



Sleep Quality

Immersion Bundle



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Objectives at a Glance



1. Sleep Physiology & Impacts

Understand the physiology and profound significance of sleep, and how quality sleep and poor sleep impact health and well-being.

2. Sleep Issues & Effective Techniques

Provide root causes of sleep issues and numerous evidence-based techniques for inducing quality sleep, with specific considerations for daytime, nighttime and in bed, and for responding to issues such as leg cramps, restless legs syndrome, and sleep apnea.

3. Yoga & Sleep

Cite research on yoga's impact, and considerations for choosing yoga poses and sequences, breathwork, and meditation to optimize sleep quality.

Sleep Physiology & Impacts 4.1



Lesson Overview

In this lesson, we explore the vital role and impacts of sleep and sleep issues on health and wellness.

Objective

Understand the physiology and profound significance of sleep, and how quality sleep and poor sleep impact health and well-being.

Description

Discuss the critical and fundamental role of sleep in healthy functioning. List 15 specific aspects of our lives that are directly related to how well or how poorly we sleep. List a dozen or more specific health problems that poor sleep can trigger or contribute to. Cite research on the physiology and effects of sleep, and of sleep issues. Discuss the physiology of sleep, particularly sleep stages. Describe circadian rhythms and body clock, and an understanding of the uniqueness of individual sleep patterns.

Vocabulary

adenosine, body clock, circadian rhythm



Vocabulary

1. **ADENOSINE** — A neurotransmitter “that is involved in energy metabolism and expenditure; the level changes throughout the day and is involved in the sleep-wake cycle [Dr. Axe]
2. **BODY CLOCK** — *See circadian rhythm*
3. **CIRCADIAN RHYTHM** — Refers to each person’s particular “body clock” which is associated with such rhythmic events as sleep and wakefulness, eating and drinking, changing core body temperature and more

Good Sleep is FUNDAMENTAL to Health & Wellness



Quality sleep is directly related — and fundamental — to health and well-being.

Sleep quality refers not to the number of hours slept but to satisfaction and outcomes from sleep. “This depends on several factors, including time to fall asleep, depth of sleep, number of awakenings after one falls asleep, length of sleep, and importantly, your sense of well-being when you wake up.” [The Epoch Times]

“Sleep quality is based on the physiological patterns of the EEG brain waves, so sleep is always a physical thing affecting mind and body.” [The Epoch Times]

Feeling Tired During the Day is a Clue...

[If you're] tired or sleepy during the day, be extremely suspicious that something is interfering with your slumber — a healthy sleeper is unlikely to feel tired or sleepy during the day. Most commonly, physical disruption to your sleeping brain waves generates this tiredness or sleepiness. Doesn't everyone experience some tired or sleepy feelings during waking hours? That's a big “no.” A normal sleeper experiencing high-quality slumber (aka normal brain wave patterns), night after night, does not report those feelings. Their sleep is functioning as designed to fully restore the mind and body. – **Dr. Barry Krakow MD**

Ayurveda: Sleep is One of Foundational Three Pillars

According to Ayurveda philosophy, sleep is one of three pillars that endow the body with strength, vigor, and healthy growth. – **Ram Rao PhD**

Sleep is a Keystone of Health

Most people don't realize that sleep is a keystone of health. When we're sleep-deprived, it's really hard to eat well or to have the energy to exercise. It's hard to think straight. It's even hard to stay in a good mood or have a positive outlook on life. – **Dr. Mark Hyman MD**

Sleep is Just as Critical as Eating, Drinking & Breathing

Sleep is just as critical to our body as other basic functions of survival like eating, drinking, and breathing. Sleep is needed for a number of reasons, including energy conservation, restoration of our tissues and cognitive function, emotion regulation, and immune health. – **Danielle Pacheco**

May be THE Most Important Factor of Health

I've come to believe that sleep (even more than diet) is the single most important lever we have for improving our health, protecting against chronic disease, and extending our lifespan. There's not a week that goes by when I don't see a study (or several studies) linking sleep deprivation to health problems. For example, just last week, I came across yet another paper indicating that insomnia increases the risk of cognitive decline and memory loss in middle-aged and older adults. Fortunately, there are practical and proven steps you can take to improve your sleep, and I cover these in my video here. – **Chris Kresser**

The Amazing & Vast Effects of Good Sleep

A good night's sleep is the foundation for a healthy, happy, productive existence... Without good, regular sleep, we just go through life in a scattered daze, everything foggy, slightly confusing, and less enjoyable. We're not really ourselves if we haven't slept. We desperately need a good night's sleep, every night. But good sleep isn't just about avoiding the negative effects of not sleeping. Sleep is an incredibly active time for our bodies and brains when we undergo all manner of growth and repair processes through a dynamic biochemical orchestration. Sleep is key, essential, absolutely downright necessary for our basic physiological operations... Sleep spurs the release of human growth hormone (HGH), an essential player in cellular regeneration (and fat burning). A full night of sleep won't just reduce the risk of brain degeneration, it will **enhance your memory performance** and creative problem solving skills the next day, not to mention make you a better person to be around by helping you see the positive in your interactions... College athletes who sleep two extra hours per night have more accuracy and faster sprint times. Good sleep means you dream, and dreams are the way your brain deals with issues your conscious self cannot or will not. – **Mark Sisson**

People Paid to Perform Prioritize Sleep

Tom Brady is one of the (if not the) greatest football players of all time. He's won five Super Bowl Championships and is still dominating at over 40 years old. You know what time he goes to bed at night? 8:30. Then there's Roger Federer. He's one of the greatest tennis players of all time. 20 Grand Slams. Nearly 100 tour wins to go along with over \$100 million in career earnings. You know how many hours he likes to sleep a day? 11 to 12. (Otherwise he says he "just doesn't feel right" and says he'll get injured.) Then we have another all-time great: LeBron James. He and Federer must be studying the same peak-performance playbook because he's another 11 to 12 hours of sleep per night kinda guy. Now... Why in the world would the world's best athletes spend so much time in bed?! Because they get paid to perform. And they know that SLEEP is one of their secret weapons. The question is: Why do YOU think you can get by on so little sleep? – **Brian Johnson**

The Impact of Sleep on Healthy Functioning



Sleep impacts healthy functioning in practically every way imaginable. Specifically, sleep impacts:

1. Overall functioning and health. [Europe PMC]
2. Stress recovery and resilience.
3. Cognitive function and memory. "The brain is programmed to strengthen new memories during (quality) rest. Whether you're a young student or a retired professional, sleep is the most natural way to fortify your memory." [The Epoch Times]
4. Work performance. [Wiley Online Library]
5. Physical capability, accidents, exercise performance.
6. Feeling states, mood, emotional disturbances, depression, burnout. [Academic Medicine] and [Yoga for Times of Change] "Many suffering from mental health problems like anxiety, depression, or PTSD, as well as those with suicidal thoughts or behaviors, almost invariably agonize over co-existing diagnosable and treatable sleep disorders." [The Epoch Times]
7. Trauma recovery. [SequenceWiz] "An astonishingly large proportion of trauma patients also suffer from undetected and untreated sleep apnea, which through the toxic trifecta generated by the arousal-sleep-arousal cycle impairs brain function and worsens PTSD."
8. Energy levels. [Sleep Foundation]
9. Appetite, weight, fat gain, cravings, insulin resistance and diabetes.
10. Testosterone levels.
11. Heart health and cardiovascular disease. [YogaUOnline] and [SequenceWiz]
12. Immunity and susceptibility to degenerative diseases and infections. [The Epoch Times]
13. Releasing / forgetting impressions we don't need.
14. Brain health. [Yoga for Times of Change and The Epoch Times]

15. "Antidote to fear." "In experiments involving 15 normal human subjects, the researchers demonstrated that specific fear memories of human beings were wiped out during the slow-wave sleep." [Yoga for Times of Change]

See Olga Kabel's commentary [here](#) about the Yoga Sutras related to dreaming and deep sleep. She explores a number of considerations, concluding that one interpretation could be this: "Understanding the purpose of dream and deep sleep states and experiencing them fully leads to mental stability."

Sleep is Foundational for Immune System & Brain Health

Just like your brain's memory is tied to sleep, so is your immune system's memory. Studies have shown that lack of sleep can actually decrease antibody count following exposure to viral pathogens... When foreign pathogens enter the body, immune cells learn to recognize disease through a complex series of biochemical adaptations. This enables the body to produce more antibodies and fight off disease if we are exposed to the same pathogen again later, supporting acquired immunity... In addition to fighting off disease, the body uses our time asleep to flush out and recycle metabolic cellular waste from the brain, a process known as autophagy.

– **Robert Backer PhD**

Releasing / Forgetting Impressions We Don't Need

According to researchers, sleep helps us to forget some of the things we learn each day. Learning requires new neuronal connections or neuronal branching in our brains, which help neurons to communicate with neighboring neurons quickly and efficiently. Furthermore, these new neuronal branches also store firsthand memories of impressions that we draw in each day through our five senses. However, some of this information is redundant and does not require being stored. For example, you do not need to know what clothes you wore to work on a Thursday couple of weeks ago. Similarly, the people you saw at the airport terminal is not a value for the brain. –

Ram Rao PhD

Sleep Flushes Out Toxins in the Brain

Lack of sleep impairs reasoning, problem-solving, and attention to detail, among other effects... [In addition] a mouse study suggests that sleep helps restore the brain by flushing out toxins that build up during waking hours. The results point to [the] role for sleep in health and disease.

– **National Institutes of Health**

Dreaming Directly Involved in Managing Stress & Healing Trauma

Have you ever had the experience when you get worked up about something one day and after a night of good sleep it seems much less dramatic? This happens because there is a built-in mechanism in our brains that enables us to "get over" our small and large dramatic events... While you dream, your brain separates the memory of the event itself from your emotional reaction to it... This is a natural process that happens every night... Normally, dream sleep is the only time during the entire 24 hour daily cycle when the production of noradrenaline (the stress chemical) in the brain is completely shut off... This combination of a sufficient amount of dream sleep AND low levels of noradrenaline in the brain enables us to "get over" our strong emotional experiences. In fact, pioneering clinical work... demonstrated that we have to dream about our traumatic experiences to get over them. – **Olga Kabel**

See Also

- [Nervous System & Stress](#)
- [Trauma](#)

Effects from Poor Sleep



Poor sleep can cause or exacerbate a variety of issues. The many health problems that poor sleep can trigger or contribute to include:

1. Increased stress (Chronic stress can lead to sleep issues, and sleep issues can lead to increased stress.)
2. Decreased immune function
3. Increased risk of depression
4. Increased risk of metabolic syndrome, diabetes, obesity, cancer, high blood pressure, cardiovascular disease and osteoporosis; "When you sleep poorly, blood vessels receive mixed messages from the brain due to the nonstop arousal-sleep-arousal cycles. These signals generate excessive contractions and dilations in the vessel walls through much of your circulatory system (i.e., the heart pumping blood to every part of your body). Disturbed vessel functioning follows (aka endothelial dysfunction), leading to abnormal blood flow." [The Epoch Times]
5. Increased risk of dementia and Alzheimer's
6. Exacerbation of chronic disease
7. Reduced ability to learn and remember
8. Reduced creativity
9. Reduced productivity
10. Slowed reaction time, reduced athletic performance
11. Premature aging
12. Increased risk of car accidents
13. Increased sensitivity to pain (a key characteristic of chronic pain)

Inadequate Sleep Has Wide-Ranging Ill Effects

Inadequate sleep can quickly sabotage your efforts at getting healthy and losing weight. Sleep is a major cornerstone of an energetic, joyful, healthy life. Not getting enough sleep or getting poor-quality sleep adversely affects hormones that make you hungry and store fat. One study found just one partial night's sleep could create insulin resistance, paving the path for diabetes (late-onset diabetes associated with obesity) and many other problems. Others show poor sleep contributes to cardiovascular disease, mood disorders, poor immune function, and lower life expectancy. – **Dr. Mark Hyman MD**

Chronically Poor Sleep Increases Chronic Stress & Feeds a Vicious Cycle

Chronic poor sleep increases chronic stress and ends up feeding a vicious cycle of a stressful state over safety. This cycle can increase your risk of mental health issues, fatigue, dementia, Alzheimer's disease, and other neurodegenerative diseases (14, 15, 16, 17, 18). – **Dr. David Jockers**

Poor Sleep Can Lead to Metabolic Syndrome

Sleep disorders can affect the body's metabolism, potentially leading to metabolic syndrome. This increases the risk of obesity and significantly raises the chances of developing conditions like diabetes, hypertension, hyperlipidemia, and stroke... Addressing sleep issues can lead to improved metabolism, offering potential benefits in tackling conditions such as high blood pressure, high blood triglycerides, and high blood sugar levels. – **Kuo-Pin Wu & Jennifer Bateman**

Research on the Impact of Sleep



Scroll down for research summaries showing the following. For more guidance and inspiration, see [Using Research](#).

