

A good night's sleep may reduce risk of type 2 diabetes in obese teens

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Obese teenagers who don't get the proper amount of sleep may have disruptions in insulin secretion and blood sugar (glucose) levels, say pediatric researchers. Their study suggests that getting a good night's sleep may stave off the development of type 2 diabetes in these adolescents.

"We already know that three out of four high school students report getting insufficient sleep," said study investigator Dorit Koren, M.D., a pediatric endocrinologist at The Children's Hospital of Philadelphia. "Our study found to keep [glucose levels](#) stable, the optimal amount of sleep for teenagers is 7.5 to 8.5 hours per night." She added that this is consistent with research in adults showing an association between [sleep deprivation](#) and increased risk of type 2 diabetes.

The study appears online today in the journal *Diabetes Care*.

The researchers studied 62 obese adolescents with a mean age of 14 years at The Children's Hospital of Philadelphia. Over one and a half days, the children, who were white, African American and Hispanic teenagers, underwent glucose testing and an overnight sleep study. In addition to measuring total [sleep time](#), the scientists studied "sleep architecture," analyzing stages of sleep such as slow-wave "deep" sleep and [rapid eye movement](#) (dream) sleep.

The optimal sleep duration was neither too little nor too much, said Koren; both insufficient and excessive sleep were linked to higher

glucose levels. While sleep stages did not predict glucose levels, lower duration of N3 ("deep" sleep) correlated with decreased [insulin secretion](#).

The current study was the first to associate sleep duration with glucose levels in children and to report a link between N3 sleep and insulin secretion.

"Reduced insulin secretion may lead to the higher glucose levels that we found in subjects who had insufficient sleep," said Koren. "We will seek to confirm these findings with home-based studies of [sleep patterns](#) in obese teenagers. In the meantime, our study reinforces the idea that getting adequate sleep in adolescence may help protect against type 2 diabetes."

More information: "Sleep Architecture and Glucose and Insulin Homeostasis in Obese Adolescents," Diabetes Care, published online Sept. 20, 2011, to appear in November 2011 print edition.

Provided by Children's Hospital of Philadelphia

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