

## Sleep Deprivation Influences Drug Use in Teens' Social Networks

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**M**ore than one behavior can spread simultaneously across a social network.

Recent studies have shown that behaviors such as happiness, obesity, smoking and altruism are “contagious” within adult social networks. In other words, your behavior not only influences your friends, but also their friends and so on. Researchers at the University of California, San Diego and Harvard University have taken this a step farther and found that the spread of one behavior in social networks – in this case, poor sleep patterns – influences the spread of another behavior, adolescent drug use.

The study, led by Sara C. Mednick, PhD, assistant professor of psychiatry at the University of California, San Diego School of Medicine and the VA San Diego Healthcare System, will be published March 19 in *PLoS One*.

“This is our first investigation of the spread of illegal drug use in social networks,” said Mednick. “We believe it is also the first study in any age population on the spread of sleep behaviors through social networks.”

Using social network data from the National Longitudinal Study of Adolescent Health, Mednick and her colleagues James H. Fowler, UCSD Department of Political Science and Nicholas A. Christakis, Harvard Medical School, mapped the social networks of 8,349 adolescents in grades 7 through 12. They found clusters of poor sleep behavior and marijuana use that extended up to four degrees of separation (to one’s friends’ friends’ friends’ friends) in the social network.

Another novel network effect that they discovered was that teens who are at the center of the network are at greater risk of poor sleep, which in turn means they are more likely to use marijuana – putting them at the crossroads of two behaviors increases a teenager’s vulnerability.

Contrary to the general assumption that drug use has a negative effect on sleep, the researchers also found that sleep loss is likely to drive adolescents to use drugs – the less they sleep the more likely their friends are to sleep poorly and use marijuana.

“Our behaviors are connected to each other and we need to start thinking about how one behavior affects our lives on many levels,” said Mednick. “Therefore, when parents, schools and law enforcement want to look for ways to influence one outcome, such as drug use, our research suggests that targeting another behavior, like sleep, may have a positive influence. They should be promoting healthy sleep habits that eliminate behaviors which interfere with sleep: take the TV out of the child’s bedroom, limit computer and phone usage to daytime and early evening hours, and promote napping.”

The research was funded by the National Institute of Mental Health, National Institute on Aging and National Institute of Child Health and Human Development.

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