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## Patient information: Weight loss surgery (Beyond the Basics)

### WEIGHT LOSS OVERVIEW

Bariatric surgery (from the Greek words "baros," meaning "weight," and "iatrikos," meaning "medicine") is the term for a surgery that is done to help you lose weight. Bariatric surgery is not recommended for everyone who is overweight or obese. However, it may be an option if you are obese and have not been able to lose weight with other methods.

A person is categorized as underweight, healthy weight, overweight, or obese based on his or her body mass index (BMI). Body mass index is a way to measure body fat that is based on your height and weight ([calculator 1](#) and [calculator 2](#)):

- A BMI of 25 to 29.9 is considered overweight
- A BMI of  $\geq 30$  is considered obese

This article will focus on surgery for obesity. Nonsurgical weight loss is reviewed separately. (See "[Patient information: Weight loss treatments \(Beyond the Basics\)](#)".) More detailed information about surgical weight loss is available by subscription. (See "[Surgical management of severe obesity](#)".)

### SHOULD I HAVE SURGERY TO LOSE WEIGHT?

Weight loss surgery is recommended **ONLY** for people with one of the following:

- Severe obesity (body mass index above 40) ([calculator 1](#) and [calculator 2](#)) who have not responded to diet, exercise, or weight loss medicines
- Body mass index between 35 and 40, along with a serious medical problem (including diabetes, severe joint pain, or sleep apnea) that would improve with weight loss

You should be sure that you understand the potential risks and benefits of weight loss surgery. You must be motivated and willing to make lifelong changes in how you eat to reach and maintain a healthier weight after surgery. You must also be realistic about weight loss after surgery (see '[Effectiveness of weight loss surgery](#)' below).

### PREPARING FOR WEIGHT LOSS SURGERY

Most people who have weight loss surgery will meet with several specialists before surgery is scheduled. This often includes a dietitian, mental health counselor, a doctor who specializes in

care of obese people, and a surgeon who performs weight loss surgery (bariatric surgeon). You may need to work with these providers for several weeks or months before surgery.

- The nutritionist will explain what and how much you will be able to eat after surgery. You may also need to lose a small amount of weight before surgery.
- The mental health specialist will help you to cope with stress and other factors that can make it harder to lose weight or trigger you to eat
- The medical doctor will determine whether you need other tests, counseling, or treatment before surgery. He or she might also help you begin a medical weight loss program so that you can lose some weight before surgery.
- The bariatric surgeon will meet with you to discuss the surgeries available to treat obesity. He or she will also make sure you are a good candidate for surgery. (See ["Patient information: Sleep apnea in adults \(Beyond the Basics\)"](#).)
- Starting a serious exercise program prior to surgery will help you prepare mentally and physically for surgery, help you reduce weight prior to surgery, and allow you to have a program you might continue after you recover.

## TYPES OF WEIGHT LOSS SURGERY

There are several types of weight loss surgeries, the most common being lap banding, gastric bypass, and gastric sleeve ([table 1](#)).

Lap banding — Laparoscopic adjustable gastric banding (LAGB), or lap banding, is a surgery that uses an adjustable band around the opening to the stomach ([figure 1](#)). This reduces the amount of food that you can eat at one time.

Lap banding is done through small incisions, with a laparoscope. The band can be adjusted after surgery, allowing you to eat more or less food. Adjustments to the size and tightness of the band are made by using a needle to add or remove fluid from a port (a small container under the skin that is connected to the band). Adding fluid to the band makes it tighter which restricts the amount of food you can eat and may help you to lose more weight.

Lap banding is a popular choice because it is relatively simple to perform, can be adjusted or removed, and has a low risk of serious complications immediately after surgery. However, weight loss with the lap band depends on your ability to follow the program closely.

- You will need to prepare nutritious meals that "work with" the band, not against it. For example, the lap band will not work well if you eat or drink a large amount of liquid calories (like ice cream). The band will not help you to feel full when you eat/drink liquid calories.

Weight loss ranges from 45 to 75 percent after two years. As an example, a person who is 120 pounds overweight could expect to lose approximately 54 to 90 pounds in the two years after lap banding.

The best results with lap band surgery are seen with patients that have frequent follow up. It is important to consider that, although long-term commitment is required with all procedures, you may need to see your surgeon more often after a lap band has been placed.

Gastric bypass — Roux-en-Y gastric bypass, also called gastric bypass, helps you to lose weight by reducing the amount of food you can eat and reducing the number of calories and nutrients you absorb from the food you eat.

To perform gastric bypass, a surgeon creates a small stomach pouch by dividing the stomach and attaching it to the small intestine ([figure 2](#)). This helps you to lose weight in two ways:

- The smaller stomach can hold less food than before surgery. This causes you to feel full after eating a very small amount of food or liquid. Over time, the pouch might stretch, allowing you to eat more food.
- The body absorbs fewer calories, since food bypasses most of the stomach as well as the upper small intestine. This new arrangement seems to decrease your appetite and change how you break down foods by changing the release of various hormones.

Gastric bypass can be performed as open surgery (through an incision on the abdomen) or laparoscopically, which uses smaller incisions and smaller instruments. Both the laparoscopic and open techniques have risks and benefits. You and your surgeon should work together to decide which surgery, if any, is right for you.

Gastric bypass has a high success rate, and people lose an average of 62 to 68 percent of their excess body weight in the first year. Weight loss typically levels off after one to two years, with an overall excess weight loss between 50 and 75 percent. For a person who is 120 pounds overweight, an average of 60 to 90 pounds of weight loss would be expected.

Gastric sleeve — Gastric sleeve, also known as sleeve gastrectomy, is a surgery that reduces the size of the stomach and makes it into a narrow tube ([figure 3](#)). The new stomach is much smaller and produces less of the hormone (ghrelin) that causes hunger, helping you feel satisfied with less food.

