

Taste preferences connected to success of long-term weight loss after bariatric surgery

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Following Roux-en-Y gastric bypass (RYGB), a type of bariatric surgery, many patients exhibit a reduction in taste preference for sweet and fatty foods, although this effect may only be temporary, according

to new research from Binghamton University, State University of New York.

Obesity is a growing epidemic worldwide and a leading cause of death alongside heart disease and smoking. Bariatric surgery, specifically RYGB, is the most [effective treatment](#) for obesity.

"People who have this surgery are what we call morbidly obese, meaning that they are at least 100 pounds overweight, and in many cases are diabetic," said Patricia DiLorenzo, professor of psychology at Binghamton University. "It's life or death for them."

RYGB makes the stomach much smaller into what is called a pouch. This pouch bypasses part of the small intestine, so when you eat, your [food](#) enters a smaller stomach and empties right into the [small intestine](#). This means that people cannot eat large meals anymore, leading to weight loss. However, [taste](#) and odor preferences are also known to change after surgery, and their potential involvement with the noted weight loss is a question of study.

DiLorenzo and her research team investigated food and odor [preference](#) changes following RYGB and compared them to changes in body-mass index post-surgery. To assess food and odor preferences before and after surgery, patients filled out the Self-Assessment Manikin, which assesses pleasure and arousal responses to an object. Patients were presented with pictures of foods representing the five taste qualities of sweet, sour, salty, bitter and umami, as well as four odors. They were then asked to rate their preferences. BMI data were collected before and after surgery.

"Most people before their surgery, their favorite foods are just what you'd expect—ice cream, French fries, burgers, pizza," said DiLorenzo. "But afterwards, their favorite food was salad, for example. Twenty percent of people said that their [favorite foods](#) were vegetables. Those

people—the ones who said they changed their taste preferences—lost the most weight."

DiLorenzo and her team also found that people who liked coffee more post-surgery were also the people that lost the most weight. Coffee and vegetables share a bitter flavor, indicating that post RYGB surgery, some patients' taste preferences shifted from high-fat and sweet foods to ones where bitter tastes were less aversive. Patients who experienced this effect lost the most weight and had lower BMIs in the long run after surgery.

However, these altered food preferences generally trend back towards pre-surgery preferences over time. Additionally, the rate of weight loss lessens as time increases post-surgery.

"The lion's share of the weight is lost in the first year," said DiLorenzo. "After that, your weight stabilizes."

Despite the risk for some patients to regain weight post-surgery, the majority of patients successfully lose and keep the weight off.

"People have the view that most people gain the weight back after RYGB surgery, and that's not true," said DiLorenzo. "Eighty percent of the people keep the [weight](#) off. In Western medicine, this is the most effective treatment for obesity."

The full paper, "Taste and odor preferences following Roux-en-Y [surgery](#) in humans," was published in *PLOS One*.

More information: Hannah Kittrell et al, Taste and odor preferences following Roux-en-Y surgery in humans, *PLOS ONE* (2018). [DOI: 10.1371/journal.pone.0199508](https://doi.org/10.1371/journal.pone.0199508)

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