

Dr. Carskadon's studies, documented in the sleep laboratory and replicated by other researchers, also show that the need for sleep increases in adolescence, in step with the body's most rapid growth and development beyond infancy. Most adolescents need an hour more sleep every day to achieve the same level of alertness they experienced when younger, although they rarely get it.

Adolescents need 9.5 hours of sleep for optimal alertness, Dr. Carskadon has found. Her studies show high school students average only 6.5 to 7.5 hours of sleep on school nights, and that a significant number report falling asleep frequently in class and struggling to stay awake or actually falling asleep at least once a week driving.

Extracurricular burden

Dr. Mahowald invited school superintendents, principals and teachers to hear Dr. Carskadon's talk. Few of them showed up. But at least one member of the audience paid careful attention: Maurice Dysken, MD, director of the Geriatric Research Education and Clinical Center at the Minneapolis VA Medical Center and past president of the Minnesota Psychiatric Society, also is the father of a teen-ager.

"When my daughter Sarah started ninth grade, she had to be at school by 7:15 a.m. That meant getting up before 6 a.m.," Dr. Dysken recalled. "Moreover, she came home from school at 2:30 p.m., a long time before my wife and I came home from work. I thought it might be worthwhile to take a look at this issue in some way that might be politically effective."

Dr. Dysken, who represents the MPS in the MMA house of delegates, introduced the resolution that prompted the MMA's action.

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Homework, extracurricular activities such as sports, social activities and jobs all steal time from teens' sleep, Dr. Mahowald said. In many high schools, he said, coaches use limited facilities such as a swimming pool or football field not only after school but also before the class day begins.

Some 20% of 3,000 U.S. public high school students surveyed by Dr. Carskadon reported spending at least 20 hours a week in extracurricular activities. Nearly 60% held after-school jobs and one-third of these students worked more than 20 hours a week.

In addition, many high schools now require students to perform community service, often early on weekend mornings. Even when youngsters get to sleep late, it's hard to convince some parents that it's all right for them to do so — that sleeping late is not a sign of depression or laziness.

Indeed, some parents have challenged the MMA's aim to start school later, suggesting that teen-agers should simply go to bed earlier. But Dr. Carskadon's work suggests that a teen who attempts to go to sleep early fights the body's internal timetable for sleep, usually with little success.

Fortunately, high school lasts only four years. Dr. Dysken's daughter is now a freshman at Wellesley. Her earliest class is at 10 a.m.

Sleep survey asks about school hours

On Oct. 23, two Israeli researchers posted a school schedule survey on SLEEP-L, a computer bulletin board for scientists and others in the sleep community. They cited a growing controversy in Israel over starting high school as early as 7 a.m.

Within a few days, they heard from 30 colleagues in eight U.S. states, South Africa, Canada, Switzerland and Germany.

Interviewed by E-mail for *AMNews*, Avi Sadeh, DSc, a lecturer in the department of psychology at Tel Aviv University, and Peretz Lavie, PhD, dean of the faculty of medicine and director of the sleep disorders laboratories at the Technion-Israel Institute of Technology in Haifa, gave this summary:

A respondent from Seattle, reported that local schools started as early as 6 a.m. Nine respondents said that 7 a.m. was a common start time in their area. The remainder said that schools usually or always started later.

In every locale, high schools started at least 30 minutes earlier than elementary schools. In one instance, high schoolers started class at 7 a.m., while elementary school children began their school day at 9 a.m.

Parents wanted school to start about 30 minutes before they started work, so that they could drop children off on their way in. Most of the sleep specialists recommended 8 a.m. or 9 a.m. as an appropriate start time.

AMNews readers wishing to report local school start times for this continuing study should write Dr. Sadeh using his E-mail address: "sadehccsg.tau.ac.il".

—Lynne Lamberg