

# Our brain can be taught to control cravings, researchers find

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Standard therapeutic techniques decrease cravings of cigarette smokers by regulating activity in two separate but related areas of the brain, a new study led by a Yale University researcher shows.

Smokers who are taught cognitive strategies, such as thinking about the long-term consequences of smoking, show increased activity in the [prefrontal cortex](#), an area of the [brain](#) associated with cognitive control and rational thought. They also show decreased activity in areas of the striatum, an area of the brain associated with drug craving and reward-seeking behavior, according to the paper published online Aug. 2 in the [Proceedings of the National Academy of Sciences](#).

"This shows that [smokers](#) can indeed control their cravings, they just need to be told how to do it," said Hedy Kober, assistant professor of psychiatry at the Yale School of Medicine and lead author of the paper.

Cravings are the triggers that often lead to relapse in a host of addictions, which carry a staggering economic and social cost. Cigarette smoking alone is responsible for over 400,000 deaths per year in the U.S. (more than all illicit drugs and alcohol combined). Some experts predict that substance abusers should show impairments in areas of the prefrontal cortex, which among other functions helps control emotion. But in smokers at least, this does not appear to be the case. This area of the brain showed increased activity -- and smokers reported less intense cravings -- when using cognitive strategies.

Cognitive behavioral therapy has been shown to be an effective tool in treating a variety of mental health disorders, including substance use disorders. The new study shows why this approach is effective, Kober said.

"We do not see any impairment in the prefrontal cortex, which suggests the brain is able, when prompted, to recruit control regions to reduce cravings," Kober said.

Provided by Yale University

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