

HELLO GASTRIC BYPASS, GOODBYE STOMACH

(1) For more and more people these days, weight gain is a problem and for a few of these people, it can become a serious life-threatening condition. People who are morbidly obese fall under this extreme category. People with morbid obesity have a body mass index (BMI) that is 40 or above, while the normal adult range should be between 18 to 26. For example, a 25 year old woman who is 5'8" and weighs 265 lb (120 kg) will have a BMI of 40, and a 14 year old boy who is 5'4" would have to weigh 235 lb (107 kg) to have a BMI of 40.

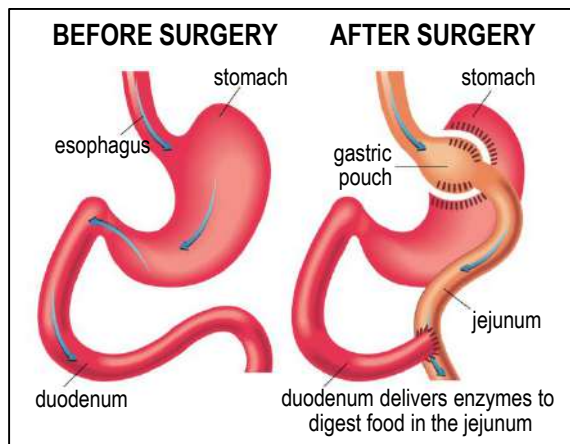


(2) For many people who are morbidly obese and for whom traditional weight loss methods, like exercise and changing diets, have not worked, bariatric surgery is sometimes recommended. Bariatric surgery is any surgery that is performed to cause weight loss. This is not the same as liposuction which is a cosmetic procedure to remove fat. Bariatric surgery aims to reduce the amount of calories a patient can consume. Bariatric surgery can fall into two types: one type attempts to reduce the amount of food that can move down the GI (gastrointestinal) tract and these procedures are considered *restrictive procedures*, and the other type attempts to make absorbing food more difficult and these are called *malabsorptive procedures*. Some bariatric surgeries include procedures that restrict as well as cause malabsorption.

(3) Let's review how food is digested and absorbed before looking at these procedures. The GI tract is one long continuous tube from your mouth to your anus. Different sections of the tube are specialized for different functions. After food is chewed and swallowed, it goes down a narrow tube called the esophagus which opens up into a wide food storage pouch called the stomach. The stomach temporarily stores the food during a meal and provides enzymes to break down the proteins. At the end of the stomach is an opening that leads to the small intestines. The first part of the small intestines is where a lot of digestive enzymes are released from the pancreas to break down food, the second and third parts are called the jejunum and the ileum and these two function to absorb nutrients into the bloodstream.

(4) One type of common restrictive bariatric procedure is called *gastric banding*. In this procedure an adjustable silicon band is put around the upper portion of the stomach, near the esophagus. The band forms a ring around the stomach and squeezes it so that it cannot stretch open as wide as it usually would. The silicon band can be inflated or deflated with saline solution through a tube that runs from the band to the surface of the skin. The band is injected with saline 4-6 weeks after the surgery when the patient has recovered. The more saline that is injected, the more restricted the stomach will become. Once weight loss is achieved, the band can be removed to restore normal function.

(5) The most popular bariatric procedure is called a gastric bypass. The word "gastric" refers to the stomach. So gastric bypass means to skip (bypass) the stomach. This technique involves both restriction and malabsorption procedures. The Roux-en-Y gastric bypass is one of the most popular gastric bypass techniques. In this method, the stomach is stapled so that the upper part of the stomach forms a small gastric pouch. The staples



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prevent the food from entering the lower portion of the stomach so the volume of food that can be consumed in any given meal is now much smaller. This is the restrictive part of the procedure. To add malabsorption to the Roux-en-Y gastric bypass, the small intestine is rearranged so that food isn't efficiently broken down and thus less is absorbed. The small intestine is cut below the duodenum so that the second part of the small intestine, the jejunum, can be attached to the small gastric pouch. This means that the food will now travel to the small pouch and then exit into the jejunum. The duodenum is attached lower down on the jejunum to provide the food with digestive enzymes to aid in the digestion of

nutrients. Since the length of the GI tract has now been shortened, food has less time to be digested so it can't be efficiently absorbed.

(6) Though bariatric surgeries can be life-saving procedures, they aren't a magical fix. Patients have to dedicate themselves to a strict routine of healthy eating and exercise for the rest of their lives or else weight can still be gained. As well, not only are less calories absorbed after bariatric surgery, less vitamins (e.g. B12) and minerals (e.g. iron) are absorbed as well. To overcome this, bariatric patients will need to use multivitamins, iron and B12 supplements.

Article Questions

- 1) What is morbid obesity?
- 2) What is bariatric surgery?
- 3) Though there are many different types of bariatric surgeries, they all fall into two main types. Name these two types and explain how they lead to weight loss.
- 4) Explain how gastric banding leads to weight loss.
- 5) What does "gastric bypass" mean and how does it lead to weight loss?
- 6) What is a negative nutritional consequence of bariatric bypass surgeries?
- 7) Why is bariatric surgery only recommended for people with morbid obesity? Why isn't it recommended for people who are overweight, but not morbidly obese?