

Addicts may be seeking relief from emotional lows more than euphoric highs

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Cocaine addiction may be about more than just chasing the high.

(Medical Xpress)—Cocaine addicts may become trapped in drug binges – not because of the euphoric highs they are chasing but rather the unbearable emotional lows they desperately want to avoid.

In a study published today online in *Psychopharmacology*, Rutgers University Behavioral and Systems Neuroscience Professor Mark West, and doctoral student David Barker in the Department of Psychology, in the School of Arts and Sciences, challenge the commonly held view that [drug](#) addiction occurs because users are always going after the high. Based on new animal studies, they discovered that the initial positive feelings of intoxication are short lived – quickly replaced by negative emotional responses whenever drug levels begin to fall.

If these animal models are a mirror into human addiction, Rutgers researchers say that addicts who learned to use drugs to either achieve a positive emotional state or to relieve a negative one are vulnerable to situations that trigger either behavior.

"Our results suggest that once the animals started a binge, they may have felt trapped and didn't like it," said West. "This showed us that [negative emotions](#) play an equal, if not more important role in regulating cocaine abuse."

In their study, Rutgers researchers detected high-pitched calls made by laboratory rats when they had the opportunity at the beginning of the six-hour drug binge to self-administer cocaine and rapidly raise their internal drug levels. After that, positive and negative emotions collided and the high-pitched euphoric calls emitted in the beginning of the experiment were absent even though the cocaine usage continued at the same level for several hours. The only time during the rest of the binge that researchers detected any calls was when drug level fell below the level animals wanted, which triggered lower-pitched calls associated with negative feelings.

"We see all the positive, high-pitched calls in the first 35-40 minutes," said Barker. "Then if the animals are kept at their desired level you don't observe either positive or negative calls. But as soon as the drug level starts to fall off, they make these negative calls."

The Rutgers researchers say this animal study may lead to a better understanding of human addiction – alcohol, tobacco and food – as well as substance abuse. The reason animal studies are critical in addiction research, they say, is that human responses are not always reliable. Individuals may be too embarrassed to answer truthfully or may just tell the scientist what they think he or she wants to hear.

"It's not that human studies aren't important, they certainly are," said West. "But with these animal studies it is clear that we should be placing just as much importance on the negative as being a trigger for drug abuse and deal with that as well."

Provided by Rutgers University

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