More Sleep Time May Cut Child Obesity

Exercise and diet not the only factors, study confirms

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Junk food and lack of exercise may not be the only things contributing to American children’s expanding waistlines. Research findings from the University of Michigan C.S. Mott Children’s Hospital suggest that kids who aren’t getting enough sleep also may be at an increased risk for being overweight.

In a study exploring the relationship between sleep duration and overweight risk for third-grade and sixth-grade children, researchers found that children who got less shut-eye – fewer than 9 hours each day – were at an increased risk of being overweight, regardless of their gender, race, socioeconomic status, or quality of the home environment.

These findings reveal that sixth graders with shorter nightly sleep durations were more likely to be overweight. And third-grade students who got fewer hours of sleep, regardless of their body mass index, or BMI, were more likely to become overweight in sixth grade. Results from this study appear in the November issue of the journal *Pediatrics*.

“Many children aren’t getting enough sleep, and that lack of sleep may not only be making them moody or preventing them from being alert and ready to learn at school, it may also be leading to a higher risk of being overweight,” said study lead author Julie C. Lumeng, M.D., assistant research scientist at the U-M Center for Human Growth and Development.

“This study suggests that an increased risk for overweight is yet another potential consequence of short sleep duration, providing an additional reason to ensure that children are receiving adequate sleep, primarily through enforcing an age-appropriate bed time.”

Already, research has demonstrated that among adults, even modest reductions in sleep duration are associated with significant increases in obesity risk. Other studies conducted in Japan and England also offer evidence of a link between shorter sleep duration and overweight risk in children.
Those studies with children, however, are limited by racial and socioeconomic homogeneity, says Lumeng, assistant professor in the Department of Pediatrics and Communicable Diseases at C.S. Mott Children’s Hospital.

Since U.S. children’s risk for overweight varies by race and socioeconomic status, Lumeng and her colleagues wanted to examine sleep duration and overweight risk for children independent of those factors.

The researchers reviewed data from the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development on reported sleep problems, sleep duration and BMI for 785 elementary school children, ages 9 to 12. Among those studied, 50 percent were male, 81 percent were white, and 18 percent were overweight in sixth grade.

The researchers found that overweight sixth-grade children slept fewer hours than children who were not overweight. Boys made up the majority of overweight sixth-grade children.

Boys, too, were reported to sleep fewer hours, while girls were found to have more sleep problems. Sleep problems, however, were not associated with a child being a risk for overweight.

Most promising, these study results show that for every additional hour of sleep in sixth grade, a child was 20 percent less likely to be overweight in sixth grade; every additional hour of sleep in third grade resulted in a 40 percent decrease in the child’s risk of being overweight in sixth grade.

“Sleep may have a behavior impact on children,” said Lumeng. “In other words, children who are better rested may have more energy to get more exercise. For example, they may be more likely to go out and play, as opposed to lying on the couch watching TV. It also is possible that when children are tired, they may be more irritable or moody, and may use food to regulate their mood.”

Even more important, Lumeng says, is emerging research that shows a connection between sleep disruption and the hormones that regulate fat storage, appetite and glucose metabolism. Short sleep duration alters carbohydrate metabolism, and leads to impaired glucose tolerance, which can affect a person’s weight. Circadian rhythms, too, affect the body’s leptin, glucose and insulin levels.

“So weight gain may not be a result of sleep’s effect on behavior, but rather sleep’s effect on hormone secretion in the body, specifically, leptin and ghrelin,” said Lumeng, who notes that sleep and leptin secretion in
children is an important area for future research.

Bottom line: If families are struggling to get their children to go to sleep at a reasonable hour, they should seek help from their health care provider, Lumeng advises. Revising school start times may also provide a solution to increasing the amount of sleep a child gets each day.

The National Sleep Foundation recommends these basic daily sleep requirements for children, adolescents, pre-teens and teens:

- Preschoolers: 11-13 hours
- Elementary school students: 10-12 hours
- Pre-teens: 9 - 11 hours
- Teens: 8 1/2 - 9 hours

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