

Parkinson's disease and binge eating

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The results of a new study conducted by Damiano Terenzi, Raffaella Rumiati and Marilena Aiello of SISSA show that "binge eating," which affects some Parkinson's patients, is associated with an impairment of working memory. This deficit prevents people from remembering the long-term goal of healthy eating behaviours. A fault in this mechanism was previously associated with eating disorders that typically affect adolescents. In the study, published in *Parkinsonism and Related Disorders*, the authors also investigated reward sensitivity and, its components, including the pleasure connected with the consumption of food and the desire to obtain food.

"Binge eating may affect different Parkinson's [patients](#) as a side effect of dopaminergic drugs they need to take," explain Damiano Terenzi and Marilena Aiello, respectively first author and coordinator of the research. "In literature, [impulse control disorders](#) such as hypersexuality or gambling have often been described in Parkinson's disease and associated to an alteration of working memory and of reward sensitivity. On [binge eating](#), it has never been investigated. This is the first survey ever to be conducted on this specific problem."

A problem with the reward mechanism

The scholars began by analysing reward sensitivity to understand if it was altered in Parkinson's patients with binge eating. Reward sensitivity comprises two components: The first is "liking," and it is associated with the pleasure of eating. The second is "wanting," the drive to search for the experience of pleasure and repeat it. To measure the first

component, the authors used an affective priming task in which the participants were asked to classify a stimulus via an emoticon as positive or negative, preceded by foods presented subliminally, that is, without being visible to the participants. If the food had a positive value for the participant, the researchers expected them to be quicker at classifying positive stimuli and vice versa for [food](#) with a negative value. To assess the second component, the authors presented images of foods and asked participants how much they craved them by exerting pressure on a hand-grip dynamometer. In this task, the effort exerted by the participant was considered to be directly associated to his motivation for the reward.

The authors write, "Our study showed that the patients with Parkinson's disease affected by binge eating give a negative value to sweet foods compared to the participants not affected by the disease, probably because this category of foods is very problematic for them, but they do not exhibit an increased desire for the same category of foods."

But the presence of binge eating is also associated with a working [memory deficit](#). Working memory allows people to retain information while carrying out an action. The authors speculate that due to a working memory deficit, Parkinson's patients suffering from binge eating may be unable to stop gorging themselves and think about the possible effects of their behaviour.

The authors conclude: "This study gives precise indications about the mechanisms that are altered in binge eating in Parkinson's patients. It is a first and important step to understanding its origins. Other surveys must be conducted to confirm and explore this evidence regarding a behaviour which not only heavily affects the quality of life of patients, but also exposes them to serious long-term consequences for their health, such as weight gain and related diseases."

More information: Damiano Terenzi et al, Reward sensitivity in

Parkinson's patients with binge eating, *Parkinsonism & Related Disorders* (2018). [DOI: 10.1016/j.parkreldis.2018.03.007](https://doi.org/10.1016/j.parkreldis.2018.03.007)

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