

## Facts About Sleep

- The brain is as active during sleep as it is when we are awake.
- Teenagers' brains during adolescence have a shift in their sleep-wake cycles that is due to developmental changes which signal the brain to feel sleepy. As a result, teens are generally unable to fall asleep before about 10:45 PM and the brain remains in a sleep mode until about 8 AM.
- Elementary children need about 10-11 hours of sleep per night, and teens need about 9 1/4 hours per night.
- Unlike teens, elementary-aged children are biologically capable of falling asleep early in the evening and thus can awaken early as well, with no ill effects.
- Fifty-five to 60% of teens whose high schools start at 8:30 AM or later are likely to sleep 8 or more hours per school night.
- There are several critical processes that sleep performs that improve brain function. One of them is cleaning out "garbage", which are the neurotoxins that are present when the brain has sorted out useful memories from the non-essential memories of that same moment in time. An example would be remembering a fact learned in class, while the memory of a fire truck passing by at that same time (a neurotoxin) would be eliminated during sleep.
- Compared to testing on the same day, a period of overnight sleep improves memory and performance after a learning experience.
- The more sleep-impaired a person is, the more he or she will not notice the impairment and will believe that he is or she is doing fine on insufficient sleep.
- Teens who are sleep deprived need up to two weeks of sleep without forced awakening to eliminate their "sleep debt" due to insufficient sleep on school days. Weekend "oversleep" is insufficient to erase the sleep debt from a week of early rising.
- Teens whose schools start later still tend to fall asleep around 11 PM, enabling them to attain more sleep every school night than teens whose schools start earlier.
- Parents of teens whose schools start at 8:30 AM or later have said their children "are easier to live with."

## What About Insufficient Sleep?

- Insufficient sleep (less than 8 hours per night for teens) is associated with depressed mood, increased emotional outbursts, and increased risky behavior.
- Brain impairment with insufficient sleep is similar to alcohol intoxication, reducing your reaction times, awareness of traffic around you, and your ability to remain alert. Being awake for 18.5 hours is equivalent to having a blood alcohol content of .05. Being awake for 21 hours is equivalent to having a blood alcohol content of .08, or driving as though you are legally drunk. Car accidents are the #1 cause of death for teenagers.
- Less sleep is associated with poorer test scores and reduced academic performance.
- A teenager getting less than 8 hours of sleep per night is significantly more likely to use cigarettes, alcohol, drugs, and be sexually active.
- More than 50% of teens who text or surf the internet at bedtime are more likely to have problems falling asleep, plus have mood, behavior and cognitive problems during the day.
- Starting high school at 7:30 AM is associated with higher car accident risk for teen drivers.
- When a student looks sleepy, his or her thinking is probably impaired.
- If an athlete performs with insufficient sleep, he or she is more likely to lose the game.
- Having a computer in the bedroom is related to later bedtimes, later wake-up times, and shortened sleep duration.
- The more days per week that students spend practicing or doing sports *before* school, the lower the self-reported grades.
- Inadequate sleep reduces remembering positive and neutral memories, and causes a dominance of negative memories to be retained.
- Drinking a caffeinated beverage after 5 PM increases the likelihood of interrupted sleep.
- Chronic insufficient sleep in adults is associated with decline in cognition, weight gain, and diabetes risk.