

# Sleep and Health

*Leader Directions*

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## Description

Sleep is one of the most important aspects of a person's health, yet every day millions of Americans struggle to get the amount they need. According to Healthy People 2020, 25 percent of U.S. adults reporting insufficient sleep or rest at least 15 out of every 30 days. In this lesson, participants will learn about the different ways that sleep can impact their health as well as strategies to help meet recommendations.

## Lesson Goals

Participants will learn:

- Sleep recommendations for different age groups
- Benefits of getting adequate sleep
- Health effects insufficient sleep
- Types and stages of sleep
- Strategies that could help improve sleep quality/quantity.

## Optional Activities

- Discussion – Individual sleeping patterns & difficulties and strategies used to get more sleep.
- Discussion – What is the longest you've ever gone without sleep? How did your body react?
- Team Activity – Divide the audience into two groups and challenge them to see which group can complete both the Sleep Health Crossword Puzzle and Word Search first. If possible, offer a prize for the winning group.

## Handouts

- Sleep Health Crossword Puzzle
- Sleep Health Word Search

## Resources/References

1. <http://www.cdc.gov/sleep/index.html>
2. <http://www.nhlbi.nih.gov/health/health-topics/topics/sdd/why>
3. [http://www.nhlbi.nih.gov/files/docs/public/sleep/healthy\\_sleep.pdf](http://www.nhlbi.nih.gov/files/docs/public/sleep/healthy_sleep.pdf)

## Materials

1. Handouts

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Sleep is a very important but often neglected part of an individual’s overall health. In the United States, more than 25% of Americans report getting insufficient sleep occasionally, while almost 10% experience chronic insomnia. According to the CDC, insufficient sleep is associated with several chronic diseases and conditions—such as diabetes, cardiovascular disease, obesity, and depression.

Sleep recommendations include the following:

<b>Age</b>	<b>Recommended Amount of Sleep</b>
<b><i>Newborns</i></b>	<b><i>16–18 hours a day</i></b>
<b><i>Preschool-aged children</i></b>	<b><i>11–12 hours a day</i></b>
<b><i>School-aged children</i></b>	<b><i>At least 10 hours a day</i></b>
<b><i>Teens</i></b>	<b><i>9–10 hours a day</i></b>
<b><i>Adults (including the elderly)</i></b>	<b><i>7–8 hours a day</i></b>

While insufficient sleep has its consequences, there are several benefits to getting the recommended amount of sleep. Those benefits include healthy brain function and emotional well-being, physical health, as well as daytime performance and safety.

### **Healthy Brain Function and Emotional Well-Being**

Your brain works the best when you’re getting an adequate amount of sleep. As you sleep, your brain is getting ready for the next day while it develops new pathways that help with learning and memory.

Research shows that learning is enhanced when you get an adequate amount of sleep. That includes learning how to do math problems, play musical instruments, perfect athletic techniques, and many other learning and problem solving skills. Adequate sleep also helps with decision making skills, alertness, and creativity skills.

### **Physical Health**

Your physical health is also impacted by your sleeping patterns. Sleep helps your body heal and repair your heart and blood vessels, decreases your risk of obesity, and helps your body balance the hormones that make you hungry or full. Your body’s response to insulin, the hormone that controls your blood sugar, is also affected by how much sleep you get. Insufficient sleep can raise your blood sugar levels, which could increase your risk for diabetes.

Sleep also helps the body’s ability to grow and develop. When the body is in a deep sleep, it releases hormones that support normal growth in children and teens. Those hormones also help with muscle development and the repair of your body’s cells and tissues. Sleep also helps to keep your immune system healthy. When you fail to consistently get adequate sleep, it might be more difficult for your immune system to defend against common infections.

### **Daytime Performance and Safety**

Adequate sleep also contributes to good performance of daily activities. Those lacking adequate sleep are not as productive at work or school compared to those that regularly meet recommendations. They also tend to make more errors, respond slower in different situations, and take longer to complete tasks.

Inadequate sleep can also result in brief moments of sleep during periods of the day when you're typically awake. These occurrences are referred to as microsleep. When microsleep occurs you can't control it and might not even notice when it's happening. A good example of microsleep would be a person driving somewhere and not remembering certain aspects of the trip. Another example might be a person hearing a presentation and not remembering some of the information discussed or finding it difficult comprehend certain points. These occurrences of microsleep can lead to safety issues such as driving accidents where sleep is a factor in approximately 100,000 motor vehicle accidents every year.

