

# Lack of sleep leads to obesity in children and adolescents

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Children who get less than the recommended amount of sleep for their

age are at a higher risk of developing obesity.

Research at the University of Warwick has found that [children](#) and adolescents who regularly [sleep](#) less than others of the same age gain more weight when they grow older and are more likely to become overweight or obese.

One of the co-authors, Dr. Michelle Miller, Reader of Biochemical Medicine, Health Sciences, Warwick Medical School said: "Being overweight can lead to cardiovascular disease and type-2-diabetes which is also on the increase in children. The findings of the study indicate that sleep may be an important potentially modifiable risk factor (or marker) of future [obesity](#)."

The paper, Sleep duration and incidence of obesity in infants, children and adolescents: a systematic review and meta-analysis of prospective studies, has been published in the journal *Sleep*. The paper's authors reviewed the results of 42 population studies of infants, children and adolescents aged 0 to 18 years which included a total of 75,499 participants. Their average [sleep duration](#) was assessed through a variety of methods, from questionnaires to wearable technology.

The participants were grouped into two classifications: short sleeper and regular sleepers. Short sleepers were defined as having less sleep than the reference category for their age. This was based on the most recent National Sleep Foundation guidelines in the U.S. which recommends that infants (4 to 11 months) get between 12-15 hours of nightly sleep, that toddlers (1-2 years) get 11-14 hours of sleep, children in pre-school (3-5 years) get 10-13 hours and school aged children (6-13 years) between 9 and 11 hours. Teenagers (14-17 years) are advised to get 8-10 hours.

Participants were followed up for a median period of three years and

changes in BMI and incidences of overweight and/or obesity were recorded over time. At all ages [short sleepers](#) gained more weight and overall were 58% more likely to become overweight or obese.

Dr. Miller said: "The results showed a consistent relationship across all ages indicating that the increased risk is present in both younger and older children. The study also reinforces the concept that [sleep deprivation](#) is an important risk factor for obesity, detectable very early on in life."

Co-author Professor Francesco Cappuccio added: "By appraising world literature we were able to demonstrate that, despite some variation between studies, there is a strikingly consistent overall prospective association between short sleep and obesity.

"This study builds on our previous analysis of cross-sectional data published in 2008. The importance of the latest approach is that only prospective longitudinal studies were included, demonstrating that short sleep precedes the development of obesity in later years, strongly suggesting causality."

The prevalence of obesity has increased world-wide and the World Health Organization has now declared it a global epidemic. The paper's authors stress that whilst healthy eating and exercise are important this study demonstrates that getting enough sleep is equally important. They suggest that educational programmes could be used to empower parents and children to maximise their sleep quantity.

**More information:** Michelle A Miller et al. Sleep duration and incidence of obesity in infants, children, and adolescents: a systematic review and meta-analysis of prospective studies, *Sleep* (2018). [DOI: 10.1093/sleep/zsy018](https://doi.org/10.1093/sleep/zsy018)

Provided by University of Warwick

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