

Blocking stress-induced cocaine addiction relapse

April 9 2020, by Bill Snyder



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Stress is a precipitating factor for craving and relapse in cocaine use disorder. A part of the brain known as the bed nucleus of the stria terminalis (BNST) has been linked to both anxiety and addiction.

Guanfacine, a drug that acts on both alpha2A-adrenergic autoreceptors and heteroreceptors in the BNST, decreases stress, drug craving and [withdrawal symptoms](#) in clinical trials. But whether it can reduce relapse rates is not known.

Reporting last month in the journal *Neuropsychopharmacology*, Rafael Perez, Danny Winder, Ph.D., and colleagues demonstrate in a [mouse model](#) that heteroreceptors are required for stress-induced "reinstatement" of cocaine-seeking behavior. This finding suggests that within the BNST alpha2A-adrenergic auto- and heteroreceptors may play opposing roles.

The researchers also found that low-dose guanfacine did not increase BNST activity but blocked [stress](#)-induced relapse, suggesting that at low doses, the drug does not engage heteroreceptors. Guanfacine should be further explored as a potential treatment for cocaine and other drug use disorders, they conclude.

More information: Rafael E. Perez et al. α 2A-adrenergic heteroreceptors are required for stress-induced reinstatement of cocaine conditioned place preference, *Neuropsychopharmacology* (2020). [DOI: 10.1038/s41386-020-0641-z](#)

Provided by Vanderbilt University

Citation: Blocking stress-induced cocaine addiction relapse (2020, April 9) retrieved 7 May 2024 from <https://medicalxpress.com/news/2020-04-blocking-stress-induced-cocaine-addiction-relapse.html>

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