

mindbodygreen



# The mindbodygreen Guide to a Good Night's Sleep

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In the fast-paced and uncertain world we live in, prolonged wakefulness seems to be valued more highly than sleep. As co-CEO of mindbodygreen alongside my husband, Jason, and a mother of two young daughters—a good night's rest is sacred to me.

For the past two decades, my struggle to fall and stay asleep was real. With more than one-third of American adults suffering from lack of sleep, many of you can empathize. I tried everything, from pharmaceutical sleep aids to optimizing sleep hygiene and addressing underlying barriers to restfulness. I have recently found a holistic nutrition and herbal approach that's revolutionized my sleep and rejuvenation.

The impact of sleep deprivation is vast—affecting our mind, body, and even the world we live in. At mindbodygreen, we are on a mission to create and share essential, research-based tools for sustainable health. A good night's sleep is foundational when it comes to health and wellness.

By partnering with functional medicine doctors, scientists, and wellness experts, I am excited to share holistic sleep insights rooted in research. *The mindbodygreen Guide to a Good Night's Sleep* provides you with the latest sleep science, causes and impact of inadequate sleep, and evidence-based recommendations to help refresh your sleep and life.

With gratitude,

Colleen Wachob  
Co-founder and Co-CEO, mindbodygreen

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The information in this guide is based on published research and clinical insights. It is not intended to replace medical advice. If you suspect you have a sleep disorder or any medical condition, see a health care provider.

# Sleep Recommendations

When you think of building a strong foundation for health and wellness, nutrition and exercise might come to mind. Does sleep? A good night's sleep is of supreme importance. In the current culture, it's easy to relegate high-quality sleep to a "nice-to-have" aspiration for later. But when we procrastinate too long, the negative effects of insufficient or poor-quality sleep are seen and felt.

The United States is a sleepy nation, with 35% of American adults<sup>1</sup> getting less than the daily minimum: seven hours of sleep.<sup>2</sup> But what constitutes a "good night's sleep"? It turns out that clinical consensus grounded in decades of research reveals the evidence-based answer—here's the amount of sleep we need for optimal health and wellness.

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## Recommended Sleep in 24-Hour Day<sup>2-4</sup>

### LIFE STAGES

Newborns (0–3 months)

Infants (4–12 months)

Toddlers (1–2 years)

Preschoolers (3–5 years)

School-age children (6–12 years)

Teenagers (13–17 years)

Adults (18+ years)

### SLEEP NEEDS

14–17 hours (including naps)

12–16 hours (including naps)

11–14 hours (including naps)

10–13 hours (including naps)

9–12 hours

8–10 hours

7–9 hours

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Recommendations from the American Academy of Sleep Medicine, Sleep Research Society, and National Sleep Foundation

“ A well-spent day brings happy sleep. ”

~ Leonardo da Vinci

# The United States of Sleepy

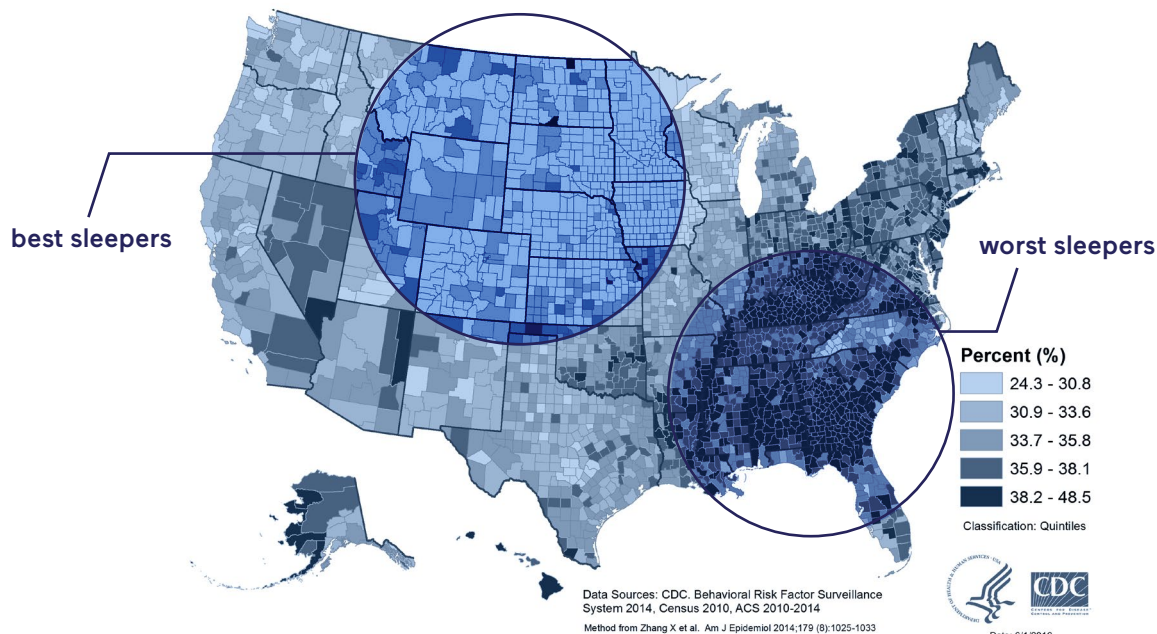
More than one-third of U.S. adults suffer from lack of sleep—that's over 70 million people sleeping less than seven hours each night, which is considered "short sleep duration." In the U.S., the prevalence of short sleepers varies by age, geography, race, and health status.

## AGE

Younger adults report more short sleep than older adults.

## GEOGRAPHY

The worst sleepers (> 30%) reside in the southeastern U.S. and states along the Appalachian Mountains, while the best sleepers (< 30%) live in the Great Plains states like Colorado and South Dakota.



