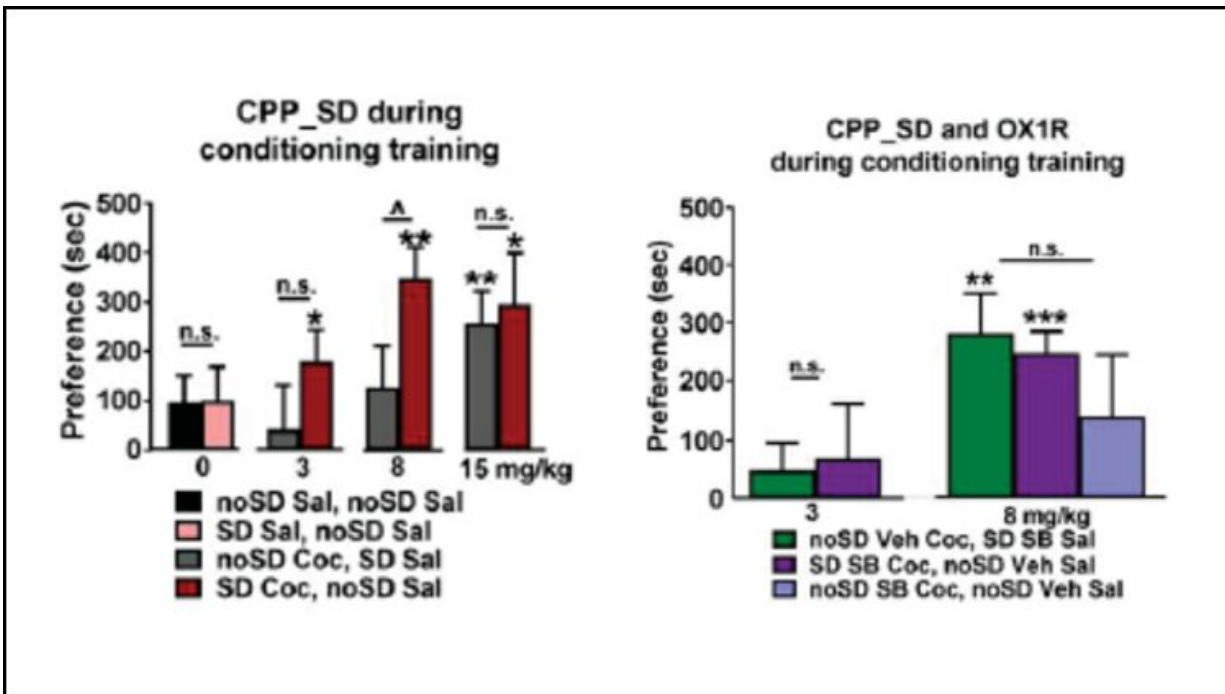


# Sleep-deprived mice find cocaine more rewarding

November 2 2020



Sleep deprivation prior to cocaine conditioning induced preference for 3 mg and increased preference for 8 mg cocaine dose (left). Blocking orexin receptors prevented the sleep deprivation-induced increase in cocaine preference (right). Credit: Bjorness and Greene, *eNeuro* 2020.

Sleep deprivation may pave the way to cocaine addiction. Too-little sleep can increase the rewarding properties of cocaine, according to new research in mice published in *eNeuro*.

Poor sleep and cocaine use go hand-in-hand. Both acute and chronic cocaine use disrupts sleep, and sleep disturbances can increase the likelihood of relapse. But it's unclear how sleep deprivation contributes to [cocaine addiction](#). The orexin system, which influences motivated and addictive behaviors through the peptide orexin, may underly the relationship: orexin activity increases during sleep deprivation, and blocking orexin receptors reduces reward-seeking.

Bjorness and Greene conditioned mice to associate a room with cocaine and examined how sleep deprivation affected their ability to develop a preference for the cocaine room. Sleep-deprived mice formed a preference for a lower dose of cocaine, one that did not affect rested mice. They also formed a stronger preference for a standard cocaine dose, indicating an increase in the amount of reward cocaine provided. Blocking the orexin system reduced the increased cocaine preference driven by [sleep deprivation](#).

**More information:** Sleep Deprivation Enhances Conditioned Place Preference in an Orexin Receptor Modulated Manner, *eNeuro* [DOI: 10.1523/ENEURO.0283-20.2020](#)

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