



EDSURGE PODCAST

Teen Sleep, Brain Science and the Debate Over School Start Times

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Scientists ran [an unusual summer camp](#) in the 1970s and '80s—and its main purpose was to study the sleep patterns of kids and teens. Campers actually wore electrodes all day so they'd be ready to plug in for monitoring. What researchers found, and have continued to study in the years since, is that teens have different, and greater, needs when it comes to sleep than people of other ages.

But it turns out that plenty of schools make it hard for teens to get the amount of sleep that doctors recommend. This has led to heated debates in recent years over school start times.

Advocates for later starts say that the issue is about more than whether teens have enough sleep to learn—there are serious implications for mental health as well.

For this week's EdSurge Podcast, we're digging into this issue of school start times, looking at the latest in brain science and at the policy debate heating up in states around the country.

Our guest is Lisa Lewis, an education journalist turned advocate for later start times. She has spent the last few years researching the issue, and she's author of a book due out next month, "[The Sleep-Deprived Teen: Why Our Teenagers Are So Tired, and How Parents and Schools Can Help Them Thrive.](#)"

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EdSurge: So how did a summer camp lead to insights into teen sleep?

Lisa Lewis: The official name was the Stanford summer sleep camp. And it had the trappings of a camp in that, for kids and teens, they came and they did have camp activities. But really it was a sleep study.

It ran for a decade from 1976 to 1985. And it really was a long-term sleep study of kids and adolescents to look at teen sleep, because prior to then, there really had not been as much done looking at sleep during the day, and particularly looking at the specifics of teen sleep.

So these campers, they got electrodes basically glued to their skull. They had a couple by their eyes. They had one by their chin. One of the former campers who's an adult now said it was sort of like the cord that runs out of your iPhone. And they had to wear these electrodes the entire time. So in between doing the normal camp activities—you know, eating meals and playing volleyball and going for ice cream—they had to go back to their rooms every two hours and take naps. And that was the real purpose of it.

Basically they were studying how long it took them to fall asleep. And there was a new test that had just been developed called the MSLT—the Multiple Sleep Latency Test—

which is essentially, how long does it take you to fall asleep?

And what they found was that across the board, the kids and the teens were getting about nine and a quarter hours of sleep each night. But the teens often were falling asleep much more quickly during nap time.

[The lead researcher was] [Mary Carskadon](#). She's gone on to find many other insights ... into the fact that teens did indeed sleep differently. For instance, later on, she was able to measure melatonin. Melatonin is what's released by the brain and that's what primes us to go to sleep at night. And what she surmised and was later able to prove with a series of subsequent tests was that the timing of when the melatonin is released is later at night in teens. And when it subsides in the morning is also later in teens.

Why does it matter that teen sleep is different?

The first thing to understand is the amount of sleep teens need is eight to 10 hours. Eight is the minimum recommended amount. We look at our teens and often they'll look like adults, but they're not, they do need more sleep.

The other thing to recognize about teen's sleep is that their sleep schedules are different. They have essentially a different body clock that is governing when they want to fall asleep and when they want to wake up in the morning. So it's a circadian rhythm shift, which means that unlike when they were younger, they really aren't sleepy and ready to fall asleep until close to about 11 o'clock at night. So then that means when you do the math, they need eight to 10 hours. If they are supposed to be sitting in their desks for a 7:30 a.m. morning bell at school, there's no way they can be getting the eight to 10 hours of sleep that they need.

How did the school start times get so early in so many places?

Back about a century ago, schools started closer to 9 a.m. and they have drifted earlier over time. One large factor that played into that was the transportation piece. So as more schools cropped up, eventually there was school consolidation. You know, we had

suburbs, we had all the growth in the school system. At some point with transportation, school districts often were using the same fleet of buses for pickups and dropoffs for the elementary and the middle and the high school level. So they were doing it in a tiered fashion, so they could use the same buses.

Well, at that point in time, all this research about teen sleep wasn't yet widely known. So the thought was, well teens are older. So they should definitely be the ones to start earlier. And then unfortunately those start times in so many cases have endured, even now that we know that teens should be starting later in the morning.

And you write in your book that it's mental health as well as their ability to learn.

