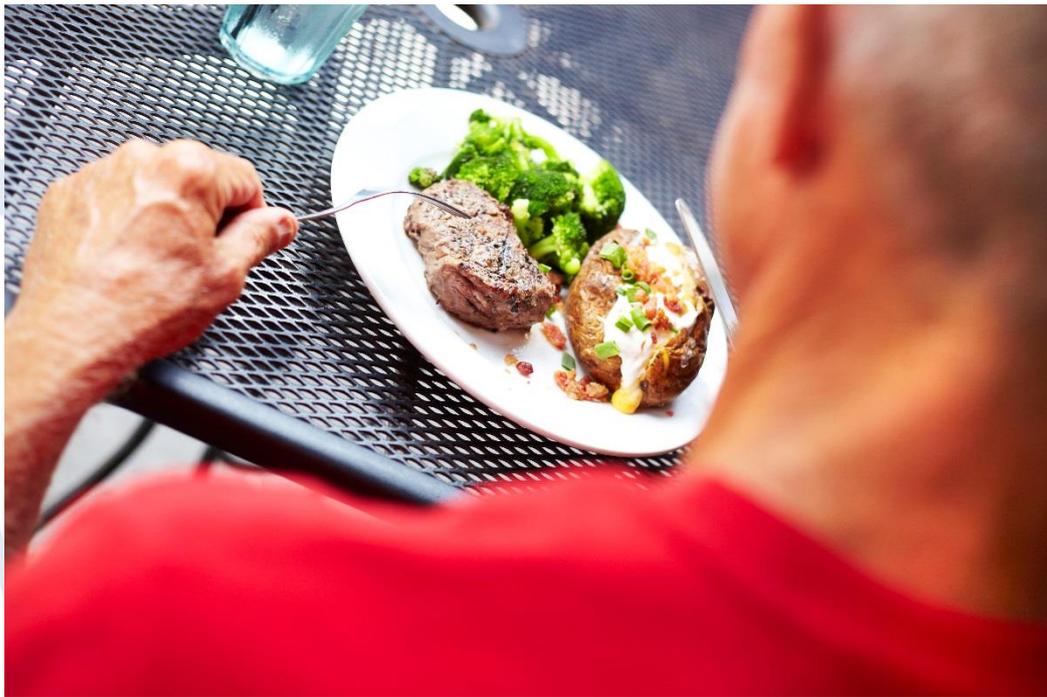




PRESS RELEASE

Parkinson and binge eating: a new study investigates the reason why



Binge eating is a problem which affects some Parkinson patients. New research by SISSA has identified working memory impairment and an alteration in reward sensitivity among its possible origins

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Binge eating, as if the impulse of the moment could not be contrasted by a deeper thought, which would lead to maintaining a healthier eating behaviour. The results of a new study conducted by Damiano Terenzi, Raffaella Rumiati and Marilena Aiello of SISSA (Scuola Internazionale Superiore di Studi Avanzati), in association with the doctors of Azienda Ospedaliera Universitaria Ospedali Riuniti di Trieste, show that "binge eating", which affects some Parkinson patients, would be associated to an impairment of a cognitive function called "working memory". This



deficit would cause the patients to gorge themselves on, since it would prevent them keeping in memory the long-term goal of a healthy eating behaviour. A fault in this mechanism had already been associated with eating disorders which typically affects adolescents. In the study, published in "Parkinsonism and Related Disorders" journal, the authors have also investigated reward sensitivity and its components i.e. liking (the pleasure connected with the consumption of food) and wanting (the desire to obtain food).

"Binge eating may affect different Parkinson patients as a side effect of dopaminergic drugs which 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 patients with binge eating. Reward sensitivity comprises two components: the first is called "liking" and it is associated with the pleasure which a specific action gives, in this case eating. The second is "wanting", namely 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 as positive or negative a stimulus (or rather an emoticon), preceded by foods presented subliminally, that is, without being visible to the participants. If the food possesses a positive value for the participant, we expect him to be quicker at classifying positive stimuli and vice versa if the food possesses 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 is considered to be directly associated to his motivation for the reward.



Terenzi and Aiello explain: "Our study showed that the patients with Parkinson 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 there's more. The presence of binge eating is associated with a working memory deficit.

The origin of binge eating

Working memory is the function in our brain that allows us to keep information in mind while we are carrying out an action. We may speculate that due to a working memory deficit, Parkinson patients suffering from binge eating may be unable to stop gorging themselves on and to 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 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".

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