## RACE

Racial differences exist when it comes to sleep loss:

- Native Hawaiians/Pacific Islanders (46%)
- Non-Hispanic Blacks (45%)
- Multiracial Non-Hispanics (44%)
- American Indians/Alaska Natives (40%)
- Asians (37%)
- Hispanics (34%)
- Non-Hispanic Whites (33%)

## HEALTH CONDITIONS

Compared to individuals getting seven or more hours of sleep each night, insufficient sleepers are more likely to be obese, physically inactive, and smokers. They are also more likely to have the following health conditions: heart attack, coronary heart disease, asthma, COPD, cancer, arthritis, depression, chronic kidney disease, and diabetes.



# Sleep Statistics

The data is in, and the numbers tell the story. Inadequate sleep and its consequences are a global problem with all stages of life affected.

## GLOBAL FIGURES

- 51% of adults globally say they get less sleep than they need.<sup>5</sup>
- 80% of adults worldwide use the weekend to make up for sleep debt during the week.<sup>5</sup>
- 44% of adults globally say their sleep has worsened in the past five years.<sup>6</sup>
- Eight in 10 adults worldwide desire improvement in their sleep, but 60% haven't sought help from a health care professional.<sup>6</sup>
- Estimates of worldwide insomnia prevalence range from 10 to 60%, depending on the population.<sup>7</sup>
- Out of 48 countries surveyed worldwide, none report getting an average of eight hours of sleep per night.<sup>8</sup>
- Japan reports the lowest sleep average (five hours, 59 minutes per night).<sup>8</sup>
- New Zealand reports the highest sleep average (seven hours, 30 minutes per night).<sup>8</sup>
- 40 to 70% of older adults have chronic sleep problems.<sup>9</sup>

## U.S. ADULTS

- 35% of American adults get less than seven hours of sleep per night.<sup>1</sup>
- 50 to 70 million U.S. adults have a sleep disorder.<sup>10</sup>
- Insomnia is the most common specific sleep disorder. Thirty percent of U.S. adults have short-term insomnia, while 10% have chronic insomnia.<sup>10</sup>
- 25 million U.S. adults have obstructive sleep apnea.<sup>10</sup>
- 48% of U.S. adults report snoring.<sup>10</sup>
- 37% reported accidentally falling asleep during the day at least once in the previous month.<sup>10</sup>
- 4% reported nodding off or falling asleep while driving at least once in the previous month.<sup>10</sup>
- Drowsy driving causes 1,550 fatalities and 40,000 nonfatal injuries each year in the U.S.<sup>10</sup>

## U.S. CHILDREN AND ADOLESCENTS

- 25% of parents report common sleep problems in their children less than five years of age.<sup>11</sup>
- Sleep problems affect 25 to 50% of children and 40% of adolescents.<sup>12</sup>
- More than two-thirds of U.S. high schoolers get less than eight hours of sleep on school nights.<sup>13</sup>
- During the four years of high school, inadequate sleep is most common in 12th graders.<sup>13</sup>
- Female high school students are more likely than males to not get enough sleep.<sup>13</sup>
- Among racial groups, Asian high school students report getting the least amount of sleep.<sup>13</sup>
- Compared to high schoolers who sleep nine hours, students who sleep less than or equal to seven hours on school nights are more likely to report injury-related risk behaviors (e.g., texting while driving, infrequent seatbelt use, riding with a driver who's been drinking alcohol, etc.)<sup>13</sup>



# Sleep Science

Sleep is a vital nervous system function and basic survival need for most mammals, and definitely for humans. This is why living with sleep deprivation isn't sustainable for long.

If we get the recommended seven to nine hours of slumber each night, we are spending a whopping one-third of our lives asleep. This significant time investment is warranted because while you're sleeping, critical biological processes are taking place.

## **HERE ARE A FEW OF THE ESSENTIAL ACTIVITIES THAT OCCUR WHILE YOU'RE SLEEPING**

- Maintenance of many vital functions in the body
- Repair of wear and tear to DNA, cells, tissues, and organs
- Detoxification, toxin removal
- Endocrine homeostasis
- Energy restoration
- Regulation of metabolism
- Muscle growth and protein synthesis
- Neuroprotective functions
- Synaptic plasticity and learning
- Memory consolidation
- Regulation of blood sugar and cholesterol
- Immune support (innate and adaptive) functions and maintenance to defend against pathogens

One can quickly see why not getting adequate, high-quality sleep would wreak havoc on our health over time.

“ Everything, from our digestion, immune system activity, and hormones, is regulated by our sleep-wake cycles. ”

~ Heather Moday, M.D.



# Sleep Disorders

Sleep loss and dysfunction are pervasive, often ignored, and able to be improved. The Institute of Medicine Committee on Sleep Medicine and Research says it this way: "Sleep loss and sleep disorders are among the most common yet frequently overlooked and readily treatable health problems."<sup>14</sup>

With over 100 distinct sleep disorders, sleep problems are more diverse than you might think. Overall, these are conditions that affect the quality, timing, or duration of sleep, as well as the sleeper's ability to function when awake.

## **MOST SLEEP DISORDERS EXHIBIT ONE OR MORE OF THESE HALLMARK SYMPTOMS:**

- Difficulty falling or staying asleep
- Excessive sleepiness during the day
- Imbalances in circadian rhythm that disrupt a healthy sleep schedule
- Abnormal movements, behaviors, and sensations that interrupt sleep

The major categories of sleep disorders include insomnias, sleep-related breathing disorders, hypersomnolence disorders, sleep-wake disorders, parasomnias, and sleep-related movement disorders.



