

Study finds new approach to block binge eating

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A new therapeutic target for the treatment of compulsive binge eating has been identified by researchers at Boston University School of Medicine (BUSM).

The study, which is published in the journal *Neuropsychopharmacology*, reports the beneficial effects of the activation of a class of receptors, Trace Amine-Associated Receptor 1 (TAAR1), on compulsive, binge eating. TAAR1 discovered in 2001, is a receptor that binds molecules in the brain called trace amines.

Compulsive, binge eating is estimated to affect approximately 15 million people suffering from forms of obesity and eating disorders in the United States. It is characterized by episodes of eating large quantities of food, often very quickly and to the point of discomfort. Binge eaters often experience a loss of control during the binge as well as shame, distress or guilt afterwards.

This study has important implications for the treatment of all the disorders which are characterized by compulsive, binge eating.

"Effective therapeutic treatments currently available are very elusive.

The results of this study provide a new window toward the development of a new class of drugs with a novel target unexplored until now," said corresponding author Pietro Cottone, PhD, co-director of the Laboratory of Addictive Disorders (LAD) and associate professor of pharmacology and psychiatry at BUSM.

Researchers created an experimental model that developed an addiction-like binge eating behavior to sugary, chocolate-flavored food intake as compared to the controls. The [experimental model](#) was also more prone to cues associated with the food and exhibited risky behavior to obtain it, while the control group did not.

They then tested whether administering a TAAR1 agonist, RO5256390, could reduce the maladaptive feeding behaviors. "Our data show that RO5256390 was able to block binge eating of the sugary diet, blocked the strength of cues associated with junk food and blocked compulsive eating in a potentially unsafe environment," explained co-first author of the study Antonio Ferragud, PhD, postdoctoral fellow in the LAD.

The researchers observed that TAAR1 was decreased in the region of the brain important for the process of decision-making and executive function (infralimbic cortex) of the experimental models as compared to controls. "TAAR1 seems to be working as a "brake" in the areas of the brain involved in decision making and executive function. Subjects exposed to junk food lose this "brake" and show aberrant addiction-like behavior over food. We are able to restore the function by activating this receptor," added Adam Howell, MS, co-first author of the study and master fellow in the LAD.

Provided by Boston University Medical Center

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