

Introduction

Obesity is associated with many diseases such as diabetes, high blood pressure, heart problems, and degeneration of the joints. These diseases and the obesity itself lead to an increased risk of premature death.

When dieting and exercising fail to help patients lose weight, surgery may help. Surgery to help patients lose weight is known as bariatric surgery. Gastric bypass is a type of bariatric surgery. Your doctors may recommend that you undergo gastric bypass surgery. The decision to have this surgery is yours.

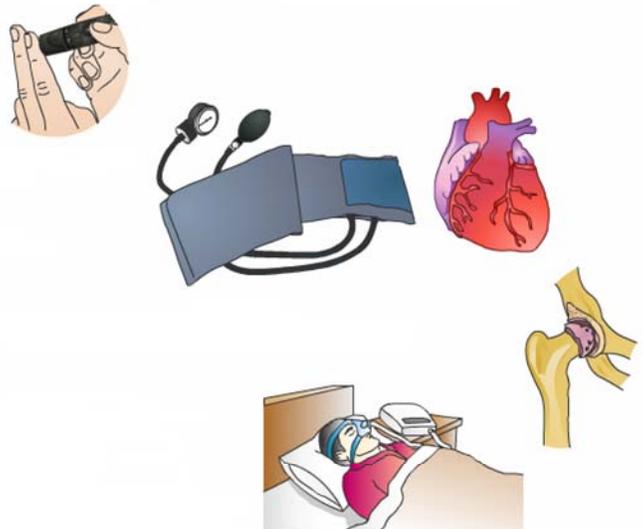
This reference summary explains the 'gastric bypass' operation. It also discusses obesity, different treatment options, the benefits and risks of gastric bypass surgery, and what to expect.

Obesity

Obesity is associated with many serious diseases that can lead to early death. These include:

- Diabetes
- High blood pressure
- Heart problems
- Arthritis and degeneration of the joints
- Sleep apnea, when breathing stops for short periods during sleep

Obesity may also cause a patient to develop low-self esteem. The patient may also begin to withdraw from social situations and activities. This often leads to the patient living in solitude.



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Solitude settles in when it becomes more difficult for obese patients to move around and mix with other people outside the immediate family circle.

Obesity is becoming more common. Obesity is caused by:

- Genetic or hereditary factors
- Sedentary lifestyle, with little or no exercise and
- Eating high calorie, non-nutritious foods commonly known as 'junk food'

Scientists have created a formula to tell if a person is obese or not.



To find your Body Mass Index in the metric system:

1. Divide your weight in kilograms by your height in meters
2. Divide the result again by your height in meters

For instance, a 2 meter-tall person with a weight of 100 kilograms has a BMI of 25.

To find your Body Mass Index in pounds

1. Multiply your weight in pounds by 703
2. Divide by your height in inches (1 foot = 12 inches)
3. Divide again by your height in inches

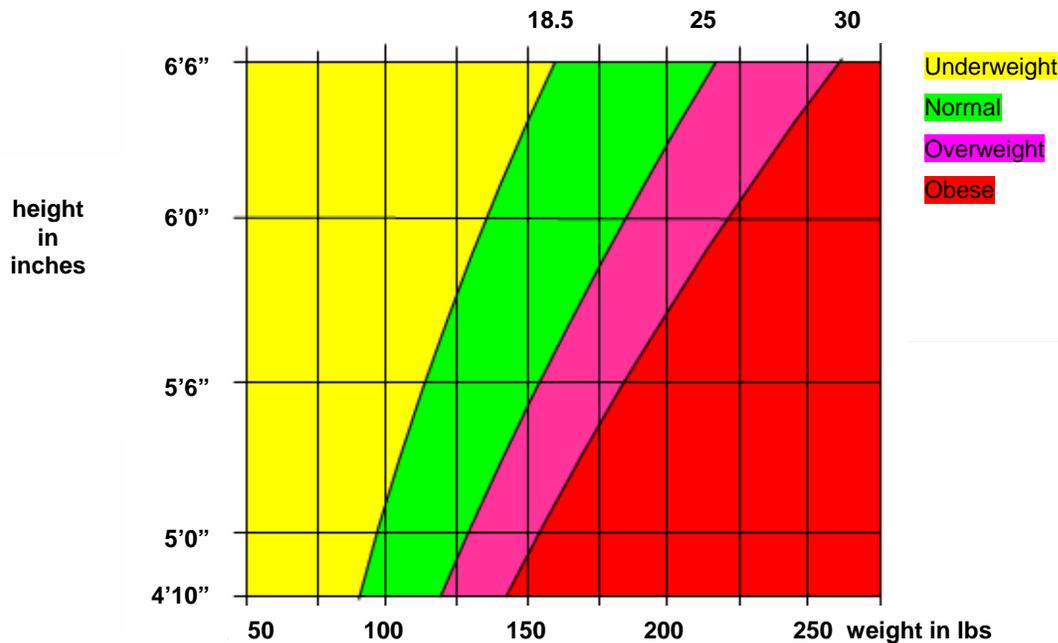
For instance, a 210 pound-person who is 70 inches tall has a BMI of about 30. The BMI formula relates the weight of the person to how tall he or she is. The BMI for normal weight ranges from 18.5 to 24.9.

$$\frac{\text{weight in kg}}{(\text{height in meters})^2}$$

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Healthcare providers identify the following ranges of Body Mass Index.