1. **Insomnia impacts health and quality of life.** (2010) [link](#)
2. **Alzheimer's disease linked to sleep disturbances.** (2019) [link](#)
3. **Deep sleep helps protect physical & mental health.** (2019) [link](#)
4. **Sleep related to mood, empathy, & burnout.** (2003) [link](#)
5. **Sleep disorders related to work performance.** (2010) [link](#)
6. **Light exposure during sleep increased risk of serious issues.** (2022) [link](#)
7. **During sleep, waste is cleared from the brain.** (2013) [link](#) and [link](#)
8. **Improvements in sleep quality led to improvements in perceived health, work stress, happiness, life satisfaction and overall well-being.** (2023) [link](#) and [link](#)

Insomnia impacts health & quality of life (2010)

- This research explores the effect of insomnia on next-day functioning, health, safety, and quality of life.
- "It is well known that psychiatric conditions, anxiety and depression in particular, are comorbid with insomnia. However, emerging data have shown links with several common and costly medical conditions such as heart disease and [diabetes](#)."
- "Furthermore, studies show that patients who have insomnia have more emergency department and physician visits, laboratory tests, and prescription drug use than those who do not have insomnia."
- "Insomnia also has been shown to negatively affect daytime functioning, including workplace productivity, as well as workplace and public safety."
- Research: [link](#)

Alzheimer's disease linked to sleep disturbances

- "Sleep is essential for both cognition and maintenance of healthy brain function."
- Neural activity contributes to memory consolidation and cerebrospinal fluid (CSF) clears metabolic waste products from the brain. Results demonstrate that the sleeping brain exhibits waves of CSF flow on a macroscopic scale, and these CSF dynamics are interlinked with neural and hemodynamic rhythms.
- Research: [link](#)

For years, researchers have been searching to explain a link between Alzheimer's disease and sleep disturbances. Though many theories exist, just [recently], scientists made a stunning discovery. During deep, non-rapid eye movement (non-REM) sleep, your brain actually cleans itself. [This study](#) details how during non-REM deep sleep, your brain experiences a measurable electrical surge followed by a wave of cerebrospinal fluid every 20 seconds throughout the stage. This wave of fluid is literally washing your brain. There are so many factors that affect your ability to get quality sleep, such as sleep disorders like sleep apnea, imbalanced hormones, alcohol use near bedtime, anxiety and depression, toxic exposures, your daily routine, and many more. But the good news is, there's a lot you can do to improve these factors. – **Dr. Mark Hyman**

Deep sleep helps protect physical & mental health

- "Getting enough quality sleep at the right times helps protect physical and mental health."
- Slow-wave sleep (SWS) represents high-intensity sleep and predominates in the first part of the night. Rapid eye movement (REM) sleep accompanies dreaming.
- Deep sleep drives brain fluid oscillations.
- Rhythmic fluid flows in deep sleep may allow communication and clearance of waste products
- Research: [link](#)

Sleep related to mood, empathy, & burnout (2003)

- Study participants: 47 interns in the internal medicine resident program at the University of Pennsylvania School of Medicine
- Associations between sleep deprivation and mood, empathy, or burnout were explored.
- The prevalence of chronic sleep deprivation, depression, burnout, and empathy increased from baseline to year end. There was an association between becoming chronically sleep deprived and becoming depressed (OR = 7, p = .014).
- There was an association between chronic sleep deprivation and mood disturbances.
- Research: [link](#)

Sleep disorders related to work performance

- Chronic sleep deprivation has been associated with negative work outcomes, including absenteeism and occupational accidents.
- One-thousand Americans who work 30 hour per week or more were asked questions about employment, work performance and sleep in the National Sleep Foundation's 2008 Sleep in America telephone poll.
- Long work hours were associated with shorter sleep times, and shorter sleep times were associated with more work impairments. Thirty-seven percent of respondents were classified as at-risk for any sleep disorder. These individuals had more negative work outcomes as compared with those not at-risk for a sleep disorder.
- Results suggest that long work hours may contribute to chronic sleep loss, which may in turn result in work impairment. Risk for sleep disorders substantially increases the likelihood of negative work outcomes, including occupational accidents, absenteeism and presenteeism.
- Research: [link](#)

Light exposure during sleep increased risk of serious issues

- "Studies consistently link light exposure during sleep to metabolic disruption. A new study adds to this research... older adults (between 63 and 84 years of age) who were exposed to *any amount of light during sleep* were at higher risk for obesity, [diabetes](#), and hypertension. Keep that phone out of your bedroom!" ([Chris Kresser](#))
- Research: [link](#)

During sleep, waste is cleared from the brain

- "The restorative function of sleep may be a consequence of the enhanced removal of potentially neurotoxic waste products that accumulate in the awake central nervous system." [\[source\]](#)
- "During sleep there is a dramatic increase in flow of cerebrospinal fluid in your brain, and this washes away the toxic waste proteins that built up in your brain when you were awake... The researchers said that this cleansing process may reduce the risk of Alzheimer's because the waste proteins being washed away are toxic to brain cells. This potentially explains why it is hard to think clearly after you've had a sleepless night and why prolonged lack of sleep can actually kill people and other animals. According to the researchers, this cleansing of waste products during sleep maybe be the very reason we need to sleep." [\[source\]](#)
- Research: [link](#) and [link](#)

Improvements in sleep quality led to improvements in perceived health, work stress, happiness, life satisfaction and overall well-being (2023)

- “Researchers sampled data from the [Czech Household Panel Survey](#) (CHPS), which maps the living conditions and describes the dynamics of long-term changes among Czech households and individuals. They analyzed 5,132 paper-and-pencil self-administered questionnaires.” [\[source\]](#)
- “The study found that improvements in sleep quality could lead to improvements in an individual’s subjective health, work stress, happiness, life satisfaction, and overall well-being.” [\[source\]](#)
- Research: [link](#) and [link](#)

Physiology, Stages, Circadian Rhythm



Sleep is a Physiological Activity

Sleep is a Measurable Physiological Activity in the Brain

All sleep disorders always have a physical factor — always —because sleep itself is a measurable physiological activity originating in your brain... Your brain generates measurable electrical activity while you're sleeping, similar to electrical impulses from your heart. This brain activity tells how well or how poorly you are sleeping. Most health care professionals simply do not know or do not appreciate this physiological dimension of sleep, which therefore leads them to focus on psychological aspects. This physical measurement reveals whether your sleeping brain waves are normal (indicating good sleep quality) or whether sleeping brainwaves are abnormal (poor sleep quality). – **Dr. Barry Krakow MD and Susan C. Olmstead**

Sleep Stages

Sleep is a process of cycles, each lasting about 90 minutes.

Sleep isn't a uniform state of unconsciousness you slip into when it becomes dark and, theoretically, ride until morning. It's a dynamic process that goes in waves — or more precisely, cycles — throughout the night. – **Mark Sisson**

We cycle through the following stages multiple times per night. In the first half of the night, we spend relatively more time in slow-wave sleep. The latter half is characterized by a higher proportion of REM sleep. [Mark Sisson]

- **Stage 1** — Light sleep
- **Stage 2** — Deeper sleep
- **Stages 3 & 4** — Slow-wave sleep (deepest sleep)
- **REM** — “Lighter sleep where our more interesting dreams occur although we can also dream in non-REM phases” [Mark Sisson]

Fascinating Brain Activity During Sleep

When you are dreaming ... your eyes dart quickly from side to side underneath your eyelids, which is why the dreaming stage of sleep is called REM (rapid eye movement) sleep... If you were hooked up to the electrodes that monitor your brain’s electrical activity and record the type and length of your brain waves, it would be hard to tell from just looking at the output if you were dreaming or awake. The quality of brain activity during the waking state and dreaming state is remarkably similar; in fact, some parts of the brain are about 30% more active during dreaming than when you are awake. What’s going on there? Why does your brain need to be so active when you dream? And why is it so different from dreamless sleep? Let’s take a look at the different types of brain activity during waking and sleeping states to help us understand what the brain is doing while we snooze. [See article for details.] – *Olga Kabel*

Circadian Rhythm, Adenosine

“Circadian rhythm” refer to each person’s particular “body clock.” A person’s body clock is associated with such rhythmic events as sleep and wakefulness, eating and drinking, changing core body temperature and more.

One of the many ways our body clock affects our experience is through the production of a neurotransmitter called adenosine. (The nervous system uses neurotransmitters as its chemical signals.)

Adenosine is a type of neurotransmitter that is involved in energy metabolism and expenditure. Over the course of the day, your body usually accumulates more adenosine, which makes you feel tired and ready to sleep by night time. By the time you wake up the next morning, you’ve metabolized adenosine and should feel refreshed. – *Jillian Levy*

Olga Kabel explains [here](#) that “*adenosine* begins to build up in your brain the moment you wake up and continues to build throughout the day. After 12 to 16 hours it reaches a high concentration that signals to the brain that it is time to sleep... Sleep gradually reduces adenosine, but if you wake up before you are ready, you will begin your day with extra sleep chemical.”

The level of adenosine in your body is always fluctuating and is affected by exercise, brain work, metabolic distress, oxidative stress and trauma. [Dr. Axe]

Body Clocks Are Longer than 24 Hours and Vary by Person

Initially it was thought that the circadian rhythms were linked to exposure to the sun, but in 1938 two researchers disproved that point. They literally went and lived in a cave for 32 days without any hint of sunlight... Both researchers continued to exhibit the same predictable pattern of prolonged wakefulness (about 15 hours), followed by a period of sleep (about 9 hours)... They discovered that their daily cycles were not precisely 24 hours. The 24-year old researcher developed a sleep-wake cycle of about 26-28 hours, and the 40-year old researcher had a cycle of slightly longer than 24 hours... Subsequent studies have shown that the average duration of the human circadian clock is about 24 hours and 15 minutes. It doesn't seem like that much of a difference, but over days and months this difference accumulates, unless the daily cycle of the sun corrects it... Daylight is the most reliable, regularly repeating signal that we perceive in our environment... Another factor that sometimes gets overlooked is that though we all have a circadian rhythm that is close to the 24-hour cycle, the peak times of wakefulness are different for all of us. – *Olga Kabel*

Unique Sleep Patterns

Some apparent sleep issues may, upon investigation, turn out to be patterns that may not be dysfunctional. Consider also the fascinating subject of biphasic sleeping explained below.

