

Brain waves predict our risk for insomnia

March 11 2015



A recent Concordia study examined the sleep cycles of 12 Concordia students as they went through the nerve-racking experience of finals. Credit: Concordia University

There may not yet be a cure for insomnia, but Concordia University researchers are a step closer to predicting who is most likely to suffer from it—just in time for World Sleep Day on March 13.

In his study published in *Frontiers in Human Neuroscience*, Thien Thanh Dang-Vu, from Concordia's Center for Studies in Behavioral

Neurobiology and PERFORM Center, explores the impact of [stress](#) on [sleep](#). Although researchers already know that stressful events can trigger [insomnia](#), the experiment reveals that some people are more vulnerable than others to developing the condition.

To determine the role of stress, the study examined the sleep cycles of 12 Concordia students as they went through the nerve-racking experience of finals. Measuring students' brain waves at the beginning of the school semester, Dang-Vu and his team found that students showing a lower amount of a particular pattern of [brain waves](#) were more at risk for developing insomnia afterwards in response to the stress of the exams.

The brain—specifically the deep, inner parts of the brain called the thalamus and cortex—produces electromagnetic activity during sleep. When monitored by diagnostic tools, this activity appears as patterns of squiggly lines that scientists refer to as spindles.

In a previous experiment, Dang-Vu and his team discovered that greater spindle activity helps sleepers resist waking, despite noise. The new study aimed to test whether there would be a similar relationship between spindles and stress.

The hypothesis proved true. "We found that those who had the lowest spindle activity tended to develop more disturbances in response to stress, when comparing [sleep quality](#) at the beginning of the semester and the end of the school semester," Dang-Vu says.

"We are not all equally armed when facing stress, in terms of how we can manage our sleep. Some people are more vulnerable than others."

So how do you get these better spindles? Are there meditation practices you can adopt? Will gyms begin introducing spindle classes?

Unfortunately, there's not a lot you can do at the moment, since spindles seem to be at least partially dependent on genetics.

But Dang-Vu, who is a medical doctor and neurologist at the Institut Universitaire de Gériatrie de Montréal, says that exploring ways to improve spindles is another prospective area for research. Measuring spindle activity may also help identify people at risk of insomnia before the condition materializes.

In the meantime, we should all keep abiding by the habits already acknowledged to promote a good night's sleep, Dang-Vu says. "Avoid sources of stress when going to bed, preserve the bedroom environment for sleep and not for work, and avoid stimulation. Find ways to relax before going to sleep."

Provided by Concordia University

Citation: Brain waves predict our risk for insomnia (2015, March 11) retrieved 27 April 2024 from <https://medicalxpress.com/news/2015-03-brain-insomnia.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.