

Obese or anorexic individuals react differently to taste, study says

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Researchers at the University of Colorado Anschutz Medical Campus have discovered that women suffering from anorexia nervosa and those who are obese respond differently to taste, a finding that could lead to new treatments for the eating disorders.

"Taste is an important driver of food intake and invariably associated with distinct neuronal patterns in the insula, the brain's primary taste cortex," said the study's lead author Guido Frank, MD, a psychiatrist and associate professor at the CU School of Medicine.

The study was recently published online in the *International Journal of Eating Disorders*.

Frank and his team set out to find if abnormal eating patterns were associated with changes in the insula's ability to classify taste stimuli.

Some 106 women of similar age underwent brain imaging while tasting [sugar water](#) or a tasteless [water](#) solution. Researchers studied how well the insula could differentiate between the flavors.

Individuals with anorexia nervosa or those who were obese, had difficulty distinguishing between ordinary water and sugar water, compared to control subjects and those who had recovered from anorexia nervosa.

"If you can't differentiate between tastes, that could impact how much you [eat](#)," Frank said. "That could also activate or not activate brain reward circuits."

These changes, he said, could occur on a variety of levels. For example, leptin and other hormones are altered in obesity and [eating disorders](#), affecting how the brain responds to food. At the same time, the reduced ability of the insula to classify taste could be due to structural changes within this [brain](#) region or alternatively could result in altered taste signal processing in different

pathways to the insula.

Research indicates that these problems diminish once a person reaches a healthy weight.

While more research is needed, Frank said one possible treatment could be to alter the [taste](#) of food.

"Perhaps adjusting flavor intensity by reducing it for those with anorexia and enhancing it for those who are obese," he said. "It's something we need to examine more closely."

Provided by CU Anschutz Medical Campus

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