Eight Hours isn't For Everyone

While it's possible eight hours is what you need, not everybody requires that amount. Some may need a little more, some a little less, says [Shelby Harris](#), PsyD, a behavioral sleep medicine provider and sleep expert with Calm, the sleep and meditation app and mental health brand. The confusion arose, says Harris, when the National Sleep Foundation recommended that adults log between seven and nine hours of sleep. But somehow that was misunderstood as a single-digit average that applied to everyone. – *Karen Asp*

Sleep Patterns May Vary

Not everyone needs the eight hours of sleep each night, despite what we've all heard. A [New York Times article](#) explains the wide variety of natural sleep patterns and calls the popular sleep prescription the "tyranny of the eight-hour block" of sleep. It is simply not true that every person needs the same amount of sleep, or that every person needs uninterrupted sleep. – *Charlotte Bell*

Are You a Biphasic Sleeper?

Historian Roger Ekirch argues, rather convincingly I think, that before the advent of artificial light, humans across geographical locations and social strata slept in two chunks during the night. The first, usually just called "first sleep," or sometimes "dead sleep," comprised the first four or so hours. "Second sleep" went until dawn. In between, people would enjoy an hour, or perhaps two or three hours, of mid-night activities such as praying and meditating, reading and writing, having sex, and even visiting neighbors. This was seen as completely normal, even welcome... Anecdotally, many famous writers, artists, and sculptors have adhered to a biphasic schedule, believing that creativity and flow are enhanced during the mid-night hours...

Remind yourself that waking can be normal, not dysfunctional. I know this can be easier said than done, especially if you're sleep deprived. The thing about biphasic sleeping is that you're still supposed to get the eight hours of nightly sleep you need, give or take. That means you have to spend nine or ten hours in bed. How many people do that nowadays? See if you can commit to at least a couple weeks of sufficient time in bed. Push away your previous (mis)conceptions about what a "good" night of sleep is "supposed" to look like. Try to welcome rather than fight the mid-night waking. Be open to what comes next. – *Mark Sisson*

Techniques for Sleeping Issues 3.3



Lesson Overview

In this lesson, we explore evidence-based techniques for inducing quality sleep and responding to issues such as leg cramps, restless legs syndrome, and sleep apnea.

Objective

Provide root causes of sleep issues and numerous evidence-based techniques for inducing quality sleep, with specific considerations for daytime, nighttime and in bed, and for responding to issues such as leg cramps, restless legs syndrome, and sleep apnea.

Description

List and discuss techniques that, when practiced during the day, can improve sleep quality at night. Provide techniques for nighttime, additional considerations for preparing the sleeping space, and finally, techniques for when in bed. Discuss leg cramps (charley horse, muscle spasm), restless legs syndrome (RLS), and sleep apnea. List herbs, supplements and foods that are helpful for quality sleep. Cite research on the effect of pink noise on sleep quality.

Vocabulary

insomnia, restless legs syndrome (RLS), sleep apnea / obstructive sleep apnea (OSA) / obstructive sleep apnea syndrome (OSAS), Willis-Ekbom disease



Vocabulary

1. **INSOMNIA** — Trouble falling asleep or staying asleep, or waking up too early [Dr. Joseph Mercola]
2. **RESTLESS LEGS SYNDROME (RLS)** — “An irresistible urge to move the legs... severity of symptoms can range from mild discomfort to severe disruption that affects overall wellness by disrupting sleep, daily activities, and mental health” [The Epoch Times]
3. **SLEEP APNEA / OBSTRUCTIVE SLEEP APNEA (OSA) / OBSTRUCTIVE SLEEP APNEA SYNDROME (OSAS)** — “The airways narrow or collapse during sleep... recurrent pauses in respiration... accompanied by blood oxygen desaturation and arousal during sleep” [Signal Transduction and Targeted Therapy]; “when a person’s tongue slips back in their throat, blocking the airways and causing them to snore and/or stop breathing, then suddenly gasp for breath” [YogaUOnline]
4. **WILLIS-EKBOM DISEASE** — *See restless legs syndrome (RLS)*

Root Causes of Sleep Issues



With knowledge of causal factors, true healing is possible. Efforts can focus on therapies targeted to correct the causes.

Root causes of insomnia, sleep disorders, obstructive sleep apnea, and restless legs syndrome (RLS) include the following. See the online version of this lesson for links to evidence and references for the items in this list.

1. 5G radiation
2. ADHD drugs
3. Adrenal fatigue / HPA axis dysfunction
4. Alzheimer's drugs
5. Anti-anxiety drugs
6. Antidepressants
7. Antihistamines
8. Antipsychotics
9. Benzos
10. Blood pressure lowering drugs
11. Blood sugar, insulin issues
12. Body temperature, high
13. Covid-19 vaccine
14. Cortisol imbalances
15. Dopamine levels, low (*See also: vitamin D deficiency*)
16. EDCs, PFAS
17. Energy drinks
18. Fluoride (*See also: melatonin deficiency*)
19. Forever chemicals (*See also: EDCs and plastics*)
20. Gut microbiome issues, dysbiosis
21. Hypertension (high blood pressure)
22. Indoor air quality issues

23. Inflammation, chronic
24. Iron deficiency
25. Laxatives with PEG 3350, given to children
26. Medications, prescription and over-the-counter (phthalates/EDCs)
27. Melatonin deficiency
28. Metabolic syndrome (*See blood sugar issues*)
29. Muscle usage / tiredness / strength, deficiency
30. Nervous system, vagal activity issues
31. Night shift work, irregular schedule
32. Nutrient deficiency
33. Obesity
34. Oxidative stress, high toxic load
35. Plastics, microplastics (*See also: EDCs*)
36. Potassium deficiency or absorption issues
37. Screen time
38. Sedentary lifestyle, work
39. Seizure drugs
40. Statins
41. Stevia
42. Stress
43. Ultra-processed foods (*See also: gut microbiome issues*)
44. Vitamin B1 deficiency or absorption issues
45. Vitamin C deficiency or absorption issues
46. Vitamin D deficiency or absorption issues
47. Vitamin E deficiency or absorption issues
48. Zinc deficiency or absorption issues

Chronic Stress Causes ELEVATED Cortisol Levels Which Can Eventually Lead to Adrenal Dysfunction and then Chronically LOW Cortisol Levels and Insomnia

Most people who are under chronic stress will have elevated cortisol levels. This is because the body is trying to ramp up its ability to deal with an excess demand. While high cortisol levels are not a problem in themselves, chronically elevated cortisol can be... Chronically elevated cortisol... is often the beginning of adrenal dysfunction if nothing is done to restore balance. Adrenal fatigue, or more accurately HPA axis dysfunction, is often characterized by a chronically low cortisol level. These people tend to feel tired and unable to handle the daily stressors of life. Other symptoms could include weight gain, hormone imbalance, anxiety, insomnia, depression, and frequent crashes in energy. – **Dr. David Jockers**

Insomnia, Conscious Awareness, and Meditation



What the Research Indicates, in Short

If you struggle with insomnia and frequently feel you've not slept a wink, processes involved in reducing your conscious awareness during sleep may be impaired. Practicing mindfulness meditation is thought to target these processes and may help improve your sleep experience. – **Dr. Joseph Mercola**

More Detail

People with insomnia will often tell you that they haven't slept a wink, even after you've just heard them snore. Recent research validates their experience and explains why this phenomenon occurs. The findings were published in the journal *Sleep*...

Prof. Kay and team analyzed the sleep patterns and experiences of 32 people with insomnia and those of 30 participants who did not have the condition... The study found that people with insomnia who reported that they had been awake, even when the polysomnography showed otherwise, had increased activity in brain areas associated with conscious awareness during the dreamless phase of sleep — that is, non-rapid eye movement sleep...

What the findings of the new study suggest is that people with insomnia may not feel as though they're asleep until their brain experiences a greater inhibitory activity in areas that are linked to conscious awareness... "In patients with insomnia," says Prof. Kay, "processes involved in reducing conscious awareness during sleep may be impaired [...] One of the strategies for targeting these processes may be mindfulness meditation." – **Ana Sandoiu & Jasmin Collier**

Leg Cramps



Other names for leg cramps include charley horse and muscle spasm.

Causes of leg cramps (muscle spasms) may include:

1. Muscle injury [Dr. Jockers]
2. Dehydration [Dr. Jockers]
3. Electrolyte imbalance [Dr. Jockers]; Leg cramps “can often be a sign of either magnesium or potassium deficiency, so increasing your magnesium and/or potassium can address the problem at its root.” [Dr. Joseph Mercola]
4. Edema (fluid retention) [Dr. Jockers]
5. Chemical or heavy metal toxicity [Dr. Jockers]

In the case of leg cramps, “applying heat, stretching and massaging the area can all be helpful. I keep a mobility therapy tool called a Tiger Tail by my bedside in case I get an occasional leg cramp during the night.” [Dr. Joseph Mercola]



“A study, published in the Journal of Physiotherapy revealed engaging in nightly stretching before bedtime can reduce the frequency and severity of nocturnal leg cramps in older individuals.” [The Epoch Times]

Muscle Spasm vs. Restless Legs Syndrome (RLS)

Nighttime leg cramps may be referred to as charley horses or muscle spasms. They are characterized by involuntary contractions or spasms in your leg muscles that are painful and often severe... You should not confuse nighttime leg cramps with restless leg syndrome. RLS is more of a discomfort with a crawling sensation, [and] is relieved when the movement stops and stretching usually helps the issue, while nighttime leg cramps are more difficult to relieve. – **Dr. David Jockers**

Restless Legs Syndrome (RLS)



Restless Legs Syndrome (RLS)* Introduction

Also known as Willis-Ekbom disease, RLS was first identified by Sir Thomas Willis in 1672, and then described in more detail and named by Karl-Axel Ekbom in 1944... RLS includes an irresistible urge to move the legs... symptoms commonly affect the area below the knee in the back of the calf, but they can also extend to the arms and thighs. The sensations usually impact both legs but may alternate between them.... The severity of RLS symptoms can range from mild discomfort to severe disruption that affects overall wellness by disrupting sleep, daily activities, and mental health. – **Dr. Beverly Timerding MD & Terri Ward**

Sensorimotor Disorder & Related to Gut Health

Restless legs syndrome is most appropriately classified as a neurological sensorimotor disorder because the symptoms are produced within the brain... A small 2019 study found that 100 percent of restless legs syndrome sufferers tested had small intestinal bacterial growth, compared to 6 to 15 percent of the general population. Another study found that 69 percent of restless legs syndrome patients tested positive for small intestinal bacterial growth (compared to 10 percent of healthy controls), and 28 percent tested positive for irritable bowel syndrome (compared to general population controls). While it may initially sound strange that gut health could be related to restless legs syndrome, study authors discuss how research has linked gut bacteria to iron deficiency, inflammation, and sleep problems. – **Sarah Warren**

Pharmaceuticals May Worsen Symptoms & Don't Address Root Cause

Restless Legs Syndrome (RLS) affects 7% to 10% of Americans, causing an urge to move legs during rest. While medications are available, they may worsen symptoms long-term, prompting interest in alternative treatments. A comprehensive review of 24 studies found that holistic therapies like exercise, yoga and reflexology significantly reduce RLS symptoms and improve sleep quality without medication side effects. Traditional herbal medicines, particularly Dangguijakyak-san and Shihogyuji-tang, showed promising results in treating RLS, leading to a lasting reduction in symptoms. Regular walking exercise performed three times weekly reduced RLS symptom severity by 21%, while stretching exercises decreased symptoms by 18% and improved overall quality of life. Non-pharmacological treatments like electrical stimulation, pneumatic compression devices and lifestyle modifications (avoiding caffeine, alcohol) offer effective alternatives for managing RLS symptoms and improving sleep quality. – **Dr. Joseph Mercola**

Antidepressants Can Trigger RLS; Diet & Lifestyle Can Improve RLS

Why do certain drugs, like antidepressants, trigger RLS? What can people reliant on such medicines do, if they want to relieve RLS? Which dietary and lifestyle habits are likely to improve RLS? “[In this 25-min video, we] explore the triggers and possible remedies for RLS — from supplementing nutrients and acupuncture to switching medications and peroneal-nerve stimulation. – **Vital Signs, The Epoch Times**

