Energy expenditure increases after gastric bypass surgery

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Gastric bypass surgery often leads to a sustained weight loss. Researchers at Sahlgrenska Academy have found part of the explanation: the operation enhances energy expenditure such that eating actually helps the person lose weight.

Maintaining weight loss is a tricky proposition. Surgery that has a long-term effect is the method of choice in the case of morbid obesity. Gastric bypass reroutes food past the stomach and duodenum directly to the small intestine. People become satiated faster and tend to eat more nutritiously.

The overall impact is effective weight loss. But reduced caloric intake does not provide the entire explanation for the success of gastric bypass patients at keeping the pounds off over the long haul.

Solves the mystery

A study published by Sahlgrenska Academy researchers in *PLOS ONE* has solved the mystery: the operation causes energy expenditure to increase at mealtime.

"Parts of the small intestine become more active and require additional nutrition after a gastric bypass," Sahlgrenska researcher Malin Werling says. "As a result, the blood absorbs fewer nutrients to store as fat. You might say that people burn calories by eating."

Metabolic chamber

The study examined patients by means of a metabolic chamber before and up to two years after surgery. Subjects spent 24 hours in the chamber, which was furnished like a small hotel room, in order for researchers to study their metabolism in detail.

Reinforces the process

The increase in the body's energy requirements after meals is well-established. The gastrointestinal tract needs energy to break down and absorb nutrients. According to Professor Lars Fändriks at Sahlgrenska Academy, researchers had not realized that gastric bypass surgery reinforces this process to such an extent that it contributes to preserved weight loss.

Additional studies

Additional studies will trace the specific mechanisms that generate the greater meal associated energy requirements after such operations. Researchers hope that the process can one day be augmented by means of drugs such that surgery does not have to be performed as often.

More information: "Roux-en-Y Gastric Bypass Surgery Increases Respiratory Quotient and Energy Expenditure during Food Intake." *PLoS ONE* 10(6): e0129784. DOI: 10.1371/journal.pone.0129784

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