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Sleep restriction results in weight gain despite decreases in appetite and consumption

WESTCHESTER, Ill. – According to a research abstract that will be presented on Monday, June 8 at SLEEP 2009, the 23rd Annual Meeting of the Associated Professional Sleep Societies, in the presence of free access to food, sleep restricted subjects reported decrease in appetite, food cravings and food consumption; however, they gained weight over the course of the study. Thus, the finding suggests that energy intake exceeded energy expenditure during the sleep restriction

Results indicate that people whose sleep was restricted experienced an average weight gain of 1.31 kilograms over the 11 days of the study. Of the subjects with restricted sleep who reported a change in their appetite and food consumption, more than 70 percent said that it decreased by day 5 of the study. A group of well rested control subjects did not experience the weight gain.

According to lead investigator Siobhan Banks, PhD, a research fellow at the University of South Australia and former assistant research professor at the University of Pennsylvania School of Medicine, it was surprising that participants did not crave foods rich in carbohydrates after sleep restriction, as previous research suggested they might. Results indicate that even though physiologically the desire to eat was not increased by sleep loss in participants, other factors such as the sedentary environment of the laboratory and the ability to snack for longer due to reduction in time spent asleep might have influenced the weight gain.

"During real-world periods of sleep restriction (say during shift work), people should plan their calorie intake over the time they will be awake, eating small, healthy meals," said Banks.

"Additionally, healthy low fat/sugar snacks should be available so the temptation to eat comfort foods is reduced. Finally, keeping up regular exercise is just as important as what food you eat, so even though people may feel tired, exercising will help regulate energy intake balance."

The study involved 92 healthy individuals (52 male) between the ages of 22 and 45 years who participated in laboratory controlled sleep restriction. Subjects underwent two nights of

baseline sleep (10 hours in bed per night), five nights of sleep restriction and varying recovery for four nights. Nine well rested participants served as controls. Food consumption was ad libitum (subjects had three regular meals per day and access to healthy snacks, and during nights of sleep restriction subjects were given a small sandwich at one a.m.).

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The annual SLEEP meeting brings together an international body of 6,000 leading researchers and clinicians in the field of sleep medicine to present and discuss new findings and medical developments related to sleep and sleep disorders.

More than 1,300 research abstracts will be presented at the SLEEP meeting, a joint venture of the AASM and the Sleep Research Society. The three-and-a-half-day scientific meeting will bring to light new findings that enhance the understanding of the processes of sleep and aid the diagnosis and treatment of sleep disorders such as insomnia, narcolepsy and sleep apnea.

Abstract Title: Sustained Sleep Restriction in Healthy Adults with Ad libitum Access to Food Results in Weight Gain without Increased Appetite or Food Cravings

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Category: Sleep Deprivation

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