# Sleep


Image Source:CDC:https://www.cdc.gov/features/getting-enough-sleep/index.html

Americans don't realize how important sleep is to their health and wellness!

According to the CDC, 35% of adults aren't getting the recommended 7 hours or more of sleep per night.[1]

[1] CDC. Retrieved from https://www.cdc.gov/features/getting-enough-sleep/index.html

## Sleep Requirements

Sleep requirements vary with age and activity levels.[2] If you are an athlete or work a job that requires movement or activity, your requirements may be on the higher end of the range in the image below.

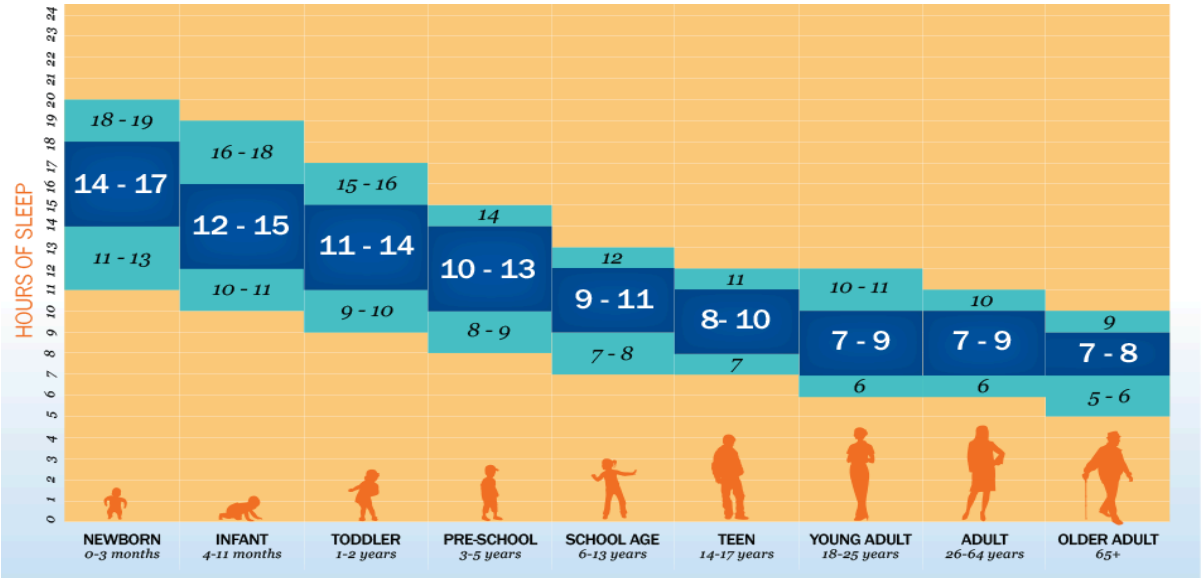


Image source: Sleep Requirements: SleepNSF / CC BY-SA (https://creativecommons.org/licenses/by-sa/4.0)

About one-third of our day should be reserved for sleep. Many people view sleep as merely a "down time" when their brains shut off and their bodies rest. People may cut back on sleep, thinking it won't be a problem, because other responsibilities seem much more important. However, research shows that a number of vital tasks carried out during sleep help people stay healthy and function at their best.

[2] Paruthi S, Brooks LJ, D'Ambrosio C, Hall WA, Kotagal S, Lloyd RM, et al. Recommended amount of sleep for pediatric populations: a consensus statement of the American Academy of Sleep Medicine. J Clin Sleep Med 2016;12(6):785–786.

## Types of Sleep

When a person is sleeping, the brain cycles through phases of non-REM (rapid eye movement) and REM sleep. Each phase helps to ensure that the mind and body are rested. About 75% of your sleep is non-REM sleep, 25% is REM sleep. Certain phases are needed to help you feel rested and energetic the next day, while other phases help you learn information and form memories.

Review the chart below on types of sleep to understand what happens during REM and non-REM sleep.

