

New research links bad diet to loss of smell

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Image: Wikipedia.

Could stuffing yourself full of high-fat foods cause you to lose your sense of smell?

A new study from Florida State University neuroscientists says so, and it has researchers taking a closer look at how our diets could impact a whole range of human functions that were not traditionally considered when examining the impact of obesity.

"This opens up a lot of possibilities for obesity research," said Florida State University post-doctoral researcher Nicolas Thiebaud, who led the study examining how high-fat foods impacted smell.

Thiebaud led the study in the lab of Biological Science Professor Debra Ann Fadool. Their work is published in the *Journal of Neuroscience* and

shows that a high-fat diet is linked to major structural and functional changes in the olfactory system, which gives us our [sense of smell](#).

It was the first time researchers had been able to demonstrate a solid link between a bad diet and a [loss of smell](#).

The research was conducted over a six-month period where mice were given a high-fat daily diet, while also being taught to associate between a particular odor and a reward (water).

Mice that were fed the high-fat diets were slower to learn the association than the control population. And when researchers introduced a new odor to monitor their adjustment, the mice with the high-fat diets could not rapidly adapt, demonstrating reduced smell capabilities.

"Moreover, when high-fat-reared mice were placed on a diet of control chow during which they returned to normal body weight and blood chemistry, [mice](#) still had reduced olfactory capacities," Fadool said.

"Mice exposed to high-fat diets only had 50 percent of the neurons that could operate to encode odor signals."

For Thiebaud and his colleagues, the results are opening up a whole new line of research. They will begin looking at whether exercise could slow down a high-fat diet's impact on smell and whether a high-sugar diet would also yield the same negative results on smell as a high-fat [diet](#).

Funded by the National Institutes of Health (NIH), the study comes at an important time with obesity rates at all-time highs throughout the world. According to the NIH, more than two in three adults in the United States are considered to be overweight or obese. Additionally, about one-third of children and adolescents ages 6 to 19 are considered to be overweight or obese.

Provided by Florida State University

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