First Step: Test Iron Levels

As a first step, you should get a blood test to find out the level of ferritin in your blood. Dr. John Winkelman, a restless legs syndrome specialist at Harvard-affiliated Massachusetts General Hospital, recommends treating restless legs syndrome with a pill form of iron when the ferritin level is 50 mcg/L or lower. He reports that this relieves restless legs syndrome symptoms substantially in about half of people with ferritin at these levels. – **Sarah Warren**

Vitamin D Supplementation

Our study identified an association between vitamin D deficiency and RLS. – **Siraj Wali et al, Journal of Clinical Sleep Medicine, The Association Between Vitamin D Level and Restless Legs Syndrome: A Population-Based Case-Control Study**

Vitamin D supplementation improves the severity of RLS symptoms. – **Siraj Wali et al, Sleep & Breathing, The effect of vitamin D supplements on the severity of restless legs syndrome**

Lack of Exercise Linked to RLS

Epidemiologic evidence indicates that lack of exercise is a strong predictor of and a significant risk factor for [restless legs syndrome]. – **Ulrike H. Mitchell**

Simple Yoga Stretches & Vitamin B-Complex Relieve RLS

In a study published in the Journal of Alternative Medicine, participants found that [simple yoga stretches] provided much-needed relief from RLS which leaves sufferers unable to sleep because of a constant inexplicable twitching in their legs... Try this practice for restless legs. Do this simple stretch on one leg, then rinse and repeat for the other... Other studies have pointed to vitamin B deficiency as a cause of the disorder, particularly vitamin B-12. Vitamin B-complex taken before bed can often help ease symptoms of restless leg syndrome and help with generalized insomnia as well. – **YogaUOnline**

Practice Simple Leg & Foot Movements with an Emphasis on Grounding & Letting Go

Some people have an uncontrollable urge to move their legs at night because their legs feel uncomfortable. These sensations... feel different from muscle cramps or numbness. The sensations usually go away after some leg movement. RLS typically doesn't lead to other more serious conditions, but it can be very disruptive to sleep if it happens often... According to Western medicine, there is no apparent cause to RLS. In the field of yoga therapy... RLS is viewed as an imbalance in Prana Vayu, with Prana "escaping" to the lower part of the body and creating a sense of restlessness. We turn to Apana Vayu management strategies... [which] means doing some simple feet and ankle movements before bed with an emphasis on grounding and letting go. – *Olga Kabel*

Obstructive Sleep Apnea



Sleep Apnea* Defined

The airways narrow or collapse during sleep, causing obstructive sleep apnea... The main characteristics of obstructive sleep apnea syndrome are recurrent pauses in respiration, which lead to intermittent hypoxia and hypercapnia, accompanied by blood oxygen desaturation and arousal during sleep. – *Renjun Lv et al, Pathophysiological mechanisms and therapeutic approaches in obstructive sleep apnea syndrome*

The Causes of Sleep Apnea & the Problem with CPAP

Sleep apnea is a condition where you repeatedly stop breathing during sleep. Snoring is a related problem caused by a restriction in your airway stemming from either your throat or nasal passageway and typically precedes more severe sleep apnea by several years. Lack of breastfeeding, the preponderance of processed food — which has predisposed several generations to a combination of obesity, malformed mouths, and unnaturally small airways — and rampant vitamin D deficiency from lack of sun exposure appear to be primary causative factors for the steady rise in sleep apnea. One of the most frequently used treatments is a continuous positive airway pressure (CPAP) machine, which straps around your face and uses mild air pressure to keep your airways open while you sleep. However, CPAP does not address any of the potential underlying causes of sleep apnea. Better solutions include oral devices that correct your tongue or jaw position, and oral myofunctional therapy, a form of facial muscle therapy that helps reshape your oral cavity and promote proper placement of your tongue, head, and neck. – *Dr. Joseph Mercola*

High Blood Pressure & Blood Sugar Issues

Obstructive sleep apnoea (OSA) is independently associated with an increased prevalence of metabolic syndrome... Recent data suggest that OSA is independently associated with the cardiovascular risk factors that comprise metabolic syndrome, including hypertension, insulin resistance, impaired glucose tolerance, and dyslipidaemia... OSA is independently associated with an increase in the cardiovascular risk factors that comprise the metabolic syndrome and its overall prevalence. – **Steven R. Coughlin et al, *European Heart Journal***

Healing Microbiome Issues Prevented Hypertension from Sleep Apnea

Obstructive sleep apnea-induced hypertension involves disruption to the microbiota, gut, and brain. Treatment strategies to normalize the microbiota prevented the adverse effects of obstructive sleep apnea on the gut, brain, and blood pressure. – **Bhanu P. Ganesh et al, *Hypertension, Prebiotics, Probiotics, and Acetate Supplementation Prevent Hypertension in a Model of Obstructive Sleep Apnea***

Omega 3 Fatty Acids Minimize Inflammatory Processes Associated with Sleep Apnea, thereby Reducing Cardiovascular Issues & Premature Death

Overall, it is clear that inflammation... plays an important role in OSA related cardiovascular morbidity. Due to the beneficial actions of omega-3 fatty acids for the cardiovascular system and in minimizing the inflammatory process, our research group has hypothesized that omega-3 fatty acid supplementation may be able to reduce cardiac dysfunction and even the occurrence of premature death in patients with OSA. – **Fulvio A. Scorza et al, *Frontiers in Neurology***

With Antioxidants Vitamin C and Vitamin E, Sleep Apnea Symptoms Decreased

After anti-oxidant intake [vitamin C and vitamin E], obstructive sleep apnoea syndrome (OSAS) patients slept better with decrease in Epworth sleepiness score and the number of apnoeic episodes. They spent more time in stages 3 and 4 of sleep. The optimum pressure of CPAP device was significantly lowered also. Oxidative stress contributes to sleep behaviour in OSAS patients, and anti-oxidant intake improves the quality of sleep in them. – **T.D. Singh et al, *Oxidative stress and obstructive sleep apnoea syndrome***

Chinese Herbal Medicine Significantly Decreased Sleep Apnea Symptoms

The present study aimed to investigate the therapeutic effects of Chinese herbal medicines for the treatment and prevention of inflammatory responses and oxidative stress in obstructive sleep apnea hypopnea syndrome ... The mean clinical symptom score was significantly decreased in the experimental group post-treatment compared with the control group. – **Qin Chen et al, *Treatment and prevention of inflammatory responses and oxidative stress in patients with obstructive sleep apnea hypopnea syndrome using Chinese herbal medicines***

Learning Functional Breathing

Sleep apnea is when a person's tongue slips back in their throat, blocking the airways and causing someone to snore and or stop breathing, then suddenly gasp for breath. In my case, loss of breath and gasping would often wake me from sleep... In sleep apnea, the diaphragm spasticity makes repeated attempts to contract to make us inhale, until it succeeds with a gasp... Functional breathing invites all muscles involved in our breathing apparatus to fulfill their role in helping to stabilize the body's core. – **Lillah Schwartz, *C-IAYT***

Potassium Nasal Spray Reduced Severity of Symptoms

The results of a study published in the American Journal of Physiology's Journal of Heart and Circulatory Physiology suggest that a potassium channel blocker nasal spray could reduce the severity of sleep apnea. – *A.C. Danhnke*



11-min video (links to cited research [here](#)), Doctor Steven Park, 7 Surprising Supplements to Help Sleep Apnea

***Note on Diagnoses:**

Knowledge or lack of knowledge of medical terminology can create a power imbalance. When people encounter others who have credentials such as an M.D. who are using unfamiliar or complex terminology, they may feel inadequate or make presumptions about the expertise of the "authority figure". As a result, they may give their power away to another rather than seeking the type of support that empowers them.

Allopathic medicine terminology is entrenched in western society and is necessary for understanding medical research and clinical reports. To efficiently digest information and research for themselves, people need a foundational grounding in the material and a clear understanding of the terminology used.

At Wellness Resource Center, we make it more efficient to understand medical diagnoses and terminology. We don't do this because establishment medicine's approach is the most effective way to heal. On the contrary, it's a verifiably failed system. Medical terminology related to the diagnosis of chronic disease is particularly disconnected from healing, instead perpetuating the verifiably false proposition that illness isn't connected to causes that can be addressed. To counter this harm, we provide information that empowers efforts to identify effective healing support as opposed to drowning in distracting terminology.

While we include information on diagnoses for the help that this can provide, we wish to be clear that establishment medicine uses a system of diagnosis that is often a distraction. The real value in diagnosis is in observing and interpreting the body's messages in order to seek and resolve the cause of illness. Establishment medicine, however, devotes vast resources and time to aggregating symptom combinations and making up names for 97,296 possible combinations. Due to the widespread failure and harm from establishment medicine "treatments", many people experience symptoms without the root cause ever being resolved, thereby becoming chronically ill. This is a new feature of modern life, called "chronic illness." Thus, while we offer information on diagnoses to maximize understanding of all available resources, we advocate for keeping attention primarily on identifying and resolving root causes.

Vital Daytime Techniques



Many sleep issues are daytime problems that show up at night. – *Gary Kraftsow*

There is an extensive body of knowledge around improving sleep quality, with numerous identifiable factors and techniques that impact sleep quality.

Following is a curation of factors that occur during the day, but affect sleep quality at night. See the online version of this lesson for links to evidence and references for the items in this list.

1. **View natural sunlight daily, especially morning light.** — “You can’t wear a brimmed hat, sunglasses and remain in the shade and expect to ‘wake up’ your circadian clock.” [Huberman Lab] “Exposing your body to sunlight for at least 30 minutes in the morning can help regulate the autonomic nervous system and the pineal gland in the brain, thereby normalizing melatonin secretion.” [The Epoch Times] “When your skin is exposed to natural sunlight, the light passes through your tissues and is absorbed by specific organelles, including your mitochondria. Your mitochondria convert the sunlight into biological signals to produce melatonin. Many believe the pineal gland is the only place melatonin is produced in the body, but the pineal gland only makes a small percentage. Mitochondria make the majority of your total supply of melatonin. Melatonin is commonly known for its role in helping you sleep, but it has many more wonderful benefits.” [Wholistic]
2. **Move daily and incorporate resistance training weekly.** — Yoga and strength / resistance training are evidence-based techniques for improving sleep. [BM] Journals and Mercola.com] Walking and other types of movement can also be of significant support. [The Epoch Times]
3. **Engage in daily stress management and address trauma.** — Commit to finding and utilizing effective stress management techniques such as spending time in nature, practicing mindfulness and meditation, and gentle inversions. Address trauma and PTSD. *See also: Stress Management for When You’re Stressed.*

4. **Address neck stiffness.** — Upper back and neck stiffness can affect sleep. [The Epoch Times]
5. **Eat clean foods, free of toxins.** — Avoid processed and junk foods. Limit or eliminate sugar, caffeine, tobacco, and alcohol. “In this randomized trial, researchers gave participants an unhealthy diet and a healthy diet, in random order, and tracked sleep quality after each dietary intervention. While the participants on both diets slept for the same amount of time, those on the junk food diet experienced reduced slow-wave sleep activity (which is a marker for deep sleep)... Eating well = sleeping well!” [Chris Kresser]
6. **Prioritize gut microbiome health.** — Seek support for ensuring a healthy microbiome and gut health as a whole. “Numerous studies have revealed the pivotal role our gut health plays in regulating our sleep-wake cycles and overall sleep quality.” [Dr. Will Cole]
7. **Avoid sleeping pills.** — Prescription and over the counter sleeping pills make you unconscious, not asleep. They don’t address the root causes and are highly addictive. They impair the sleep cycle and increase dementia, falls, and death. [The Epoch Times and Bird’s Eye View] “Once you start such drugs, you cannot stop taking them at will... If these drugs are stopped abruptly, the brain will not have time to produce its own serotonin, and the mood may be affected and could even collapse altogether. This can cause adverse effects ranging from being unable to sleep through the night to becoming suicidal. Therefore, if you are in the process of stopping Western medicine, it is wise to support yourself with other means, such as acupuncture and exercise, to help the brain secrete serotonin.” [The Epoch Times]
8. **Purify indoor air.** — “Using an air purifier can potentially reduce the long-term risk of developing or worsening OSA [sleep apnea]. Research shows that air purification can lower indoor air pollution, reduce inflammation, and support cardiovascular health. High-efficiency particulate air (HEPA) filters are especially good at trapping allergens and airborne particles that can affect breathing during sleep.” [The Epoch Times]
9. **Explore nutritional and herbal support (detailed below).** — “Unlike their pharmaceutical counterparts, natural solutions align with the body’s intrinsic pathways, facilitating the induction of high-quality, deep, and refreshing slumber that contributes to the healing of every system.” [The Epoch Times]

