

“Hey! You stole my food!”



Abnormal eating behaviors in frontotemporal dementia

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Frontotemporal dementia is associated with a wide variety of abnormal eating behaviors such as hyperphagia, fixations on one kind of food, even ingestion of inanimate objects, making an already-difficult situation even worse. A review by SISSA researchers gathers together the state of the art of what is known in this field, paying particular attention to the brain mechanisms involved. The information may be used for understanding eating disorders in healthy people. The review was published in the magazine *Neurocase*.



The "Banana lady" described by Andrew Kertesz ("The Banana Lady and Other Stories of Curious Behavior and Speech," 2006) ate only bananas and drank liters and liters of milk every day. She continually asked her husband to make sure that there was always enough milk and bananas in the house. After her death, brain analysis confirmed her doctors' diagnosis: the woman was suffering from frontotemporal dementia, a common type of dementia second only to Alzheimer's. Alterations in eating behavior are so frequent in this disease that they are factored into the diagnosis. A systematic review by SISSA Researcher, Marilena Aiello, in collaboration with Vincenzo Silani (IRCCS Istituto Auxologico Milan) and Raffaella Rumiati, SISSA professor and coordinator of the iNSuLa laboratory (Neuroscience and Society), provides an overview of the research done in this field, creating a comprehensive framework to help establish the state of the art and suggest new lines of research. "We put together what appeared to be a fragmented image, focusing on types of disorders and hypotheses about the brain mechanisms behind them," says Aiello. "This could be helpful for understanding abnormal eating behavior in healthy people as well."

There are many kinds of disorders described in the literature, ranging from a simple increase in appetite, to uncontrolled overeating, lack of satiety, changes in food preferences as in the extreme example of the so-called "Banana lady," and ingesting objects .

There have been other rather extravagant behaviors related to food observed as well, such as stealing food from other peoples' plates. "These behaviors are problematic, of course, socially, but also with regard to patients' health as they tend to gain weight," says Aiello, "even if individual consequences are different. Some people lose weight because they eat a narrow range of foods in an obsessive way."

From an analysis of the studies in the review, there is a link with certain areas of the brain, including the orbitofrontal cortex and most probably the hypothalamus, an area of the brain that regulates the interaction between the amount of food consumed and energetic homeostasis. "The origin of food anomalies in frontotemporal dementia is likely due to many factors," says Aiello. "It may involve an alteration of the autonomic nervous system, characterized by an altered assessment of the body's signals, such as hunger, satiety, and appetite. Damage to the hypothalamus can cause a loss of inhibitory signals, causing behaviors such as overeating." "There are probably sensory and cognitive factors that can complicate the picture, continues Aiello. "In patients who eat objects, for example, there is perhaps a semantic problem of recognizing the object of and its function."

"All of these mechanisms," concludes Aiello, "are interesting for understanding the disease and creating optimal treatments to counteract symptoms. At the same time, they reveal abnormalities that may be present, albeit with varied intensities, in healthy individuals with irregular eating habits."

USEFUL LINKS:



- Link to the original paper on Neurocase: <http://goo.gl/jcxVpk>

IMAGE:

- Credits: Qfamily (Flickr: <https://goo.gl/u3NY2W>)

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