



FREQUENTLY ASKED QUESTIONS

ADOLESCENT SLEEP AND SCHOOL START TIMES

How much sleep do adolescents need?

Adolescents have a biological need for 8 to 10 hours per night. We know this from a series of studies where adolescents went to “sleep camp” and spent 3 weeks in a lab. They were allowed to catch up on lost sleep, and then sleep as much as they wanted. In this setting, adolescents naturally slept an average of 9.3 hours per night.

How much sleep do most adolescents get?

In the United States, 7 out of 10 adolescents get less than 8 hours of sleep. There is no reason to believe this is any different in the Littleton Public School District. Consider, if your child has to wake at 6:00 a.m., he/she would need to be asleep by at least 10:00 p.m. in order to obtain the *minimum* recommended 8 hours of sleep (which for most teens is not enough.)

But I get by on less sleep than that, why can't adolescents?

Sleep needs change over development. Just as young children need more sleep than adults, so do adolescents. And besides, “getting by” on less sleep is not the same as functioning at one’s best, which requires a sufficient, good quality sleep every night.

What happens during sleep?

A lot! Right after falling asleep, growth hormone is released, so children literally grow in their sleep. In addition, in the first part of the night executive functioning is developing. This is necessary to help teens make good decisions, reduce risky behaviors, and control their moods. In the last part of the night, during REM (or dream) sleep memories form and learning consolidates. So by waking up too early, students are literally deprived of their dreams, not to mention the learning that is so critical to academic and life success.

Wouldn't teens get more sleep if parents made them go to bed earlier and took away their technology?

It is very important for parents to set bedtimes, and for all technology to be removed from the bedrooms. However, teens can't simply fall asleep at 8:00 or 9:00 p.m. due to physical changes during puberty. Melatonin is a hormone released by the brain that controls the internal clock and prepares the body for sleeping. But during puberty, the timing of the melatonin release is delayed by up to 2 hours. This makes it nearly impossible for teens to fall asleep early. This shift is also seen in the morning hours, such that when we ask a teen to wake at 6:00 a.m. that is equivalent to asking an adult to wake at 4:00 a.m. An adolescent's brain is biologically asleep at the time we ask them to wake up, often get behind the wheel of a car, and go to school and learn.

Why should we coddle our teens? We should be preparing them for the real world.

This is not coddling, but using developmentally appropriate expectations to help adolescents succeed. This excuse would be the same as saying parents should stop having their 2 year old nap and wake them earlier in the morning to prepare them for kindergarten. Notably, in LPS the first buses pick students up at 6:24 a.m. Very few adults have jobs that require them to leave home that early to commute, and then start work and perform their very best at 7:20 a.m.

What happens when teens don't get enough sleep?

Every aspect of functioning is negatively impacted by not getting enough sleep.

- Students who miss out on only 1 hour of sleep per night for 5 nights have been shown to have increases in ADHD like behaviors (inattention and impulsivity).
- Similarly, students who go to bed 1 hour later for just 3 nights perform a full grade level below students who are getting enough sleep on tasks of short term memory, fine motor skills, and problem solving.
- Teens who do not get enough sleep have increased risk-taking behaviors and accidents.
- Negative mood is associated with insufficient sleep, with one study of over 30,000 students showing that for each hour of lost sleep there was a 38% increase in feeling sad or hopeless, and a 58% increase in teen suicide attempts.
- Insufficient sleep is directly related to obesity, heart disease, and diabetes.
- Drowsy driving accidents increase. After 17 hours of wakefulness, reaction time, decision making, and concentration are impaired as if a person has a blood alcohol level of 0.05 (legal limit in Colorado).



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How can I tell if my teen is getting enough sleep?

- Teens should be able to wake relatively easy in the morning (i.e., get out of bed within 15 minutes of parent or alarm waking them). If he has to use multiple alarms or you throw water on him to wake him up, he is not getting enough sleep.
- Sleeping an extra 2 hours per night on weekends or school holidays is a sign your child is trying to catch up on lost sleep during the week.
- Falling asleep in school or other inappropriate places (e.g., during a party or celebration, at a sporting event, riding on a ski lift) is a sign she is not getting enough sleep.
- If your child's mood or behavior positively change following a night of increased sleep, the other nights he/she is not getting enough sleep.

What changes have other districts found after changing school start times?

Tremendous benefits for students have been shown following later school start times for middle and high school students, including students getting more sleep, increased attendance, and higher graduation rates. Further, increases in achievement scores are on par with reducing class sizes, which then reduces the achievement gap for many students. Students also report less depression and caffeine use, and there are fewer car crashes (a 70% reduction in one district!)

It is important to note that districts have not found changes to the number of hours students spent on homework, jobs, or sports/activities.

If school starts later, won't kids just go to bed later?

No. In districts where start times are delayed, students go to bed at the same time, or even earlier. The extra sleep is all obtained by having a later wake time in the morning.

Most of the studies have focused on middle and high school students. What about elementary school students? Won't starting school earlier negatively impact them?

As previously described, it is difficult for adolescents to go to bed earlier due to pubertal changes in their internal clock. That is not the case for elementary school students, who are biologically predisposed to earlier bedtimes and wake times. One study found that pre-adolescent students have the same degree of focus at 7:00 a.m. that adolescent students have at 8:00 a.m. In addition, districts who have changed start times report elementary students to be more engaged and ready to learn when they haven't been in before school care or watching television for 1-2 hours before school starts (which often occurs for later starting elementary students).

How will School Age Child Care be affected?

All elementary schools currently offer School Age Child Care. It is likely that there will be higher demand for after-school care, and SACC programs will adjust to accommodate this need. Contact your school's SACC manager to register and learn more.

How will bus transportation be affected?

A few additional bus routes will be planned to accommodate the compressed routes new start times require. Existing bus routes may be adjusted to accommodate the new start times and the increased traffic after 8 a.m.

How will middle school and high school activities/athletics be affected?

Other school districts, including Cherry Creek Public Schools, that have implemented a later school start time report minimal challenges related to activities and athletics. These challenges may be mitigated by adjusting start times for practices and clubs that begin after school and also compressing practice and rehearsal times. The middle school activity bus routes that run later in the afternoon will continue.

How much will this change cost?

Scheduling a compressed transportation schedule will cost approximately \$137,000 annually. This is a manageable cost considering nearly 8,000 middle and high school students in LPS will benefit from a later school start time.