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## Let's Explore Some Of The Major Sleep Disorders:

<b>SLEEP LOSS</b>	Sleeping less than the average basal need (i.e., 7-9 hours per night for adults).
<b>INSOMNIA</b>	Inability to fall or stay asleep that may also involve early morning awakening with inability to fall back asleep. In chronic insomnia, symptoms occur at least three times/week for at least three months. If symptoms last less than three months, this is referred to as short-term insomnia.
<b>SLEEP APNEA</b>	Periodic interruptions in sleep and breathing accompanied by attempts to gasp for air, creating snorting noises (snoring can be a sign of sleep apnea); often experience daytime sleepiness.
<b>NARCOLEPSY</b>	Excessive sleepiness during the day (including bouts of "irresistible sleepiness") and sudden muscle weakness; narcolepsy "sleep attacks" can occur during unusual circumstances.
<b>RESTLESS LEGS SYNDROME (RLS)</b>	Unpleasant "creeping" sensation in the legs (often starting in the lower legs), with aches and pains radiating throughout the legs; difficulty falling asleep.
<b>SHIFT-WORK SLEEP DISORDER</b>	People with jobs outside a typical 9 a.m. to 5 p.m. schedule who experience insomnia at night and excessive sleepiness during the day.
<b>JET-LAG DISORDER</b>	When travelers pass through multiple time zones and their circadian rhythm gets out of sync with the local time at destination; jet lag is typically worse when traveling eastbound.
<b>SLEEPWALKING</b>	aka somnambulism: This is when people get out of bed and move while still asleep; attempts to wake sleepwalkers may result in aggression.
<b>SLEEP ENURESIS</b>	aka bedwetting: This is unintentional urination while sleeping; quite common in young children.

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# The Sleep-Wake Cycle

The sleep-wake cycle is a circadian rhythm, or 24-hour cycle, that's intrinsic to our body's internal clock. This rhythm coordinates critical processes throughout the body, from the digestive system to the endocrine system.

Our master clock, or pacemaker, is located in the brain's suprachiasmatic nucleus (SCN), found in the hypothalamus. Signals are sent from the SCN via clock genes, which regulate numerous physiological activities. The SCN is highly influenced by external cues (especially light) and is thus tied to the cycle of day and night.

- Daylight causes the SCN to transmit signals that make us alert and active.
- Nightfall causes the master clock to send signals to release **melatonin** (the sleep-promoting hormone) from the pineal gland. Melatonin also helps keep us asleep.
- Pressure to sleep builds with more awake time; this sleep drive is correlated with a rise in the neurotransmitter adenosine in the brain. **Adenosine** breaks down while we sleep.
- In the morning, the hormone **cortisol** rises significantly to stimulate wake-up.

This exquisite, rhythmic timing of our internal body clock changes over the course of one's life, which is why sleep needs vary at different ages. When properly aligned with day and night, this circadian rhythm facilitates regular, deep sleep. When the rhythm is off, sleeping problems can occur.

Two additional sleep terms you may come across include "**sleep deprivation**" (not getting enough sleep) and "**sleep deficiency**," which involves sleep deprivation plus three other characteristics:



**SLEEPING AT WRONG  
TIME OF DAY**  
(not in sync with  
circadian rhythm)



**NOT SLEEPING  
WELL**



**HAVING A SLEEP  
DISORDER**  
that hinders adequate or  
high-quality sleep

# Stages of Sleep

While duration of sleep is important, so is the continuity and depth of that sleep. The internal organization or pattern of your sleep cycles and stages is referred to as sleep architecture. This pattern consists of several cycles each night. Each cycle includes two main types of sleep:

- **Rapid eye movement (REM)**
- **Non-REM (NREM)**

REM and NREM sleep occur in four distinct stages of sleep (each with differences in brain wave activity and eye movements). These four stages cycle through several times during the night, typically four to six times. Infants spend a lot of time in REM sleep. NREM sleep peaks in early childhood, dips significantly after puberty, and continues declining as we age.

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SLEEP STAGE	TYPE OF SLEEP	NORMAL LENGTH	CHARACTERISTICS
<b>Stage 1</b> (N1)	NREM Sleep	1-5 minutes	<ul style="list-style-type: none"><li>• Dozing off</li><li>• Body and brain activities start slowing down</li><li>• You move into Stage 2 easily if not disturbed</li></ul>
<b>Stage 2</b> (N2)	NREM Sleep	10-60 minutes	<ul style="list-style-type: none"><li>• More subdued now</li><li>• Muscle relaxation and decrease in body temperature, breathing, and heart rate</li><li>• Harder to be woken up</li><li>• We spend about half of our sleep in Stage 2</li></ul>
<b>Stage 3</b> (N3, SWS, delta sleep, deep sleep)	NREM Sleep	20-40 minutes	<ul style="list-style-type: none"><li>• Deep sleep</li><li>• Additional relaxation with reduction in muscle tone, pulse, and breathing rate</li><li>• Delta waves seen in brain activity</li><li>• Much harder to be woken up</li><li>• Thought to be an essential stage for restoration, recovery, immunity, growth, memory, and creative processes in body and brain</li><li>• Spend most deep sleep time in first half of night</li></ul>
<b>Stage 4</b>	REM Sleep	10-60 minutes	<ul style="list-style-type: none"><li>• Increased brain activity but temporary paralysis of muscles (except eyes and muscles that control our breathing)</li><li>• Eyes are closed but rapidly moving</li><li>• Stage 4 is thought to be critical for memory, learning, and creativity</li><li>• Vivid dreams occur most often in this stage</li><li>• This REM sleep stage accounts for about 25% of our night and lengthens as the night progresses, especially in the second half of the night</li></ul>

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# Other Sleep Matters

## **GENDER DIFFERENCES IN SLEEP**

Sex and gender differences in sleep exist and should be considered by health care practitioners. Research demonstrates that compared to their male counterparts, women:



