

# Knowledge of food is preserved in patients suffering from neurodegenerative diseases

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Credit: Brian Fuller

A SISSA research study published in a special issue of the journal *Brain and Cognition*, completely dedicated to the cognitive neuroscience of food, analyzes the lexical-semantic deficits of the food category in patients suffering from neurodegenerative diseases like Alzheimer's. The study shows that knowledge about food is preserved more than other categories of stimuli, even in the case of severe syndromes. Further,

perception of caloric intake affects a person's ability to remember the name of a food; the higher the calories, the more knowledge is preserved. Professor Raffaella Rumiati of the International School for Advanced Studies (SISSA) in Trieste, first author and expert in semantic categorization of food, also served as editor of the special issue (along with Giuseppe Di Pellegrino, University of Bologna), and wrote the introduction to the issue.

Perhaps it is because it is so crucial to our survival that lexical and semantic knowledge related to [food](#) is relatively well preserved even in diseases that lead to a general decline in memory and cognition, such as Alzheimer's and Aphasia Primary Progressive. Raffaella Rumiati and her team at SISSA, in collaboration with Caterina Silveri of Catholic University "Agostino Gemelli" in Rome, observed the phenomenon while testing the cognitive performance of two groups of patients and a control group of healthy people in tasks concerning visual recognition of food and comprehension.

"It should not be surprising that food resists even generalized [cognitive decline](#)," says Rumiati. "It is not difficult to imagine how evolutionary pressure could lead to increased strength in cognitive processes related to fast recognition of what is probably the most important stimulus for survival." Another fact revealed by the study supporting food supremacy was that in all three groups, patients and control, food information was processed better than "non – food." Adds Rumiati, "We know from the literature that the names of the most caloric foods are acquired early in life."

Rumiati and colleagues discovered another interesting detail: the perception of [caloric intake](#) of each food is proportional to the strength with which we recognise their names. The more caloric the food seems, the better it is preserved. "This phenomenon may be closely related to what I said earlier: the more nutritious the food, the more important it is

to recognize it."

## A special issue

The work of Rumiati and colleagues comes from a need to expand knowledge on the subject: "It seems strange, but there are not many cognitive studies on food, and it has only been in recent years that the topic has attracted more attention from the scientific community." For this reason, a special issue of the journal *Brain and Cognition* thus gives greater force to this field of study.

"Along with Giuseppe Di Pellegrino from the University of Bologna, we edited the special issue and, at the request of the magazine, wrote an introductory article on the current situation. I believe that in coming years this area of research will continue to become more and more important," concludes Rumiati.

**More information:** Raffaella I. Rumiati et al. Lexical-semantic deficits in processing food and non-food items, *Brain and Cognition* (2016). [DOI: 10.1016/j.bandc.2016.08.007](https://doi.org/10.1016/j.bandc.2016.08.007)

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