

Predisposition to addiction may be genetic

June 10 2021



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People who have a high sensation-seeking personality trait may be more likely to develop an addiction to cocaine, according to a Rutgers study.

"Although many people try [illicit drugs](#) like cocaine or heroin, only a small proportion develop an [addiction](#)," said lead author Morgan James, a member of the Rutgers Brain Health Institute and an assistant

professor in the department of psychiatry at Rutgers Robert Wood Johnson Medical School. "The interaction found between sensation-seeking traits and the drug-taking experience show that predisposition to addiction has a [genetic basis](#), and that this interacts with environmental factors such as patterns of drug use. The sensation-seeking trait was predictive of rats' likelihood to exhibit stronger motivation for drugs when we gave them the opportunity to take cocaine."

The findings, published in the journal *Neuropharmacology*, shed light on what predisposes people to addiction and may help with substance use screening and treatment.

The lab study found that [high sensation](#)-seeking rats—those with a strong desire for new experiences and a willingness to take risks to be stimulated—were more prone to developing behavior that reflects human addiction. The findings suggest that high sensation-seeking people have a greater risk of losing control over their drug intake, which makes them more vulnerable to drug addiction.

A major goal of addiction research is to identify behavioral biomarkers that predict addiction vulnerability. Future studies can build on these findings to determine what is different in the brains of those who are high sensation-seeking to see what predisposes them to addiction.

More information: Shayna L. O'Connor et al, The sensation-seeking trait confers a dormant susceptibility to addiction that is revealed by intermittent cocaine self-administration in rats, *Neuropharmacology* (2021). [DOI: 10.1016/j.neuropharm.2021.108566](https://doi.org/10.1016/j.neuropharm.2021.108566)

Provided by Rutgers University

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