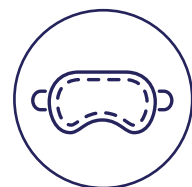
**REPORT MORE  
SLEEPINESS AND  
SHORTER SLEEP  
DURATION**



**ARE AT  
SIGNIFICANTLY  
HIGHER RISK  
FOR DEVELOPING  
INSOMNIA AND  
RESTLESS LEGS  
SYNDROME**



**HAVE MORE  
DIFFICULTY FALLING  
AND STAYING ASLEEP  
AND EXPERIENCE  
MORE DAYTIME  
FATIGUE**



**EXPERIENCE  
MORE SLOW-  
WAVE SLEEP  
(deep sleep)**





### **SLEEP POSITIONS**

Do you sleep on your back versus side or facedown (least common position), and does it really matter? The answer is that it's a personal and health-based decision related to your unique physiology. Regardless of your sleep position, optimize pillow placement and mattress firmness to support and not strain the spine's natural curvature, from your neck all the way down.

Certain medical conditions may require a specific sleep position for safety reasons. People with joint pain or reflux often lie on their back, as this is the most neutral position. If a person has sleep apnea or snoring issues, side sleep is typically recommended. During pregnancy, sleeping on your left side is thought to be the ideal position for mom and baby in terms of blood flow and comfort.

A critical callout is for babies. When it comes to safe sleep for infants, remember: "Back to sleep, tummy to play." Side sleep is not advised for babies, and time on their stomach is appropriate when they are awake and being watched.

### **DREAMING**

Much mystery remains in the scientific literature regarding dreams. What's known is that dreaming is a normal part of sleep and often relates to subject matter from your waking life. Dreams are not thought to alter sleep architecture, but waking from a frightening dream (nightmare) can make falling back asleep more difficult and have negative, lingering effects on your day.

“ Dreams have been described as picture-metaphors for your most salient emotions... [they] can help us get a better understanding of our blind spots and shine a light on things that are important that we may have been avoiding.”

~ Leslie Ellis, Ph.D.



# Lack of Sleep: The Impact

Just like eating, drinking, and breathing, sleep is a basic need. When the basics go awry, there are consequences. In addition to the obvious clues of fatigue or exhaustion, subtle signs that you need more sleep may include forgetfulness, mood changes, decision-making difficulty, or headaches.

In functional medicine, root causes of health manifestations are the true targets to achieve healing. When chronic, inadequate sleep is the root cause, the impact on the body is remarkable, and not in a good way. Sleep deficiency is linked to numerous, detrimental, and costly issues—spanning your mind, body, and environment—from an increased risk for disease to strain in relationships and reduced performance at work. The holistic importance of sleep is paramount. To echo World Sleep Day’s 2020 slogan: “Better Sleep, Better Life, Better Planet.”<sup>32</sup>

## According To Research, We Know That Lack Of Sleep Is Associated With:

mind	body	green
<ul style="list-style-type: none"> <li>↑ daytime sleepiness<sup>35</sup></li> <li>↓ mood<sup>36</sup></li> <li>↑ irritability, mood swings<sup>37</sup></li> <li>↓ cognitive function<sup>38</sup></li> <li>↓ decision-making ability<sup>39</sup></li> <li>↓ attention and memory<sup>40–41</sup></li> <li>↓ reactions to positive events<sup>42</sup></li> <li>↑ reactions to stressors<sup>42</sup></li> <li>↑ depression<sup>43</sup></li> <li>↑ anxiety<sup>44</sup></li> <li>↑ headaches and migraines<sup>45</sup></li> <li>↑ neurodegeneration<sup>46</sup> (e.g., dementia, Alzheimer’s disease)</li> </ul>	<ul style="list-style-type: none"> <li>↓ immunity/immune function<sup>19</sup></li> <li>↑ hunger and appetite<sup>47</sup></li> <li>↑ body weight<sup>48</sup></li> <li>↑ overweight and obesity,<sup>49</sup> including abdominal obesity<sup>50</sup></li> <li>↓ testosterone<sup>51</sup></li> <li>↑ sexual dysfunction<sup>52</sup></li> <li>↑ inflammation<sup>19</sup></li> <li>↑ cortisol dysfunction<sup>53</sup></li> <li>↓ glucose tolerance and insulin sensitivity<sup>47</sup></li> <li>↑ type 2 diabetes<sup>54</sup></li> <li>↑ cardiovascular disease<sup>55</sup></li> <li>↑ hypertension<sup>56</sup></li> <li>↑ heart attack<sup>57</sup></li> <li>↑ stroke<sup>58</sup></li> <li>↑ mortality<sup>59</sup></li> </ul>	<ul style="list-style-type: none"> <li>↓ quality of life<sup>14</sup></li> <li>↑ relationship strain<sup>14</sup></li> <li>↓ productivity<sup>14</sup></li> <li>↑ performance deficits at work and school<sup>14, 34</sup></li> <li>↑ absenteeism at work and school<sup>14</sup></li> <li>↑ alcohol use<sup>14, 34</sup></li> <li>↑ injury and disability<sup>14, 34</sup></li> <li>↑ health care utilization, medical costs<sup>14</sup></li> <li>↑ clinical burnout<sup>34</sup></li> <li>↑ errors (medical, motor vehicle, work-related, environmental health)<sup>14, 34</sup></li> <li>↓ public health<sup>14, 34</sup></li> </ul>

## LACK OF SLEEP:

# Top Contributors

There are many variables and sources of stress that can disrupt sleep homeostasis. Some are rooted in a medical problem or traumatic event, while others revolve around poor sleep hygiene practices, which can be modified more readily. Certain sources of sleep loss are simply part of your life for a period of time, like a challenging job schedule or caring for young children.

