

The Fundamentals of Sleep

Core Facts

- **How much sleep** do we need for adequate rest?
 - **Adults** need 7-9 hours of sleep per night
 - **Teens** need 8-10 hours of sleep per night
 - **Children** need 10 or more hours of sleep per night
- **Getting adequate sleep** benefits us in many ways and is crucial for a better quality of life. Some of these **benefits include:**
 - Replenishing your immune system to fight off infection and sickness
 - Enhancing memory retention and learning
 - Bettering your mood
 - Building muscle
 - Optimizing energy and alertness
 - Lowering blood pressure
 - Repairing injuries
- Conversely, when you **don't get adequate sleep**, there are negative effects. The **likelihood of these increase** the longer you go without adequate rest:
 - Increased risk for infection and getting ill
 - Lack of energy and focus
 - Forgetfulness
 - Depression or anxiety
 - Weight gain
 - Increase of chance of chronic diseases such as cancer or Alzheimer's
- When you sleep, you go through **four different stages of sleep**, over and over throughout the night. These **four stages are:**
 - Stage 1 Light Sleep
 - Stage 2 Light Sleep
 - Deep Sleep
 - REM Sleep
- **Stage 1 Light Sleep** is the initial stage and usually lasts a few minutes. In this stage:
 - **Muscles** start to relax and you may experience twitches.
 - **Breathing and heart rate** begin to slow down.
 - **Brain waves** begin to slow.

- In **Stage 2 Light Sleep**, your body moves into a slightly deeper sleep than Stage 1, and it acts as a **bridge to the deeper stages of sleep**. This is the stage of sleep we typically spend the most time in throughout the night, and here's what happens:
 - **Heart rate and breathing** slow down further
 - **Body temperature drops**, preparing your body for deeper sleep.
 - **Brain activity continues to slow**, but you experience short bursts of electrical activity known as sleep spindles, which help **process memories and learning**.
- **Deep Sleep** (also called slow-wave sleep) is where your body goes through **critical restorative processes**. In this stage, the following takes place:
 - **Breathing and heart rate reach their lowest levels** as your body is fully relaxed.
 - **Blood pressure drops**, promoting cardiovascular health.
 - **Muscles relax even more**, making it difficult to wake up easily.
 - **Tissue growth and repair** occur, and your body releases growth hormones that aid in muscle and cell regeneration.
 - **Brain activity slows significantly**, allowing for waste to clear from the brain.
- **REM (Rapid Eye Movement) Sleep** is the stage of sleep where most **dreaming** occurs. This stage is **crucial for memory and learning**, as well as **mental and emotional restoration**. Here's what happens during REM sleep:
 - **Rapid eye movements** occur under the eyelids, hence the name.
 - **Brain activity increases**, becoming more similar to wakefulness, but your body remains in a state of paralysis to prevent you from acting out dreams.
 - **Breathing becomes irregular**, and heart rate and blood pressure may rise, similar to waking levels.
- **How to ensure you get a good night of sleep?** Here are some of the best tips known to enhance **quantity and quality** of sleep:
 - Stick to a consistent sleep schedule and try to go to bed at the same time each night
 - Create a relaxing bedtime routine
 - Restrict exposure to blue light before bed (phones, TVs, laptops, etc)
 - Keep your bedroom cool, very dark and quiet
 - Avoid eating before bed
 - Avoid caffeine late in the day
 - Do not drink alcohol, especially at night as it destroys your REM Sleep
 - Exercise regularly but try not to work out right before bed