View Morning & Late Afternoon Sunlight

View sunlight by going outside within 30-60 minutes of waking. Do that again in the late afternoon, prior to sunset. On bright cloudless days: view morning and afternoon sun for 10 min; cloudy days: 20 min; very overcast days 30-60 min... Don’t wear sunglasses for this practice if you safely can, but contact lenses and eyeglasses are fine. No, you don’t have to look directly at the sun, and never look at ANY light so bright it is painful to view! That said, you can’t wear a brimmed hat, sunglasses and remain in the shade and expect to “wake up” your circadian clock. — **Dr Andrew Huberman**

Strength Training Helps Prevent Insomnia

Strength training helps you fall asleep faster and stay asleep longer by tiring your muscles and calming you down. This improvement in sleep quality leads to increased daytime energy and alertness. – *Dr. Joseph Mercola*

Excessive Screen Time, Anxiety & Overwhelm Make it Difficult to Fall Asleep

The light emitted by our computers, devices, and phones can negatively affect the production of melatonin, which is a natural hormone that “dims” our alertness and creates a mental state conducive to sleep. Excessive screen time, anxiety, and a sense of too many tasks to complete can make it difficult to unwind and relax, and even more difficult to fall asleep. Our neurochemistry gets out of balance, distorting the signals to the brain’s sleep centers. – *Shirley Telles MBBS, PhD*

Yogic Lifestyle Supports Good Sleep

Yoga also includes many lifestyle suggestions that are helpful for rest, restoration of balance, and good sleep. These include a sattvic diet (foods that are both soothing and nourishing), rising at dawn, completing most activities by dusk (which may seem difficult but is not impossible), using natural light as much as possible, and tuning in with nature and ourselves. – *Shirley Telles MBBS, PhD*

See much more in the next lesson: [Yoga & Sleep](#)

Night Time Techniques



At Night Time

See the online version of this lesson for links to evidence and references for the items in this list.

1. Use blue blocking goggles and/or eliminate screens after dark.
2. Avoid heavy meals before bed. "Eating can signal the body to get energized for activity." [The Epoch Times] "Spicy foods and unhealthy fatty or sugary foods can also lead to fragmented sleep,¹² especially when eaten late in the evening. This is thought to be due to the brain chemical hypocretin, a neurotransmitter that helps keep you awake and also plays a role in appetite." [Dr. Joseph Mercola]
3. Take a warm shower or bath at least 90 min before bed. [Dr. Joseph Mercola and The Epoch Times] Or, soak feet in hot water. "Research has found that the closer the temperature of the body's internal organs is to that of the limbs, the easier it is to fall asleep... Soaking the feet in hot water can help reduce the temperature difference between the extremities and the internal organs, thereby promoting better sleep." [The Epoch Times]
4. Ice the neck to stimulate the vagus nerve. A randomized study "confirmed our main hypothesis that cold stimulation at the lateral neck region would result in higher heart rate variability and lower heart rate than in the control condition." [source]
5. Create a bedtime routine including removing sensory stimulation for a period of time before sleep. "Most sleep experts will tell you that the key to consistent and restful slumber lies in cultivating good sleep hygiene — a set of simple and sensible behavior guidelines which echo yogic and ayurvedic principles." [Yoga International]
6. Drink warm herbal tea before bed.

7. Do gentle yoga poses, breathwork and/or meditation before bed. [Frontiers and The Epoch Times] See more: [Yoga & Sleep](#)
8. Maintain a consistent sleep schedule.
9. Favor an earlier bedtime.

In the Bedroom

See the online version of this lesson for links to evidence and references for the items in this list.

1. Create a sanctuary space for sleeping. Turn off technology. [Naturally Savvy]
2. Keep bedroom and pillow cool. [The Healthy]
3. But also, try wearing socks. [Brief Communications and The Healthy]
4. Use a non-toxic mattress and bedding. [Naturally Savvy]
5. Air out duvet (comforter, blanket) at least weekly — especially helpful when put outside in cool air. Use separate duvets for co-sleepers to accommodate individual temperature preferences and lead to fewer sleep disturbances. [Cecilia Blomdahl]
6. Try a sleep mask. “Wearing a sleep mask enhanced participants’ ability to learn new information and form memories. Use of sleep masks, as well as ear plugs, by ICU patients significantly improved subjective sleep quality. Exposure to light at night may increase your risk of cancer, obesity, high blood pressure and diabetes.” [Dr. Joseph Mercola]
7. Listen to “pink noise” (20 to 20,000 hz frequencies, gentle sound similar to rushing water or wind blowing through leaves) while sleeping. See research below.[Dr. Joseph Mercola]
8. Utilize essential oils such as lavender oil. “Single-blind randomized studies showed that lavender improved the mean scores of sleep quality in fifteen healthy students, in sixty-four ischemic heart disease patients, and in thirty-four midlife women with insomnia.” [PubMed Central]

In Bed

See the online version of this lesson for links to evidence and references for the items in this list.

1. Try mouth taping. [The Epoch Times]
2. Try sleeping naked. “Many of these benefits are related to lower body temperature, which can have a significant impact on your sleep quality.” [Dr. Joseph Mercola]
3. Prop body as needed for pain-relief, comfort and a neutral spine. “My goal with this video is to show you some simple ways that you can make your preferred sleeping position more comfortable and hold your spine in better alignment through the night... I’ll discuss each of the three sleeping positions — stomach, side, and back — and give effective tips on how you can maintain better positioning for your back and hips.” [Tone & Tighten]
4. Try sleeping on the side or back as opposed to the stomach. “Many people who sleep on their stomach experience neck pain and tension because their head is turned to one side or the other, keeping muscles in their neck and shoulders contracted or stretched all night long. Lying on the stomach with the head turned to the side also puts pressure on the cervical vertebrae, potentially causing nerve compression and tingling or numbness in the arms and hands. Headaches can be caused or made worse by compressing the neck muscles and cervical vertebrae. And lying on your stomach puts pressure on your lower back, contributing to muscle tension and disc problems.” [YogaUOnline]
5. Settle the mind. Once in bed, engage in practices that reduce mental chatter such as progressive relaxation, visualization, mantra meditation, or mindfulness practice. [The Epoch Times] “For people suffering from insomnia, just getting into bed can trigger a new bout of stress. If you find your thoughts are racing and you are worrying about falling asleep, you can practice a body scan, where you consciously relax various parts of your body. Or you can work with your breath.” [Yoga for Times of Change] In addition to traditional mantras, see “bedtime mantras” here. Seek consistency. “Teaching yourself how to drop into a relaxed state and then fall to sleep (and stay asleep) takes practice. Consistency and patience while you learn the practices are important. Management of insomnia with yoga means creating a consistent routine to regularly reinforce relaxation and sound sleep.” [Yoga Therapy]
6. Have tools for nighttime awakening. See more: Yoga & Sleep: From Bed
7. If you can't return to sleep, leave the bedroom but do not turn on lights or technology.

Video



14-min video by functional medicine clinician Chris Kresser, Notes include links to research.

Outline:

1. Cool room/bed 67+/- degrees
2. Restrict light at night – dark room and/or mask
3. More natural light during the day
4. Manage stress during the day
5. Stop devices at least 1 hour before bed, ideally 2-3 hours before
6. Move more, sit less
7. Breathe through your nose at night
8. Eat a nutrient-dense diet, esp. Mg, Fe, D3
9. Smart supplementation: Mg, Se, K, B6, B12, C, D3, choline

Herbs, Supplements, Foods



Consider experimenting with any of these natural remedies and sleep support. See the online version of this lesson for links to evidence and references for the items in this list.

1. 5- HTP
2. Adaptogens
3. Amino acids
4. Antioxidants
5. Ashwagandha
6. Black cumin oil extract
7. Bone broth
8. Brahmi
9. Butyrate
10. Catnip
11. Chamomile
12. Cherries, tart (Montmorency tart cherries are a natural source of melatonin)

13. Chinese herbal medicine, Jiawei Di Tan Tang
14. Chrysanthemum tea
15. Collagen
16. Diet, anti-inflammatory
17. GABA (gamma-aminobutyric acid)
18. Glutamine
19. Iron supplementation, if levels are low
20. Jatamansi
21. Kava kava
22. L-theanine
23. Lavender
24. Lemon balm
25. Linden flower
26. Magnesium and magnesium-rich foods
27. Melatonin
28. Milk, warm
29. NAC
30. Nighty Night Tea by Traditional Medicinals
31. Passion flower
32. Peppermint
33. Potassium
34. Punarnava
35. Reishi mushrooms
36. Rose tea
37. Selenium
38. Silk tree bark tea
39. Sour jujube seed tea
40. St. John's wort
41. Valerian
42. Vitamin B1 or B complex
43. Vitamin C
44. Vitamin D
45. Vitamin E
46. Vitamin K
47. Zinc

Black Cumin Extract

Throughout the month-long study, participants diligently took either a placebo or the black cumin oil extract. Each participant completed nightly Pittsburgh sleep study questionnaires, and, at the study's conclusion, all questionnaires were compiled, and initial blood tests were repeated. The results showed a striking reduction in cytokine and cortisol levels among the group treated with black cumin oil extract. Furthermore, this group reported significantly higher scores indicating quality restorative sleep, painting a promising picture of the extract's potential impact. – *The Epoch Times*

Taking Valerian for 14 Days Improved Sleep

We confirmed significant differences between valerian and placebo for parameters describing slow-wave sleep... A tendency for shorter subjective sleep latency, as well as a higher correlation coefficient between subjective and objective sleep latencies, were observed under valerian treatment. – *F. Donath et al, Pharmacopsychiatry*

Acupuncture & Acupressure



3-min, Michael Reed Gach PhD, "Sleep Better Insomnia Acupressure Points" Demonstrates how to counteract sleep problems for getting to sleep, or getting back to sleep for all ages, including children"

Acupuncture and TCM

Acupuncture, the ancient practice of inserting fine needles into specific body points, originating from traditional Chinese medicine (TCM), has a big place in modern health care. Treating everything from chronic pain to anxiety, this time-tested technique is helping people seeking alternatives to conventional treatments. Many common conditions can be effectively treated with acupuncture. It can also contribute to overall health and well-being... TCM treatments, including acupuncture and calming herbal formulas, can improve sleep quality by addressing the root causes of insomnia, such as stress, an overactive mind, or hormonal imbalances. Acupuncture can help regulate the sleep-wake cycle by calming the nervous system. – *Christine Connor*

Music, Sound Frequencies, ASMR



Research

Pink noise while sleeping improved sleep and memory (2017)

