

# Inadequate sleep predicts risk of heart disease, diabetes in obese adolescents

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Obese adolescents not getting enough sleep? A study in today's *The Journal of Pediatrics*, shows they could be increasing their risk for developing diabetes, heart disease and stroke.

Lack of sleep and obesity have been associated with an increased risk of cardiovascular and metabolic diseases in adults and young children.

However, the association is not as clear in adolescents, an age group known for lack of [adequate sleep](#), and with an obesity and overweight prevalence of 30 percent in the United States.

Researchers at the University of Michigan Health System and Baylor University studied 37 obese adolescents, ages 11-17. Their risk factors for type 2 diabetes and cardiovascular disease, such as fasting cholesterol and blood sugar, waist circumference, [body mass index](#), and blood pressure, were measured to create a continuous cardiometabolic risk score.

The adolescents were fitted with a physical activity monitor, worn 24 hours a day for seven days to measure typical patterns of physical activity and sleep.

One-third of the participants met the minimum recommendation of being physically active at least 60 minutes a day. Most participants slept approximately seven hours each night, usually waking up at least once. Only five of the participants met the minimal recommended eight and a

half hours of sleep per night.

Even after controlling for factors that may impact cardiometabolic risk, like BMI and physical activity, low levels of sleep remained a significant predictor of cardiometabolic risk in obese teens.

This shows that even among those already considered at risk for cardiometabolic disease, in this case [obese teens](#)' decreased [sleep duration](#) was predictive of increased cardiometabolic risk. The study cannot determine whether [lack of sleep](#) causes cardiometabolic disease or if obesity, or other factors cause [sleep disturbances](#).

"However, the strong association between sleep duration and cardiometabolic risk score independent of the effects of body composition and [physical activity](#) suggest a potential influence of sleep duration on cardiometabolic health in obese adolescents," says lead author Heidi IglayReger, Ph.D., supervisor of the Physical Activity Laboratory at the Michigan Metabolomics and Obesity Center.

These data provide evidence that objective sleep assessment may be a useful screening tool to identify at-risk adolescents.

Future studies are needed to determine if improving sleep duration would decrease the risk of developing cardiometabolic diseases.

**More information:** "Sleep Duration Predicts Cardiometabolic Risk in Obese Adolescents," *The Journal of Pediatrics*, [DOI: 10.1016/j.jpeds.2014.01.034](#)

Provided by University of Michigan Health System

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