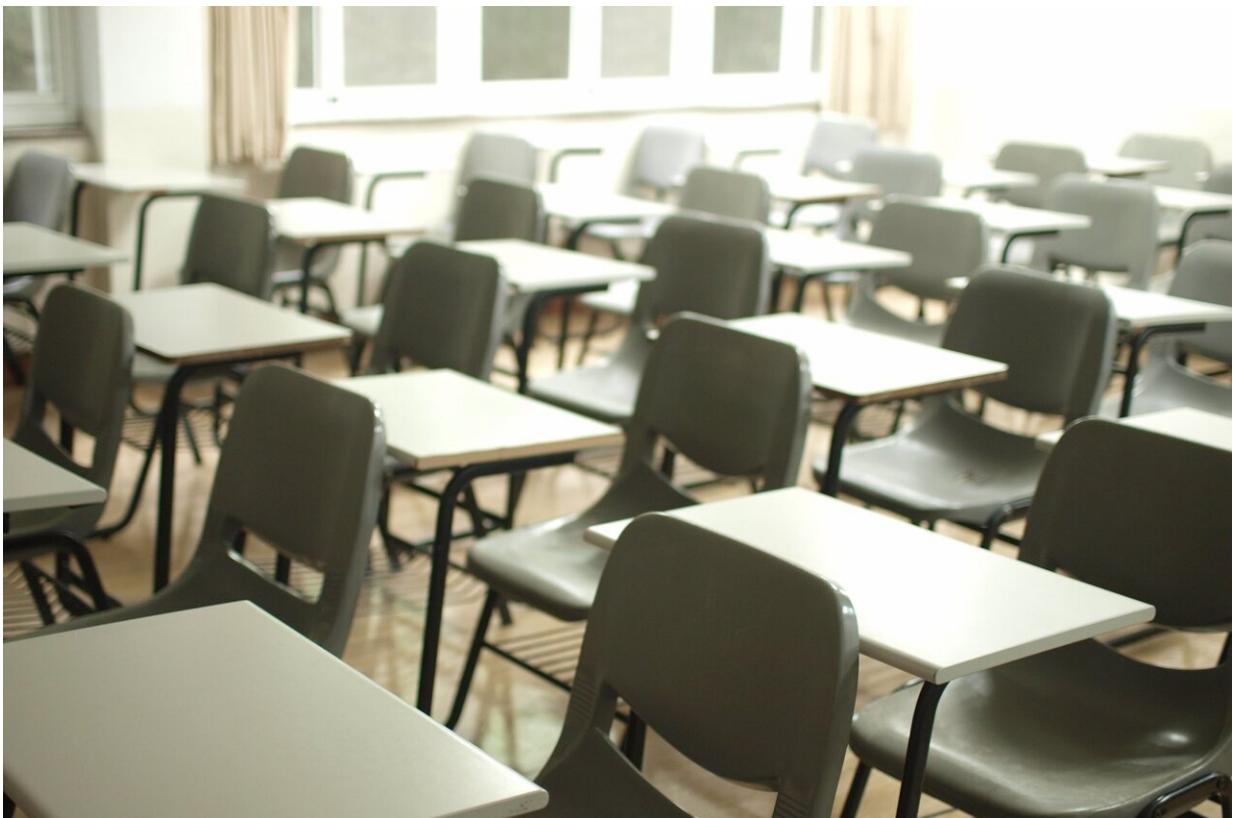


Students could get more sleep and learn better if school started a little later, neurologist says

December 18 2023, by Joanna Fong-Isariyawongse



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Nearly three-quarters of high school students do not get enough sleep on school nights, according to the [Centers for Disease Control and](#)

[Prevention.](#)

The National Sleep Foundation recommends that teens sleep for [eight to 10 hours per night](#). But various factors hinder this, including early [school start times](#) and [shifts in adolescents' circadian rhythms](#)—the biological internal clock that regulates the [sleep-wake cycle](#) and repeats roughly every 24 hours. Healthy sleep is crucial for teens' physical, cognitive and emotional development. When teens don't get enough sleep, it can have lifelong impacts. They range from [poor mental health](#) to [lower attendance and graduation rates](#).

As a neurologist [specializing in sleep disorders](#), I have studied the profound importance of sleep in optimizing the body and mind. I believe insufficient sleep among adolescents is a public health crisis. This is why I reached out to my local state representative in Pennsylvania, [Rep. Jill Cooper](#), a member of the House Education Committee, in October 2023 and pushed for legislative change. The resulting [proposed bill](#) would mandate that middle and high schools start no earlier than 8:15 a.m. by the 2026-27 school year.

