personal mementos, calming color schemes, and soothing sights and sounds—a tabletop water fountain, for example—will also make your bedroom a more inviting place to rest and relax.

Quiet

As your body transitions through different stages of sleep, unexpected noise may wake you during shallower cycles; your brain attends to those sounds, and this interferes with the quality of your sleep.

IF YOUR BEDROOM HAS BECOME YOUR OFFICE

A cluttered bedroom can keep you up at night. "If the bedroom is full of stuff when you walk in at night, most people feel guilty," says Pamela Thacher, PhD, a clinical psychology professor at St. Lawrence University. "Your brain thinks it's time to ignore the clutter—which takes mental effort—or fix the clutter, which takes physical effort." Working from home has made matters worse. "Often the most private, quiet place to work is your bedroom," Thacher says. "Now you've got a laptop and papers in there creating more clutter." To restore order, get rid of what you don't need, she says. Straighten your work space at night to signal that the workday is over. Finally, "try to separate your bed from your work area," she says. "Maybe put up a Japanese screen to create a boundary between the two. That tells your brain that your sleeping space is peaceful and sacred."
—Pam O'Brien

"To encourage deep and restful sleep, your bedroom should be a cocoon."

—Joyce Walsleben, PhD, co-author of *A Woman's Guide to Sleep*

If your bedroom is victim to unwelcome sounds of ambulances, fighting cats, or whipping winds, a thick rug and heavy blinds might help buffer the noise. If not, try a white noise machine or earplugs to drown out disruptions. If you fall asleep to music or podcasts, use a player with a "sleep" function that shuts down automatically after 30 or 60 minutes.

A dead-silent room could be *too* quiet for sensitive or anxious sleepers. "When you're in complete silence, your hearing becomes more defined and your brain starts looking for sounds, so the slightest one can disturb your sleep," explains Michael Breus, PhD, a clinical psychologist and sleep specialist in Manhattan Beach, California.

A white noise machine would be helpful in such a situation too, because it smooths out the sound level by introducing monotonous background noise. Any background noise that helps you fall asleep should be fine—the key is sticking to uniform, uninteresting sound.

Clean

Tidy up your bedroom. A neat space reduces stress and helps put your mind to rest.

You want the air in your room to be clean also. Research shows that the quality of air you breathe all night long can affect your sleep. "Particulate matter and allergens may lead to inflammation and mucus production that disrupt sleep," says Martha E. Billings, MD, a pulmonologist at UW Medicine in Seattle.

Regular dusting and vacuuming make a difference in air quality, as does replacing the filter in your HVAC system every three to six months. Fresh air helps too; one study showed that better ventilation in dorm rooms overnight improved alertness among college students the next day.

Make it a habit to open the windows for a few minutes before bedtime to help flush out volatile air particles. Also consider investing in an air purifier, especially if you have allergies, wake up congested, or blow your nose throughout the night.

The filter inside an air purifier neutralizes unhealthy particles such as pollutants, allergens, and toxins (like chemicals in household cleaners that have been used in the room).

Accommodating

Lying in bed tossing and turning or reading for hours makes you associate bed with being awake. Shelby Harris, PsyD, a clinical psychologist in White Plains, New York, specializing in behavioral sleep medicine, recommends setting up a sitting or resting area (simply a chair with a soft light over it) for reading, listening to music, or meditating. If you wake up and can't get back to sleep in about 20 minutes, go to that spot to wind down, then return to bed when you start feeling drowsy. ■

Additional writing by Petra Guglielmetti and Marty Munson

CREATING A FENG SHUI BEDROOM

When a bedroom is designed according to feng shui concepts, it is a peaceful and balanced environment that promotes a better night's rest, says feng shui consultant P.K. Odle. Like acupuncture, feng shui is a Chinese practice based on the *I Ching* (in English: *Book of Changes*), an ancient manual that "acknowledges that everything is energy," says Odle. Some people believe that every building has an unseen "energy blueprint," determined by its magnetic orientation and when it was built. Implementing feng shui relates to decorating and placing furniture to create positive flow, Odle says. If you'd like to try it out, here are a few tips.

The Bed

Your bed should be positioned so when you're in it, the top of your head is near a solid wall. "Or at least toward a wall with a closed window that doesn't have any drafts," says Odle. "This position is to reduce the movement of...energy above your head." If your bed cannot fit right up against a wall because of floor molding, Odle suggests keeping the door closed or a few inches ajar when you're lying in bed. As for the bed itself, a solid wood frame or upholstered headboard is best for feng shui, as opposed to one with multiple panels, open bars, shelving, or storage space.

Colors and Mirrors

Try to avoid primary colors—and in particular reds, blues, purples, and black. "They can trigger major problems depending on the feng shui energies of the space," Odle says. Look for furniture, bedding, and accessories that are neutral in color—calming without being uninteresting, such as muted shades of blue, pink, and taupe.

A feng shui bedroom would not have a mirror, because mirrors reflect light and thus make the energies of the bedroom very active, says Odle. "This causes delays in going to sleep after lights out, because you are waiting for the bedroom's energies to become more still."

Elemental Remedies

Complement your bedroom with decor that correlates to the five elements: water, fire, earth, wood, and metal. You could keep a plant in your bedroom for wood, decorate with objects made of earth or metal, or include some type of water feature. You don't necessarily have to have all five of the elements represented in each room, Odle says. —*Amanda Lauren*

The Bed of Your Dreams

Organic linens, cooling pillows, and more: Tailor your bedding to your wants and needs.

BY ADRIENNE ONOFRI

OF ALL THE ADVICE on how to sleep better, the most basic may be: Make sure you're comfortable. And that happens right in your bed.

Not so long ago, bed comfort meant choosing between "soft" and "firm" for your pillow or mattress—oh, and something about thread count in the sheets? The conversation pretty much ended around there.

These days, however, you have a world of options for all your bedding products, and they take many factors into consideration—not just firmness, but also temperature, allergy sensitivities, weight, even sustainability. The marketplace has also expanded with the rise of online retailers of mattresses, pillows, and linens—the bed-in-a-box brands, which include Casper, Marlow, Brooklinen, Luma Sleep, and Brooklyn Bedding.

To begin with, if you'd like a roomier bed, remember that in addition to the four main sizes—twin, full, queen, king—you can find "long" beds, most commonly in twin size, that add about five inches head to toe. Then there's the California king, which is four inches wider than a king (but four inches shorter).

Read on to familiarize yourself with some of the choices you have for making your bed just the way you want—and need—it to be for your best sleep ever.