Speaking of children, it's a good thing babies are adorable, because they are a major contributor to sleep deprivation. One survey on the "State of (Un)rest for Parents" found that 43% of parents caring for a newborn clocked only one to three hours of uninterrupted sleep each night.<sup>60</sup> In fact, only 5% of parents caring for babies 0 to 6 months old achieved the recommended amount of sleep.<sup>60</sup>

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### COMMON CULPRITS OF SLEEP LOSS INCLUDE:

<b>Sleep Disorders<sup>22</sup></b>	For example, insomnia, sleep apnea, narcolepsy, restless legs syndrome (RLS)
<b>Poor Sleep Hygiene<sup>61</sup></b>	Inconsistent bedtime routine; blue light exposure near bedtime (light bulbs, digital devices); caffeine, alcohol, or nicotine use near bedtime; lack of comfort or support from mattress and pillow, etc.
<b>Home Sleeping Environment<sup>62</sup></b>	Temperature, shades, lighting
<b>Physical Environment<sup>62</sup></b>	Traffic, light, noise pollution
<b>Challenging Job Schedule</b>	Health care workers, <sup>63</sup> shift workers, <sup>64</sup> parents of infants <sup>65</sup>
<b>Poor Work-Life Balance<sup>66</sup></b>	Sleep time limited or deprioritized
<b>Pregnancy<sup>67</sup></b>	Especially first and third trimesters; sleep issues due to hormonal changes, more frequent bathroom trips (nausea, urination), nighttime reflux, and RLS
<b>Menopause<sup>68</sup></b>	Night sweats, hot flashes, ovarian hormone changes, RLS
<b>Autoimmune Conditions<sup>69</sup></b>	Lupus, multiple sclerosis, type 1 diabetes, celiac disease, chronic fatigue syndrome, rheumatoid arthritis
<b>Thyroid Dysfunction<sup>70-71</sup></b>	Fatigue is a hallmark of hypothyroidism but can also occur in hyperthyroidism
<b>Pain<sup>72</sup></b>	Injury, osteoarthritis, neuropathy, headache, cancer pain
<b>Mood Disorders</b>	Anxiety, <sup>73</sup> depression, <sup>43</sup> seasonal affective disorder <sup>74</sup>
<b>Trauma</b>	Combat, <sup>75</sup> physical assault, <sup>75</sup> sexual abuse, <sup>75</sup> natural disasters, <sup>75</sup> pandemics (e.g., COVID-19), <sup>76</sup> PTSD, <sup>77</sup> grief/bereavement <sup>78</sup>

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## **MEDICAL CONDITIONS**

A non-exhaustive list of other medical issues that can induce fatigue include infections, allergies, nasal obstruction/congestion, sinusitis, swollen adenoids, anemia, fibromyalgia, hormone dysfunction, adrenal insufficiency, eating disorders, congestive heart failure, type 2 diabetes, dementia, mental illness, kidney or liver disease, asthma, reduced lung function, and cancer.

## **MEDICATIONS THAT DISRUPT SLEEP**

Although many drugs can affect sleep, these are the most common offenders:<sup>79</sup>

- Drugs with stimulant effects (amphetamines and methylphenidate for ADHD treatment)
- Drugs with stimulant side effects (ephedrine)
- Alpha-blockers
- Beta-blockers
- Corticosteroids
- SSRI antidepressants
- ACE inhibitors
- Angiotensin II receptor blockers (ARBs)
- Cholinesterase inhibitors
- H1 antagonists
- Glucosamine/chondroitin
- Statins

“ I think sleep should be considered the new vital sign.”

~ Michael Breus, Ph.D.





# Sleep Assessments

A sleep specialist, typically a provider specializing in sleep medicine, can evaluate and diagnose sleep disorders. In addition to a variety of questionnaires, two major tools used clinically are the sleep diary and polysomnography (aka sleep study).<sup>80-81</sup>

## **SLEEP DIARY**

By recording your sleep patterns and habits, this diary provides insights on sleep hygiene and other variables. In addition to sleep time and quality info, sleep diaries capture information about emotions and stress, as well as food, beverages, and medications you consume. This record helps reveal practices that may be supporting or hindering sleep.

Doctors use sleep diaries to analyze patients' sleep behaviors and determine whether a sleep study is needed. The National Sleep Foundation has an [official sleep diary](#) that anyone can use.<sup>80</sup>

## **SLEEP STUDY**

Usually conducted overnight at sleep centers (sometimes within a hospital), polysomnography<sup>81</sup> is a rigorous technique that provides detailed information about your sleep to diagnose a variety of sleep disorders. The study examines your sleep stages and cycles, gleaned information about the amount and quality of your sleep.

Several non-invasive physiological parameters provide objective information, including brain waves, blood oxygen levels, heart rate, breathing, snoring, and movements of your eyes and limbs. Depending on the data, the technologist may introduce a positive airway pressure (PAP) machine or oxygen to improve sleep parameters during the test.

## **WEARABLE TECHNOLOGY**

Measuring or tracking your sleep through digital technology is popular. Capturing various biosignals, these devices provide personal health tracking information to the user. Their utility and application in research and clinical sleep medicine has yet to be determined.<sup>82</sup>

# Sleep Strategies

Maybe you have a great sleep-life balance, but somebody you care for does not. What tools exist to help ensure we all get the Zzzz's we deserve? Thankfully, many holistic strategies exist. Some fixes may seem obvious, while others are a novel approach to fold into your sleep regimen.

Certain lifestyle techniques target common sleep hygiene mistakes, while other methods leverage tools to promote relaxation and support your body's circadian rhythm. To achieve sustainable changes, always personalize sleep support techniques, and create a relaxing bedtime routine that makes the most sense for you and the people in your life.

