

## School Start Time and Sleepy Teens

**A**SK ANY PARENT OF A TEENAGER ABOUT their child's sleep habits and you will likely hear stories about how difficult it is to get their son or daughter out of bed on school days. Most high schools in the United States begin the school day by 8 AM or earlier, with the corresponding rise time being about 75 to 90 minutes before that.<sup>1</sup> This means that high school students generally arise between 5:45 AM and 6:30 AM to get dressed and get to school. These data provide an interesting contrast when one views what research on the sleep patterns of adolescents has revealed, namely that their biological preference for falling asleep is approximately 11 PM with their natural wake time at about 8 AM. However, knowing that teenagers are still in the zone of sleep when they are being forced to get up for school is small comfort when the battle to get one's child out of bed is inevitable and inescapable.

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The article by Owens et al<sup>2</sup> in this issue of the *Archives* extends the body of research findings that substantiate the positive outcomes when a high school makes a modest shift to a later start time. Research on the topic of later start times for high school actually began 14 years ago when Edina High School in Minnesota shifted from a 7:20 AM start to an 8:30 AM start. Not knowing what effects might be realized, the school district engaged researchers in the Center for Applied Research and Educational Improvement at the University of Minnesota to investigate all aspects of the impact of the change. The study revealed some surprising findings, such as student reports of fewer depressive feelings, less daytime sleepiness, and increased feelings of positive self-efficacy.<sup>1</sup> Teachers reported that students were much more alert in the first 2 class periods than previously, and parents noted that their children were "easier to live with." Comparative data were also collected via the Sleep Habits Survey (Brown University) at that time from more than 7000 students in 16 Minneapolis area school districts. Several of those districts had similar demographic characteristics to the Edina High School students and were able to serve as control schools. Significant differences were found between what students in Edina High School reported and what students reported in schools whose times had not changed, particularly with regard to depression, sleepiness, and total amount of sleep per school night.

As a result of the initial findings in Edina, in 1997 the entire Minneapolis Public School District, with 7 high schools and more than 49 000 total student enrollment in grades kindergarten through 12, shifted all of the start times of their schools, with high schools changed to an 8:40 AM start and middle schools beginning at 9:10 AM. Surveys and interviews were conducted in Minneapolis, as they were in Edina, with nearly identical findings for student outcomes. This is important to note, as the Edina and Minneapolis districts could not have been more different demographically. Edina is a very stable, wealthy suburb, while Minneapolis is highly urban, with 67% students of color and 83% of students qualifying for free/reduced lunch. Although the districts were vastly different, the outcomes and effects were essentially the same.<sup>3</sup>

Given that Owens et al<sup>2</sup> report similar findings to the earliest research, there is a growing body of evidence that changing the start time for high schools is good for adolescents. So, the follow-up question is: "Why aren't more schools changing to a later time?" The answer to that is actually very complicated. Changing the start time of any school engenders the same kind of emotional reaction as does a district's deliberations about the closing of a school or making school boundary changes. The time that a school starts is felt to be sacrosanct by those who have come to rely on it as a predictable part of their day and life. In a sense, the time that school starts is like a community norm. It predicts the rhythm of the day and the rhythms of personal and work schedules. This is true not only for teachers, parents, and children, but also community businesses and anyone else who gauges his or her life activities around school time.

School superintendents and school board members who have been asked to bring up the subject of a possible change to a later start for their high schools are extremely reluctant to do so. In the 14 years since the research findings on the outcomes for a later start time were first published, many superintendents and school board members across the United States have lost their jobs as a result of contentious public meetings where people who were against the change took action to replace those in leadership positions supporting the change.

The role of data and factual information in discussing and advocating for changing school start times is key. Medical research information about the adolescent sleep-phase shift was the catalyst for the Edina district to change their high school start time to help students attain their maximum potential. However, when the first findings emerged in 1997, the question remaining at that time concerned the effect of the later start time on academic out-

comes. Longitudinal research has since found several significant academic effects, such as decreasing the dropout rate, but a direct correlation between later start time and academic achievement on normed tests has not been substantiated.<sup>4</sup> Subsequent sleep research has deepened and confirmed what was first reported by Carskadon<sup>5</sup> and others.<sup>6</sup> Thus, pairing the growing body of medical research with the educational outcomes seems to be the logical path to argue for changing to later start times. The difficulty then and now is the tendency of those opposed to making changes to not use the known facts as a starting point for the local discussion. When districts begin the conversation by asking, "Do you think we should change the start time of our high school?" given what we already know about natural resistance to change, the discussion will almost certainly begin on a negative footing and will likely polarize the community. A better approach would be to begin by sharing what we currently know to be true about the biological imperatives of adolescent development and sleep, along with the social/emotional and educational outcomes for more- and less-well-rested teenagers. Incorrect assumptions, the use of only partial facts, and hasty implementation are frequent reasons that cause the defeat or demise of a local decision to change the start time. Transportation costs are the other main stumbling block to such a change. They can be a truly legitimate reason for no change if a transportation study is impartially conducted, assessing the logistics and financial impact. Interestingly, both the Edina and Minneapolis school districts were able to implement the change to a later high school start time with zero impact on their transportation budgets, so it can be accomplished at no additional cost.

In the end, having comprehensive information and impartial presentation of what is known, and not assumed, is needed to really begin the local dialogue. Given what has been discovered thus far, changing the starting time of schools is a seemingly simple issue with in-

credibly sticky political dimensions. A final caveat is to be mindful that one solution does not fit all. It is through the development of shared knowledge of the facts and the concerns that a reasonable, local decision is reached. And the decision may ultimately be that a change is not feasible. So be it. The community at large is, after all, the final arbiter, as all must truly live with the consequences. Our teenagers need and deserve our best informed thinking about all of this; having the facts in hand is the best place to start.

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Realistically, if our company is to survive and prosper, over the long term, we must get our share of the youth market. In my opinion, this will require new brands tailored to the youth market.

—Claude Teague, R. J. Reynolds Tobacco Company, "Research Planning Memorandum on Some Thoughts About New Brands of Cigarettes for the Youth Market," February 2, 1973.