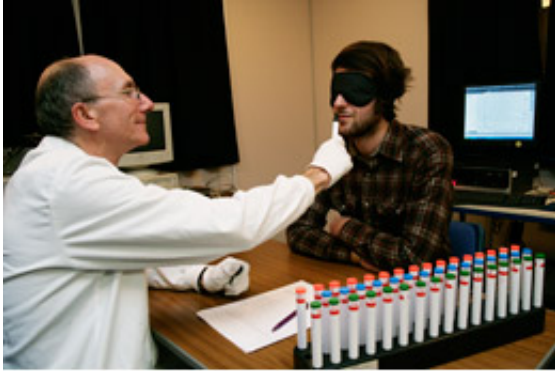


Heavier people are better at 'smelling' food

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Dr Lorenzo Stafford tests sense of smell

People who have a higher Body Mass Index (BMI) have a greater sense of smell when it comes to food, a new study has found.

It is the first study ever to examine the relationship between [Body Mass Index](#) and our sense of smell when hungry and full.

The research by Dr. Lorenzo Stafford, of the University of Portsmouth's Department of Psychology, is published in the latest issue of *Chemical Senses*.

Dr. Stafford set out to study if being hungry or full had an impact on people's ability to distinguish smells. He found that people have a heightened sense of smell to non-food odors when they are hungry but,

paradoxically, participants were better at smelling [food](#) odors after eating.

When the results were analyzed further, he found that compared to those with a low BMI, people with higher BMI had a poorer sense of smell for non-food odors and greater sensitivity to the smell of food.

Scientists don't yet know why people have a greater ability to smell foods when they are full but Dr Stafford said it could be the body's way of detecting and rejecting foods you no longer need in order to maintain the right energy balance.

He said: "What these findings suggest are that individuals with higher BMI have impaired sense of smell to odours unrelated to food, consistent with previous research, but when it comes to food odors, the same individuals perform better. It could be speculated that for those with a propensity to gain weight, their higher sense of smell for food related odours might actually play a more active role in food intake.

"We have known for some time that the part of the brain that processes olfactory information (the olfactory cortex) is also connected to the feeding centres of the brain, but what is less clear is the extent to which it controls food intake. Hopefully this research will stimulate more work in this area with the potential to help those who struggle with their weight and those who treat people with weight problems."

Dr. Stafford ran two separate experiments on a total of 64 men and women aged 18-49. Participants were tested for their sensitivity to non-food smells using a threshold test widely used in research and clinics which measures the lowest concentration of the odor that can be reliably detected. For the food related odor, a discrimination test was used where participants had to differentiate the food odour from odor blanks.

Dr. Stafford said: “People underestimate their sensory abilities and it’s certainly true that our [sense of smell](#) is a lot better than people think, with some work showing the average threshold to a food odor to be around 1000th of one per cent odour concentration. To put this into perspective, in 50ml of solution, the amount of odorant we can detect would be 0.0006 of a ml or 0.6mcl, quite literally a mere drop.”

Dr. Stafford used two odors for his research; alcohol-based n-butanol for the non-food odor and a natural herb-based odor used in the food industry for the food [odor](#).

Provided by University of Portsmouth

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