- A researcher for the study described pink noise as “fairly pleasant; it kind of resembles a rush of water ... It’s just noticeable enough that the brain realizes it’s there, but not enough to disturb sleep.”
- Listening to pink noise improved sleep and memory “among 60- to 84-year-olds, a population that tends to have reduced slow wave sleep, or deep sleep, compared to younger individuals. Slow wave sleep is also associated with memory consolidation.” [\[source\]](#)
- “The participants scored about three times better on memory tests the morning after listening to pink noise in their sleep.” [\[source\]](#)
- “Past research also found that steady pink noise helped to regulate brain waves and led to more stable sleep and improved sleep quality in adults, both during the night (a 23% improvement with pink noise) and during naps (a 45% improvement).⁹ Seventy-five percent of the study participants also said they experienced more restful sleep when exposed to pink noise.” [\[source\]](#)
- Commentary – Mercola.com: Can Pink Noise Help You Sleep? [link](#)
- Commentary – Today: ‘Pink’ noise might lead to better sleep and improved memory: A new study finds that a specifically-timed sound can improve sleep and memory [link](#)
- Research – Acoustic Enhancement of Sleep Slow Oscillations and Concomitant Memory Improvement in Older Adults [link](#)

Music, Sound Frequencies

1. [Chinese Bamboo Flute, Relaxing Zen Music & Water](#)
2. [Soothing Instrumentals for Relaxation & Sleep](#)
3. [Sound Bath](#)
4. [Just Music TV](#)
5. [528Hz & 432Hz Tuning Forks](#)
6. [432 hz Music for Sleep](#)
7. [Tibetan Healing Sounds](#)
8. [Crystal Singing Bowls Sleep Music](#)
9. [Native American Sleep Music](#)
10. [8 Hrs. Supercharge Your Intuition While You Sleep](#)

ASMR

1. [Whispers of the Wolf ASMR & Reiki](#)
2. [TingTing ASMR](#)
3. [WhispersRed ASMR](#)

More

For Guided Visualizations (with or without music) and other related techniques, see the next lesson in this series: [Yoga & Sleep](#)

Readings



The Importance of Sleep Routines

According to happiness researcher Gretchen Rubin, what you do every day matters more than what you do once in a while. Since you go to sleep every day... how you go to bed can make a huge difference in the quality of sleep you get. – **Lena Schmidt**

Nutrition & Lifestyle Are Key Factors in Sleep Quality & Duration

A high-calorie diet³ can disrupt circadian rhythms, and a lack of nutrients⁴ like calcium, magnesium, and Vitamin D may negatively affect sleep duration. In contrast, healthy behaviors like physical exercise⁵ contribute to better sleep quality and increased energy. – **Danielle Pacheco**

Natural Remedies

I recommend 300 to 600 mg of passionflower or 320 to 480 mg of valerian root extract before bed. Other natural sleep supplements include melatonin or magnesium. Potato starch mixed into a glass of water before bedtime can also help. Start slowly with one teaspoon and gradually build up the dose. This feeds good gut bacteria and improves blood sugar control while helping you drift into sleep. – **Mark Hyman MD**

Get Physically and Mentally Relaxed

The ability to fall asleep in two minutes or less, anywhere, anytime, is actually a skill like any other, and one anyone can learn. The technique for how to do so was in fact developed for Naval aviators during World War II... To accomplish the first goal, Winter taught the men how to physically relax. To accomplish the second, he taught them how to mentally relax. In fact, he essentially defined sleep as the state of being both physically and mentally relaxed... Winter argues that once you're physically relaxed, if you get "your mind clear of any active thoughts for just ten seconds, you will be asleep." The key to falling asleep quick is thus to stop the train of thoughts that is usually rumbling through your head. You have to stop ruminating on the regrets, worries, and problems of the day. – **Brett and Kate McKay**

Self-Soothing and Making Peace with Yourself

According to Sandra Anderson... we often make sleep much more complicated than it has to be. "I sometimes think about how parents soothe a child—reading or telling them stories, or singing lullabies, and then I think of adult-equivalent ways to self-soothe," she says. "It's important to feel content when you lie down to sleep, and to feel satisfied on every level—physical, mental, and emotional."... Make peace with yourself, ask for inner strength and guidance, and go to bed with a clear conscience—happy and content!" – **Kathryn Ashworth**

Traditional Chinese Medicine (TCM) Perspective

From the TCM perspective, the sympathetic nerve belongs to yang, and the parasympathetic nerve to yin. One can have a good night's sleep only when yin and yang are balanced... Various physiological activities within the human body can be classified into yin and yang. When yin and yang are balanced, the body is healthy; conversely, an imbalance will cause diseases. Therefore, TCM emphasizes the balance of yin and yang as the key to good health... Many Chinese medicinal herbs regulate the balance of yin and yang, such as Bupleurum and Cyperus decoction, Bupleurum ramuli cinnamon decoction, or Bupleurum and peony powder, which are all modulators that calm the sympathetic system and allow the parasympathetic function to work. Of course, TCM also has several prescriptions that target sleeping, such as ginseng and ziziphus pills, sour jujube decoction, and Bupleurum and dragon bobe decoction, which all have the effect of stabilizing the brain. In addition, acupuncture can also balance the autonomic nerves. For example, huatuojiaji acupoints on both sides of the bladder meridian (Hair Clip EX-B2) are the sympathetic nerve chains of the autonomic nervous system. Massage or acupuncture on these points effectively adjusts the autonomic nervous system. – **Amber Yang**

Waking in the Night

What not to do [when waking in the night] is just as important as what actions you can take to fall back asleep. Don't allow yourself to start working in your mind. Don't think about your job, your problems, or anything like that. Instead, get out of bed and sit in a chair near the bed in the dark. Then in your mind, focus on a relaxing and wonderful memory. One of the best times of your life. Not an exhilarating and exciting one, but a calm and loving one where you felt safe and seen and full hearted. Once you feel like you might be able to go back to sleep, get back into bed. Absolutely under no circumstances should you look at your phone, laptop, or TV. – **Max Strom**

Morning Routines Important, Too

Great sleep starts in the morning. As soon as you're awake, go outside and greet the sun. Get natural sunlight onto your body and into your eyes in order to "tell" your circadian clocks that the day has begun and you are awake. The more natural light you get in the daytime, the better you sleep at night.¹⁵ Stand barefoot on the earth... Studies suggest that connecting to the earth with your bare skin can improve subsequent sleep. Get some physical activity. Sex, exercise, a little light movement, a barefoot walk outside (which is efficient because it's both light and movement and connection to the earth). The point is to move your body to give your circadian clock the message that you're ready to live the day... You don't have to eat breakfast, although some people find it really helps them get better sleep. But if you do, make sure you're eating protein. – **Mark Sisson**

Morning and Evening Sunlight Best for Impacting Sleep

Getting sunlight in your eyes in the middle of the day can be beneficial but that's the "circadian dead zone" during which you can't shift your clock. Viewing morning sunlight and evening sunlight is really the key to a robust night's sleep and strong focus and energy during the day. – **Dr. Andrew Huberman**

Healing Stress & Trauma

Most of us are trying to get over something – experiences big and small... Here are some of the strategies that we can employ for ourselves and our students:

- Allowing enough time for sleep and using yogic techniques to improve the quality of sleep.
- Bringing our emotional wounds to the front of our awareness so that our brains could deal with them during the dream state. It can mean journaling or talking about our own troubles or creating a safe space for our clients to share their stories.
- Working on separating our memories of the event from the emotional charge associated with it through our yoga practice (meditation works great for that).
- Choosing to look at our nightmares as a brain process that is attempting to help us get over our traumatic experiences.
- Using yogic stress management techniques (specifically langhana techniques, and specifically pranayama) to try to lower the levels of chronic stress and as a result, circulating levels of noradrenaline.

– Olga Kabel

Yoga & Sleep 2.1



Lesson Overview

In this lesson, we explore evidence-based yoga techniques, including poses, breathwork and meditation, for promoting quality sleep.

Objective

Cite research on yoga's impact, and considerations for choosing yoga poses and sequences, breathwork, and meditation to optimize sleep quality.

Description

Cite research on the effectiveness of yoga and other techniques in inducing quality sleep. Discuss why and how yoga helps with sleep. List poses and sequences for consideration. Provide resources for breathwork and meditation to optimize sleep quality.

Research on Yoga's Impact



See [Research on the Impact of Yoga: Stress Relief & Resilience, General Well-Being, Sleep, Immunity](#) for summaries and links to research demonstrating these outcomes:

1. Mindfulness meditation **improved sleep for older adults experiencing sleep issues** (2015)
2. Mindfulness meditation was **successful for the treatment of insomnia**, providing “durable results” (2015)
3. **Statistically superior sleep results** among yoga groups (2013)
4. After 6 months of yoga, **sleep quality, depression, and health status of older adults were all improved** (2009)
5. Significant **decrease in the time taken to fall asleep, an increase in the total number of hours slept, and in the feeling of being rested** in the morning among elderly, compared to Ayurveda group and control group (2005)
6. Among **more than 1,800 women with sleep problems**, yoga groups showed a **significant improvement in sleep** (2020)
7. Yoga improved self-reports of sleep quality, plus **measurable markers of slow-wave sleep, REM and awakenings** (2009)
8. Among **4,500 participants**, mind-body therapies (meditation, tai chi qigong, and yoga) resulted in **statistically significant improvement in sleep quality and reduction in insomnia severity** (2019)
9. Meditative movement (tai chi, qi gong, and yoga) **improved sleep quality in a variety of patient populations** (2016)
10. Yoga **improved sleep in cancer survivors** (2014)
11. Tibetan Yoga intervention vs stretching or usual care: **Better sleep quality, both short and long-term, among breast cancer patients** receiving chemotherapy (2017)

12. 8 weeks of **web-based Hatha Yoga had beneficial effect on the mental health and quality of sleep** in older adults (2022)
13. **Moderate-intensity exercise or stretching improved sleep quality** among sedentary, overweight, and postmenopausal women (2003)
14. **Overweight adults** engaging in **resistance training and/or aerobic exercise increased their sleep time**, with the greatest gains from resistance training (2003)
15. Mindfulness practices and cognitive behavioral therapy were equally **effective for insomnia** (2018)
16. Practicing twice-weekly yoga **improved symptoms of restless leg syndrome** (2013)

RCT: Mindfulness Meditation Caused Large Improvement in Sleep Quality

This randomized control trial examined the effect of a structured mindfulness meditation program on moderate sleep disturbances in older adults... The program... resulted in improvement in sleep quality... The improvement in sleep quality was large and of clinical relevance. – *David S. Black PhD, MPH et al, JAMA Internal Medicine*

Mindfulness Based Stress Reduction Improved RLS

The aim of the pilot study was to investigate whether mindfulness-based stress reduction (MBSR) can be used as a feasible and acceptable treatment option for the RLS patient population... The findings revealed group and individual improvements in RLS symptom severity, RLS-specific quality of life, sleep quality, and daytime sleepiness. Results also revealed significant reductions in general psychopathology, and overall significant improvement in mindfulness and mental health status post-intervention with stable improvements at a 3-month follow-up. – *Vicky Bablas et al, Mindfulness*

Why & How Yoga Helps



Research makes it clear that yoga promotes good sleep. While some of the underlying reasons for this may yet to be fully understood, we do know the following.

1. Yoga helps accomplish two keys of sleep: being physically relaxed, and being mentally relaxed.
2. Chronic stress (or an imbalance between sympathetic and parasympathetic nervous system activation) tends to lead to sleep issues. Yoga promotes nervous system balance by invoking the relaxation response. See more: [Why Yoga Works](#)
3. Yoga can help to balance yin and yang energies in the body.
4. Yoga can help to release blocked energy. When engaged in yoga practice, students may become aware of a felt sense of blockages to their energy flow and a sense of the blockages being alleviated. See more: [Energy & Subtle Body Anatomy](#)
5. Mindfulness appears to be a key to resolving insomnia as described in research [here](#) and [here](#).
6. In addition to the tremendously significant impacts of conscious breathing and other breathwork, it may be particularly important for sleep apnea.