Get smart

You have a smartphone, a smart TV, a smart car—now it's time for a smart mattress. That would be one fitted with sensors that monitor aspects of your sleep, like what position(s) you're in, how often you awaken, and when you pass through each stage of sleep.

The sensors also cue adjustments to the mattress while you sleep—its temperature, perhaps, or firmness or elevation at the top or bottom—and often work

in conjunction with an app so you can track what's going on throughout the night.

Smart beds may also log your biometrics, such as temperature, heart rate, and breathing pattern. There are smart bed frames (bases) too, where all tracking and adjusting are done in the frame rather than the mattress.

Not all smart beds have the same capabilities, and many brands offer a line of smart mattresses or bases where the price increases according to the complexity of features included. Regardless, the core principle is to customize your nighttime, helping you identify what might be disrupting your sleep and ensuring the comfort and environment match your particular needs and habits. Among the companies well known for smart beds are Eight Sleep, GhostBed, ReST Bed, Sleep Number, and Tempur-Pedic.

Go green

Maybe your priority in mattress shopping is not so much personalizing your experience as saving the environment. That's where organic and sustainable bedding come in—not just mattresses but pillows, sheets, and blankets as well.

This category too encompasses a range of possibilities: A company might source organically raised cotton and wool or deal only with fair-trade suppliers, or their environmental-minded practices could extend to, say, making mattress and pillow filling from recycled plastic, prohibiting chemicals in the manufacturing of materials in its products, or using nontraditional material (like hemp or eucalyptus) that has a less harmful impact on the environment when processed. Prominent players in the organic/ethical bedding market include Avocado, Boll & Branch, Buffy, Coyuchi, SOL, and Under the Canopy.

Bamboo has emerged as a popular eco-friendly material for bed linens, as it's far more sustainable to grow than cotton. Bamboo also is considered naturally hypoallergenic and temperature-regulating, and bamboo sheets are usually softer than all but the highest-thread-count cotton sheets (they typically last longer too). Cool-jams, Cozy Earth, Layla, and Sweet Zzz are a few bedding brands offering bamboo linens.

Most bamboo sheets on the market are made of bamboo rayon, also called bamboo viscose—processing this fabric is actually very taxing on the environment, because of the

chemicals involved. But it's generally cost-prohibitive for companies to use natural bamboo, a.k.a. bamboo linen, which is processed without chemicals.

Ettitude claims to be the only bedding brand that sells sheets made from bamboo lyocell, which is manufactured without toxic chemicals and uses less water and energy to process.

Once upon a mattress

A bedding feature predating sustainable or smart is memory foam, which was famously engineered for seat cushioning in NASA aircraft and later adapted by the sleep industry for mattresses and pillows.

Before memory foam came on the market a few decades ago, coil springs and traditional foam were the predominant components inside mattresses; memory foam made the mattress softer and more accommodating, since it molds to your body, even as you move during sleep.

It tends to trap heat, though, and that led to the introduction of gel memory foam—the mattress is made partly of gel particles to enhance air circulation and keep the bed cooler.

An additional choice you have is a hybrid mattress, made of both memory foam and innersprings and designed to maximize softness and support. This addresses some people's dislike of the "sinking" feeling they may get from the mattress's contouring properties.

These various types of mattresses are all available in pillow top versions, where the top of the mattress is a padded layer for extra softness.

The hot zone

Bedding manufacturers have been paying more attention in recent years to temperature issues, focusing on improving the airflow and breathability of the material in their products so you can sleep at a consistently comfortable temperature.

Major companies like Beautyrest, Sealy, and Serta have added cooling pillows to their inventories, and smaller firms specialize in temperature-regulating bedding.

While gel is probably what's most commonly used to make pillows cooling, other things such as graphite, copper, even volcanic sand particles (which apparently disperse heat) are integrated into the material of various pillows to keep you from sweating excessively in bed.

Cooling technology is used in other bedding products, including mattresses and mattress pads, or toppers. One distinction to make is between a pillow or mattress designed to stay cool—all you need to do is sleep on it—and the kind on which you can adjust the temperature manually throughout the night.

Several mattresses in the latter category allow you to adjust the temperature separately for each side of the bed, so both people who sleep in the bed can be comfortable even if they have different temperature preferences. This feature is also available in blankets.

Some bedding companies have been developing innovative and proprietary technology for temperature control. ChiliSleep, for example, deploys hydropower: You use a remote control to alter the temp of the water coursing through narrow tubes within the mattress pad or blanket.

Weight for it

For a long time, the only option among blankets if you wanted to get more snuggly in bed was a heated one. Now people are turning to weighted blankets—for psychological as well as physical comfort.

Weighted blankets get their additional heft from tiny pellets or metal chains that are interspersed among the fibers. They come in weights from 2 or 3 pounds all the way up to 40 or more pounds; experts recommend picking one that's about 10 percent of your weight.

The purpose of a weighted blanket is to simulate a hugging or swaddling, so it's another level of comfort. But research has shown weighted blankets can have therapeutic effects: One study found that people with insomnia slept longer and moved around in bed less when they used weighted blankets versus regular blankets, while another said that 60 percent of participants (all of whom were concurrently hospitalized for mental health treatment) reported significantly reduced anxiety after using a weighted blanket.

Bearaby is one brand specializing in weighted blankets, but many bedding companies now have weighted blankets in their product lines. Those whose weighted blankets are generally highly rated include Gravity, Uttermara, Yaasa, and YNM.

Weighted blankets may be too warm for so-called hot sleepers, although companies have begun making cooling weighted blankets.

If you are a hot sleeper, you can also look out for the term "moisture-wicking." Often seen on athletic wear but becoming more prevalent as a bedding quality, moisture-wicking applies to material that can wick away—or draw off—perspiration and dry quickly.

If you are a cool sleeper, consider sateen sheets. This luxurious-feeling fabric—the closest you can get to satin without paying the price—tends to retain heat because of its tight weave.

Pillow power

Another word you may see in the bedding department is "cervical," referring to pillows and mattresses that provide special support for your neck (otherwise known as your cervical spine). A cervical pillow is lower in the middle than on the sides, creating a cradle of sorts for your head and neck.

You also need to consider your sleep position when buying pillows: If you sleep on your stomach, choose softer, flatter pillows; if you sleep on your back, medium but contouring is good (avoid a big pillow under your head—it can put pressure on the spinal discs in your neck). If you sleep on your side, go with something plumper.

