Brain Scan Study Shows Cocaine Abusers Can Control Cravings

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New treatments aimed at strengthening inhibitory control could help prevent relapse

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UPTON, NY — When asked to inhibit their response to a “cocaine-cues” video, active cocaine abusers were, on average, able to suppress activity in brain regions linked to drug craving, according to a new study at the U.S. Department of Energy’s Brookhaven National Laboratory. The results, to be published in an upcoming issue of *NeuroImage*, suggest that clinical interventions designed to strengthen these inhibitory responses could help cocaine abusers stop using drugs and avoid relapse.

“Exposure to drugs or stimuli associated with using drugs is one of the most common factors leading to relapse in drug-addicted individuals,” said Nora Volkow, Director of the National Institute on Drug Abuse and lead author on the paper.

“We know from previous studies that drug cues can trigger dramatic changes in the brain that are linked to a strong craving response,” added co-author Gene-Jack Wang, Chair of Brookhaven’s medical department. “This study provides the first evidence that cocaine abusers retain some ability to cognitively inhibit their craving responses to drug-related cues.”

Added Volkow, “Our findings provide enormous hope because they imply that cognitive interventions might be developed to maximize cocaine abusers’ success in blocking the drug-craving response to help them avoid relapse.”

The scientists used a brain-scanning technique called positron emission tomography (PET) and a radioactively “tagged” form of glucose — the brain’s main fuel — to measure brain activity in 24 active cocaine abusers during three different conditions: 1) while subjects simply lay in the scanner with eyes open; 2) while subjects watched a “cocaine-cues” video with scenes simulating the purchase, preparation, and smoking of crack cocaine; and 3) while subjects watched the video but were told to try to inhibit their craving response. Scans were performed in

random order and on separate days.

SOURCE [3]

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