



## Cocaine-Related Cues Elicit Physiological Stress Responses

Overcoming addiction is part of a learning process with people in recovery actively working to maintain healthy changes in their lives.

In addiction treatment, clinicians help patients learn new techniques to navigate safely through experiences that often evoke powerful urges to consume drugs. Learning to successfully cope with stressful situations and the people, places, and things the patient associates with past drug-taking experiences is part of the therapeutic process.

Recent research has demonstrated that cocaine addicted patients respond to these drug associated features in their environment. Their responses to these stressful situations include rushes of adrenaline and other hormones that increase pulse rate and blood pressure, among other effects.

### Research Outline

A recent study was conducted with 54 cocaine addicted men and women, aged 21 to 50, at an inpatient research facility. Before entering treatment, the patients had abused cocaine for an average of 9 years immediately prior to treatment. On average,

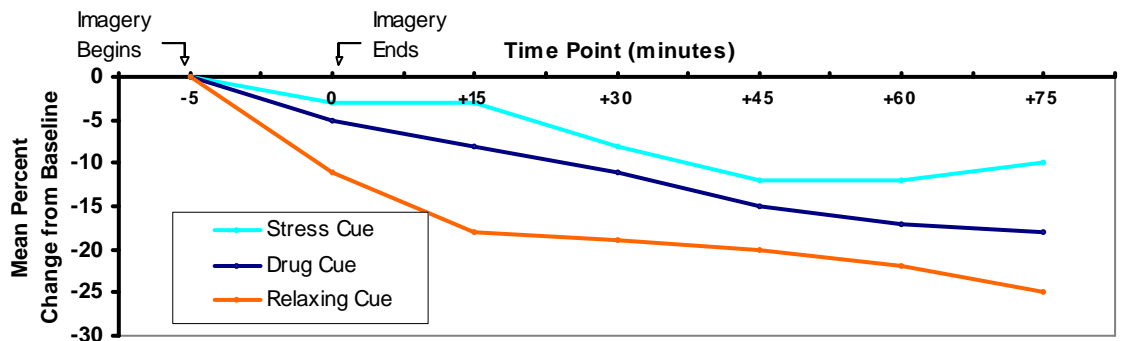
they had consumed the drug 3 or more times per week. Almost all, some 94% of the participants, had smoked crack cocaine.

To study physiological and emotional responses to cocaine, researchers elicited from patients detailed accounts of three past personal experiences. One very stressful, one relaxing, and one specifically related to taking cocaine. The responses were tape recorded.

### Testing Sessions

Over the three testing sessions, conducted on different days, patients relive all three of their stressful, drug-related, and relaxing experiences by listening to the recordings. When the tape finished, the patient rated the vividness of the scenes and his or her cocaine craving and anxiety.

The researchers found similar patient responses to the stressful and drug-related tapes with peoples' pulses increasing and their blood pressure rising. **Stressful situations and drug-related tapes also increased participants' subjective responses to craving and anxiety compared with the relaxation tapes.**



*Cortisol levels, which normally decline in the morning, remain relatively high in cocaine-addicted patients after they listen to a five-minute tape of a stressful or drug-related experience, but not after they listen to a relaxing tape. Cue-induced elevations in cortisol and other stress hormones persisted for up to 30 minutes.*

## Summary

**R**esearch results suggest that cocaine abusers' stress responses may take longer to normalize, resulting in a heightened reactivity to stress.

Normally stress responses include an adrenaline rush, increased heart rate,

rapid breathing, and blood pressure which turns quickly to normal once a threat has passed. **What was different and striking in the patients studied was that they continued to exhibit stress up to 30 minutes longer than would normally be expected.**

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