Some brands, such as Infinite Moon, sell pillows with extra fill, allowing you to adjust the height of your pillow.

Because you spend nearly a third of your time in bed, your mattress is the most important health care product in your home.

Another pillow tweak that could enhance your sleep is using a spray. Lavender is a popular ingredient in pillow sprays, due to its sleep-promoting properties, but you can find sprays containing chamomile and other essential oils. Some people like to spritz their pajamas with pillow spray.

All these bedding choices might overwhelm you when you're shopping—but do not rush or make a decision based purely on cost, if avoidable. As Terry Cralle, RN, a clinical sleep educator in Washington, DC, put it in *Health* magazine: "Your mattress is the most important health care product in your home." That's because you spend nearly a third of your time in bed.

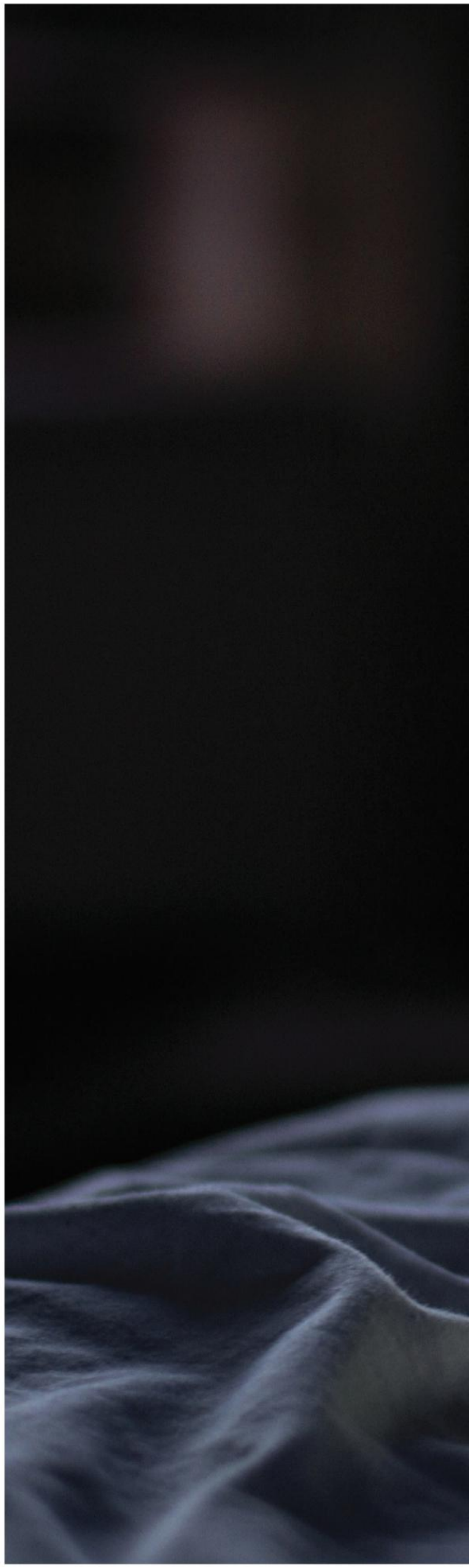
Sleep experts also caution that many people use the same pillow or mattress for too long. Changing your pillow every year is not unreasonable and should definitely be done at least every other year; they get worn out and possibly germy.

And while mattresses may come with a 20-year warranty, you probably should start thinking of replacing them after 7 to 10 years, according to Cralle. The mattress could lose support, and you could need a softer one as the years go on. ■

Next-Gen Sleep

Technology is transforming common bedroom electronics and creating an array of new sleep-related devices and apps.

BY NICOLE CLANCY



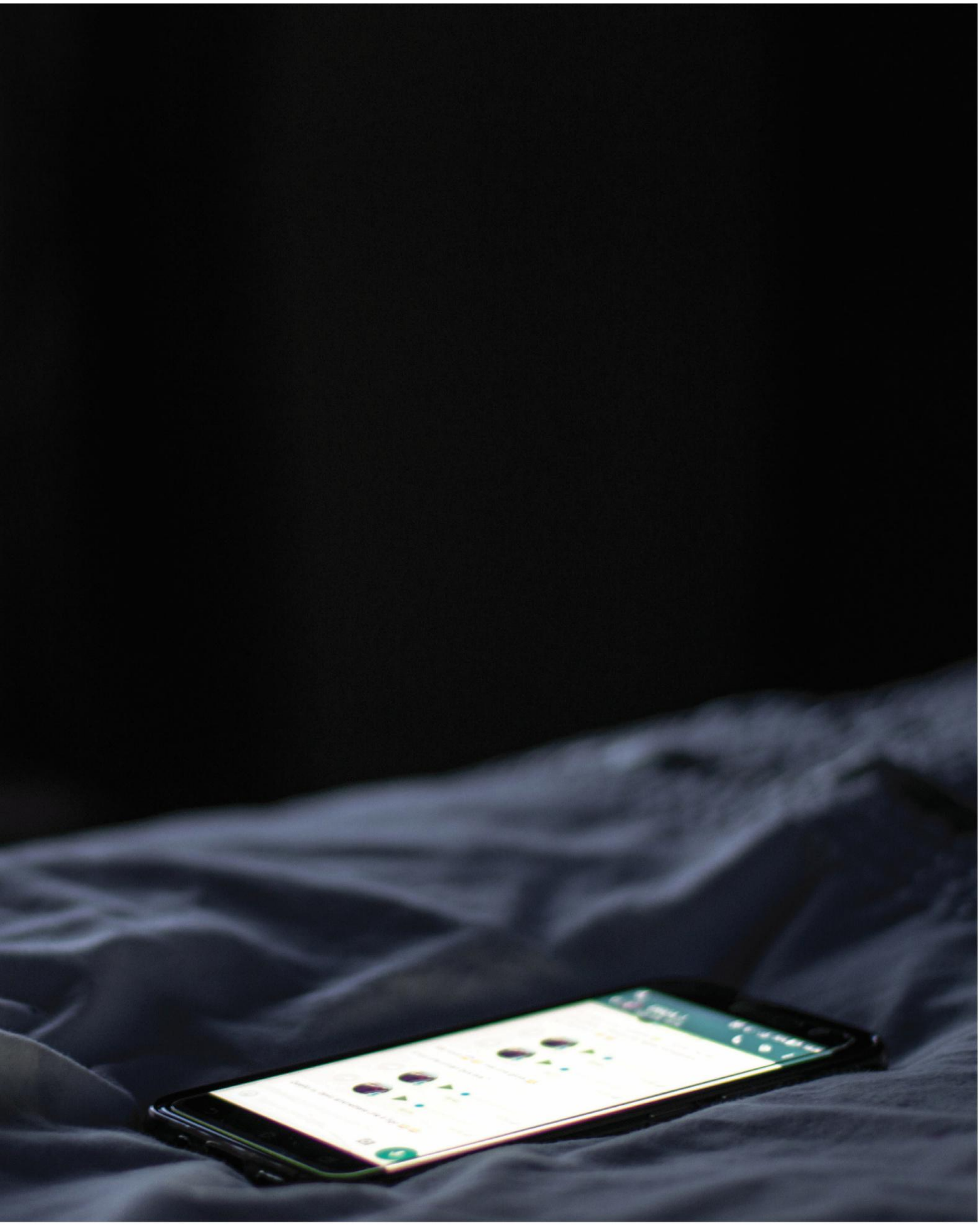
WITH A THIRD of American adults getting less than seven hours of shut-eye a night, according to the Sleep Foundation, people are seeking solutions in many forms.

