**Sleep Research**

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**Section 1: Teens, School and Sleep: A Complex Relationship**

1. Circle the most important word in each of the 5 paragraphs below.
2. Using all of those words write a sentence that tells what the article is about.

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The National Sleep Foundation

If you have a teenager (or remember your high school sleep habits) you know that staying up late, struggling to rise with the alarm clock, and dozing until noon on the weekends come with the territory. One of the reasons adolescents become night owls is the lifestyle of this age group—which brings heavy loads of homework and busy social lives—but another reason is a natural, biological shift that occurs in the teenage years.

Scientists have known for a long time now that a person's biological clock shifts forward in adolescence. Instead of feeling drowsy in the evening, teenagers actually tend to become more alert and have a difficult time settling in to sleep (likely because melatonin, which causes sleepiness, is secreted later). In the morning, when people of other ages are awake and primed for the day, teenagers still have elevated melatonin levels and often feel groggy as a result. Many teens also feel drowsy in the middle of the day, regardless of their sleep habits.

That's why many doctors and school administrators have advocated for later high school start times. A teen who rises for school at 6:30 a.m. is fighting against a biological force of sleepiness, and later might find it hard to doze off with sufficient time to get the roughly nine hours of sleep that adolescents require.

When schools shift their schedules, teens benefit. For example, seven high schools in Minneapolis moved their start times from 7:25 a.m. to 8:30 a.m. and tested the outcomes for their students. As a result of the change, the teens got five or more extra hours of sleep per week, and attendance and enrollment rates went up, as did alertness. Meanwhile, student-reported depression went down. This proves true for middle schoolers as well. In a study of 7th and 8th graders, those who went to a school that started at 8:37 a.m. reported sleeping an hour more on school nights. The ones who started at 7:15 a.m. were tardy four times as often and had significantly worse grades, both in the fall (when the start time changed) and again in the spring when they were re-tested. Even with significant data supporting later school starts, many districts and parents are reluctant about changing, although many are considering the shift.

For teens who do have to wake up bright and early, limiting screen time in the evening is important, since the blue light emitted by screens on devices like ipads and cellphones can send alerting signals to the brain. Teens who seem to be excessively sleepy despite what appears to be a full night's rest should consult with their doctor for more guidance.

<https://sleepfoundation.org/sleep-news/teens-school-and-sleep-complex-relationship/page/0/1>

# Section 2: Eight Major Obstacles to Delaying School Start Times

After each section write a sentence that summarizes what the section was about.

The National Sleep Foundation

The following are eight major obstacles to changing [school start times](http://www.sleepfoundation.org/sleep-topics/school-start-time-and-sleep):

## 1. Transportation

Because most school districts have a delicately balanced bus transportation system designed to run as efficiently and inexpensively as possible, any change in the school schedule can have a severe impact. The specific circumstances in each district vary, but problems that arise can include cost, recruiting drivers, and/or redesigning the routes.

One solution that has worked to solve this problem is flipping start times, most commonly elementary with high school. This solution requires no extra buses or drivers, just a change in the order of pickups. This schedule also seems to be more appropriate to elementary school students’ sleep schedules, because young [children](http://www.sleepfoundation.org/sleep-topics/children-and-sleep) tend to wake up earlier in the morning. This is a very dicey issue; however, in districts where the start time is quite early. If the young students have to go to school so early, they have to go to bed VERY early (because they need 10 - 11 hours of sleep). Parents may not get home from work until very near or after bedtime. The direct flip cannot work unless all start times are reasonable.

Another solution that may be implemented is a shift to public transportation for older students. In many cases, the public bus routes are similar to yellow bus routes, and can be used by students. Many districts have found they can actually save money by buying students bus passes and eliminating a large portion of their yellow bus fleet.

Some communities face another problem, which is that shifting start times will impact traffic congestion and commuting for both teachers and students. Teen drivers are at the highest risk for [drowsy driving](http://www.drowsydriving.org/); however, and preliminary studies have shown that delaying their school start time has a significant effect in lowering the occurrence of such crashes.

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## 2. After School Activities

High school athletics are very important to many students who have obvious concerns about the impact of a change in start times on their ability to participate. Any delay in the start of school will most likely result in a later release time, which may reduce time available for practice and matches (especially daylight hours). One result of later release times may be greater competition for field and gym space, which may result in the cancellation of some programs (JV and sports like swimming and golf, for example, which often require the use of facilities during off-peak hours). If school gets out later, some athletes might be required to leave class early in order to attend a match. In this case, students may have to choose between a game and a test, a choice no student should have to make.

