More Reasons Why Getting a Good Night’s Sleep Is Important

Boston (March 30, 2015)—Not getting enough sleep not only makes our minds less alert, but our bodies too. Studies have suggested that losing several hours of sleep can slow the body’s metabolism, but what about losing only a few hours? A team of researchers from the University of South Carolina and Arizona State University found that metabolic effects are seen even when sleep is shortened by two hours.

Xuewen Wang will present the study’s findings in a poster session on Monday, March 30, at the Experimental Biology Meeting (Boston Convention and Exhibition Center from 12:45 to 3 PM EDT).

In this study, volunteers slept as much as they needed or two hours less for three nights. The research team then evaluated the responsiveness of the volunteers’ metabolism by having the volunteers drink a glucose drink and then measuring the glucose and insulin levels in the volunteers’ blood. The researchers observed that sleeping two hours less increased insulin concentration, suggesting that cutting sleep even a little can alter metabolism.

From the researchers: “Our study was conducted in a group of young healthy adults after only three days of shortened sleep by two hours. The study findings are important because this amount of shortened sleep is often seen in real life. Our next step is to find out whether the sleep pattern of shortened sleep during the week and catching up sleep during the weekend affects glucose metabolism in longer term. We are also interested in finding out the responses in individuals who already have impaired glucose metabolism.”

Full Abstract
The literature suggests that severe sleep loss of more than a few hours a night decreases glucose tolerance and insulin sensitivity. This study was to determine whether moderate sleep restriction had similar effects. Methods: Fifteen healthy non-obese (BMI=24.5±3.4 kg/m2) young adults (20.6±1.3 years) completed two oral glucose tolerance tests: One was after three days of restricted sleep by two hours each day, and the other was after three days of ad libitum sleep. Plasma samples were collected before and 30, 60, 90 and 120 minutes after consumption of a glucose drink to determine glucose and insulin concentrations. Fasting C-peptide concentration was also determined. Results: Glucose concentrations before and 30, 60, 90 and 120 minutes following consumption of glucose were not different during the two glucose tolerance tests (p > 0.10 for all). Glucose area under the curve was also similar (p > 0.10). Insulin concentrations before and 60, 90 and 120 minutes following consumption of glucose were not different during the two glucose tolerance tests (p > 0.10 for all), but insulin concentration 30 minutes following consumption of glucose was higher (p = 0.038) after restricted sleep (31.4±19.8 uIU/ml) than ad libitum sleep (23.7±17.4 uIU/ml). Insulin area under the curve and fasting C-peptide concentration were also greater (p = 0.056 and p = 0.059, respectively) following restricted sleep than ad libitum sleep. Conclusion: Short-term moderate sleep restriction of only two hours may have adverse effects on glucose metabolism by increasing insulin concentration in this group of healthy young adults.

NOTE TO JOURNALISTS: To schedule an interview with a member of the research team, please contact Stacy Brooks at sbrooks@the-aps.org or (240) 432-9697.
About Experimental Biology 2015
Experimental Biology is an annual meeting comprised of more than 14,000 scientists and exhibitors from six sponsoring societies and multiple guest societies. With a mission to share the newest scientific concepts and research findings shaping current and future clinical advances, the meeting offers an unparalleled opportunity for exchange among scientists from throughout across the United States and the world who represent dozens of scientific areas, from laboratory to translational to clinical research. www.experimentalbiology.org

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