Sara Dittoe Barrett, PhD, author of *The 4-Week Insomnia Workbook* and director of Cognitive Behavioral Associates of Chicago, says she likes to create a toolbox filled with strategies to increase the chance of sleeping well. "Some of these tools are cognitive, meaning the way we think about sleep and our beliefs about sleep are important," she explains. "Some of the tools are behavioral, like getting regular exercise and making sure your bedroom is comfortable and conducive to restorative sleep."

Now technology can be part of your toolbox. What follows are some tech products that support sleep hygiene. None involves looking at a phone or computer screen for longer than it takes to switch on an app, since use of electronic devices like phones and tablets is discouraged around bedtime.

Apps for relaxing

Use a sleep app to implement a healthy wind-down and get ready for bed. "Meditation and relaxation apps can help if you are having issues with anxiety, stress,



or difficulty accepting bouts of sleeplessness," says Barrett, adding that these apps are good for people new to meditation who'd prefer guided instruction and specific exercises. Insight Timer, Calm, and Headspace are some of the popular apps.

Many meditation apps provide other content designed to help you fall asleep, including soothing music; breathing or yoga exercises; sound effects like rain, wind, and ocean waves; and bedtime stories, fiction and non.

Spring for the premium version of an app and you'll unlock even more features—courses in relaxing and improving sleep quality, celebrity-narrated content, daily releases of music and meditations, and even charts and graphs to track your progress.

Apps for monitoring

For a data-oriented approach to your nightly zzz's, invest in a sleep-tracking app. Gathering the 411 on how well you're sleeping—as measured by things like interruptions to your sleep, your phases of sleep, light and temperature in your bedroom—is a great first step to resolving your sleep challenges. The app may even track your heart rate, breathing, and other biometrics.

While sleep trackers may involve sensor equipment—a band you wear on your head, wrist, or finger, or something that attaches to your pillow or mattress—some apps work if you just place your phone close to or in your bed while you sleep.

Sleep tracking through an app is not an exact science: It generally measures inactivity rather than actual sleep. But apps can uncover trends about your sleep, like how well you sleep in specific conditions or after consuming certain food or drink. This info may help you decide what you could do to sleep better.

If you live in a loud household (think night-owl teenagers here) or you're a light sleeper, a noise machine or app can be a lifesaver, says Barrett. You have options with different types of noise, timers, and a choice of noise frequencies.

The best-known kind of noise-canceling tech for sleepers is probably a white noise machine. White noise resembles static; a machine producing this consistent sound as you sleep should block out any sudden noises like slamming doors or music that might jolt you awake.

Some noise machines have settings for pink, red, or brown noise—the colors correspond to frequencies, though they're all types of white noise. Pink noise sounds like wind or rainfall, and has been shown to reduce brain wave activity during early stages of sleep, which can improve sleep quality and duration.

Red noise is more of a low rumble, while brown noise has been likened to a roaring river or

wind. Finding which background noise works best for you may take a little experimenting.

An alternative to white noise as background noise is a whirring fan, and there are machines that offer a variety of fan sounds as well as other sounds, like ocean surf, which can lull people to sleep. Instead of buying a machine, you could download an app for white noise or other sleep-inducing sounds.

Covering your ears

You also might consider using headphones or earplugs to minimize noise-related sleep interruptions. Headphones designed specifically for sleep are likely to be more comfortable than those you wear during the day to listen to music, as they're usually made of softer material and are not as bulky.

Sleep headphones often come with white noise or other sound options. Some models are headbands that cover your forehead rather than a device that sits on the top of your head.

If you don't want something around any part of your head while you're in bed, look for earbuds or earplugs made for sleeping. These have come a long way from old-school foam earplugs—which may get too hot for sleeping anyway. Sleep earplugs are typically made of silicone and shaped to be comfortable but not pose a danger of poking too far into the ear canal.

Experts note that any earplugs or headphones you wear to bed should block out sound no higher than 33 decibels, so you would hear a smoke detector go off.

The alarm clock is another sleep-related product that's gotten a high-tech makeover: Once these clocks only buzzed or rang, but now they're more compatible with how your body naturally sleeps and wakes. The goal is to wake up without feeling startled or getting an adrenaline rush from the annoying beeping.

The time display may take up only a small part of the clockface—the rest would be a light that gradually brightens over the course of a half hour before your set wake-up time. Or the face is covered in fabric to reduce glare from the lighted numbers.

> Some machines have settings for pink, red, or brown noise—which sounds more like rainfall or rumbling water than the *sshh* of white noise.

Pleasant alarm sounds

Nicole Avena, PhD, associate professor of neuroscience at the Icahn School of Medicine at Mount Sinai, says an alarm clock "that has options to allow you to wake up to a soft noise or light that gets brighter is a gentler, more natural way to wake up."

A small 2020 study from Australia's RMIT University suggested that people felt groggier when they awakened to a jolting alarm noise, while alarm clocks with melodic sounds made them more alert.

Just as the clock's light brightens over time in the morning to simulate sunrise, the sunset simulation available on some models offers gradually decreasing light and relaxing sounds.

Alarm clocks may also include such features as alternate timeframe settings for the morning gradual lighting; a choice of colors for the light; brightness controls; and various alarm sounds such as birds, a stream, wind chimes, or even the OG bell.

You can also find clocks with more advanced features, such as sensors to monitor ambient conditions in the room, a companion app, and guided breathing through different sound and lighting rhythms.

