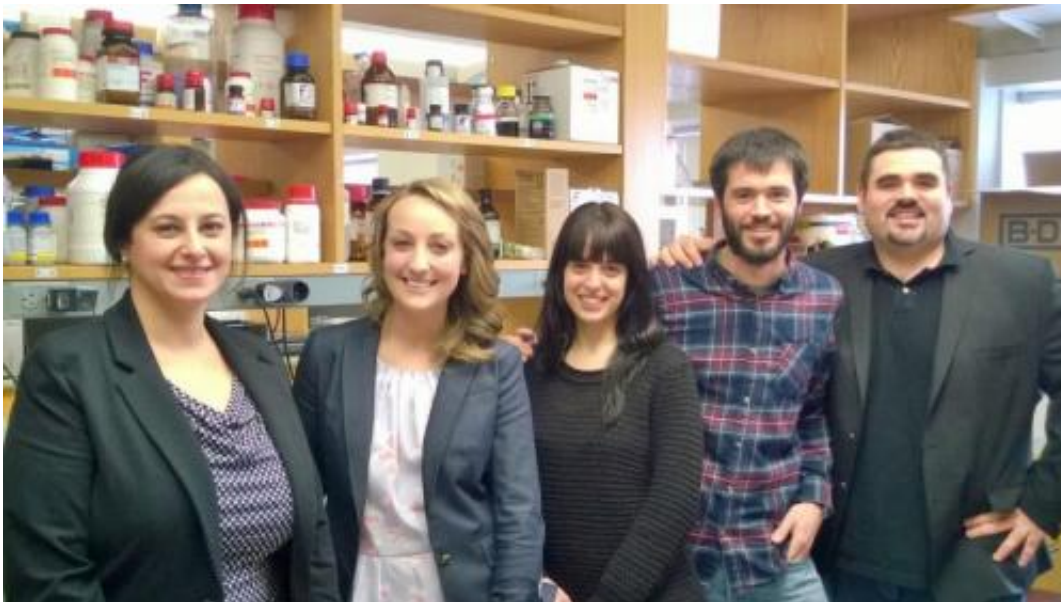


# Study shows that impulsivity is risk factor for food addiction

May 6 2014

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Have you ever said to yourself that you would only have a handful of potato chips from the bag then, minutes later, realized you ate the whole thing? A recent study shows that this type of impulsive behavior might not be easily controlled – and could be a risk factor in the development of food addiction and eating disorders as a result of cellular activities in the part of the brain involved with reward.

The research, published online in *Neuropsychopharmacology*, was led by

Boston University School of Medicine (BUSM) and conducted in collaboration with the University of Cambridge in the United Kingdom. It also points out the common mechanisms involved between drug and food addiction.

Research has shown that people with eating disorders and obesity are known to be more impulsive than healthy people. For example, they may be more likely to blurt out something that they later regret saying or to start an activity without thinking through the consequences. However, it was unclear whether the impulsivity existed before the dysfunctional eating behavior or if developed as a result of it.

BUSM researchers attempted to answer this question by measuring the inability to withhold an impulsive response in experimental models that were exposed to a diet high in sugar daily for one hour. Models shown to be more impulsive rapidly developed [binge eating](#), showing heightened cravings and the loss of control over the junk diet (measured as inability to properly evaluate the negative consequences associated with ingestion of the sugary diet). Conversely, models shown to be less impulsive demonstrated the ability to appropriately control [impulsive behavior](#) and did not show abnormal eating behavior when exposed to the sugary diet.

Interestingly, the impulsive models showed increased expression of a transcription factor called Delta-FosB in the nucleus accumbens, an area of the brain involved in reward evaluation and impulsive behavior, indicating a potential biological component to this behavior.

"While impulsivity might have aided ancestors to choose calorie-rich foods when food was scarce, our study results suggest that, in today's calorie-rich environment, impulsivity promotes pathological overeating," said Pietro Cottone, PhD, co-director of the Laboratory of Addictive Disorders and associate professor of pharmacology and psychiatry at BUSM.

"Our results add further evidence to the idea that there are similar mechanisms involved in both drug and [food addiction](#) behavior," said Clara Velazquez-Sanchez, PhD, postdoctoral fellow in the Laboratory of Addictive Disorder and first author of the study.

Provided by Boston University Medical Center

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