Nervous System Balance is Key to Sleep, and Yoga is Extremely Successful at Regulating the Nervous System

When a person is excited or nervous, the sympathetic nervous system will become active, causing blood pressure and heart rate to increase, and gastrointestinal peristalsis to stop. When a person is relaxed or at rest, the parasympathetic nervous system will become active, blood pressure and heart rate will slow down, and resumption of gastrointestinal motility. A balance between these two systems allows people to be active when they should be and to rest when they need to, thereby maintaining the normal functions of the body. Once there is a problem with the autonomic nervous system, it can cause various symptoms throughout the body. In addition to insomnia and waking prematurely, there may also be signs of fear, palpitations, chest tightness, breathlessness, dizziness, and tinnitus, among others. There also might be issues with the gastrointestinal and digestive system, such as gastroesophageal reflux, as well as skeletal and muscle problems, including numbness in the hands and feet. – **Amber Yang & JoJo**

Conscious Breathing Improves Sleep Quality Among Insomniacs

There is autonomic dysfunction among insomniacs, especially in relation to vagal activity; however, this decreased vagal activity can be facilitated by practicing slow, paced breathing, thereby improving sleep quality. – **H.J. Tsai et al, Psychophysiology**

Another Way to Describe Yoga's Impact on the Nervous System: Yoga Reduces Hyperarousal

Sleep disturbances are often caused by hyperarousal, which can result from running thoughts or a mind that “won't turn off.” Yoga can help reduce arousal, thereby increasing the chances of a good night's sleep. We can also manage the hyperarousal that accompanies insomnia by tailoring our daily routines in order to expend excess energy during the day, and invoke a calming energy in the evening, and we can make yoga a part of these routines. – **Kayla Kurin**

See also: [Why Yoga Works: Yoga's Impact on Gene Expression & Stress](#)

Why Mindfulness Meditation Helps

Ten percent of American adults struggle with chronic insomnia and 30% report occasional or short-term insomnia. Research finds you can remain consciously aware even while your brain and body are sleeping. Insomniacs who report being awake even when their brain wave patterns indicate they're sleeping have increased activity in brain areas associated with conscious awareness during the dreamless phase of sleep. If you struggle with insomnia and frequently feel you've not slept a wink, processes involved in reducing your conscious awareness during sleep may be impaired. Practicing mindfulness meditation is thought to target these processes and may help improve your sleep experience. – **Dr. Joseph Mercola**

Balances Yin & Yang Energies

One very common symptom of imbalance between yin and yang is insomnia or poor sleep, which is something you are likely to experience when you have too much yang energy or too little yin energy... Not being able to sleep is considered an imbalance in Chinese medicine, which addresses the energy meridians and seeks to balance the body's energy by tonifying or unblocking your qi. Acupuncture is one approach to this, in which needles are placed in specific points on meridians to balance energy excesses or deficiencies. Yin Yoga is largely based on the same principle. It seeks to address energy along the meridians, which are believed to be situated in our connective tissue. These not-too-intense, longer-held stretches bring profound release and physical benefits [and provide a] release that allows blocked energy to circulate. – **Josh Summers**

Why & How Yoga Promotes Sleep

Stretching activates the parasympathetic nervous system, which helps slow the heart rate, cue the muscles to release, and quiet the mind. And intentional breathing calms the mind and body. When you slow your breath, it becomes physiologically impossible to remain in a state of anxiety or agitation. (You heard that right: physiologically impossible.) – *Jenessa Connor*

Cools the Body

It's usually easier to fall asleep in a cooler room than a hot one... you might stick your feet out from under the blanket if you are feeling too warm. Exposing your extremities to open-air helps cool you down... My trick for falling asleep in a room that's too warm is to dip my feet into cold water and then leave them slightly wet as I climb back into bed. As water evaporates from the feet, it helps to cool you down... The yoga tradition, of course, has its tricks for cooling the body. You can try Shitali breath, which involves breathing in through a rolled tongue, or its cousin Sitkari, which involves breathing in through your teeth. Both of those techniques are meant to cool you down. If you also lengthen your exhalation when you practice those, it will also help to calm your nervous system. Another general suggestion that concerns body temperature comes from the yogic ideas of Ida and Pingala... Breathing through the left nostril is supposed to stimulate the lunar channel and cool the body. – *Olga Kabel*

Yoga is Extremely Helpful but Will be More So When Combined with other Techniques for Improving Sleep Quality

If a student comes to you seeking help with sleep troubles, there are many yogic techniques we can use to help. However, those techniques become less effective if her body has to fight against.. natural sleep-wake cycles, effects of stimulants, and so on. – *Olga Kabel*

General Approach

Optimizing, Individualizing

See [Yoga Adaptation Principles](#) for a foundation. To consider yoga techniques for individual situations related to sleep, Olga Kabel suggests the following approach [here](#).

1. Ask questions to get an idea of how the sleep issues are manifesting and to get a sense for potential [causal factors](#).
2. As a result of what you learn, make recommendations on lifestyle choices that address sleep consistency, sleep environment and/or pre-sleep activities. (See [Sleep Issues & Effective Techniques](#) for an extensive and organized curation of evidence-based techniques.)
3. Create a yoga practice for the student's situation.

A General Approach

When choosing poses, it's always wise to consider the common physical and energetic effects of [asana categories](#) (standing poses, backbends, forward bends, Restorative Yoga, Yin Yoga, etc). However, the approach to practicing a pose is arguably as relevant, or more so, than the specific posture itself.

When choosing stretches and poses for practicing later in the day or just before bedtime, consider these suggestions:

1. Practice with gentle awareness.
2. Move slowly.
3. Synchronize movements with the breath.
4. Prioritize comfort as opposed to striving.
5. Practice gentle [stretches](#), and consider "lingering" for 5 to 10 slow breaths in each pose.

Consider "Lingering" for 5 to 10 Breaths in Each Pose

Be sure to linger for five to 10 long, slow breaths in each pose. The idea is to stretch the muscles sufficiently and also slow your nervous system sufficiently so you can release tension and settle into sleep. – *Yoga with Cassandra*

Yoga Techniques for Consideration

See below for:

1. Poses
2. Sequences
3. Breathing Techniques
4. Meditation, Visualization
5. Chanting

Poses for Consideration



Late in the Day, Minimize These

To encourage sleep, it's typically advised to minimize exhilarating practices late in the day.

1. Minimize exhilarating practices including stimulating breath practices such as Kapalabhati
2. Minimize deep backbends
3. Minimize Power Yoga, Vinyasa Flow or strong versions of Surya Namaskar
4. Minimize "over-enthusiastic" Ujjayi [Lisa Sanfilippo]
5. Minimize "overteaching" or "creating dependence on your cues" [Lisa Sanfilippo]
6. However, when there is excess tension or nervous anxiety, the practitioner may need to first begin with vigorous or stimulating practices to "burn off" excess energy and tension, after which the student will be more comfortable slowing movement down. See more: Sequencing & Pacing to Balance Energy

Poses with many backbends, inversions, or rigorous flows can boost your energy levels, making it harder to fall asleep. For example, positions like urdhva dhanurasana (upward bow or wheel pose) or adho mukha vrksasana (handstand) are best avoided right before bed. – **Chris Mosunic PhD**

Stretches & Poses for Consideration

Consider stretches that help to prepare the body for sleep and poses that support the relaxation response. Some considerations include:

See online version of this lesson for links to evidence and references for the items in this list.

1. Adho Mukha Svanasana (Downward Facing Dog)
2. Prasarita Padottanasana (Wide Legged Standing Forward Bend)
3. Uttanasana (Standing Forward Bend) + Twist
4. Utthan Pristhasana (Lizard)
5. Malasana (Yogic Squat)
6. Sukhasana (Easy Seat / Cross-Legged Seat)
7. Janu Sirsasana (Head to Knee)
8. Baddha Konasana (Bound Angle)
9. Upavistha Konasana (Wide Angle Seated Forward Bend)
10. Paschimottanasana (Seated Forward Bend)
11. Cat-Cow Flow
12. Balasana (Child's Pose)
13. Adho Mukha Virasana (Downward Facing Hero) + variation of taking arms to side to stretch side body
14. Thread the Needle / Reach Under the Bed [source]
15. Anahatasana (Extended Puppy Pose)
16. Apanasana (Knees to Chest) or Ardha Apanasana (One Leg Knee to Chest)
17. Ankle stretches
18. Supta Padangusthasana (Reclined Hand to Toe) with strap
19. Twist, seated, supine or restorative such as Jathara Parivartanasana (Reclined Twist with strap)
20. Ananda Balasana (Happy Baby)
21. Full body stretch (supine, arms overhead)
22. Supta Baddha Konasana (Reclined Bound Angle)
23. Viparita Karani (Inverted Action / Legs Up the Wall)
24. Other Restorative Poses such as "Mermaid Twist", Constructive Rest, Side Lying Savasana or Supported Savasana
25. Yoga Nidra

In this article on rest and restoration, yoga therapist Shirley Telles suggests these poses:

- Tadasana (Mountain Pose)
- Standing Sidebend
- Gomukhasana (Cow Face Pose)
- Bhujangasana (Cobra Pose)
- Salabhasana (Locust Pose)
- Matsyasana (Fish Pose)
- Sidebending while lying on the back

It's More About the Manner in Which You Approach Each Posture

What should your yoga practice resemble late in the evening when you're wanting to counteract anxiety and insomnia? There's no single style or sequence of yoga that's ideal for everyone at night. It's more the manner in which you approach each posture that makes a difference. Sustained and gentle stretches. Slow and steady breathing. Moving slowly in between poses rather than being rushed. It's a simple equation of easy movement and measured breathing which instigate your parasympathetic nervous system, which in turn brings profound release and relaxation — both physical and psychological. – **Jeanie Manchester**

Avoid Vinyasa Flow in Favor of Slow Flows or Static Poses

While the after-work hot yoga class or vinyasa flow may be great for some, if you or your students are finding sleep elusive, you'll likely need to schedule these heating, heart rate-increasing practices for much earlier in the day — or avoid them entirely in favor of slower and steadier yoga. Later in the evening, offer slow flows or static poses, with plenty of time to breathe with each movement. Add more cooling practices that slightly lengthen the exhale; or teach Chandra Bhedana Pranayama (Moon-Piercing Breath), a single-nostril breath associated with cooling, calming energy. Even if you begin with a heating practice and fast movements, cool it down at least about halfway through class to set your students up for relaxation. – **Lisa Sanfilippo**

Sequences to Optimize Sleep



8-min video, Yoga with Cassandra, "Evening Yoga – Wind Down & Chill Out Yoga"



13-min video, Yoga with Cassandra, "10 min Stretch & Relax Evening Wind Down Yoga"



16-min video, Yoga with Cassandra, "Evening Yoga Stretch-Full Body Bedtime Yoga"



15-min video, Yoga with Bird, "15 Min Gentle Yoga for Deep Sleep – Sleep Throughout the Night"



14-min video, Sarah Beth Yoga, "Yoga Stretch for Chest & Back"

Asana & Meditation for Releasing the Day [link](#) and [video](#)

- **Title** – Yoga Practice for Better Sleep
- **Source** – Olga Kabel, YogaUOnline
- **Focus** – “This yoga practice uses simple movement, deep belly breathing and meditation to gradually let go of the regrets, worries and problems of the day. The practice also includes guided relaxation that you can do in bed.”
- **Format** – The article includes rationale and a stick-figure sequence summary, plus there is a 39 min video

6 Poses for Better Sleep [link](#)

- **Title** – Restorative Sequence: Better Sleep Practice
- **Source** – Leza Lowitz, Yoga for Times of Change
- **Focus** – This sequence is so simple to do and so effective, that even if it does not lead you to deep slumber, it will certainly induce relaxation and calm. The sequence includes both Legs Up the Wall pose and Instant Maui pose.
- **Format** – This sequence includes photos and instructions.

