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### Sleeping less than 6 hours a night may lead to diabetes

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October 5, 2010

Your mom always told you to get eight hours a sleep each night—and now there's more evidence that mom knew what she was talking about.

A new study shows that people who get less than six hours of sleep a night are more likely to develop diabetes.

"This research supports growing evidence of the association of inadequate sleep with adverse health issues," says the study's first author Lisa Rafalson, a National Research Service Award fellow in the University at Buffalo department of family medicine.

In a study published in the *Annals of Epidemiology*, Rafalson and her team found that people who slumber less than six hours a night during the work week were three times more likely to have elevated levels of blood sugar than those who sleep between six and eight hours.

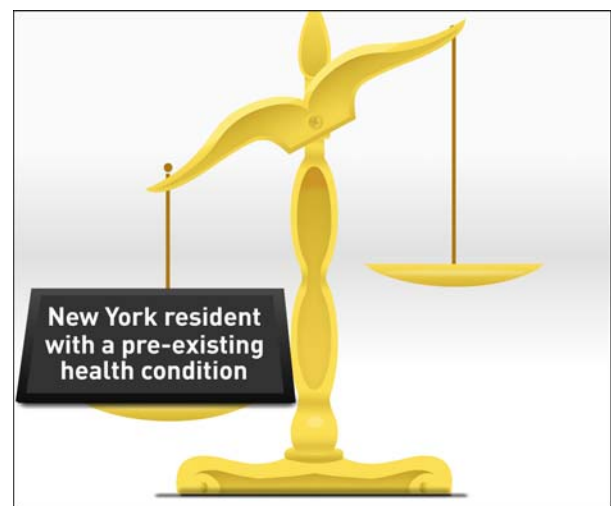
"Impaired fasting glucose - a glucose level between 100-125 mg/dl is known as pre-diabetes, and about 25 percent of people who have impaired fasting glucose will, at some point, develop type 2 diabetes," Rafalson says. Previous studies have shown that severely restricting sleep can result in an increase in appetite-stimulating hormones and a decrease in the hormones that inhibit appetite. In addition, people who are sleep-deprived also crave calorie-dense foods.

In addition, sleep restriction decreases glucose tolerance, while increasing cortisol levels and variations in the heart rate -- changes that can result in increased blood glucose levels.

In the study at UB, researchers matched 91 people who developed pre-diabetes with study participants who had maintained normal glucose levels for years. Participants were placed into three groups based on their Sunday through Thursday average daily amount of sleep: "short-sleepers," who reported less than six hours of sleep nightly; "long-sleepers," who reported sleeping more than eight hours nightly; and a reference group who slept six-to-eight hours a night.

Results show that "short-sleepers" had a significantly increased risk of progressing from normal glucose levels to pre-diabetes, compared to those who slept six-to-eight hours nightly.

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The study found that sleeping an average of more than eight hours a night also increased the likelihood of developing increased fasting glucose, consistent with other literature, but the findings weren't statistically significant, possibly because only five people were in that group, Rafalson noted.

"A high glucose level is associated with many complications, such as heart disease and premature death," says Rafalson. "Physicians should discuss sleep habits with their patients, along with other lifestyle issues that are important to long-term health, such as diet and exercise."

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