Shorter time in bed may protect against chronic insomnia

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Twenty to 50 percent of Americans suffer from acute insomnia each year, defined as difficulty falling asleep or staying asleep, three or more nights per week, for between two weeks and three months. Roughly 10 percent of Americans experience chronic insomnia lasting longer than three months. The effects of chronic insomnia (and/or sleep loss) include impaired physical and mental performance, increased risk for mental health disorders (such as, depression and substance abuse), and increased risk for medical diseases, including hypertension, diabetes, heart disease, and stroke.

Now, preliminary findings from a Penn Medicine study (abstract #0508) presented at SLEEP 2016, the 30th annual meeting of the Associated Professional Sleep Societies LLC, suggest that what may prevent 70 to 80 percent of individuals with new onset insomnia (acute insomnia) from developing chronic insomnia is a natural tendency to self-restrict time in bed (TIB). For example, if someone goes to sleep at 11 p.m. and wakes up at 5 a.m. (versus an intended 7:30 a.m.), they start their day, rather than lie awake in bed.

Electing to stay awake (rather than staying in bed trying to sleep) is not only a productive strategy for an individual with acute insomnia, but is also one that is formally deployed as part of cognitive behavioral therapy for chronic insomnia.

Last month, the American College of Physicians recommended Cognitive Behavioral Therapy (CBT) as the initial, first-line treatment

for chronic insomnia, based on data showing the therapy can improve symptoms without the side effects associated with sleep drugs.

By evaluating over a year how time in bed varies in 416 individuals who remain good sleepers (GS), in good sleepers who begin suffering from acute insomnia and then recover (GS-AI-REC), and in good sleepers who transition to acute insomnia and then to long-term chronic insomnia (GS-AI-CI), the study provides the first evidence supporting the significant role that sleep extension - the effort to recover lost sleep by increasing one's sleep opportunity, or TIB - plays in turning acute insomnia into chronic insomnia. The results from these preliminary data analyses show that 20 percent of the population of good sleepers experience acute insomnia per year, 45 percent of these individuals recover, 48 percent have persistent but periodic insomnia, and 7 percent develop chronic insomnia.

"Those with insomnia typically extend their sleep opportunity," says Michael Perlis, PhD, an associate professor in Psychiatry and director of the Penn Behavioral Sleep Medicine Program. "They go to bed early, get out of bed late, and they nap. While this seems a reasonable thing to do, and may well be in the short term, the problem in the longer term is it creates a mismatch between the individual's current sleep ability and their current sleep opportunity; this fuels insomnia."

The findings offer the first data confirming a theory (the 3P model of insomnia) developed by the late Arthur Spielman in the 1980s, that says the catalyst for the transition from acute to chronic insomnia is "sleep extension," that is, the tendency to expand sleep opportunity to make up for sleep loss.

Echoing Spielman, Perlis says, "Acute insomnia is likely a natural part of the human condition. If you think about the fight flight response, as trigger for sleeplessness, this makes sense. That is, it shouldn't matter

that it's 3 a.m. and you've been awake for the last 22 hours, if you're being threatened and you believe there is a threat to your quality of life or existence, it's not a good time to sleep. It is understandable that sleeplessness has persisted as an adaptive response to such circumstances. In contrast, it's hard to imagine how chronic insomnia is anything but bad...and the clinical research data support this position given chronic insomnia's association with increased medical and psychiatric morbidity."

Co-authors on the study include Ellis J. of the Northumbria Center for Sleep Research (United Kingdom), Knashawn H. Morales from Penn, Michael Grandner of the University of Arizona, and Charles Corbitt, Genevieve Nesom , and Waliuddin Khader from Penn.

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More information: Perlis will present the team's findings at SLEEP on Wednesday June 15, 2016 at 9:30 am in room 605.

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