Sleeve gastrectomy is considered less invasive than gastric bypass because the intestines are not rearranged, and there is less chance of malnutrition. It also appears to control long-term hunger better than lap banding. It might be safer long term than the lap banding because no permanent device is implanted.

The gastric sleeve has a good success rate, and people lose an average of 33 percent of their excess body weight in the first year. For a person who is 120 pounds overweight, this would mean losing about 40 pounds in the first year. Like the lap band and gastric bypass, it is important to follow an appropriate diet after surgery.

## WEIGHT LOSS SURGERY COMPLICATIONS

A variety of complications can occur with weight loss surgery. The risks of surgery depend upon which surgery you have and any medical problems you had before surgery. Some of the more common early surgical complications (one to six weeks after surgery) include:

- Bleeding
- Infection
- Blockage or tear in the bowels
- Need for further surgery

Important medical complications after surgery can include blood clots in the legs or lungs, heart attack, pneumonia, and urinary tract infection. (See ["Complications of bariatric surgery"](#) and ["Overview of medical management of patients after bariatric surgery"](#).)

Complications may happen in any setting, and, if they do, they may be best managed at centers experienced in weight loss surgery. In general, centers with experience in weight loss surgery have:

- Board-certified doctors and surgeons
- A team of support staff (dietitians, counselors, nurses)
- Long-term follow-up after surgery
- Hospital staff experienced with the care of weight loss patients. This includes nurses who are trained in the care of patients immediately after surgery and anesthesiologists who are experienced in caring for the morbidly obese.

## EFFECTIVENESS OF WEIGHT LOSS SURGERY

The goal of weight loss surgery is to reduce the risk of illness or death associated with obesity. Weight loss surgery can also help you to feel and look better, reduce the amount of money you spend on medicines, and cut down on sick days. (See ["Overview of medical management of patients after bariatric surgery"](#).)

As an example, weight loss surgery can improve health problems related to obesity (diabetes, high blood pressure, high cholesterol, sleep apnea) to the point that you need less or no medicine.

Finally, weight loss surgery might reduce your risk of developing heart disease, cancer, and certain infections.

## AFTER WEIGHT LOSS SURGERY

You will need to stay in the hospital until your team feels that it is safe for you to leave (on average, one to three days). Do not drive if you are taking prescription pain medicine. Begin exercising as soon as possible once you have healed; most weight loss centers will design an exercise program for you.

Once you are home, it is important to eat and drink exactly what your doctor and dietitian recommend. You will see your doctor, nurse, and dietitian on a regular basis after surgery to monitor your health, diet, and weight loss. (See ["Overview of medical management of patients after bariatric surgery"](#).)

You will be able to slowly increase how much you eat over time, although it will always be important to:

- Eat small, frequent meals and not skip meals
- Chew your food slowly and completely
- Avoid eating while "distracted" (such as eating while watching TV)
- Stop eating when you feel full
- Drink liquids at least 30 minutes before or after eating
- Avoid foods high in fat or sugar
- Take vitamin supplements, as recommended

- Continuously re-assess intake and ensure that you are maintaining healthy habits

It can take several months to learn to listen to your body so that you know when you are hungry and when you are full. You may dislike foods you previously loved, and you may begin to prefer new foods. This can be a frustrating process for some people, so talk to your dietitian if you are having trouble.

It usually takes between one and two years to lose weight after surgery. After reaching their goal weight, some people have plastic surgery (called "body contouring") to remove excess skin from the body, particularly in the abdominal area.

Before you decide to have weight loss surgery, you must commit to staying healthy for life. This includes following up with your healthcare team, exercising most days of the week, and eating a sensible diet every day. It can be difficult to develop new eating and exercise habits after weight loss surgery, and you will have to work hard to stick to your goals.

Recovering from surgery and losing weight can be stressful and emotional, and it is important to have the support of family and friends. Working with a social worker, therapist, or support group can help you through the ups and downs.

## WHERE TO GET MORE INFORMATION

Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site ([www.uptodate.com/patients](http://www.uptodate.com/patients)). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient information: Weight loss surgery \(The Basics\)](#)

[Patient information: Weight loss treatments \(The Basics\)](#)

[Patient information: My child is overweight \(The Basics\)](#)

[Patient information: Health risks of obesity \(The Basics\)](#)

[Patient information: Care after weight loss surgery \(The Basics\)](#)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient information: Weight loss treatments \(Beyond the Basics\)](#)

[Patient information: Sleep apnea in adults \(Beyond the Basics\)](#)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough,

long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Approach to the patient with weight loss](#)

[Behavioral strategies in the treatment of obesity](#)

[Dietary therapy for obesity](#)

[Drug therapy of obesity](#)

[Overview of therapy for obesity in adults](#)

[Role of physical activity and exercise in obese adults](#)

[Surgical management of severe obesity](#)

[Complications of bariatric surgery](#)

[Overview of medical management of patients after bariatric surgery](#)

The following organizations also provide reliable health information.

- National Library of Medicine

([www.nlm.nih.gov/medlineplus/weightlosssurgery.html](http://www.nlm.nih.gov/medlineplus/weightlosssurgery.html))

- The National Institute of Diabetes and Digestive and Kidney Diseases

(<http://win.niddk.nih.gov/publications/gastric.htm>)

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[1-3]

Literature review current through: Oct 2013. | This topic last updated: Mar 20, 2013.

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3. [Balsiger BM, Murr MM, Poggio JL, Sarr MG. Bariatric surgery. Surgery for weight control in patients with morbid obesity. Med Clin North Am 2000; 84:477.](#)