



TIPS FROM SCIENCE FOR BETTER SLEEP

We spend 1/3 of our lives in sleep!

Sleep is needed for: clearing plaques from our brains, sharper thinking, boosting immune function, memory consolidation, mood regulation, decreasing pain, heart health, creating/breaking down tissue, blood sugar regulation and weight control.

BASIC SLEEP CYCLE

Average sleep cycle is 90 minutes and includes non-REM (Rapid Eye Movement) and REM segments of sleep. Things that shorten REM: erratic sleep schedules, alcohol, overeating, and medication.

People of different ages need different amounts of sleep. **People who get this much sleep tend to live longer with a higher quality of life than those who don't.**

Newborn infants: 0-2 months	14-17 hours (includes naps)
Infants: 3-11 months	12-15 hours (includes two naps)
Toddlers: 1-3 years	11-14 hours (includes one nap)
Preschoolers: 3-5 years	10-13 hours (includes one nap)
School-age children: 5-10 years	9-11 hours
Teen: 10-17 years	8 -10 hours
Young Adults: 18-25 years	8 -10 hours
Adults: 26-64 years	7-9 hours
Older Adults: 65 + years	7-8 hours

50% of Americans are sleep deprived. 30% have chronic insomnia. **At least 50% of all insomnia is stress-related.** A recent survey by the National Sleep Foundation found that over 60 % of Americans suffer from poor sleep quality resulting in everything from falling asleep on the job and absenteeism to marital problems and car accidents.

TIPS FOR QUALITY SLEEP

Sleep Schedule

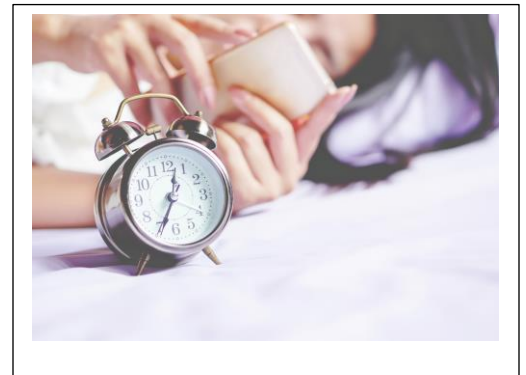


- Reserve the last hour before going to bed to create a calming habit for yourself (see nervous system handout for options) such as rocking, meditation, drinking a hot drink, and reading a good (but not too exciting) book
- Keep a regular sleep cycle—if you cannot fall asleep at an exact time, go to bed and turn out the lights at the same time every night anyway, even on weekends
- Avoid napping (this disrupts the body's circadian rhythm). If you feel you must nap, limit naps to 30 minutes or less and not after 3 pm.
- Don't get up early to finish a project, stay up later—this causes the least disruption to your rhythm

- Avoid setting your alarm earlier than 6 am if possible—prepare the night before if 6 am will crimp your routine
- If you must regularly get up before 6 am, reset your body clock by ensuring darkness and quiet for an early-to-bed schedule and waking up to bright lights
- Don't let anything disturb your natural sleep cycle (animals in bed with you, TV on, spouse flipping and turning, sounds, lights)

Sleep and Technology

- Exposure to bright lights in the evening sets the body clock “forward”, making you want to sleep later (10 min. for every hour of exposure)
- Blue light is a natural part of the light spectrum, and we need it during the day to keep us alert. However, our blue light exposure needs to mirror the sun: peaking at mid-day tapering to none by sundown. Electronic devices contain LED lights, which are shining directly into eyes, delivering blue light to your brain as long into the evening as you are using electronic devices and using LED lighting in your home. Consider using the following methods to correct your blue light exposure after sundown:
 - Get “blue-blocking” or zen lenses and use them when needing to use electronics into the evening
 - Use apps that shift the light spectrum to the yellow-orange range
 - Apply filters to your device screens that block blue light
 - Use smart lightbulbs with wireless controllers so that you can alter your light spectrum exposure
 - Get outside **EVERY** day to reset your light exposure!
- DON'T expose yourself to flickering screens
 - (TV, cell phones, laptops—these causes brain arousal)
 - don't keep electronics these in the bedroom



Sleep Atmosphere

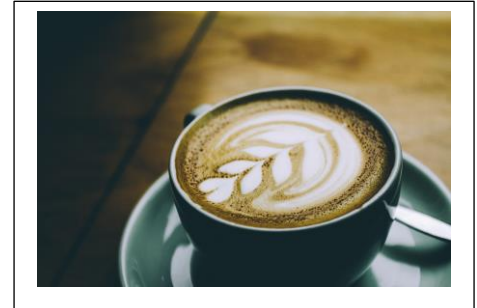


- Pay close attention to sleep atmosphere: no scents (most odors disrupt sleep—except vanilla-almond), cool temperature, minimal noise, no distractions, utmost comfort with sleep surface (including pillows, sheets, mattress, etc.)
- Use your bedroom only for bedroom activities—don't have your office or work activities located there
- Don't watch the clock, rather get up and do a calming or boring activity until you feel sleepy, then go back to bed
- Develop sleep rituals—calming activities to remind your body that it is time to sleep
- Let go of worries by writing them down as they float into your mind
- Add Plants! One spider plant can remove 90% of toxins in 2 days!