### Types and Stages of Sleep

There are two types of sleep that make up the sleeping experience which include: rapid eye movement (REM) sleep and non-REM sleep with the latter consisting of 3 different stages. REM sleep typically occurs between an hour to an hour and half after you fall asleep. During this stage, while your eyelids are closed, your eyes move rapidly in various directions and there is also a rise in your heart rate and blood pressure. This is also the period in which dreaming tends to occur. Stage 1 of the non-REM usually starts as soon as you fall asleep. At this stage your body is at a more relaxed state and you can easily be awakened. You then transition into the non-REM stage 2 stage where you spend about half the night and your brain waves begin to slow down. In the third stage of non-REM sleep, you enter a very deep sleep where it can be very difficult to be awakened. This is considered to be the most beneficial phase of sleep to regain energy for the next day. For a more detailed description of these stages, see the chart below.

## Types of Sleep

Non-REM Sleep	REM Sleep
<p><b>Stage 1:</b> Light sleep; easily awakened; muscles relax with occasional twitches; eye movements are slow.</p>	<ul style="list-style-type: none"> <li>● Usually first occurs about 90 minutes after you fall asleep, and longer, deeper periods occur during the second half of the night; cycles along with the non-REM stages throughout the night.</li> <li>● Eyes move rapidly behind closed eyelids.</li> <li>● Breathing, heart rate, and blood pressure are irregular.</li> <li>● Dreaming occurs.</li> <li>● Arm and leg muscles are temporarily paralyzed.</li> </ul>
<p><b>Stage 2:</b> Eye movements stop; slower brain waves, with occasional bursts of rapid brain waves.</p>	
<p><b>Stage 3:</b> Occurs soon after you fall asleep and mostly in the first half of the night. Deep sleep; difficult to awaken; large slow brain waves, heart and respiratory rates are slow and muscles are relaxed.</p>	