Newer types of night-lights and light bulbs also offer tweaks to the lighting in your bedroom. One example: Healthe's Goodnight LED bulb, which has a soft light that can help you wind down. On its website, the company says the product uses "technology originally designed in collaboration with NASA to support the circadian rhythms of astronauts." Another brand, LOHAS, makes an LED nightlight with a dimmer and a "dusk to dawn" sensor that automatically turns the light on and off.

There's also buzz around red spectrum light—a type that minimizes blue light wavelengths, which are at the opposite end of the spectrum from red. Lighting Science, for one, makes a red spectrum bulb.

A red spectrum bulb is not necessarily red-colored, though red bulbs are also promoted as favorable to sleep because it is believed red light stimulates melatonin production. ■

The Fine Art of Sharing a Bed

How can you keep your loved ones close but also get a good night's rest? Try this advice, from people who have been there.

ROCKABYE, BABIES

A mom of four sets ground rules for co-sleeping.

IT WAS ABOUT 2 a.m. on a sweltering July night when it occurred to me that I might never sleep again. I had newborn twins, a 3-year-old, and a 6-year-old, and I was on the verge of losing it. As soon as I put one twin down, the other would wake up. It might have been funny if it hadn't been so torturous. Then one night when my boy twin was 6 months old, I dozed off while nursing him in bed. We both awoke the next morning following a miraculous five-hour stretch of sleep. The rest is history.

On any given night, there's a good chance my wife and I have a kid in our bed. Those newborn twins are now toying with tweendom, but one still comes to me with big eyes on a Saturday night and asks to crawl in with us. The other might sneak in at 2 a.m. on a Wednesday. I wake up, but I fall right back to sleep, and so do they. Everyone wins.

Four kids is a lot of kids. My wife and I try to schedule one-on-one time with each of them when we can, but those outings can feel forced, and it's not always realistic with weekend schedules. In our house, quality time is taken when and where you find it, and sometimes that

means kids sleeping in our bed. We don't always say yes, and there are ground rules: We try to keep it to one child at a time and restrict bed sharing mostly to weekends. Weeknight appearances are reserved for emergency situations (hi, nightmares), illness, or just really bad days. Yes, we've been known to make the occasional exception. To be honest, sometimes it's hard to say no. Time is fleeting and I know this won't last forever.

Letting kids into the bed might not be for everyone, but there can be benefits in addition to more sleep for both you and your child. In one small study, preschoolers who co-slept from an early age were more self-reliant and socially independent and better able to make friends than solitary sleepers. Another study of 205 families showed that by age 18, children who shared a bed didn't differ from solitary sleepers in terms of sleep problems or their cognitive development.

Perhaps best of all, you never know what kinds of conversations you'll have, propped up on pillows and buried under a quilt. The heart-to-hearts range from humbling ("Mom, your breath kinda stinks") to heartwarming ("Mom, being in your bed makes me feel loved"). If that doesn't convince me I made the best choice for my family, I'm not sure anything will. *—Maya Kukes*

CAN THIS MARRIAGE BE DUVETED?

A blanket hog and his shivering wife end their nightly cold war.

IF YOU'VE STOOD at a carnival and watched someone take a long, thin paper cone and rotate it around a big spinning drum of sugar until it builds into a fluffy cloud of cotton candy, you are familiar with the mechanics of my husband, Jamie, interacting with covers. Only, from my cold vantage point on the bald side of the bed, the result is not nearly as sweet. I used to wake up several times a night to clutch back my share, and in the morning I'd feel groggy and resentful that—not to get too Macbeth—he hath murdered my sleep...and my mood.

But then, while browsing hygge boards on Pinterest, I noticed the Scandi-style bed trend of two separate duvets, one for each partner. I quickly ordered matching twin-size linen duvets, wrapping a down comforter for me and a cotton coverlet for Jamie, who, despite his cover-hogging tendencies, runs warm. I overlapped them on the bed, and they looked like a single piece.

This setup transformed the way I sleep. On fall nights, we leave the window open to the crisp air, and I mummify myself in the most delicious, draftproof fashion and drift off. Of course, Jamie still wraps himself up in a jelly roll or sends a cascade of covers onto the floor, but it no longer bothers me. It's his own problem—and his own duvet. *—Rory Evans*

NO MORE RUFF NIGHTS

Hounded by allergies, a dog lover cannot allow her furry friend in bed.

THOUGH I HAVE A king-size mattress and a pint-size dog, I kicked him out of bed long ago—and not just because he snores. I have major hay fever, and while snuggling Winston is sweet, it can also be sneezy. Pet hair can collect dander, saliva, urine, and other allergens like dust and pollen.

If you have allergies, your best bet is to keep your pet out of your bedroom, advises Neeta Ogden, MD, a spokesperson for the American College of Allergy, Asthma, and Immunology. If you can't bear banishing your pooch from the room, try to keep him out of your bed. "If your pet sleeps next to you for eight hours, you're getting a far greater exposure to allergens than if he's just in the bedroom," Ogden says.

Make sure your pup has a comfortable place to sleep (look for a "cuddler" bed he can snuggle into or a bed made with memory foam). Lure him into it with a treat, then give him the treat once he lies down, says Michael Shikashio, a certified dog behavior consultant. Treat him anytime you catch him in his bed. When he hops in with you, say "Off," then give him a treat after he gets down. Don't show him the treat beforehand, or he may think you're rewarding him for being in your bed.

If you still want to co-sleep, save your comforter from drool and hair by covering it with an easy-to-launder throw. Run a rubber-gloved hand over it to remove hair before tossing it into the machine. And regular baths will help minimize allergens, fur, and "Fritos feet" (the bacteria on pups' paws often give off a corn chip smell). *—Juno DeMelo*

MY DARLING, MY FREIGHT TRAIN

Fed up with a snorefest, an exasperated fiancée finally finds support.

I SHARE A BED with a boisterous sleeper. My fiancé, Francisco, has been known to burst out laughing while unconscious. He once assured me, while sleeping, that he was a pirate. But perhaps the most raucous part of his late-night comedy show is the snoring.

Sometimes it's a loud, goose-like "honk!" followed by a whistling "shooo!" that I've only heard in cartoons. Other times the snore reminds me of the "brum-brum-brrrrr" of a horror-film chainsaw.

In my generous moments, I find this comforting, knowing he's sleeping so soundly. In my worst moments, I huffily decamp to the couch. But I'm always afraid that one night we'll hear the furious knock of a broomstick on the ceiling from our upstairs neighbors. That's how loud it is.