6 Poses for Sleep [link](#)

- **Title** – This Restorative Yoga Sequence Will Prepare You For a Good Night of Sleep
- **Source** – Jenny Clise, Yoga Journal
- **Focus** – Jenny Clise, a New York City-based yoga teacher, guides you through a sequence she designed to soothe your nervous system, increase flexibility, and calm your mind after a full day.
- **Format** – This sequence includes photos and instructions.

Poses + A Full Sequence [link](#)

- **Title** – 15 Best Yoga Poses for Sleep
- **Source** – Jeanie Manchester, Yoga Journal
- **Focus** – “[These] poses can be done in their entirety and in the order in which they appear... or you can simply turn to the ones that bring you relief on any given night.”
- **Format** – This sequence includes photos and instructions.

Morning & Evening Sequences [link](#)

- **Title** – Morning and Evening Yoga Sequences for Better Sleep
- **Source** – Kayla Kurin, Yoga International
- **Focus** – A restorative evening sequence, plus a morning sequence “for increasing energy levels and reducing early-morning grogginess”
- **Format** – Includes pose sequences with photos and instructions.

Bedtime Sequence [link](#)

- **Title** – 9 Yoga Poses for When You Just Can’t Relax at Night
- **Source** – Gabrielle Marchese, Yoga Journal
- **Focus** – “This gentle yoga sequence is designed to ensure that you leave the tension behind and fall asleep with ease.”
- **Format** – This sequence includes photos and instructions.

The Best Yin Yoga Stretches for Better Sleep [link](#)

- **Title** – The Best Yin Yoga Stretches for Better Sleep
- **Source** – Josh Summers, Yoga Journal
- **Focus** – “This sequence of stretches for sleep is designed to enhance your yin energy and cool your yang aspects to promote a proper night of rest.”
- **Format** – Includes pose sequences with photos and instructions.

See Also

- [Restorative Yoga: Sequencing Considerations & Sample Sequences](#)
- [Sequence Library: Restorative Yoga Sequences](#)
- [Sequence Library: Yin Yoga Sequences](#)

From Bed

In this [article](#) and this [article](#), Nina Zolotow describes practices that can be done from bed (either when going to bed or upon waking in the night). Here are some suggestions:

1. Practice [calming breathing techniques](#) such as extending the exhalation, [Brahmari](#) or [cooling practices](#).
2. Say a [mantra](#) in your mind. (Zolotow suggests using something different than that used during the day when you're trying to stay awake.)
3. Do a self-guided [body scan](#) for physical relaxation.
4. Listen to calming music, a guided relaxation or ASMR in a voice that you find calming. Suggestions below.
5. Practice a supported inversion or other restful pose (such as inserting a pillow or bolster under pelvis as shown [here](#)).

See also: Restorative Poses to do in Bed by Sara Clark, Yoga Journal [link](#)

Breathing Techniques



Select breathing techniques from here: [Pranayama & The Breath Hub](#).

These may be of particular relevance for promoting sleep:

1. Natural Breathing
2. Basic Breath Training
3. Brahmari (Bee Breath)
4. Cooling Practices

Avoid stimulating breath practices such as Kapalabhati or extending the inhalation.

Nina Zolotow notes that most people will not find [Sama Vritti](#) or [Nadi Shodhana](#) down-regulating enough for sleep, but if a person finds those practices calming, they should of course choose what works best for them.

Breathing Exercises Proven Effective for Insomnia

Millions suffer from insomnia worldwide, experiencing a wide array of symptoms from trouble focusing to severe long-term health conditions. The go-to solution is often medication, but research suggests that deep breathing exercises may be equally as effective. Slow, deep breathing boosts melatonin production, an essential hormone for initiating sleep. Slow breathing techniques promote relaxation and strengthen the body's rest-and-digest response. An increase in melatonin helps signal to the body that it's time to sleep, aiding in falling asleep faster and more deeply. Deep breathing can improve vagal tone, which is essential for relaxation. Research shows that spending 20 minutes on slow-paced breathing before bed significantly helps with relaxation. Researchers have said that slow-paced breathing could be a practical, non-medication-based treatment for insomnia. – *Sheramy Tsai*

Max Strom: 4-7-8 Breathing Pattern

A simple, age-old breathing practice that I use and teach is ideal for insomnia caused by stress. It's the 4-7-8 Breathing Pattern. Lie in your bed in the dark, ready to sleep. Then inhale to the count of four, hold your breath to the count of seven, and exhale to the count of eight. I recommend continuing this for two minutes, but you can always do it longer. – **Max Strom**

Tuning into Breathing Patterns & More

I asked about what he eats, drinks, and how he breathes. The other keys I routinely inquire about is how a client exercises, rests, and thinks. I already know he can't sleep or rest. His exercise routine is a typical Type A: the harder the better, weights, running, everything high intensity... I did a breathing diagnostic tuning into the pathway of his native breath and watching with awareness as he proceeds. Then I requested he grow his breath and expand into the three abodes: pelvis, ribcage, and upper chest. And I watch. Where is the restriction, the fear, the blind spot? ... His breath was not smooth and rhythmic, but forced and extremely vigorous as if preparing for a heavy bench press. It appeared as a big explosion into the belly then nothing into any thoracic or ribcage portion of his form. Most importantly how he thinks. Wow. This man is responsible for all the woes of the earth, politics, and his family... He is intense, passionate, and pissed off! ... He carries all of this energy with him in his mind constantly. With this information about his anxiety-related sleep problems in mind, I felt it wise to focus my recommendation prescriptively for how he breathes, exercises, and thinks. – **Shari Williams**

After reading the article linked above, then go to [Relax and Go to Sleep Part 2: The Five P's](#) for in-depth details on Shari Williams' approach with her client.

Meditation, Visualization, Chanting

Additional resources for consideration include the following.

Meditation, Mindfulness, Guided Visualizations

Select meditation & mindfulness techniques from here: [Meditation & Mindfulness Hub](#).

These may be of particular relevance for promoting sleep:

1. Guided Visualizations. “Research has shown that even for experienced yoga teachers, guided relaxation (in a voice other than their own) is more useful than auto-suggestions (self-guided practice). I recommend lying in savasana.” [\[source\]](#)
2. Falling Asleep in an Enchanted Forest (sleep meditation with binaural beats) [\[link\]](#)
3. 'I AM' affirmations for happiness and abundance | guided sleep meditation [\[link\]](#)
4. Relaxing Guided SLEEP Meditation for Stress Relief (12 min) [\[link\]](#)
5. Yoga International written bedtime meditation by Kathryn Ashworth [\[link\]](#)
6. Verbal meditation for sleep by Jeffrey Crespo [\[link\]](#).

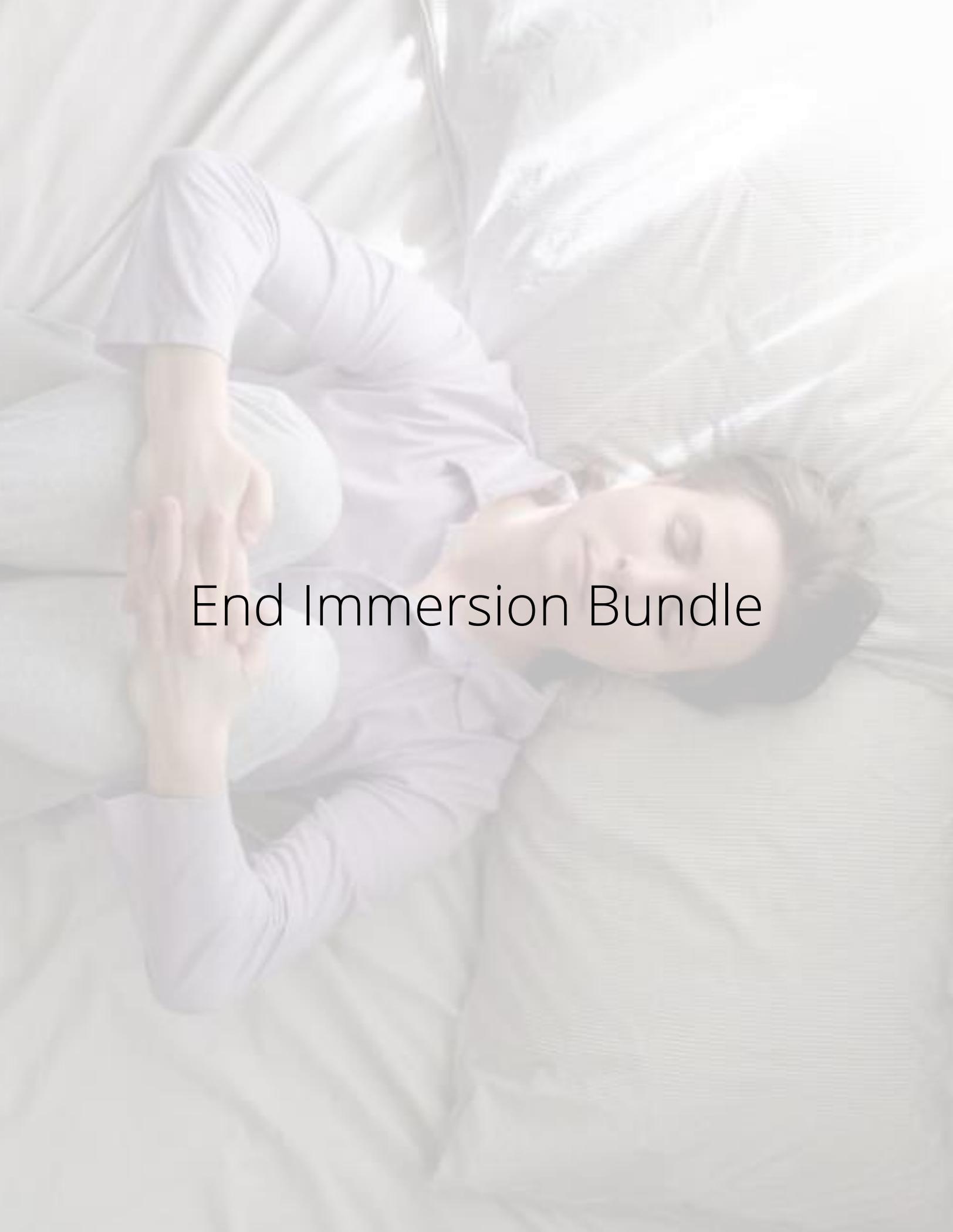
More Considerations

1. [Sound, Mantras & Chanting Hub](#) — Including [AUM/OM](#) chanting
2. [Anxiety & Yoga Practices to Consider](#) — A list of considerations including breathing practices, present moment awareness, yoga philosophy, sound and mantra, and meditation

Turning from the Content of Thoughts (Worry) to Sensations in the Body

Mindfulness meditation practice suggests that rather than becoming absorbed in the story you are creating, you can align your consciousness with the restless sensations in the body. Mindfulness of body sensation can begin to ground and quiet your mind. In Buddhist thought, worry is a component of restlessness, one of the five hindrances to meditation, along with desire, aversion, sleepiness and doubt. The metaphor for restlessness is a constant wind, a perpetual movement that finds no rest. Worry causes the mind to spin in never-ending circles. It stimulates and agitates the mind and body, making sleep impossible. I began to apply my meditative discovery to those times when I could not sleep. I could choose to bypass getting caught by the content of my spinning thoughts. Instead, I could turn my mind to the energy beneath the story. I began by letting go of the worry that I was not getting enough sleep. -

Charlotte Bell

A woman with light brown hair, wearing a light purple long-sleeved shirt, is sitting on a bed with white linens. She has her eyes closed and her hands are clasped together in front of her chest. The text "End Immersion Bundle" is overlaid in the center of the image.

End Immersion Bundle