## Sleep Hygiene 101

Although more empirical evidence is needed on sleep hygiene,<sup>83</sup> the recommendations are practical and attainable. They include things like:<sup>61, 84</sup>

- Practice consistent bedtime routine and fixed wake-up time
- Wind down/quiet time before bedtime
- Only use the bed for sleep (and sex); do reading, TV watching, etc., in another room
- Don't overdo naps (power nap < 30 minutes is OK)
- Keep bedroom dark and at a cool temperature
- Infuse pleasant aromas in the bedroom
- Maximize noise reduction or masking (earplugs, noise machine)
- Invest in comfortable and supportive mattress, pillows, and linens
- Avoid caffeine and alcohol well before bedtime
- Quit nicotine



### BLUE LIGHT IS BAD.

In addition to creating a dark bedroom environment, put down the smartphone (and tablet, laptop, etc.) and turn off the TV. Much of the content on digital devices can be anxiety-inducing, and the blue light emitted is known to disrupt our circadian rhythm and thus sleep.



### GO OUTSIDE.

To improve your sleep-wake cycle in the most organic way, look outside, or when possible, head outside and sync your body and brain with natural sunlight.

“ We cannot simply turn a switch from our frenetic, information-packed, action-oriented days to sleep. Instead, sleep is actually a process and does take time. Prepare your body and brain for rest by prioritizing relaxing activities in the 30 minutes before bed.”

~ Rebecca Robbins, Ph.D.



## SLEEP TOOLS:

# Physical Activity

Engaging in exercise regularly is key to sleep health and yields a variety of other disease-reduction benefits. That's a win-win. Here are the evidence-based recommendations for physical activity:<sup>85-86</sup>

### TODDLERS AND PRESCHOOLERS

Engage in physical activity and have opportunities to move during the day.

### CHILDREN AND TEENS

Be physically active (moderate to vigorous intensity) for at least 60 minutes on most or all days. This activity can be split into smaller units throughout the day, and school activities like PE/gym counts toward the 60 minutes.

### ADULTS

Each week, be physically active for at least 150 minutes (2.5 hours) in moderate-intensity activity or 75 minutes of vigorous activity (or some combination). Activities can be split into smaller units throughout the day.

*Recommendations from the American Heart Association and U.S. Department of Health and Human Services (National Institutes of Health).*

A variety of activity types (aerobic, resistance, weight-bearing, flexibility, etc.) is the optimal approach to exercise. But whether you're walking, doing yoga, playing a sport, dancing, gardening, swimming, or lifting weights, any incremental amount of physical activity is beneficial.

Choosing activities that you enjoy can increase the fun factor and sustainability of exercise. If you have children, engage in a family activity so everyone reaps the wellness benefit.

“Sleep is recovery. If you haven't done anything you need to recover from, you're not going to sleep particularly well.”

~ Michael Breus, Ph.D.

## SLEEP TOOLS:

# Stress Management and Relaxation

De-stressing and relaxing are no-brainers when it comes to sleep. Easier said than done. Here are some holistic strategies to help.

### STRESS MANAGEMENT

We are a stressed society, and the subsequent anxiety from those stressors is competing with our sleep. Stress activates our fight-or-flight adrenaline pathway, the hypothalamic-pituitary-adrenal (HPA) axis, which promotes wakefulness.<sup>87</sup> Because when you're being chased by a lion, it's best to be awake. But when the "lions" don't go away over time (chronic stress), the HPA axis is overstimulated.<sup>88</sup> The stress of not being able to fall asleep activates the HPA axis further. This is a futile, exhausting cycle.

When feasible, intentionally **removing major or minor sources of stress** goes a long way. Perhaps you take on one less commitment or ask for help from others to lighten your load. **Partnering with a psychology or psychiatry professional**, counselor, or life coach can help you talk and work through sources of stress and anxiety—the things keeping you up at night. Through **cognitive behavioral therapy**<sup>89</sup> and other techniques, these practitioners can help you develop techniques to improve resiliency and the effectiveness of your response to stressors.

“ Look at the stories you're telling yourself about sleep. If you're saying sleep is something elusive, then that makes that story stronger in your nervous system, in your body, and in your mind and physiologically creates more anxiety, which will rev up your sympathetic nervous system and make it harder to fall asleep.”

~ Victoria Albina, N.P., MPH



## SLEEP TOOLS:

# Relaxation Techniques

There are a variety of relaxation techniques to tap into. The most common approaches include:

- Low-impact stretching
- Warm bath
- Controlled breathing<sup>90</sup>
- Muscle relaxation<sup>84</sup>
- Imagery/visualizations (go to your personal “happy place”)<sup>84</sup>
- Mindfulness meditation<sup>91</sup>
- Yoga<sup>92</sup>
- Acupressure/pressure points<sup>93</sup>
- Acupuncture<sup>94</sup>
- Massage therapy<sup>95</sup>

Certain scents can also help to relax and even make one sleep. **Aromatherapy** has a growing body of evidence to support its role in improving sleep quality.<sup>96</sup> Lavender has the largest amount of scientific support, but the scent of other essential oils (e.g., valerian, bergamot, chamomile, eucalyptus, peppermint, cedar, vanilla, rose, and geranium) may also help with relaxation and sleep.

Last but not least, it turns out that **orgasm** (whether achieved through sex with a partner or masturbation) before bedtime is associated with the perception of better sleep.<sup>97</sup>

“ Sleep is the  
best meditation.”

~ Dalai Lama



## SLEEP TOOLS:

# Diet

Everyone knows that healthy nutrition is tied to disease prevention and positive health outcomes, but sleep isn't usually part of the nutrition conversation. It should be. Through metabolism, foods are our source of energy. Also, certain nutrients and herbals are known to promote sleep.