We know there is a link between mental health and sleep. When we're sleep deprived, all of us tend to be in a worse mood. It affects mood, but more seriously, there's a link with depression, there's a link with suicidality. There are some very, very profound implications. When you look at being sleep deprived and what that does for mental health, [statistics have shown] that the less sleep teens get the more their suicide risk goes up. For instance, there's one study in Fairfax County, they found for each hour of lost sleep, it was linked to a 42 percent increase in suicidal thoughts and a 58 percent increase in suicide attempts. So that's very, very concerning as a parent.

You started out a few years ago covering this as a journalist and shifted to being an advocate. What was it that made you decide to get involved?

I am a parent, and I am a parenting journalist, and there are times when those roles overlap. So the issue of school start times really hit my radar in the fall of 2015. I have two kids. My oldest is now in college. And 2015 was when he started high school. And at the time our local high school started at 7:30 a.m. Now I personally am not a morning person. It felt pretty early to me, but I could also see it felt pretty early to him, too. He was really not awake and ready to learn.

So I started looking into it. And what I found was that in our specific case it had been that way as long as anyone could remember. There wasn't really any justification that I

could find for it. But more importantly, what I quickly realized when I started looking into the issue of school start times was that it was a bigger issue than just our high school or our community. There was a huge body of research out there looking at teen sleep and looking at the fact that school start times and what time schools start in the morning actually plays a huge role in teen sleep.

So you felt like this was an issue that was ripe for action?

I wrote my first article about school start times [in 2016]. It was [an op-ed](#) that ran in The Los Angeles Times called “Why Schools Should Start Later in the Morning.” That op-ed ended up being read by one of our California state senators, Anthony Portantino, whose district is in Los Angeles.

He had a high school freshman at the time, so it was very much an issue that resonated with him. And as it turned out, their school was actually having conversations about whether to move to a later start time. So he read that, and it piqued his interest. He decided to look into the issue further as part of that, his office reached out to a group called [Start School Later](#), which is a national nonprofit.

I actually had started my own local chapter of Start School Later as part of my local efforts. So all of the people who were at that point chapter leaders in California got hooked up with Senator Portantino's office, and a bill got introduced [in \[2018\]](#).

I testified in front of the state assembly education committee. I was involved in ongoing communications. There was sort of a core group of us in California and then other people affiliated with Start School Later and other sleep researchers who were steadfast advocates for us all the way through.

So after a two-and-a-half-year legislative process—to go through numerous committees and hearings and floor votes—it got all the way to Governor Jerry Brown's desk. And he vetoed the bill. And that meant starting all over.

It sounds like the main argument against the bill was that each district should decide the issue of start times rather than have a statewide mandate, right?

The opposing viewpoint for having a statewide mandate for school start times is it can be done locally and it should be decided locally. However, while there are many districts around the country that have changed their start times up until now, it's been done on a patchwork basis, and the net result is far too little.

The average start time as of then for high schools was 8:04 a.m.—only 15 percent [of schools] were meeting the recommendations.

The other key piece is that this is a public health issue. That's why groups like the [American Academy of Pediatrics] **have weighed in on this** because of the profound implications of teen sleep deprivation and the link between school start times and teen sleep. So when you talk about other public health issues like asbestos or lead paint, those are not left to local discretion. Those are typically handled at the state level.

Why do you think the issue hasn't been faster to change with all the research and other factors you've mentioned?

I should say there are probably hundreds of districts around the country that have made the change.

As far as why more districts have not done so I think in some cases it's difficult when you talk about change. Just the concept of change is difficult.

It does represent a disruption to the status quo and there is a certain transition and that can be inconvenient. And so I think it's been far too easy to sort of not make this change, even knowing it might be the right thing to do.

And that's why I think it's so significant that in California there will be this state law going into effect July 1.

The law went through the whole process again, and it got signed into law by Governor Gavin Newsom in 2019.

But there was a key piece of it, which is there was a three-year implementation window so that it would allow enough time for schools and communities to prepare, because that is the best practice, you do want to give people enough notice.

It is just amazing to see because of the number of kids that that's gonna affect in California, where public school enrollment for middle and high schools is over 3.3 million.

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