

# Short sleep duration and sleep-related breathing problems increase obesity risk in kids

December 11 2014

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This is an image of a weight scale. Credit: CDC/Debora Cartagena

Sleep-related breathing problems and chronic lack of sleep may each double the risk of a child becoming obese by age 15, according to new research from Albert Einstein College of Medicine of Yeshiva University. The good news is that both sleep problems can be corrected. The study, which followed nearly 2,000 children for 15 years, published

online today in *The Journal of Pediatrics*.

"In recent years, lack of [sleep](#) has become a well-recognized risk for childhood [obesity](#)," said Karen Bonuck, Ph.D., professor of family and [social medicine](#) and of [obstetrics](#) & gynecology and women's health at Einstein and lead author on the paper. "Sleep-disordered breathing, or SDB, which includes snoring and sleep apnea, is also a risk factor for obesity but receives less attention. These two risk factors had not been tracked together in children over time to determine their potential for independently influencing weight gain. Our study aimed to fill in that gap."

Dr. Bonuck and her colleagues used data collected on 1,899 children by the Avon Longitudinal Study of Parents and Children (ALSPAC) based in Avon, England. ALSPAC collected parent questionnaire data on both child sleep duration and SDB symptoms from birth through 6.75 years and child BMI data from research ALSPAC clinics.

## **Sleep-disordered breathing**

The researchers found that children with the most severe SDB had the greatest risk for obesity. Those children who fell into the "worst case" SDB category were twice as likely to become obese by 7, 10 and 15 years of age, compared to the asymptomatic group. Children considered "worst case" scored highest for SDB symptoms of snoring, [sleep apnea](#) or mouth-breathing.

Children whose SDB peaked later, around 5 to 6 years old, fared better but still had a 60 to 80 percent increased risk of becoming obese. Overall, one-fourth of children in this population-based cohort had an increased statistical risk of obesity that arose from SDB symptoms experienced earlier in life. Obesity was defined as BMI greater than the 95th percentile for age and gender, according to the International

Obesity Task Force.

## Sleep duration

With respect to sleep duration, children with the shortest sleep time at approximately 5 and 6 years of age had a 60 to 100 percent increased risk of being obese at 15 years. Children with short sleep duration at other ages saw no significant increase in risk. (In this study, children with short sleep duration were those who, in any given age group, slept less than 90 percent of their peers. For those aged 5 and 6 years old, this was 10.5 hours a night or less.)

Interestingly, SDB and [lack of sleep](#) were equally strong risk factors for obesity, but their effects were independent of each other. The researchers looked for associations between short-sleep-duration children and SDB children across all age groups included in the study but did not find clustering, i.e., there was little evidence that children with one risk factor were more likely to also be affected by the other. The study did not analyze whether children affected by both of the sleep-related risk factors were at greater risk for obesity than were [children](#) who had just one risk factor.

## Addressing the Problem

"We know that the road to obesity often begins early in life," said Dr. Bonuck. "Our research strengthens the case that insufficient sleep and SDB—especially when present early in childhood—increase the risk for becoming obese later in childhood. If impaired sleep in childhood is conclusively shown to cause future obesity, it may be vital for parents and physicians to identify [sleep problems](#) early, so that corrective action can be taken and obesity prevented. With [childhood obesity](#) hovering at 17 percent in the United States, we're hopeful that efforts to address

both of these [risk factors](#) could have a tremendous public health impact."

A common cause of SDB is enlarged tonsils or adenoids, which can be removed through surgery. Malocclusion—misalignment of the jaws and teeth—which can be treated with a night guard or through orthodontic care is being investigated as a source of SDB as well. As for lack of sufficient sleep, which affects an estimated 25 to 50 percent of preschoolers, "Learning good sleep habits and proper sleep hygiene can promote healthy sleep and longer sleep duration," said Dr. Bonuck.

**More information:** The paper is titled "Sleep-Disordered Breathing, Sleep Duration, and Childhood Overweight: A Longitudinal Study" *The Journal of Pediatrics*, 2014.

Provided by Albert Einstein College of Medicine

Citation: Short sleep duration and sleep-related breathing problems increase obesity risk in kids (2014, December 11) retrieved 25 April 2024 from <https://medicalxpress.com/news/2014-12-short-duration-sleep-related-problems-obesity.html>

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