

Social networks show drug use follows lack of sleep

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PARENTS looking to steer their teens away from drugs may want to encourage them stay in bed longer. Lack of sleep seems to lead to increased drug use - not the other way around, as many researchers previously concluded - and this is likely to be a pattern of behaviour that teenagers acquire from their friends.

"Your sleep is going to influence my sleep and that will make me more likely to do drugs," says [Sara Mednick](#), a neuroscientist at the University of California, San Diego, who led the study.

Establishing whether one behaviour leads to another usually requires an experiment in which a particular variable is tweaked. But in the first analysis of its kind, Mednick and her team used changes in the friendship networks of 90,000 teens during the course of a school year as a "natural experiment" ([see "Natural experiments: Working in the history lab"](#)) to discover what influences led them to use cannabis. They say their analysis showed not only that cannabis and poor sleep spread together, but also that lack of sleep was causing marijuana use.

Having one friend who had less than 7 hours of shut-eye a night increased the likelihood that a teenager had also used marijuana by 20 per cent, the team found. Also, the more sleep-deprived friends the teenager had, the more likely it was that he or she smoked dope. The team also found that the most popular teenagers - those most central to their school's social network - were the ones most likely to sleep poorly, do drugs and pass these behaviours on.

"This research was done in the early 90s before the internet age," Mednick points out. The teenagers' poor sleep habits may have been spread through late-night phone calls and gallivanting, but since the research was done new distractions such as text messaging could offer even more reasons to stay up late. "My guess is that this is going to become 10 million times worse," Mednick says.

To reduce the possibility that a shared environmental factor may explain these connections, Mednick's team took into account differences between teenagers, including race, sex, parents' income and education. Another complication is that teenagers tend to pick friends based on a mutual interest, be it football or French or recreational drug use.

But Mednick says that the pattern of changes in the social networks show the teens are not simply picking like-minded friends, but that friends are driving each other's behaviour (*PLoS ONE*, [DOI: 10.1371/journal.pone.0009775](#)). Mutual friends had more influence on the sleep habits and drug use of one another than pairs where only one person named the other as a friend. Teens whose friendship was not reciprocated by a classmate they named had little or no effect on that friend's behaviour.

[Susan Tapert](#), a psychologist also at UC San Diego who was not involved in the study, agrees that poor sleep may lead to drug use, but also says the two behaviours probably reinforce one another. A previous study found that after treatment, alcoholics who continued to have sleep problems were more likely to relapse.

Mednick hopes to use a similar approach to find out if sleeping badly is related to gambling and other impulsive acts.

Team member [James Fowler](#), who previously showed that [obesity spreads through social networks](#), sees social networks as a useful tool for teasing out cause and effect. He and Mednick write: "People are connected, and so their health behaviours are connected."