

# Sleep Deprivation Affects Academics, Behavior

BY MIRIAM E. TUCKER  
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WASHINGTON — When a child is sleep deprived, it shows at school.

In a study of 74 healthy 6- to 12-year-old students, experimentally reducing the duration of their sleep at home for 1 week resulted in academic and attention problems significant enough that teachers could detect differences between children who had had enough sleep and those who had not—without being told which ones were which (Sleep 2005;28:1280-6).

The results strongly suggest that information about sleep should be obtained for all children who present with academic difficulty or behavior problems, particularly those with inattentive symptoms, Gahan Fallone, Ph.D., said during a report of his findings at a conference for science reporters sponsored by the American Medical Association.

"As clinicians, we have to ask about sleep in patients who present with these behavior indicators," said Dr. Fallone of the Forest Institute of Professional Psychology, Springfield, Mo.

Increasing evidence suggests that children and adolescents are not getting as much sleep as they need to function optimally in school. Most of the studies demonstrating a link between lack of sleep and adverse effects on school performance have used either self-reports of sleep duration or laboratory-induced sleep deprivation.

This study attempted to isolate the specific effects of sleep loss by using home-based sleep restriction in healthy, well-functioning children who had no mood or psychiatric diagnoses, including attention-deficit hyperactivity disorder.

In a 3-week period during the school year, children slept on their typical schedule the first week. During week 2, they were randomized to either an optimized sleep condition in which they spent 10 or more hours in bed or to a restricted condition in which children in third grade and above spent 6.5 hours or less in bed while those in first and second grade were allowed no more than 8 hours in bed. In week 3, the children switched sleep conditions.

Several methods were used to ensure compliance, including daily sleep diaries, twice-daily phone calls, and wrist activity monitors. At the end of each week, teachers were asked to rate the children on 34 items that assessed attention problems, academic performance, hyperactive-impulsive behavior, oppositional-aggressive behavior, and mood. The teachers were not told which schedule the students were following.

Significant differences from baseline

were seen on the academic problems portion of the questionnaire, which had a scoring range of 2-18. Compared with a baseline score of 6.86, the mean rating during the optimized sleep condition was 7.03; the mean rose to 7.67 for the sleep-restricted condition. On the School Situations Questionnaire, children in the sleep-restricted period had significantly more attention problems and a greater mean severity of attention problems, compared with baseline: From a possible 0-9 range, mean severity was 1.26 during restricted sleep, compared with 0.99 during optimized sleep periods and 0.80 at baseline.

In contrast, there were no significant changes during the 3 weeks in the areas of



Significant increases were seen in academic and attention problems, but not in hyperactivity, aggressiveness, or mood.

hyperactive-impulsive behavior, oppositional-aggressive behavior, or mood, said Dr. Fallone, who did this research while working at Brown Medical School, Providence, R.I.

Based on these findings and data from other studies, Dr. Fallone suggested the following advice for parents:

- ▶ Remove media (such as television and video games) and other distractions from your child's bedroom.
- ▶ Consider getting your child to bed on time as important as getting him or her to school on time.
- ▶ Use the average time in bed for the healthy children in this study during the baseline week as a guideline: 10 hours for first and second graders; 9.75 hours for third and fourth graders; and 9.2 hours for fifth through seventh graders.
- ▶ Eliminate the use of caffeine.
- ▶ Keep children's bedtimes and wake-up times the same on weekends as they are on school days.

These results suggest that while insufficient sleep may be the core deficit in some children with attention problems, it is not likely to be the core problem when excessive hyperactivity and impulsivity are present. Dr. Fallone and his associates currently are analyzing data from a follow-up study in children aged 12-17 who have attention-deficit hyperactivity disorder. The study's aim is to assess the amount of sleep these children get and the impact of sleep duration on their response to stimulant medication. ■

# Survey: Racial Differences in ADHD Views, Misconceptions

BY JOYCE FRIEDEN  
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MONTREAL — Attention-deficit hyperactivity disorder is underdiagnosed among African American children, but African American parents suspect otherwise, Dr. Rahn Bailey said at the annual meeting of the American Academy of Psychiatry and the Law.

In a survey of 226 African American parents and 262 white parents, Dr. Bailey, a psychiatrist in private practice in League City, Tex., found striking differences in their perception of ADHD and its diagnosis. For instance, 41% of African Americans surveyed agreed that "African Americans are more likely than other ethnic groups to be diagnosed with ADHD," compared with 13% of white respondents.

Similarly, 45% of African Americans agreed with the statement, "Teachers are more likely to suspect ADHD in African American children with learning or behavioral problems than in other ethnic groups." About 12% of white parents agreed with that statement.

African Americans also were more concerned about the disease itself, with 71% saying that they "would be very concerned" if their children were diagnosed with ADHD, compared with 53% of white respondents. In addition, fewer African Americans—64% vs. 79% of whites—said they would know where to go for help if their children were diagnosed with the disorder.

"African Americans are less likely to go

for diagnosis and care, and if they get the medicine, are less likely to take it," Dr. Bailey said. And although African Americans think ADHD is overdiagnosed in their population, it is actually underdiagnosed because school personnel suspect conditions such as oppositional defiant disorder or conduct disorder, without being aware that those conditions can coexist with ADHD, he added.

African American parents also are less familiar with ADHD in general, with 10% saying they are "not at all familiar" with it, compared with 2% of white parents. And misperceptions about the disorder are common. One survey, for example, found that twice as many African American parents—59%—as white parents attribute ADHD to sugar in the diet.

"That's a point for education, for all doctors, to be aware of," Dr. Bailey

said. "It emphasizes that the misperceptions people get from the media can have more impact on what they believe and their resulting behavior than what they receive from physicians."

As a result of this lack of knowledge, "it just stands to reason that in that setting, you are a lot less likely to receive a positive outcome or a fair outcome or a good outcome," Dr. Bailey said.

"These families are less likely to go for diagnosis and care, and if they do go, they are more likely to go late. If they get a prescription, they are less likely to take it. It's very clear that, in the African American community, the prescription least likely to be filled in the first place is an ADHD prescription." ■

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# Adenotonsillectomy No Panacea For Behavior and School Issues

RANCHO MIRAGE, CALIF. — Adenotonsillectomy significantly improved the quality of life, daytime sleepiness, and daytime and nighttime breathing of children with obstructive sleep apnea, but it did not change their behavior, concentration, or school performance, parents reported to Canadian researchers.

Dr. Evelyn Constantin and associates in the departments of pediatrics and psychiatry at Montreal Children's Hospital and McGill University, Montreal, asked parents to assess many aspects of their children's function and behavior before, immediately after, and following recovery from adenotonsillectomy for obstructive sleep apnea (OSA) between 1993 and 2001.

Among 166 questionnaires returned to researchers, 138 were completely filled out. Investigators also assessed behavior changes using the Conners' Par-

ent Rating Scale-Revised for 94 children at least 3 years old.

The results were released at a conference on sleep in infancy and childhood sponsored by the Annenberg Center for Health Sciences.

Significant improvements were reported for quality of life, daytime breathing, sleep breathing, loudness of snoring, and excessive daytime tiredness, the investigators said.

No significant changes were seen after surgery in asthma, bedwetting, concentration, school performance, or intellectual/developmental progress. No short-term or long-term effects of the surgery were seen on any subscale of the Conners' subscales.

Dr. Constantin said during an interview that a prospective study of potential behavioral impacts of adenotonsillectomy for OSA is underway.

—Betsy Bates