

# Lack of sleep could cause mood disorders in teens

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Chronic sleep deprivation—which can involve staying up late, and

waking up early for work or school—has become a way of life for both kids and adults, especially with the increasing use of phones and tablets late into the night. But this social jet lag poses some serious health and mental health risks: new research finds that for teenagers, even a short period of sleep restriction could, over the long-term, raise their risk for depression and addiction.

University of Pittsburgh's Peter Franzen and Erika Forbes invited 35 participants, aged 11.5-15 years, into a sleep lab for two nights. Half the participants slept for 10 hours, while the other half slept only four hours. A week later, they came back to the lab for another two nights and adopted the opposite sleep schedule from their initial visit.

Each time they visited the lab, the participants underwent brain scans while playing a game that involved receiving monetary rewards of \$10 and \$1. At the end of each visit, the teens answered questions that measured their emotional functioning, as well as [depression](#) symptoms.

The researchers found that sleep deprivation affected the putamen, an area of the brain that plays a role in goal-based movements and learning from rewards. When participants were sleep-deprived and the reward in the game they played was larger, the putamen was less responsive. In the rested condition, the brain region didn't show any difference between high- and low-reward conditions.

Franzen and Forbes also found connections between [sleep restriction](#) and mood: after a night of restricted sleep, the [participants](#) who experienced less activation in the putamen also reported more symptoms of depression. This is consistent with findings, from a large literature of studies on depression and reward circuitry, that depression is characterized by less activity in the brain's reward system.

The results suggest that [sleep deprivation](#) in the tween and teen years

may interfere with how the brain processes rewards, which could disrupt mood and put a person at risk of depression, as well as risk-taking behavior and addiction.

Provided by American College of Neuropsychopharmacology

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