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When the head of St. George's School proposed starting the school day a half-hour later, many were skeptical.

Eric F. Peterson, the head of the private boarding school in Middletown, just wanted St. George's students to get more sleep. But his plan faced resistance.

"The initial reaction was, 'What difference can 30 minutes make? The kids will just stay up later,' " Peterson said. "I felt, what harm could 30 minutes more do?"

The school, which includes grades 9 through 12, decided to try the later time just as an experiment. According to the plan, from Jan. 6 to March 6, 2009, school would start at 8:30 a.m. instead of 8.

But the effects of that extra half-hour were so swift and dramatic that the 8:30 a.m. start time has stayed in effect. And a local sleep researcher's documentation of those effects are being published in the July issue of the Archives of Pediatric and Adolescent Medicine – adding to growing evidence that later school start times have measurable benefits for teens.

Adolescents stay up later at night because of biological changes that make it harder to fall asleep until late, abetted by a wealth of modern-day distractions. But they need as much sleep as younger children, resulting in chronic sleep deprivation.

Once St. George's changed the start time, Peterson noticed right away that more kids were at breakfast and they seemed more alert. The teachers felt "less frantic" starting the day.

Far from staying up later, students went to bed earlier, so they added an average of 45 minutes to their sleep time on school nights. Buoyed by the extra sleep, they felt more motivated and less depressed. Fewer were late for class. Students fell asleep in class less often, and fewer went to the health center with fatigue-related complaints.

Barely halfway into the experiment, Peterson says, "I started hearing, 'We're not going to go back to the original start time, are we?' "

The St. George's experiment was tracked by Dr. Judith A. Owens, a pediatric sleep researcher at Hasbro Children's Hospital, whose daughter was a senior at St. George's.

Though the study involved a small group and a short time period, she said, it provides “one more piece of evidence that this is worth doing.”

The students took an online survey before and after the two-month experiment, gauging sleep habits, behavior and feelings. (Of the school’s 357 enrollees, 201 completed both surveys.) Owens did not measure academic performance because the study’s time frame was too short to gauge effects. But other studies have shown a link between shorter sleep and lower academic achievement.

“What surprised me most,” Head of School Peterson said last week, “was the breadth of the benefit. I kind of figured things would be a little better in some ways. They seemed to be so much better in many ways.”

For example, he said, “We more than doubled the amount of quality breakfast food that we were consuming as a community in the mornings. That stunned me. ... Who knows how that played into people’s later alertness?”

Maddie Carrellas, of Middletown, was a senior at St. George’s when the experiment took place. As a day student who had to drive to school, she was especially appreciative of the extra half-hour. “I just had a lot more time in the morning. I felt a lot more relaxed,” she said.

Sometimes she even went to bed earlier because she knew she had a little extra time to get ready in the morning. (Some students told the researchers that they were inspired to go to bed earlier when they saw the benefits of sleeping an extra half-hour in the morning.)

St. George’s original start time of 8 a.m. is gentle compared to most public high schools, which typically start at 7 or 7:15 a.m. To catch the bus, many public school kids are awake by 6, but few can fall asleep before 11.

To make up for the half-hour of school time lost in the morning, St. George’s cut 10 minutes of class time per week for each course and sports practice was shortened by 10 or 15 minutes.

Owens acknowledges that changing school start times is logistically easier for a boarding school that doesn’t have to contend with bus schedules and afterschool jobs. But she notes that in Minnesota, Kentucky and elsewhere, public school systems have successfully delayed start times — and have documented such positive effects as higher SAT scores and fewer car crashes.

It's striking, however, that despite the improvements, St. George's students were still sleep-deprived after the time change. The average school-night sleep time increased from 7 hours, 7 minutes to 7 hours, 52 minutes. But the typical adolescent needs 9 hours to 9¼ hours of sleep every night. Only 11 percent at St. George's slept 9 or more hours after the time change.

Before the start-time change, 85.1 percent of the students reported struggling to stay awake or falling asleep during class. Afterward, that dropped to 60.5 percent — a significant change, but one that still leaves more than half the students feeling sleepy in class.

"It underscores this really terrible epidemic that we have in this country of inadequate sleep across the board and particularly affecting our teenagers," Owens said.

Sleep deprivation is especially harmful to the very parts of the brain that need to develop in adolescence — those involving motivation, judgment and emotional regulation. "We have no idea what the long-term consequence is," Owens said.

Owens calls for a cultural shift that recognizes sleep as necessary and valuable, rather than a sign of laziness or a waste of time.

"Parents will do everything they can to improve success in their kids," Owens said.

"They'll do Stanley Kaplan, go to all sort of lengths to pad their resumes ... But the most important thing they can do is get them more sleep."

KEY POINTS: Teens and sleep

Teenagers need an average of 9 to 9 1/4 hours of sleep each night, but find it hard to fall asleep before 11 p.m.

Shorter sleep times have been linked to poorer academic performance, depressed mood, memory and behavior problems and weight gain.

Starting school a half-hour later at St. George's School increased the percentage of students getting at least 8 hours of sleep from 16 percent to 55 percent; reduced the percentage who said they rarely or never got enough sleep from 69 percent to 34 percent; and reduced the percentage of students who rated themselves as "at least somewhat unhappy" or depressed from 66 percent to 45 percent.

Parents can help by minimizing the time needed to prepare for school in the morning; keeping televisions, computers and other electronics out of the bedroom; limiting naps to a half-hour; and considering reducing your teen's afterschool activities.