It's been like this for most of our 13 years together. He's been checked for all the things, and we've tried industrial-strength earplugs, tucking a pillow under his back so he stays on his side, nasal strips, gentle nudging, and not-so-gentle nudging.

At least, I *thought* we'd tried everything. Then I read a press release about a new mattress that's designed to help with snoring—and dreams of an oh-so-silent night danced in my head.

The mattress came with a remote, and at the touch of a button, we could lift the feet and head. But the real magic happened from a sensor under each side of the mattress: When it detected snoring, it lifted the head of the mattress a bit. Apparently, sleeping at a slight incline can make breathing easier.

Upgrading our mattress has helped both of us. Francisco's snoring has decreased—especially the loud, lingering variety. But the mattress also improved my sleep routine by keeping track (via a companion app) of how often I wake up, how long I stay in restorative REM sleep, and even the temperature in the room.

As for Francisco's sleep talking and laughing? Let's just say I feel lucky to be marrying a man who keeps me entertained, even when he's fast asleep. *—Brandi Broxson*

How to Unwind

Consider these ways to let your brain and body know you're switching out of active mode.

BY AKANKSHA SINGH

THERE ARE TWO TYPES of people in this world: those who fall asleep moments after their head hits the pillow and, well, the rest of us. The ones who await sleep in bed, as thoughts ping-pong in our brains and the glowing numbers on the clock remind us we're still awake.

According to Jade Wu, PhD, a Durham, North Carolina–based sleep medicine specialist and researcher, what you do in the hours before bed impacts the quality of your sleep immensely. "My general philosophy is to switch from 'doing' mode to 'being' mode," says Wu. That means you should put away things that are meant to be "productive" and spend the time on things you enjoy.

Do what you know helps you decompress and feel at ease—whether it's reading, cuddling with a partner or pet, listening to a podcast, or something else.

"These activities will relax the body and mind," says Wu. "Try to be intentional about doing something that contributes to your well-being instead of simply distracting from boredom." In other words, no doom-scrolling.

You want to avoid working right up until bedtime. In a culture obsessed with productivity, it's easy to pressure yourself into working longer and harder. But if you're one of those people who powers off your laptop right before you turn out the lights, stop.

This isn't simply because electronic devices emit blue light that's known to suppress the sleep-inducing hormone melatonin, but because your brain is active in work mode.

"You need a wind-down period to relax your body, process your thoughts, and generally allow the hustle and bustle of the day to cool off," explains Wu.

While you should shut down your computer for work in the evening, feel free to catch up on texts to friends or play a few rounds of online solitaire in the hours leading up to bedtime. "Screens are perfectly fine to use in the evening—if you get enough bright light exposure during the day," says Wu.

The key, she says, is "to have a big contrast in how much light you're exposed to during the day versus evening." This lets your brain know the difference between day and night and helps keep your circadian rhythms on track.

When you do mindful meditation, you focus on your breathing while noticing how your body feels.

"Too much bright light in the evening and not enough during the day will confuse your internal clock and make it harder to sleep well at night and harder to feel good during the day."

Lights on low

To that end, be sure to draw the blinds or curtains and dim the lights at least one hour before bedtime. This lets your body know it's nearing bedtime by boosting melatonin. If you can, swap out cool-toned LED lights and fluorescents for warm-toned lights. Although LEDs are environmentally friendly, many of them contain blue light, which hampers melatonin production.

The relaxing effects of a bath or shower may seem obvious, but they're also backed by science. According to a meta-analysis published in *Sleep Medicine Reviews*, a hot shower or bath 90 minutes before bed helps you sleep faster. The hot water can lower your body's core temperature—sort of like how you cool down when you sweat—and the temp decrease tells your body it's time for bed. (Some experts recommend a warm bath, as they believe the hot water may interfere with your pre-sleep drop in body temperature.)

A bath closer to bedtime could relax you, but an hour and a half prior is optimal because of how long it takes for your body temp to go down.

How about unwinding to soothing, mellow music, like smooth jazz or classical? It can serve the same function lullabies once did. "It's important to 'downregulate' the nervous system using our built-in neural networks that are hardwired to respond to sounds our mothers made to lull us to sleep," says Jeanette Raymond, PhD, a clinical psychologist in Los Angeles.

The write stuff

Quiet your mind by journaling or making lists before bed—it's great for getting thoughts out. "Writing down everything that's on your mind is an effective way of releasing anger, fear, and shame," says Raymond.

"Seeing it and editing it will give you a sense of having done something that will relieve anxiety and make you feel more competent," she says, "[and this] in turn can lead to lowered stress hormones and your body moving into sleep rhythms."

Similarly, adds Raymond, if your mind is racing because you are rehearsing for a confrontation or another situation where you have to speak up for yourself, before going to bed, write down what you want to say.

While regular exercise during the day is great for sleep, exercising at night signals to your body that you're up and active. So get your workout in at least a few hours before you go to bed (ideally, no later than 6 p.m.).

Closer to bedtime, try light stretching or progressive muscle relaxation. A study in which participants stretched for one hour three times a week for four months concluded that stretching aided sleep quality. (Turn the page for a stretching routine to do at night.)

To practice progressive muscle relaxation, tense then relax your muscles, starting at your forehead (tense brows!) and working down to your toes (who knew you carried tension in your feet!).

A deep-breathing session or a mindfulness activity can also help you unwind. When you do mindful meditation, you "stay in the present" by focusing on your

breathing while noticing how your body feels.

The idea is to redirect thoughts that evoke anxiety (say, planning for that big meeting tomorrow) back to your chest and its rising and falling with each in-and-out breath. Mindful meditation has been shown to help fight insomnia and improve sleep quality.

What won't help you unwind—but, rather, may get you wound up—is scolding yourself for slipping up. Had a late night? That's OK, it happens. "Avoid telling yourself you have to sleep for a certain amount of time or else you've failed," says Raymond. "Harsh self-talk adds stress."

Instead, remind yourself this is just one night and try to get your full seven or eight hours tomorrow. The last thing anyone needs is to be stressed out by their downtime. ■

TIPS FROM THE PROS

We asked psychology experts how they quiet their minds at bedtime.

