

Stress hormone reduces heroin cravings

July 28 2015



Researchers at the University of Basel in Switzerland recently conducted a study on heroin addiction and demonstrated that the stress hormone cortisol can reduce addictive cravings. Credit: University of Basel

Every addiction is characterized by a strong desire for a certain addictive substance, be it nicotine, alcohol or other drug. Researchers at the University of Basel in Switzerland recently conducted a study on heroin

addiction and demonstrated that the stress hormone cortisol can reduce addictive cravings. The findings from the research have been published in the medical journal *Translational Psychiatry*.

Heroin is a drug with an extremely high dependency potential that stimulates severe cravings in addicts. A team of researchers led by PD Dr. Marc Walter and Prof. Dominique de Quervain from the University of Basel recently studied the effect of the [stress hormone cortisol](#) on the addictive cravings in heroin addicts.

In past studies, the researchers in Basel discovered that cortisol diminishes the ability to retrieve memories; intake of the hormone reduced the brain's ability to remember. This can be used, for example, to relieve symptoms in [patients](#) suffering from anxiety disorders by inhibiting the patients' ability to recall anxious episodes. The researchers hypothesized that cortisol also has an [inhibitory effect](#) on addiction-related memory and thus on the craving for the addictive substance.

Addiction-related memory diminished

In this study, 29 patients currently undergoing heroin-assisted treatment were given a cortisol tablet or placebo before receiving a dose of heroin. Administering cortisol to the addicts resulted in a decrease in cravings by an average of 25% when compared to placebo. Along with other tests, the subjects were asked to rate their cravings on a visual analogue scale (VAS), which is a scale for gauging subjective experiences. This decrease was seen in patients who were dependent on a relatively low dose of heroin but not in highly-dependent patients.

Whether the inhibitory effect of cortisol on the craving for heroin will also affect addiction-related behaviors of patients in their day-to-day lives is still unclear. "For this reason, we want to examine whether cortisol can help patients reduce their heroin dosage or remain abstinent

from [heroin](#) for longer," says Marc Walter, chief physician at the Psychiatric University Clinics (UPK) Basel.

Plans are already underway for further studies. The goal is to determine whether "the inhibitory effect of [cortisol](#) on addictive cravings might also have positive implications for nicotine, alcohol or gambling addiction," says Dominique de Quervain, Director of the research platform Molecular and Cognitive Neurosciences at the University of Basel.

More information: Walter, Bentz, Schick Tanz, Milnik, Aerni, Gerhards, Schwegler, Vogel, Blum, Schmid, Roozendaal, Lang, Borgwardt and de Quervain, Effects of cortisol administration on craving in heroin addicts, *Translational Psychiatry* (2015), [DOI: 10.1038/TP.2015.101](#)

Provided by University of Basel

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