While energy density is common (excess calorie intake), nutrient density is lacking in the U.S. diet, resulting in many documented nutrient gaps. In fact, a 2019 study using nationally representative data reveals lower intake of calcium, magnesium, vitamin D, and vitamin K in people getting less than seven hours of sleep per night.<sup>98</sup>

### DIETARY PATTERN

The relationship between diet and sleep is complex and bi-directional, with more research needed. Getting less than the recommended levels of sleep is associated with irregular meal patterns, intake of fewer vegetables, more snacking, and an increase in consumption of energy-dense foods like fats and refined carbohydrates.<sup>99</sup> With that in mind, it's no surprise that chronic sleep loss is tied to weight gain, obesity, and various chronic ailments.

### DIET AND SLEEP INSIGHTS<sup>99-103</sup>

#### AVOID:

- Spicy, heavy, and large meals close to bedtime.
- Foods that contain ingredients with stimulant properties (e.g., cocoa/chocolate) near bedtime.

#### INTEGRATE

- Certain foods from animals, plants, and fungi that may promote sleep: **milk products, fish, fruit, vegetables, complex carbohydrates, whole grains, nuts, eggs, legumes, and seeds.**
- Magnesium-dense foods (nuts, seeds, legumes, leafy greens, avocado, tofu, bananas, fatty fish, and whole grains) that support sleep
- Additional functional foods proposed to have sleep-aid properties, like barley grass, maca, reishi mushroom, asparagus, lettuce, cherry, kiwi, and walnuts.
- Foods that affect tryptophan, serotonin, and melatonin levels.



## **SLEEP TOOLS:**

# Beverages

When it comes to beverages, make sure you're drinking plenty of water throughout the day to remain hydrated. Additionally, milk and certain noncaffeinated herbal teas can be relaxing before bedtime. Let's explore some widely consumed beverages that can hinder sleep.

### **BACK OFF THE CAFFEINE**

Be intentional about avoiding sources of caffeine (e.g., coffee, certain teas, energy drinks, and hot chocolate) in the afternoon and definitely evening. While caffeine metabolism speed differs among individuals, avoiding caffeine after noon is a conservative rule of thumb. We know through research that consuming caffeine even six hours before your bedtime can disrupt sleep.<sup>104</sup>

### **AVOID ALCOHOL**

While some people can tolerate alcohol in moderation before or around bedtime, it is prudent to avoid alcohol near bedtime, as it can disrupt sleep quality (particularly REM sleep) and duration.<sup>105</sup> Drinking alcohol before sleep is linked with fatigue and insomnia symptoms the following day, which sets up a vicious cycle if the person continues to seek alcohol for sedative effects.<sup>106</sup>

## SLEEP TOOLS:

# Targeted Ingredients

In addition to a high-quality multivitamin/mineral supplement to fill inevitable micronutrient gaps from our diet, what targeted ingredients can help support sleep? Let's take a look at a standout mineral, several botanicals, and two bioactives known to have sleep-promoting properties and actions.

### MAGNESIUM

Clocking less than seven hours of sleep per night has been tied to nutrient inadequacy, including magnesium.<sup>98</sup> This essential mineral is involved in hundreds of critical biochemical reactions in the body and supports sleep through several unique relaxant properties within the central nervous system.<sup>107-108</sup> In addition to magnesium-rich foods mentioned before, supplementation is also a great option, especially since more than 40% of U.S. adults fail to meet their daily magnesium needs through diet alone.<sup>109</sup>

### BOTANICALS

Also known as the Chinese date, jujube is a fruit widely used in Eastern medicine because of its calming and sleep-supportive properties.<sup>110</sup> L-theanine, an amino acid from green tea, is an herbal bioactive that has the ability to relax and support sleep quality.<sup>111</sup> Other botanicals with evidence for sleep support include saffron,<sup>112</sup> valerian,<sup>113</sup> hops,<sup>114</sup> passionflower,<sup>115</sup> lemon balm,<sup>116</sup> and chamomile.<sup>117</sup>

The endocannabinoid system is involved in sleep and can modulate the nervous system.<sup>118</sup> For cannabinoids like cannabidiol (CBD) from the hemp plant, a small but growing number of clinical studies indicate their role in helping you fall asleep, improving sleep quality, and reducing sleep disturbances at higher potency doses.<sup>119</sup> For products derived from hemp oil, a full-spectrum extract is likely most helpful for sleep support, as it offers diversity and synergy of cannabinoids, terpenes, and other natural plant compounds.<sup>120</sup>

### BIOACTIVES

Gamma-aminobutyric acid (GABA) is a well-studied neurotransmitter. Studies indicate its ability to promote sleep quality through relaxant and stress-relieving effects.<sup>121</sup> And then there's melatonin, a well-known sleep hormone.<sup>122</sup> Short-term use of high-dose melatonin supplementation (e.g. greater than 1 mg per day) may be indicated and useful for specific medical reasons<sup>123</sup> under the supervision of a medical professional or for certain lifestyle reasons (e.g., jet lag, shift work).<sup>124</sup> In contrast, when considering regular, long-term melatonin use for daily circadian rhythm support, lower physiologic melatonin doses that mimic typical nocturnal levels (i.e., 0.3 to 0.5 mg melatonin) are recommended.<sup>125</sup> Taking more melatonin than needed can be linked to undesirable desensitizing effects, such as nightmares, next-day grogginess, and headaches.

“ Magnesium helps to calm the central nervous system (CNS), which helps to prepare the brain to turn off and also to keep it functioning at a calmer level throughout the night. ”

~ Robert Rountree, M.D.





#### **SLEEP TOOLS:**

## For Children

Sleep problems in children are common and doubly felt in the household, by the child and their caregiver.<sup>20</sup> The majority of insights found in this sleep guide apply to children—for example, nighttime routine, eating healthy, staying active, and avoiding blue light before bedtime. Along with these foundational strategies, here's some additional sleep intel specific to little ones.