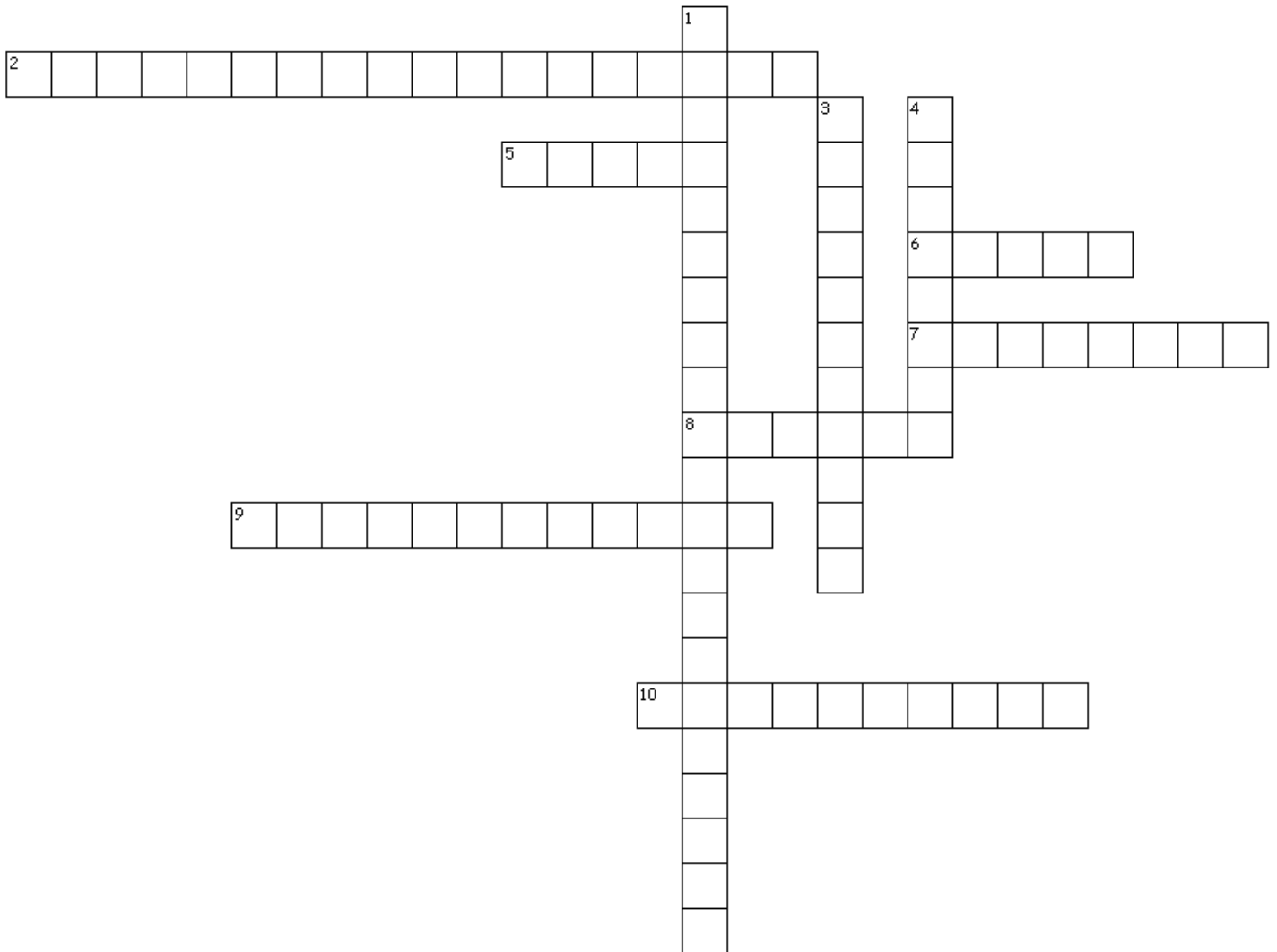
Types of Sleep

## Tips to Get More Sleep

For some, getting the recommended amount of sleep can be easier said than done. Therefore, the National Sleep Foundation has provided the following four tips to help meet those recommendations.

1. Go to bed at the same time each night and rise at the same time each morning.
2. Make sure your bedroom is a quiet, dark, and relaxing environment, which is neither too hot nor too cold.
3. Make sure your bed is comfortable and use it only for sleeping and not for other activities, such as reading, watching TV, or listening to music. Remove all TVs, computers, and other "gadgets" from the bedroom.
4. Avoid large meals before bedtime.

## Sleep Health Crossword Puzzle



### Across

2. The recommended amount of sleep for this age group is at least 10 hours a day
5. The recommended amount of sleep for this age group is 9-10 hour a day
6. Adequate sleep allows this part of the body to function better when taking a test
7. Dreaming occurs during this type of sleep
8. The recommended amount of sleep for this age group is 7-8 hours a day
9. This major body system can more easily defend against common infections when you get adequate sleep
10. Brief moments of sleep during the day when you're typically awake

### Down

1. The recommended amount of sleep for this age group is 11-12 hour a day
3. Type of sleep that has three stages
4. The recommended amount of sleep for this age group is 16-18 hours a day

## Crossword Puzzle Answer Key

### Across

2. School Aged Children
5. Teens
6. Brain
7. REM Sleep
8. Adults
9. Immune System
10. Microsleep

### Down

1. Preschool-aged Children
3. Non-REM Sleep
4. Newborns

# Sleep Health Word Search

J M M P F A Z S V P E E L S H  
E Z K G M A E R D Y H A V T X  
R E O V N H O X N F P A M H E  
A Q M G N I K L A W P E E L S  
M B V Y B I R U F X D L R Q I  
T E F K J L K O F H S I N A M  
H D M S H H E T N B F L O U L  
G T S D O W I G N S R B N Z R  
I I A J E R A F V P P A S I Q  
N M C H E R Y M X S T G I E D  
P E R D B T K J L A O X M N O  
K R P E E L S O R C I M P R R  
R D L Z M J F L F X C F H D A  
B D R O W S I N E S S D P J L  
S X X J Y K O W X K L A E P S

BEDTIME  
BRAIN  
DREAM  
DROWSINESS  
MICROSLEEP  
NIGHTMARE  
NONREM  
REM  
SLEEP  
SLEEPWALKING  
SNORING  
TIRED