Despite all these concerns, most districts that have changed their start time have experienced few problems with regard to athletics. Practice times are rescheduled, and in some cases lights are installed so practice can run a little later. Match times are changed so that students do not have to leave class early. Many districts have even seen increased participation in sports (Edina, MN) and improved performance by their teams (Wilton, CT; Nathan Hale, Seattle, WA). Research has shown that sleep deprivation has a severe negative impact on coordination and endurance, so it makes sense that better rested student athletes would perform better.

Also, while athletics are obviously very important to many students and their families, everyone must remember that a school’s first obligation is to provide its students with an environment conducive to learning.

The delay in release time for students also means that students with after-school jobs may be affected. This issue is important for certain students and their families who rely on the extra income to get by. Therefore, the change may disproportionately affect low income families. On the other hand, studies have shown that employers indicate a change in start times has not affected their business or the number of hours their student employees can work. They indicate that extra help is not usually needed until school gets out anyway, so they can easily adjust to the new schedule.

Other researchers have found that students who are employed for more than 15 hours per week are negatively impacted academically, so working fewer hours may be better for students who don’t rely on the income for substantive needs, which includes the great majority of working teens.

Participation in other activities such as after-school tutorials, religious classes, community service, or clubs may also be jeopardized by a later release time. On the other hand, many students find that if they sleep more, they can finish their homework faster and have ample time to participate in extracurricular activities.

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## 3. Other Students and Programs

As mentioned above, a change in schedule for high school students will usually result in a change for younger students. If elementary students have the earliest start times, they may be waiting for the bus in the dark early mornings, or waiting at home alone after school. Research is lacking on the effect of school start times on younger students, so it is hard to justify their earlier start.

Many communities have been able to find workable solutions for younger children. Local community organizations may be able to provide childcare. Parents can organize a rotating schedule for a “bus stop supervisor” each day for each neighborhood.

A change in transportation can be difficult for certain student populations and programs, such as special education students and career centers. Careful planning and consideration can usually resolve such difficulties.

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## 4. Reduced Time to Access Public Resources

If school ends later, students will have less time to use the library, among many other community resources. However, students do seem to be able to work more efficiently when they are less sleep deprived, and could therefore make better use of the time they do have.

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## 5. Teachers

Some worry that a later start time and release time will leave teachers less time with their families. But in practice, teachers rarely find this to be true. Many are able to spend more time with young students in the morning. Some elect to arrive at school at the same time and complete planning before school, meaning their schedules are unchanged. Many teachers also report having extra personal time to exercise.

Teachers can also take advantage of the extra time to sleep. This will enable them to be more alert and energetic in the classroom and more effectively handle problems and discipline procedures. Teachers also appreciate being able to incorporate the day’s news into their lessons.

Teachers who coach have seen very little impact on their role as coaches. The changes implemented to help students adjust to the new schedule also apply to the teachers who work as coaches.

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## 6. Stress for Families

Many people are resistant to change and emotions can run high when someone is forced to alter his/her routine. Most families have a highly coordinated schedule worked out to balance the many activities of each of its members. The thought of reworking this delicate balance can be intimidating. Many parents have a hard time looking beyond this personal disadvantage to the benefits that will result.

In reality, a community can easily adjust to change, especially if given ample time and resources to prepare. A detailed outline of the expected changes is essential. Hotlines, message boards and meetings to discuss problems are helpful resources. It is also important to involve stakeholders in the process from the beginning, so they can voice their concerns.

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## 7. Uneducated Community

One of the biggest challenges in any campaign for change is to educate the community and convince them of the merits of your proposal. It is extremely important to spread the word to as many people as possible about sleep and school start times. The change will affect the entire community, from students and parents to businesses, libraries, police, youth sports clubs, bus drivers and many others. Create a standard presentation, and offer to give it to as many groups as possible. People must understand the biological changes that occur in teens that make them unable to fall asleep early. This means that the issue cannot just be a personal matter of putting the kids to bed earlier, or a sign that teens are lazy, obstinate or defiant, but a serious issue that must be addressed by the schools.

Your education efforts should also inform adults of their probable sleep deprivation and its effects. Sleep is important for everyone, not just the students.

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## 8. Resistance of students

Students may not be clamoring for this change. Teens, much like the adults in their lives, will be resistant to change and will worry about the impact on their after-school activities.

Therefore, it is equally important to educate the students themselves about the benefits of a later start time. This material can be incorporated in many different subjects at all age levels. Science class is the most obvious, but sleep can also be discussed in psychology, health, math (data on sleep can be used to learn about different mathematical operations), social studies, geography, and English classes (students can write persuasive essays or research papers on this issue).

<https://sleepfoundation.org/sleep-news/eight-major-obstacles-delaying-school-start-times>