"I imagine writing my worries on a piece of paper, putting the paper in a box, and closing the lid. Then I put that box in a slightly larger box, close the lid, and lock it. The boxes can be wood or bejeweled or even glass. I try to imagine all of this as realistically as possible. I continue through successive boxes until I fall asleep."
—Dana Harron, PsyD, founder and director of Monarch Wellness & Psychotherapy in Washington, DC

"Depending on the temperature in my bedroom, I wear either a hot or cold eye mask, and inhale breaths of calm thoughts, and exhale breaths of racing thoughts."
—Devita Allen, licensed professional counselor in Manalapan Township, New Jersey

"I turn my focus to my senses. I list five things I can see, four things I can touch, three things I can hear, two things I can smell, and one thing I can taste. Then I repeat the exercise until I fall asleep."
—Tracy Cooper, co-owner of Fit Therapy of Texas in San Antonio

"I picture parts of my body relaxing under the weight of a warm, soothing blanket. I begin at the feet, then move up to my ankles, then calves, all the way to the crown of my head."
—Sarah Thacker, integrative therapist in New York City

—Hannah Harper

6 Feel-Good Stretches to Do Before Bed

Get out all the kinks before you turn in for the night with these simple exercises.

BY KAREN ASP

YOUR BODY needs time to shift into sleep mode, which is why it's recommended you do something relaxing before bed.

That could mean reading, snuggling under a weighted blanket with a cup of chamomile tea, or doing some simple stretching. Such exercises would be beneficial to both sleep and fitness.

"Deep breathing and slow stretching slow the nervous system and calm the brain and body similar to meditation," says Leslee Bender, Florida-based creator of the I Am Ageless Now workout program and the Bender Ball, who developed the following series of six soothing stretches. Do them right before you're ready to crawl into bed to encourage sounder slumber.

To really protect and preserve your body, pair these with lower back or foot stretches or also do a more vigorous workout during the day (morning is the optimal time).

Hip Flexor Opener

Stand about two to three feet from your bed, facing it. Place your right foot on the edge of the bed, bending the right knee and shifting your body weight forward slightly while keeping your left foot on the floor. Both feet should point forward.

Reach your right arm (or both, to make it more challenging) toward the ceiling and hold 10 seconds, breathing deeply as you feel muscles release. Switch to the left side and repeat.

Hamstring Stretch

Stand two to three feet from your bed, facing it. Place your right foot on the bed. Keeping your right leg straight, flex the foot. With hands on hips, slowly hinge forward until you feel a stretch down the right hamstring. Without moving your body, rotate the right foot side to side eight times. Repeat the exercise with your left foot on the bed.

Standing Spine Twist

Stand about two to three feet from the bed, facing it. Reach your arms overhead so you feel length in the front of your body. Moving from the hips, slowly lower your upper body toward the bed and place your hands on it. As you do this, lengthen your spine (just as you would if doing downward dog in yoga).

Take your right hand off the bed and rotate your upper back to the right, reaching that arm upward while pressing into your left palm. Hold for several deep breaths. Release to the start position and repeat on other side.

Hip Flexor Stretch

Lie faceup on the bed with a rolled-up pillow under your right hip and your leg extended on the bed. Reach your right arm overhead, thinking about lengthening through the right side of the body. Now point and flex the ankles eight times. Switch sides and repeat.

Range-of-movement exercises alleviate pain and tension associated with the upper body. If you do them, straightaway you're getting a better night's sleep.

Spine Twist

Lie faceup on the bed and bring your knees to your chest. Extend your right leg so it's resting on the bed. Place your right hand over your left hand and gently guide your left knee across your body to the right. Rotate your head left until you feel a gentle stretch in your neck. Release, then switch sides and repeat.

Happy Back

Lie faceup on the bed with a pillow under your hips. Bend your knees, bringing them toward your chest and wrapping your arms around the backs of your legs. Hold at least 10 seconds while breathing deeply.

DAYTIME PLAN: BRING ON THE WEIGHTS...

EXERCISING DURING the day increases the amount of sleep you get at night, particularly the amount of slow-wave sleep, the phase when your brain and body rejuvenate most.

The sleep benefits of daytime exercise can be expanded by using weights. According to a study, healthy older adults who do strength training fall asleep faster and wake up less frequently throughout the night.

These results hold true for younger adults too, says lead study author Julie Vanderlinden, PhD, a public health researcher and sleep therapist in Belgium. "A combination of exercises showed the highest proportion of significantly improved sleep outcomes," she says.

Luke Milton, founder of Training Mate studio in Los Angeles, put together this routine to do with a pair of light- to medium-weight dumbbells (or any weighted household objects, like water bottles or food cans).

"It's effectively moving oxygenated blood cells between the major muscle groups," Milton says. What that does is help release stress that can mess with your sleep later.

He follows up each lower-upper exercise pair with a "body-opening movement" targeting tight hips. "Range-of-movement exercises actually alleviate the pain and tension associated with that part of the body. If you do them, straightaway you're getting a better night's sleep," he says.

Do each move for 45 seconds without resting between moves. Then repeat the entire circuit.

Curl and Press

Start by standing with a dumbbell in each hand, arms by your sides, palms facing in. Curl dumbbells up to shoulders, palms still facing in, elbows tight to ribs. Press dumbbells overhead so they stack directly over shoulders, keeping your core engaged. Reverse the movement to return to the starting position.

Sumo Squat

Stand with feet wide and toes pointed out at 45-degree angles. Hold a single dumbbell horizontally in both hands in front of your chest. Inhale to bend knees and hinge at hips to lower yourself into a squat, making sure knees track over toes. Pause when hips are at knee height. Exhale to press through the midfoot to stand and return to the starting position.

Cobra Pose to Downward Dog

Lie facedown on the floor. Place hands under your shoulders and press into palms to straighten arms and lift your chest off the floor (cobra pose). Pull shoulders away from ears and relax glutes. Lift hips and roll over the tops of your feet to move into downward dog, forming an upside-down V shape with your body. Drop heels toward floor and relax head between arms. Shift hips forward to return to cobra pose.

Bent-Over Triceps Extension

Stand with feet hip-width apart, a dumbbell in each hand, arms at your sides. Bend knees slightly and hinge forward at the hips so your torso is at a 45-degree angle. Row dumbbells up toward your ribs, elbows in tight to start. Straighten arms and squeeze triceps to extend dumbbells backward. Pause one second; return to starting position.

Reverse Lunge

Start by standing with feet together, a dumbbell in each hand, arms at your sides. Roll shoulders back and down and engage your core to assume proper posture. Take a big step back with your right foot to lower into a lunge, bending both knees at 90 degrees. Stop just before your back knee touches the ground. Push off the rear foot to step it forward and return to the starting position. Repeat on the other side. Continue alternating.

