Nicotine exposure affects food response

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Yale University researchers say nicotine exposure in mice can increase their motivation to respond to food for weeks after their last exposure to nicotine. The finding, said the scientists, runs counter to the popular belief that nicotine exposure curbs appetite and sheds new light on the role played by certain nicotinic acetylcholine receptors involved in reinforcing aspects of nicotine.

Darlene Brunzell, an associate psychiatry research scientist and first author of the study, said the findings provide insight into one of the most vexing issues relating to smoking cessation -- the prospect of weight gain.

"Although acute nicotine can act as an appetite suppressant, these data are the first to suggest repeated exposure to nicotine has the opposite effect, that nicotine increases motivation for food for weeks following exposure to the drug," she said.

Stephanie O'Malley, professor of psychiatry and principal investigator for the Center for Nicotine & Tobacco Use Research at Yale said, "More research is needed to determine how exactly that works, but this does show that there could be a connection between exposure to nicotine and subsequent weight gain in some individuals."

The findings are to be detailed in an upcoming issue of the journal Psychopharmacology.