

# Does eating give you pleasure or make you anxious?

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(Medical Xpress) -- Perhaps the most puzzling symptom of anorexia nervosa -- a disorder that tends to occur in young women -- is the refusal to eat, resulting in extreme weight loss. While most people have a great deal of difficulty in dieting and losing weight, particularly if a diet extends over many months or years, individuals with anorexia nervosa can literally diet themselves to death. In fact, this disorder has a very high death rate from starvation. A new study, now online in the journal *International Journal of Eating Disorders*, sheds light on why these symptoms occur in anorexia nervosa.

Most people find eating to be a pleasant and rewarding experience. In contrast, people with [anorexia nervosa](#) often say that eating makes them more anxious, and food refusal makes them feel better. Research over the past decade has provided new insights into the brain mechanisms that are associated with the rewarding aspects of eating. One of these [brain chemicals](#) is dopamine, which is released when people or animals eat tasty foods.

A study led by Walter Kaye, M.D., professor of psychiatry and director of the Eating Disorder Treatment and Research Program at the University of California, San Diego, School of Medicine, used a brain imaging technology called positron [emission tomography](#) (PET), which permits visualization of dopamine function in the brain. In order to provoke dopamine levels in the brain, scientists administered a one-time dose of the drug amphetamine, which releases dopamine in the brain.

In healthy women without an eating disorder, amphetamine-induced release of dopamine was related to feelings of extreme pleasure in a part of the brain known as a "reward" center. However, in people who had [anorexia](#) nervosa, amphetamine made them feel anxious, and the part of the brain that was activated was, instead, a part of the brain that worries about consequences.

"This is the first study to demonstrate a biological reason why individuals with anorexia nervosa have a paradoxical response to food," said Kaye. "It's possible that when people with anorexia nervosa eat, the related release of the neurotransmitter dopamine makes them anxious, rather than experiencing a normal feeling of reward. It is understandable why it is so difficult to get people with anorexia nervosa to eat and gain weight, because food generates intensely uncomfortable feelings of anxiety."

Importantly, this study was of people who have recovered from anorexia nervosa for at least a year, suggesting that the feeling provoked may be due to pre-existing traits, rather than a response to being at an extremely low weight.

In terms of impact on treatment strategies, there are no currently proven treatments that reduce core symptoms in anorexia nervosa, such as eating-induced anxiety. According to the researchers, even though food is accompanied by severe anxiety, it is still critical to eat and gain weight in order to effectively treat this disorder.

Provided by UC Davis

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