Tripod Adductor Stretch

Start with hands and knees on the floor. Extend your right leg out to the side, balancing on your right heel. Push hips back to feel a stretch at the inside of your right thigh. If this is too easy, lower onto elbows. Ease hips forward to return your right knee to the ground. Switch sides; repeat. ■

Weights workout written by Mary Anderson

Behavioral Matters

Other things the sleepy, the sleepless, and the sleeping tend to do

BY COURTNEY MIFSUD INTREGLIA & EMILY JOSHU

Yawning

Many of the reasons that have been put forth for why we yawn—from boredom to a lack of oxygen—have not held up to scientific scrutiny. But one explanation backed by research studies involves regulating temperature in the brain stem. A 2011 study from the University of Maryland found that yawning helps keep the brain cool, and the sinuses play a role in that process by acting as bellows.

"The brain is exquisitely sensitive to temperature changes and therefore must be protected from overheating," Gary Hack, DDS, clinical associate professor at the University of Maryland School of Dentistry, and Andrew Gallup, PhD, then a research associate at Princeton University, wrote at the time of the study's publication. "Brains, like computers, operate best when they are cool."

By cooling down our brains, yawning help us think more clearly. So while an ill-timed yawn might be interpreted as a sign that you're bored, it actually is more connected to alertness.

"Yawning is common among individuals right before public speaking events. Yawning has been documented among paratroopers right before they jump out of planes. And yawning is also very common among Olympic athletes right before competition," Gallup, now an associate professor of biopsychology at the State University of New York Polytechnic Institute, said on a 2021 episode of *CBS Sunday Morning*. "And it's not because they're sleepy. It seems that yawning is a response that helps prepare individuals for action."

Then there is the contagious yawn—a real occurrence. Researchers consider contagious yawning a social rather than physiological phenomenon, with a number of studies linking it to an empathetic response. Further bolstering that theory, a 2012 study found that yawns are the most contagious around close friends.

Sleepwalking

Formally known as somnambulism, sleepwalking is classified as a parasomnia, or abnormal sleep behavior. A person might walk or perform other activities while still mostly asleep. Sleepwalking episodes originate during deep sleep and tend to last one to five minutes, with longer periods the exception.

"Sleepwalking is strongly genetically linked," says Alcibiades J. Rodriguez, MD, medical director of the Comprehensive Epilepsy Center-Sleep Center at New York University. About 60 percent of sleepwalkers have at least one parent with a history of sleepwalking, and people with two parents with such a history are even more likely to sleepwalk.

Genetic history is not the only factor at play, though. Sleep disorders such as obstructive sleep apnea can trigger the onset of sleepwalking, as can sleep deprivation. One study of 193 patients found that experiencing stressful events during the day was a main trigger of sleepwalking incidents.

More common among children than adults, sleepwalking is a disorder of arousal, meaning it involves partial awakening from deep sleep.

"In childhood, disorders of arousal can usually be considered an expected and normal developmental sleep phenomenon, apart from those with [medical or physical] consequences," Rodriguez says. "However, disorders of arousal that persist beyond adolescence or begin in adulthood can often be problematic and may require clinical attention."

The condition itself isn't harmful to one's health, but it can lead to danger if the sleepwalker falls down the stairs or inadvertently hurts himself while sleepwalking. "If there is a risk of injury, then low-dose, long-acting benzodiazepines—such as clonazepam—are often prescribed to alleviate sleepwalking," says Rodriguez.

Shift Work

Working the night shift can contribute to sleep issues, so much so that a shift work sleep disorder has been identified. It affects people who work nontraditional hours, outside of the typical 9-to-5, such as factory workers, hospital employees, and police officers.

Shift work tends to throw off the body's circadian rhythms, which could cause difficulty

falling and staying asleep as well as trouble staying awake at work. Nearly a third of shift workers may experience such problems.

Rodriguez recommends shift workers see their doctor for individualized assessment based on activities, work schedule, and days off. Prescription medications modafinil and armodafinil can help shift workers stay alert when on the job, but it's also essential to follow proper sleep hygiene, just as if they were sleeping at traditional hours.

Talking in Your Sleep

It is estimated that two out of three people talk during sleep at some point in their lives. Sleep talking is usually harmless, though it might awaken or even alarm, a companion—and what's said could be embarrassing for the sleeper.

While sleep talking is not dangerous on its own, Rodriguez cautions that, like other sleep abnormalities, it could be a symptom of a more serious condition such as sleep apnea or post-traumatic stress disorder.

Getting plenty of sleep could make you less likely to sleep talk. Keeping a sleep diary can help you and your doctor identify a potential underlying health issue.

Oversleeping

We know how skimping on sleep can be problematic, but what about the flip side of the coin? Regularly getting more than the recommended seven to nine hours of shut-eye per night may pose its own risks.

Numerous studies have linked oversleeping to certain health conditions and to risk of death. In one large meta-analysis published in 2018 in the *Journal of the American Heart Association*, mortality risk was shown to increase with each extra hour of sleep; the risk of dying from heart disease and stroke also increased with longer sleep times.

According to Rodriguez, sleeping more than nine hours will not cause any health concerns if you do it once in a while—but if you are regularly sleeping that much and not feeling rested, it could mean there's an underlying sleep disorder.

Sleep and Illness

Some chronic neurological conditions can impair sleep quality and increase restlessness. Three in four people with Parkinson's disease experience sleep-related symptoms, such as difficulty falling asleep, excessive daytime sleepiness, vivid dreaming, and restless legs syndrome. This is due both to brain changes as the disease progresses and to side effects from common medications.

Mental health conditions can disrupt sleep too. It's estimated that insomnia occurs in three-quarters of adults with depression, according to the Sleep Foundation. Depression can also lead to hypersomnia—excessive daytime sleepiness or time spent asleep—and obstructive sleep apnea, which impairs breathing. Additionally, about half of adults with generalized anxiety disorder experience sleep problems, such as insomnia.

To improve overall sleep quality, people with chronic conditions are advised to maintain a sleep routine: Go to bed and wake up around the same time every day, and limit napping. In Parkinson's patients, early research from the journal *Sleep Medicine* found a "significant improvement in subjective sleep disturbance, sleep quantity, and daytime sleepiness" in participants who took melatonin supplements. ■

DAY'S LAST LIGHT

"Every one that sleeps is beautiful,
every thing in the dim light is beautiful"

WALT WHITMAN