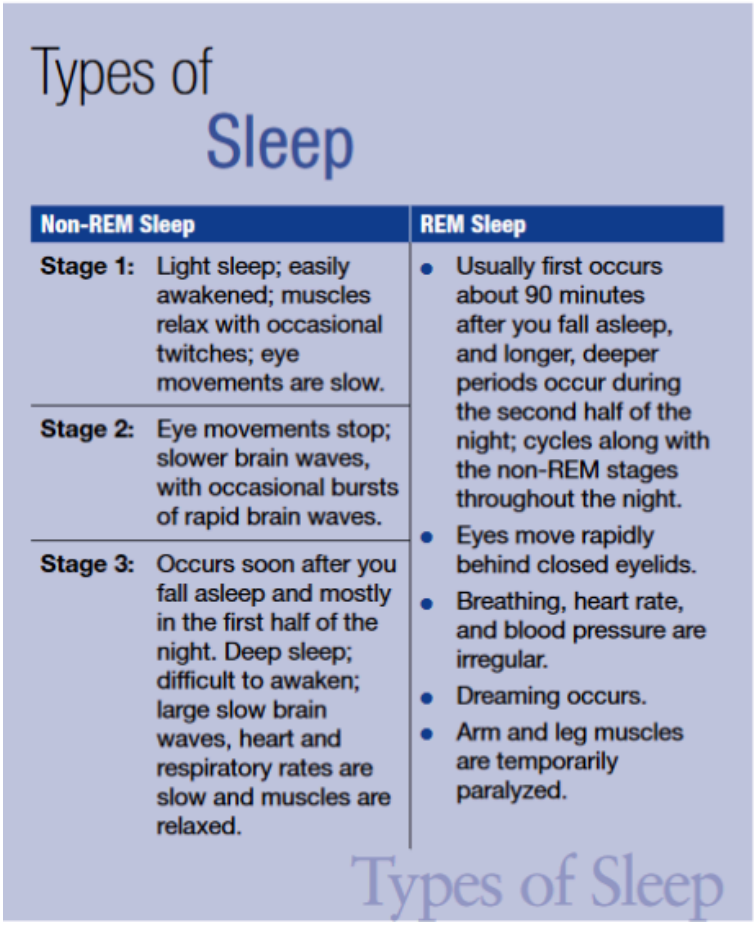


Image Source: Types of Sleep: https://www.nhlbi.nih.gov/files/docs/public/sleep/healthy_sleep.pdf

You typically first enter REM sleep about an hour to an hour and a half after falling asleep. After that, the sleep stages repeat themselves continuously while you sleep. As you sleep, REM sleep time becomes longer, while time spent in stage 3 non-REM sleep becomes shorter. By the time you wake up, nearly all your sleep time has been spent in stages 1 and 2 of non-REM sleep and in REM sleep. If REM sleep is severely disrupted during one night, REM sleep time is typically longer than normal in subsequent nights until you catch up. Overall, almost one-half of your total sleep time is spent in stage 2 non-REM sleep and about one-fifth each in deep sleep (stage 3 of non-REM sleep) and REM sleep. In contrast, infants spend half or more of their total sleep time in REM sleep. Gradually, as they grow, the percentage of total sleep time they spend in REM continues to decrease, until it reaches the one-fifth level typical of later childhood and adulthood.

Why people dream and why REM sleep is so important are not well understood. It is known that REM sleep stimulates the brain regions you use to learn and make memories. Animal studies suggest that dreams may reflect the brain's sorting and selectively storing new information acquired during wake time. While this information is processed, the brain might revisit scenes from the day and mix them randomly. Dreams are generally recalled when we wake briefly or are awakened by an alarm clock or some other noise in the environment. Studies show, however, that other stages of sleep besides REM also are needed to form the pathways in the brain that enable us to learn and remember.[3]

[3] National Institutes of Health. Retrieved from https://www.nhlbi.nih.gov/files/docs/public/sleep/healthy_sleep.pdf

## Benefits of Sleep

The quality and quantity of your sleep is important. People whose sleep is frequently interrupted or cut short might not get enough of certain stages of sleep. In other words, how well rested you are and how well you function the next day depends on your total sleep time and how much of the various stages of sleep you get each night. Benefits of adequate sleep include:

### 1) Performance and Memory

We need sleep to think clearly, react quickly, and create memories. In fact, the pathways in the brain that help us learn and remember are very active when we sleep. Studies show that people who are taught mentally challenging tasks do better after a good night's sleep. Other research suggests that sleep is needed for creative problem solving.

Skimping on sleep has a price. Cutting back by even 1 hour can make it tough to focus the next day and can slow your response time. Think about your ability to drive, study or sports performance if you are an athlete!

### 2) Mood

Sleep affects mood. Insufficient sleep can make you irritable and is linked to poor behavior and trouble with relationships, especially among children and teens.

People who chronically lack sleep are also more likely to become depressed.

### 3) Health

Sleep is also important for good health. Not getting enough sleep or getting poor quality sleep on a regular basis increases the risk of having high blood pressure, heart disease, and other medical conditions.

In addition, during sleep, your body produces valuable hormones. Deep sleep triggers more release of growth hormone, which fuels growth in children and boosts muscle mass and the repair of cells and tissues in children and adults. Another type of hormone that increases during sleep helps the immune system fight various infections. This might explain why a good night's sleep helps keep you from getting sick—and helps you recover when you do get sick. Hormones released during sleep also control the body's use of energy.

Studies find that the less people sleep, the more likely they are to be overweight or obese, to develop diabetes, and to prefer eating foods that are high in calories and carbohydrates. [4]

## Sleep Physiology

Many factors play a part in helping you fall asleep and awake on a regular schedule. The body clock typically has a 24-hour repeating rhythm (called the circadian rhythm) that gets signals from adenosine, the hormones melatonin and cortisol as well as your exposure to light. Review the article "What Makes You Sleep" to learn more!

## Sleep Deprivation

Sleep deprivation affects several areas of a person's health.[5]

View the video on sleep deprivation to understand the physiology of sleep deprivation and effects on the body.

