

Laparoscopic Obesity Surgery

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1. How is Obesity Defined?

A person is considered morbidly obese if they are one hundred pounds overweight. The term Body Mass Index (BMI) was developed to calculate a healthy weight for each person's height. A healthy BMI is between 18.5 and 24.9kg/m². A person with a BMI of 25 to 29.9 is overweight, and greater than 30 is obese. Body mass index is a tool for indicating weight status. It is a measure of weight and height and correlates with body fat. A 45 year old woman who is five feet three inches tall has an ideal (healthy) body weight up to 140 lbs (BMI = 25). At a weight of 230 lbs this woman is considered morbidly obese. The relation between fatness and body weight differs with age and gender. Women and older people generally have higher body fat.

2. Why is Obesity Dangerous?

Obesity is known to be associated with several other medical illnesses. High blood pressure, adult onset diabetes, high cholesterol, osteoarthritis, polycystic ovaries and abnormal menses, depression and heartburn (acid reflux disease) are some of the associated illnesses. These medical conditions decrease quality of life and can decrease life expectancy.

3. Why is Surgery Used to Treat Obesity?

Many patients can lose weight with dieting and exercise but it can be difficult to maintain weight loss without changing lifestyle behaviors or continuing on a weight maintenance program. Even with medication prescribed by their physician, less than 5% of obese patients are able to maintain weight loss for the long term with lifestyle modification alone. For those unable to lose and maintain weight loss, and those who are morbidly obese, or obese with co-morbidities (health problems as a result of their obesity), surgery has been shown to achieve significant and sustained weight loss. It can improve or cure most of the obesity related medical conditions.

4. How Does Surgery Work for Weight Loss?

Surgery is a tool that helps patients decrease the intake of calorie. The procedures work by one of two mechanisms; one is by causing restriction of food intake by reducing the size of the stomach. By changing the size of the patient's stomach, the patient can only eat very small portions at each meal. The second mechanism not only limits the size of the stomach but allows fewer calories to be absorbed into the body. By altering the way food is digested not all of the calories ingested make it into the body for storage.



5. What are the Surgical Options?

There are currently three laparoscopic weight loss operations that are commonly performed today for obesity: laparoscopic adjustable gastric banding, laparoscopic roux-en-Y gastric bypass and laparoscopic biliopancreatic diversion.

First performed in 1993, laparoscopic adjustable gastric banding is a purely restrictive method of weight loss. An adjustable band is placed around the top portion of the stomach (Figure 1). Due to the lack of a staple line this technique has less morbidity and mortality. Long term data are not yet available but a 50% excess weight loss has been seen at five years. Improvement in obesity related medical conditions also occurs.

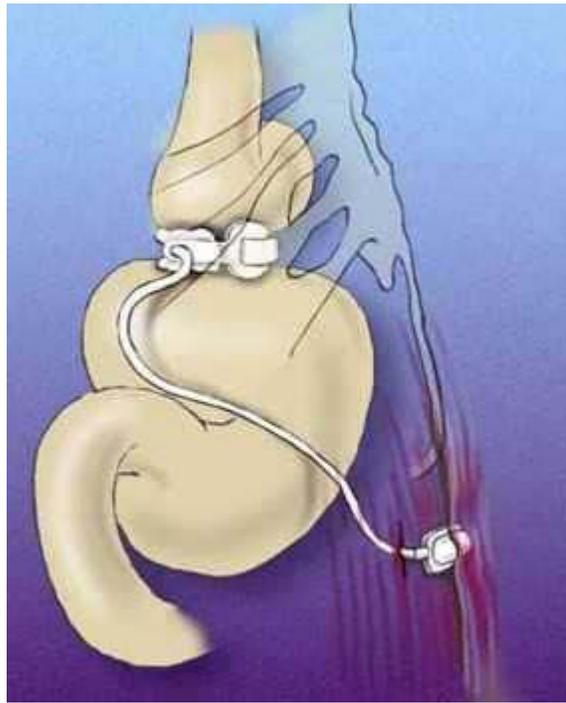


Figure 1

Laparoscopic roux-en-Y gastric bypass was first introduced in 1994 but gastric bypass surgery has been done since the mid-nineteen sixties. The stomach is surgically divided creating a small chamber, which is then connected to the small intestine (Figure 2). Excess weight loss is approximately 50 - 70%. Operative death is low. Early post-operative side effects are 10%. Related medical diseases resolve in the majority of patients. This surgery functions as both a restrictive and a malabsorptive procedure. Therefore, long term nutritional follow up and iron deficiency anemia screening are a requirement post-operatively. This is the most common weight loss surgery performed in the United States.



Figure 2

Biliopancreatic diversion is a malabsorptive weight loss procedure. This procedure includes removing part of the stomach to form a larger pouch than the prior two operations (3/4 can of soda vs 2-3 ounces). The portion of intestine available to absorb calories is very short (Figure 3). This surgery consistently has good weight loss results (70% of excess weight or higher). However, this amount of malabsorption can result in vitamin deficiencies. Therefore these patients must follow a high protein diet, take vitamin supplements and continue medical follow up routinely throughout their lives. Operative death is 0.5 – 1%. Side effects occur in 9-25% of patients. Good resolution of obesity related medical conditions is also seen after this operation.

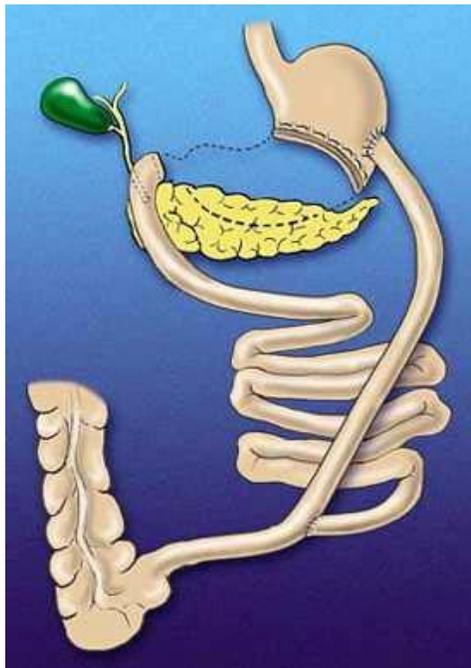


Figure 3

6. Who is a Candidate for Surgery?

The National Institutes of Health (NIH) Consensus Conference created guidelines for weight loss surgery in 1991. These guidelines state that a patient who has morbid obesity (BMI 40 or greater) or who is obese with co-morbidities (BMI 35 or greater) is a candidate for surgery. Prospective patients must have a clear understanding of the risks and benefits of the operation they choose and accept the post-operative lifestyle changes. They must have no psychiatric illness that impedes this understanding. The outcomes may be improved in those patients who have been able to achieve weight loss in the months prior to surgery. A goal for pre-operative weight loss is set at most centers.

