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Getting enough sleep could help prevent type 2 diabetes

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Men who lose sleep during the work week may be able to lower their risk of developing Type 2 diabetes by getting more hours of sleep, according to Los Angeles Biomedical Research Institute (LA BioMed) research findings presented today at The Endocrine Society's 95th Annual Meeting in San Francisco.

The study by Peter Liu, MD, PhD, an LA BioMed lead researcher, found that insulin sensitivity, the body's ability to clear glucose (blood sugar) from the bloodstream, significantly improved after three nights of "catch-up sleep" on the weekend in men with long-term, weekday sleep restrictions.

"We all know we need to get adequate sleep, but that is often impossible because of work demands and busy lifestyles," said Dr. Liu. "Our study found extending the hours of sleep can improve the body's use of insulin, thereby reducing the risk of Type 2 diabetes in adult men. Reducing the incidence of this chronic illness is critical for a nation where diabetes affects nearly 26 million people and costs an estimated $174 billion annually."

Insulin is a hormone that regulates a person's blood sugar level. The body of a patient with Type 2 diabetes cannot effectively use the insulin it produces, or it becomes "resistant" to insulin. Retaining the body's sensitivity to insulin reduces the risk of developing Type 2 diabetes, a chronic illness that is the seventh leading cause of death in the U.S.

Other research had demonstrated the harmful effects of experimental sleep restriction on insulin sensitivity in healthy, normal sleepers. The new study provides information about people who lose sleep during the week – often because of jobs and busy lifestyles – but "catch up" on their sleep on the weekends.

"The good news is that by extending the hours they sleep, adult men – who over a long period of time do not get enough sleep during the working week – can still improve their insulin sensitivity," Liu said.

Liu and researchers from the University of Sydney in Australia studied 19 non-diabetic men, with an average age of 28.6 years, who for six months or longer (average, 5.1 years) self-reported inadequate sleep during the workweek. On average, the men received only 6.2 hours of sleep each work night. But they regularly caught up on their sleep on the weekends, sleeping an extra 37.4 percent, or 2.3 hours, per night, the authors reported. Their reported sleep times were verified by actigraphy, in which each man wore a small device on his wrist that monitored sleep-wake cycles.

The men spent three nights in a sleep lab on each of two separate weekends. The researchers randomly assigned the men to two of three sleep conditions: (1) 10 hours of sleep, (2) six hours of sleep or (3) 10 hours in bed, in which noises during deep sleep aroused them into shallow sleep without waking them. The six hours of sleep tested persistent sleep restriction.

On the fourth morning, the research staff drew the men's blood to measure their blood sugar and insulin levels to calculate insulin sensitivity. Each individual had the same food intake during the study visits, so that diet would not influence the results, Liu said.

When the men slept 10 hours a night on each of three nights of catch-up

sleep, their insulin sensitivity was much better than when they had persistent sleep restriction, the scientists found. Their insulin resistance test score also improved (decreased) with sleep extension.

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