

# Treating addiction by eliminating drug-associated memories

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Addicts, even those who have been abstinent for long periods of time, are often still vulnerable to their own memories of prior drug use. For example, exposure to the same environment in which they commonly used drugs - a contextual memory - can increase their craving for the drug dramatically and can lead to relapse.

A new study in the April 15th issue of *Biological Psychiatry*, published by Elsevier, has evaluated a novel compound that may ease the power of those memories.

"In this study, we found that after repeatedly giving cocaine injections to rats within a particular environment, the rats developed a strong preference for that environment over another environment where a placebo was given," explains M. Foster Olive, Ph.D., co-author and senior investigator. "Next, we treated the animals with an [experimental drug](#) called CDPPB, and found that it decreased the rats' preference for the cocaine-associated environment during subsequent tests."

This is a process called extinction learning, whereby the compound helps the brain to create new associations instead of retrieving the old associations, in this case between the cocaine and the environment. Dr. Olive also notes that this promising finding may aid the development of new therapeutic treatments that could be used in conjunction with exposure therapy, a technique used to desensitize individuals to [stimuli](#) that invoke negative responses or emotions.

John Krystal, M.D., Editor of Biological Psychiatry agrees and hopes that these findings can be expanded to other areas of work. "It will be interesting to see whether this approach extends to the treatment of cocaine abuse or other addictions. Further, it will be important to see whether mGluR5 agonists [like CDPPD] might play a role in the treatment of the extinction of other forms of maladaptive learning, such as the traumatic memories associated with posttraumatic [stress disorder](#)."

More information: "Positive Allosteric Modulation of mGluR5 Receptors Facilitates Extinction of a Cocaine Contextual Memory" by Justin T. Gass and M. Foster Olive. The authors are affiliated with the Center for Drug and Alcohol Programs, Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, South Carolina. The article appears in [Biological Psychiatry](#), Volume 65, Issue 8 (April 15, 2009), published by Elsevier.  
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