---

[4] National Institutes of Health, National Heart, Lung and Blood Institute. Retrieved from https://www.nhlbi.nih.gov/files/docs/public/sleep/healthy_sleep.pdf

[5] US Department of Health and Human Services. National Institutes of Health. Retrieved from https://www.nichd.nih.gov/health/topics/sleep/conditioninfo/sleep-deprivation

Driving while drowsy or sleep deprived can be deadly. An estimated 1 in 25 adult drivers (aged 18 years or older) report having fallen asleep while driving in the previous 30 days.[6] See "Crash in Bed, Not on the Road" below to learn about the warning signs that you might be too sleepy to drive as well as tips to avoid drowsy driving.

# Crash in Bed Not on the Road

Most people are aware of the hazards of drunk driving. But did you know that driving while drowsy can be just as deadly? Like alcohol, a lack of sleep makes it harder to react quickly enough to a suddenly braking car, a sharp curve in the road, or other potentially dangerous situations.

Watch for these warning signs that you might be too sleepy to drive safely:

- Trouble keeping your eyes open or focused
- Continual yawning
- Inability to recall driving the past few miles

If you feel sleepy while driving, pull off the road to a safe place and take a nap for 15–20 minutes.

## Tips To Avoid Drowsy Driving

- **Be well rested before hitting the road.** Keep in mind that if you skimp on sleep for several nights in a row, it might take more than one night of good sleep to be well rested and alert.

- **Avoid driving between midnight and 7 a.m.** This period of time is when we are naturally the least alert and most sleepy.
- **Don't drive alone.** A companion who can keep you engaged in conversation might help you stay awake while driving.
- **Schedule frequent breaks on long road trips.**
- **Don't drink alcohol.**
- **Don't count on caffeine.** Although drinking a cola or coffee might help keep you awake for a short time, it won't overcome extreme sleepiness.

Remember, if you are short on sleep, stay out of the driver's seat!

Image: Crash in Bed, Not on the Road"https://www.nhlbi.nih.gov/files/docs/public/sleep/healthysleepfs.pdf

[6] CDC Retrieved from https://www.cdc.gov/features/dsDrowsyDriving/

## Tips to Improve Your Quality or Quantity of Sleep

Like eating well and being physically active, getting a good night's sleep is vital to your health and well-being.

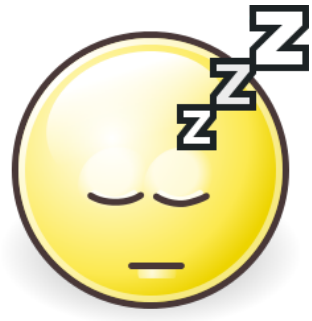

Image Source: Sleeping face: https://upload.wikimedia.org/wikipedia/commons/e/ea/Face-sleep.svg

Here are 10 tips to help you:

- Stick to a sleep schedule. Go to bed and wake up at the same time each day—even on the weekends.
- Exercise is great, but not too late in the day. Try to exercise at least 30 minutes on most days but not later than 2–3 hours before your bedtime.
- Shut down electronic devices about 1 hour before bedtime. Blue light exposure from electronic devices like smartphones, laptops and gaming devices reduces melatonin and can disrupt the body's sleep/wake cycle.[7]
- Avoid caffeine and nicotine. The stimulating effects of caffeine in coffee, colas, certain teas, and chocolate can take as long as 8 hours to wear off fully. Nicotine is also a stimulant.

[7] Column Five Media. Infographic. How Technology Effects our Sleep. Retrieved from https://www.rasmussen.edu/student-life/blogs/main/infographic-how-technology-affects-sleep/

- Avoid alcoholic drinks before bed. A "nightcap" might help you get to sleep, but alcohol keeps you in the lighter stages of sleep. You also tend to wake up in the middle of the night when the sedating effects have worn off.
- Avoid large meals and beverages late at night. A large meal can cause indigestion that interferes with sleep. Drinking too many fluids at night can cause you to awaken frequently to urinate.
- Don't take naps after 3 p.m. Naps can boost your brain power, but late afternoon naps can make it harder to fall asleep at night. Also, keep naps to under an hour.
- Relax before bed. Take time to unwind. A relaxing activity, such as taking a hot bath, reading, listening to music, should be part of your bedtime ritual.
- Have a good sleeping environment. Make sure your bedroom is quiet, dark, relaxing, and at a comfortable temperature.
- Don't lie in bed awake. If you find yourself still awake after staying in bed for more than 20 minutes, get up and do some relaxing activity until you feel sleepy. The anxiety of not being able to sleep can make it harder to fall asleep.[8]

[8]National Institutes of Health, National Heart, Lung and Blood Institute. Retrieved from https://www.nhlbi.nih.gov/files/docs/public/sleep/healthysleepfs.pdf


https://www.mindsethealth.com/matter/sleep-hygiene-tips

If you often find yourself feeling tired or not well rested during the day, despite spending enough time in bed at night, you may have a sleep disorder. Please see this 5 minute video on sleep disorders for additional information. Your family doctor or a sleep specialist should be able to help you.