While parents, educators and [school administrators](#) cannot alter biology, they can change school start times to allow students to obtain sufficient sleep for academic success and physical and mental well-being. In fact, the American Academy of Pediatrics [recommends pushing back school start times](#) to 8:30 a.m. or later.

Around the world, [school start times vary considerably](#), from 7 a.m. in Brazil to 9 a.m. in Finland. While I'm not aware of any global dataset or research on the relationship between school start times and academic performance, Finland was ranked No. 2 on the list of [best educational systems](#) in the Global Citizens for Human Rights report in 2020. Canada, where the average school day begins at 8:30 a.m., was ranked No. 4.

Sleep and the teenage brain

Parents may notice that their kids, who were once early birds, start to sleep later and later as they hit their teen years. This is not just due to typical teen behavior like playing video games late at night, but rather it's a [biological response](#).

During adolescence, changes in hormone levels, along with physical and brain maturation, lead to natural shifts in the circadian rhythm. The body tends to delay the release of melatonin, the hormone responsible for bringing on drowsiness at night.

Consequently, teens often find it [challenging to fall asleep early](#), leading to a later bedtime. This delayed circadian rhythm also results in a preference for waking up later in the morning. These changes clash with societal and cultural expectations such as early school start times, often contributing to [sleep deprivation](#) among teenagers.

More than 80% of public middle and high schools across the United States [start before 8:30 a.m.](#), with 42% starting before 8 and 10% before 7:30. Consequently, bus pickup for some children can be as early as [5 a.m. in some districts](#). What follow are four negative outcomes associated with early school start times.

Hindered academic success

Numerous studies have linked early school start times to poorer performance on [academic tests](#).

One study looked at [school start times, graduation rates and attendance rates](#) for 30,000 students in 29 high schools across seven states. It found a significant improvement in attendance rates, from 90% to 93%, and

[graduation rates](#), from 80% to 90%, four years after delaying school start times to 8:30.

Sleep deprivation has been shown to worsen [memory](#), [learning ability](#), [attention span](#), [creativity](#), [school attendance](#) and [first-period tardiness](#)—a perfect storm for poor academic performance.

Poorer mental health

A recent [advisory from the U.S. surgeon general](#) raised the alarm on the harmful impacts of social media on youth mental health. Researchers have unearthed mounds of evidence on the negative effects, including poor body image. In these discussions, however, a simple yet powerful solution for improving mental well-being is often overlooked—the profound impact of sleep.

During REM sleep—or the dream state—our memories consolidate and we process emotions. Insufficient sleep increases the risk of [depression](#), [anxiety](#) and [suicide](#) among adolescents. One study showed that for every extra hour of sleep among adolescents, their [risk of suicide decreased](#) by 11%.

Impaired physical health and social behavior

Sleep is fundamental for physical well-being. For both children and adults, it plays a key role in essential bodily functions. During [slow-wave sleep](#)—or deep sleep—our bodies restore themselves: Our [immune system strengthens](#) to keep us healthy. And our waste-clearing lymphatic system [eradicates neurotoxic proteins](#), which are linked to diseases like Alzheimer's.

Sleep deprivation is associated with higher rates of [obesity](#), [diabetes](#),

[cardiovascular problems](#), [chronic health conditions](#), [physical injuries](#) and weakened immune function. Sleep-deprived students are more likely to fall asleep when sedentary, such as when driving a car. [Motor vehicle accidents](#) related to driving while drowsy are especially prevalent among teen drivers.

Sleep-deprived students are also more likely to demonstrate aggression, struggle with social communication and engage in risk-taking behaviors. One study found that the amount of sleep that high school students get is directly related to their [engagement in unsafe behaviors](#), such as substance abuse, risky driving, aggressive behavior and tendency toward self-harm.

An economic cost

The economic ramifications of this crisis may not be immediately obvious, but they are undeniable. Contrary to [concerns that delayed school start times might increase transportation costs](#) by changing bus schedules, a 2017 study conducted by the nonprofit RAND Corp. found that the economic benefits [far outweigh the expenses](#).

The study showed that a universal shift to 8:30 a.m. school start times would result in an \$8.6 billion gain in the U.S. economy over two years. Investing in delayed [school](#) start times, therefore, isn't a drain on resources. Instead, it contributes to a healthier future for generations to come.

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