

## Research on Adolescent Sleep

**Medical research shows that adolescent students are sleep deprived and they become *several hours* sleep deprived by the end of the week.**

Research tells us that adolescents actually need more sleep for good physical & mental health as well as growth. Hormonal changes increase their levels of melatonin, which means they require increasing amounts of sleep. They need at least 9 ¼ hours per night. Extra weekend sleep does not offset the effects of sleep deprivation.

Research also tells us that adolescents' circadian rhythm changes and they are *more alert in the afternoons and evenings, and require morning sleep* and thus are not alert in the mornings. Due to early school start times, adolescents are unable to get the 9 ¼ hours of sleep they require and "kids are going to school when their brains are still in a nighttime mode," says M. Carskadon, Professor of Psychiatry and Human Behavior at Brown University School of Medicine and National Sleep Foundation Pediatric Council Chair.

**Medical research shows that there is a direct correlation between lack of sleep and the following:**

- Lack of information processing
- Memory deficits
- Increased irritability
- Anxiety
- Depression
- Decreased creativity
- Inability to handle complex tasks
- Falling asleep in class

*(Center for Applied Research and Educational Improvement at the University of Minnesota)*

- Daytime sleepiness
- Moodiness
- Hyperactivity
- Anxiety

*(Zukerman article, Montgomery County Public Schools, Rockville, MD, [www.mcps.k12.md.us](http://www.mcps.k12.md.us))*

- Lower IQ (temporary while sleep deprived)

*School Districts across the country are addressing this problem by moving back school start times for middle and high schools. These districts report very good results.*

**A study done on Minnesota schools that set start times back by one hour shows that:**

- Grades went up
- Discipline problems went down
- Illness calls dropped
- Depression among students fell
- Students (as well as teachers) were a happier bunch

*(Dr. Ronald Dahl, Director of The Child and Adolescent Sleep Laboratory at the University of Pittsburgh Medical Center)*

*Verbatim from a few of the myriad articles supporting later start times for middle and high school students.*

**1. "Sleep-Starved Students Snoozing, Not Studying", March 25, 1999**

An epidemic of sleeplessness is taking a heavy toll on the nation's children – and their ability to learn. A majority of kids say they are sleepy during the day and 15 percent admit to falling asleep in school, according to a survey released Wednesday.

The problem, which hits teen-agers especially hard, is of such looming concern that parents and school districts across the country are considering starting high school hours later, so students will not only rise, but also shine.

“One clear casualty of sleep deprivation is learning,” said Dement (William Dement, the Stanford University professor who is considered the father of sleep research). “That’s a tragedy – a recent tragedy.”

Studies show that a lack of sleep severely curbs the ability to comprehend and retain information and to think creatively. A study at Johns Hopkins University showed that adolescents who started school two hours later performed better academically.

Other experts say many children diagnosed with attention deficit disorder are simply suffering from sleep deprivation, which can include symptoms like inattention, hyperactivity and emotional instability.”

*Knightridder News Service, www.sltrib.com*

**2. Starting as early as ages 8-12, many children’s biological “circadian” rhythms change, and they start staying up later and sleeping later in the mornings.** Everyone is different, but most teens “naturally” feel awake later at night, making it difficult to go to sleep before 11:00 pm. Sleep researchers have found that most adolescents need more than 9 hours of sleep: we think we can “get used to” less, but our brains and bodies won’t be doing as well with less sleep. Those of us who routinely get 6 hours of sleep or less per night are functioning just like someone who stayed up 48 hours straight after getting 8 hours of sleep on a regular basis.

Sleep deprivation can result in depression, especially among girls, anxiety, daytime sleepiness, moodiness and hyperactivity. Other problems included a reduction in teens’ motivation to initiate long-term or abstract goals and a decrease in their persistence to work towards such goals. These motivational changes may, for example, deter students from electing challenging course but not affect their grades.

A growing number of studies show that these early school schedules can undermine teenagers’ ability to learn, to drive safely, to get along with others, and can even increase the likelihood of smoking and drug abuse.

[www.sleepfoundation.org](http://www.sleepfoundation.org)

[www.mcps.k12.md.us](http://www.mcps.k12.md.us)

**3. Our research has shown that biological changes during puberty affect an adolescent’s internal sleep-wake clock.** Many adolescents are physiologically not ready to fall asleep until 11:00 pm or later,” explains Mary A. Carskadon, Ph.D., Sleep Research Lab Director at Bradley Hospital/Brown University, Providence, RI, and National Sleep Foundation Pediatric Council Chair.

“Teens are paying a heavy price for following the old adage, ‘early to bed, early to rise,’” says U.S. Rep. Zoe Lofgren (D-Calif.), sponsor of the “Zzz’s to A’s” bill in Congress. “It’s time for schools to synchronize their clocks with their students’ body clocks so that teens are in school during their most alert hours and can achieve their full academic potential.” Rep. Lofgren has introduced legislation in Congress to encourage school districts to set later starting times-not shorten the school day-and includes a federal grant to help cover administrative and operating costs associated with changing school hours.

*The National Sleep Foundation, www.sleepfoundation.org*

**4. Due to a variety of fiscal and logistical reasons, many school districts around the country have started a disturbing trend** toward starting the school day far earlier than is healthy for young minds. With start times moved up, students are often dismissed from school hours earlier than their parents return home from work, creating the atmosphere of unsupervised, unstructured free time that research has known lead to high rates of juvenile crime.

MAVIA, Mothers Against Violence in America, [www.mavia.org/wideawake.htm](http://www.mavia.org/wideawake.htm)

### **5. “You Snooze, You Lose”**

**In a Survey of more than 3000 high school students, lack of sleep was linked to lower grades.**

“Kids are going to school when their brains are still in a nighttime mode,” says Mary Carskadon, a professor of psychiatry and human behavior at the Brown University School of Medicine.

When tested in the E.P. Bradley Hospital Sleep Research Lab at 8:30 am., some tenth graders fell asleep as quickly as people suffering from narcolepsy. Research by Carskadon and Amy Wolfson, a psychology professor at the College of the Holy Cross in Worcester, Mass., correlated sleep patterns of children with their grades. Students struggling or failing at school were found to get less sleep than their counterparts earning A’s and B’s. (*New York Times, August, 1999*)

### **6. “Those Sleepy Excuses for Bad Grades May Really Be True”**

Teens can easily sleep 9 ¼ hours and should get at least 8 ¼. But natural hormone shifts mean they need that extra hour at the end of their sleep, not the beginning. If they don’t get that extra hour because they have to get up to go to school, a critical phase of their night’s sleep is missed – and their day is headed for trouble.

That missed phase can lead not only to muddled thinking, but to mood swings and teachers are saying, ‘This is a remarkable change. The attention paid in my first-hour class is so vast, I can’t get over the difference that one hour of sleep makes,’ said Kyra Wahlstrom, associate director of the Center for Applied Research in Educational Improvement at the University of Minnesota.

Depriving youngster of that last hour of sleep to hustle them to school early may also be to blame when grades drop in elementary and junior high schools. A lot of behavior diagnosed as the result of Attention Deficit Disorder (ADD)