

Study to test sleep technology in chronic insomnia

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If you spend your nights staring at the bedroom ceiling, you're not alone. About a quarter of U.S. adults suffer from insomnia, which significantly impacts their quality of life.

Estimates put the burden of <u>insomnia</u> on the U.S. economy at a whopping \$63 billion per year in lost productivity, increased <u>health care</u> <u>expenses</u> and costs associated with workplace errors and accidents.

A new, three-year project led by scientists in Washington State University's Sleep and Performance Research Center may soon bring relief to those who toss and turn. In collaboration with the University of Washington, the researchers will test the effectiveness of a novel, lowcost sleep measurement technology with built-in sleep coaching functionality in individuals with chronic insomnia. Insomnia is considered chronic if disrupted sleep occurs at least three nights a week for more than three months.

Known as the S+, the technology is a noncontact sleep sensor designed to sit on a sleeper's night stand, where it measures timing, quantity and quality of sleep. An integrated function called S+ Mentor uses an app on a connected smartphone or tablet to provide users with sleep scores and charts, along with individualized suggestions on how sleep may be improved. Previous studies have validated its use for tracking sleep in healthy sleepers and people with <u>obstructive sleep apnea</u>, but scientists have not yet tested the technology in individuals with insomnia.



"We will investigate to what extent this technology can accurately measure insomniacs' <u>sleep patterns</u> over days and weeks and provide tailored improvements in their sleep," said Devon Grant, principal investigator of the study and a postdoctoral researcher in the Elson S. Floyd College of Medicine. "This could help expand cost-effective therapy options available to this undertreated population."

Measuring, improving sleep

Grant said the current standard for treatment of chronic insomnia is cognitive behavioral therapy for insomnia (CBT-I). While working as a therapist at a Spokane-based sleep clinic, she created the area's only such program and ran it for more than 10 years. While CBT-I is considered to be effective and can provide long-lasting benefits, participation has been limited mostly by high costs and a lack of qualified providers. A recently developed online version of CBT-I has resolved some of these issues while showing comparable results, but still may not be right for everyone, Grant said.

For their study, the research team will recruit 90 adults with chronic insomnia in the Spokane and Seattle areas, along with 30 healthy sleepers who will serve as controls. Participants will be monitored for two months in their home environment. Those with insomnia will be randomly assigned to one of three groups—one group will only have their sleep monitored by the new technology; the other two are intervention groups in which sleep monitoring will be combined with either participation in an online CBT-I program or sleep coaching through the technology's mentoring feature.

Data from the study will be analyzed to determine whether the new technology measures participants' <u>sleep</u> accurately. In addition, the researchers will compare treatment outcomes between the two intervention groups to see whether the technology's coaching



functionality is at least as effective in treating <u>chronic insomnia</u> as online CBT-I.

Provided by Washington State University

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