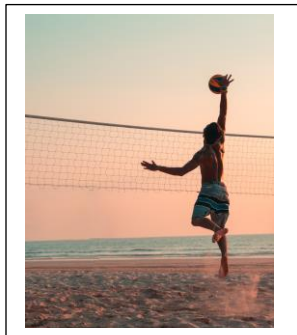


Sleep and Diet

- Avoid snacks with additives/artificial sweeteners before bedtime and don't overeat—food digestion causes an increased in body temperature, and a slight decrease is needed for better sleep
- Have a dairy product or light carbohydrate shortly, but not right before, bed to increase melatonin production—see above about body temperature
- Avoid alcohol/caffeine/nicotine 4-6 hours before bed
- Alcohol disrupts deep sleep!
- **DON'T** drink caffeine **or eat chocolate** after lunch: the body takes up to 8 hours to metabolize caffeine's effects in the body
- Top bedtime teas: Chamomile, Mint, Valerian, Lemon balm, Ginger, Rosehip, honeybush, Rooibos
- Other sleepy time drinks: Golden milk (with natural anti-inflammatory Tumeric), and Malted Milk (the malt contains magnesium, vitamin B, iron, zinc, and phosphorus).



Sleep and Exercise



- Regular exercise can deepen sleep
- Exercise **NO LATER** than **3 hours** before bedtime. Cardiovascular exercise is known for flushing the stress hormones that are produced from non-physical stress out of the body (in essence, using them for their intended purpose and then excreting the by-products)

Sleep and Medications

- Some antidepressants decrease Serotonin, which then decreases Melatonin—talk to your doctor about this if you are on one or any other medications about which you have questions

Sleep and Miscellaneous

- Control hormones, disease, travel as these all affect the body's rhythm
- The greater our body weight, the more sleep we need
- Spend time outside EVERY DAY. One day/night of camping reset campers' sleep cycles back to normal!
- Controlled breathing can be a great sleep helper. Try this easy but effective method—Breathe in for a count of 4. Hold that breath for a count of 4.





Breathe out for a count of 8. Continue for up to 30 minutes

- Having your window open creates a better balance of CO₂ and O₂ in the bedroom, with fewer night-time awakenings
- Deep sleep clears the brain of plaques, reducing your risk for Alzheimer's!
- The parts of the brain dealing with emotions are up to 30% more active in REM sleep than during waking hours, creating a type of overnight "therapy" 😊 "It is a common experience that a problem difficult at night is resolved in the morning after the committee of sleep has worked on it."

~John Steinbeck

- Gratitude helps you fall asleep as it suppresses worry. Try drifting off to thoughts of three things that made you happy during the day.

Sleep Stories

10 Top sleep stories in Calm: Wonder, Blue Gold, Serenity of the Sea, Song of the Sunbird, The Waterfall, The Velveteen Rabbit, The Nordland Night Train, Cloe Your Eyes Sleepypaws, Morocco's Hidden Forest, the Nutcracker

Don't succumb to Orthosomnia—the anxiety created through becoming obsessed about getting the perfect night's sleep!

SLEEP DEPRIVATION FACTS



- Insomnia is twice as common for women than men
 - Sleep deprived people fall asleep within 4 min. compared to 40 for non-sleep deprived
 - Sleep deprived people engage in microsleep—brief periods in which they lose consciousness (microsleep is NOT restorative, but rather a warning). Microsleep is a safety hazard (leading to falling asleep at work, behind the wheel, increased errors and accident rates), and it is possible to be doing this without being aware of it
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- Sleep deprivation leads to increased health problems and work absenteeism
 - Sleep deprivation increases cortisol levels—a reverse of what happens with normal sleep
 - Sleep deprivation causes depletion of the immune system, growth of fat rather than muscle, harm to brain cells, acceleration of aging, and increased risk of depression and heart disease
 - Stress from sleep loss cancels the benefit of exercise—don't wake up early to have your workout if this is causing sleep deprivation.



WHAT IS SLEEP DEPRIVATION VS. DEFICIENCY

Sleep deprivation occurs if we don't get enough sleep. Sleep deficiency is a broader concept. It occurs when we have one or more of the following:

- We don't get enough sleep (sleep deprivation)
- We sleep at the wrong time of day (that is, we're out of sync with our body's natural clock)
- We don't sleep well or get all of the different types of sleep our body needs
- We have a sleep disorder that prevents us from getting enough sleep or causes poor quality sleep
“Your ability to function and feel well while you're awake depends on whether you're getting enough total sleep and enough of each type of sleep. It also depends on whether you're sleeping at a time when your body is prepared and ready to sleep.” *NIH: Explore Sleep Deprivation and Deficiency*

SLEEP BIBLIOGRAPHY AND RESOURCES

Be sure to watch this humorous video on sleep benefits:

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