#### **BALANCE IS KEY.**

Schedules and consistency are important for children. Balancing their day with periods of rest, play, and learning is ideal. While screen time may be unavoidable for many children (e.g., remote learning), making the child's bedroom a no-screen zone should be the goal.

#### **GET ON THE SAME PAGE.**

Stating expectations to get on the same page is important when it comes to children and sleep. Tell your children you expect them to sleep through the night, how that process will occur (i.e., the routine: brush teeth, tuck them in, read a book, and say goodnight). Explain that you will see them in the morning. This communication brings alignment and comfort to the nighttime routine.

#### **TRY SLEEP TRAINING.**

In order to help your child learn how to fall asleep, it's best to put them to bed when they are sleepy, not after they're already asleep. When a child is having difficulty falling asleep, there are sleep training methods you can use. Different methods are better suited for some kids depending on the child's unique personality and needs.<sup>126-127</sup>

The "checking method" is just one approach, an element of the Ferber method "cry it out" technique. With this strategy, you say goodnight to the child and then check in periodically. During these quiet check-ins, if the child remains awake, encourage them by explaining how good they'll feel after a good night's sleep. Repeat this approach every five minutes until the child has fallen asleep.

“There is a time for many words,  
and there is also a time for sleep.”

~ Homer



## **SLEEP TOOLS:**

# Medications

Small lifestyle changes and targeted nutrition approaches go a long way when it comes to falling asleep and waking up refreshed. If these methods have been exhausted and sleeplessness persists, or you have a particular sleep disorder, your health care provider may determine that pharmacologic options are indicated. In addition to the monetary costs of over-the-counter (OTC) and prescription sleep drugs, these short-term interventions come with side effects and safety considerations.

## **PHARMACEUTICALS**

Most OTC options that help induce sleep contain antihistamines as the active ingredients. Tolerance can develop, and next-day grogginess from the hangover effect is likely. These drugs are designed for short-term, occasional use.<sup>128</sup>

Then there are sleeping pills,<sup>129</sup> commonly benzodiazepines, antidepressants, antihistamines, and anxiolytics. Your doctor may prescribe these medications for short-term use to promote sedation. These pharmaceuticals target functions related to falling and/or staying asleep. Most drugs do not target both mechanisms and are not designed to be used as long-term sleep aids.

Sleeping pills are typically not safe for certain populations like children, older adults, and women who are pregnant or breastfeeding. Other limitations of a pharmaceutical approach include possible drug dependence, addiction, and withdrawal, as well as undesirable side effects, including but not limited to:

- Headache
- Prolonged drowsiness
- Dizziness that increases risk of falls
- Danger from mixing with alcohol
- Gastrointestinal issues like nausea and diarrhea
- Memory and performance deficits during the day

# Busting Sleep Myths

Sleep myths are pervasive. Here are some common sleep myths with answers rooted in science.

## **I'M JUST ONE OF THOSE PEOPLE WHO DOESN'T NEED MUCH SLEEP.**

**FALSE.** While individuals are unique, and sleep architecture can differ from person to person, the research and clinical consensus converge on the fact that the average adult needs seven to nine hours of sleep each 24-hour period.<sup>2</sup> Getting less than seven hours each night over time is associated with an alarming number of negative health issues.

## **YOU CAN PAY OFF YOUR "SLEEP DEBT."**

**IT DEPENDS.** While neurobehavioral effects<sup>130</sup> and insulin sensitivity<sup>131</sup> caused by acute sleep restriction can be improved by intentional recovery sleep ("catch-up sleep"), deficits likely remain if the person's sleep debt is chronic. More research is needed in this area.

## **ALL SNORING IS NORMAL.**

**FALSE.** If snoring and daytime sleepiness co-occur, you could have sleep apnea.<sup>132</sup> Overweight, obesity, and a larger neck increase the risk for sleep apnea. With this serious sleep disorder, you stop breathing periodically during the night, which reduces your blood oxygen levels and stresses your heart and entire cardiovascular system. As a result, snoring is tied to an increased risk for cardiovascular disease.<sup>133</sup>

## **NAPPING IS BAD.**

**FALSE.** From infants and toddlers to older adults and everything in between, napping is a common practice across the globe. The case for power naps is actually rooted in research.<sup>134</sup> It turns out that a nap that's less than 30 minutes ("power nap") during the daytime improves wakefulness, cognitive performance, and learning ability.

## **YOU NEED LESS SLEEP WHEN YOU'RE OLDER.**

**FALSE.** As you age, your sleep pattern may change, but the seven to nine hours of sleep recommendation still holds. Older adults may clock less sleep at night but still accumulate at least seven hours in a 24-hour period through the addition of a routine of daytime naps.<sup>135</sup>

## **TOO MUCH SLEEP IS A BAD THING.**

**IT DEPENDS.** While lack of sleep is no good, snoozing too much may be an instance of too much of a good thing. When adults get excessive sleep (more than nine hours per night), research indicates that negative health consequences can result. Long sleepers may experience a reduction in cognitive function<sup>38</sup> and an increase in body weight and fat mass,<sup>136</sup> obesity,<sup>137</sup> and even mortality risk.<sup>59</sup> But there's an important caveat: Sleeping more than nine hours per night may be OK for certain populations:<sup>2</sup> infants, children, teenagers, young adults, people recovering from acute sleep loss, and individuals with certain illnesses.





# The Data Is Clear: Sleep Matters.

Chronic sleep loss is widespread, and so is its vast impact on the mind, body, and world we live in. The encouraging news is that sleep duration and quality can be improved. If deep, restorative sleep is your personal health need, we hope that this holistic guide helps usher restfulness into your life!

[More sleep resources](#) from mindbodygreen.

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