- Less than 18.5, the person is underweight
- From 18.5 to 24.9, the person has normal weight
- From 25 to 29.9, the person is overweight
- Above 30, the person is obese



You can use the height and weight graph to find your Body Mass Index. Find your weight on the bottom of the graph. Go straight up from that point until you come to the line that matches your height. Then look to find your weight group.

Gastric bypass surgery is recommended only for obese patients; it is not recommended for patients who are overweight. The next section discusses the different parts of the body that are involved in gastric bypass surgery.

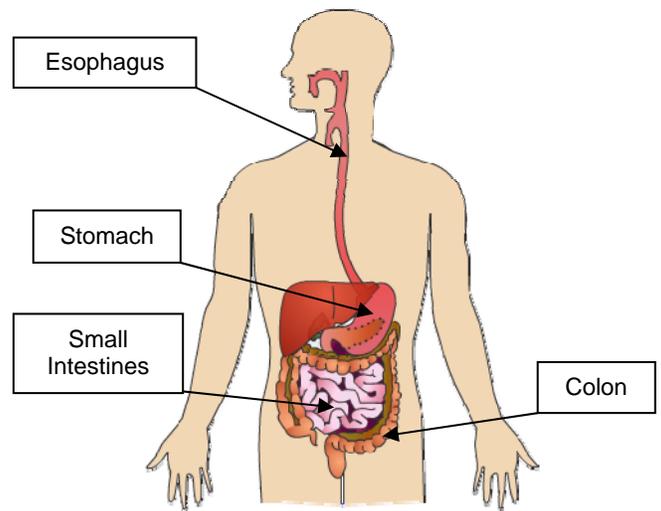
Digestive System

Understanding the digestive system is essential to understanding gastric bypass surgery. This section reviews the structure and function of the digestive system.

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Digestion means that the food we eat is broken down into very small parts that can then enter the blood stream.

After we chew and swallow our food, it moves down the esophagus to the stomach, where a strong acid continues the digestive process. The stomach can hold about 3 pints of food at one time.



Stomach contents move to the duodenum, the first segment of the small intestine. There it is mixed with special juices that come from the liver, called bile, and others that come from the pancreas. Bile and pancreatic juices speed up digestion. Most of the iron and calcium in the food we eat is absorbed in the duodenum.

Vitamin B12 is a very important vitamin for the health of the nerves. It can only be absorbed in the blood stream with the help of a special chemical made in the stomach.

The jejunum and ileum, the remaining two segments of the nearly 20 feet of small intestine, complete the absorption of almost all calories and nutrients.

The food particles that cannot be digested in the small intestine are stored in the large intestine or colon where stools are formed. Stools are then defecated through the anus.

Treatment Options

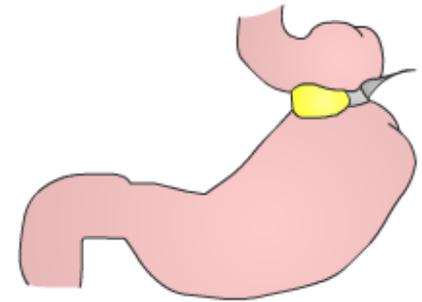
Healthcare professionals help obese patients lose weight through a variety of treatment options that include, dieting, exercising, counseling, medications, and surgery. Surgical options are considered last.

Various diets have been created for weight loss. Patients who are significantly overweight should only diet under the supervision of their healthcare provider. Exercise not only helps lose weight, but also tones the body and generally makes people feel better about themselves. Counseling can help some patients manage their eating habits and issues with body image and low self-esteem.

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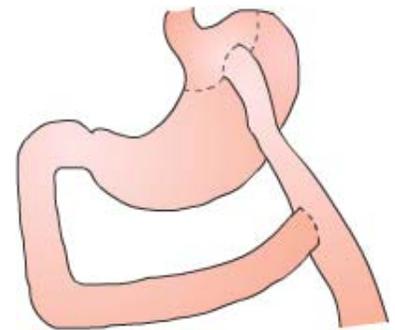
Medications are also an option. However, some of these medications have possible negative side effects. Diet medications should only be taken under the supervision of your physician.

Several bariatric surgeries exist. There are many types of surgeries that can help with weight reduction. Some surgeries aim at making the stomach smaller, these are known as 'restrictive operations', they include adjustable gastric banding and vertical banded gastroplasty.



Gastric Banding

Other operations aim at bypassing most of the small intestines where nutrients are absorbed. These are known as 'malabsorptive operations'. This reference summary discusses the 'gastric bypass operation' also known as Roux-en-Y gastric bypass or RGB. RGB combines both types of bariatric surgeries. It is the most common and successful combined procedure in the United States.



RGB

Not all patients are eligible for bariatric surgery. To be eligible, the patient should either:

- Have a body mass index (BMI) of 40 or more (this is about 100 pounds overweight for men and 80 pounds for women) or
- Have a body mass index between 35 and 39.9 and a serious obesity-related disease. Such diseases include type 2 diabetes, heart disease, and sleep apnea

After a patient is determined to be eligible for bariatric surgery, his or her doctor will explain the risks and benefits of the procedure and what to expect after the procedure. The doctor recommends bariatric surgery only after he or she determines that the patient understands the risks and lifestyle changes needed after the operation and is ready for such lifestyle changes.

Surgery

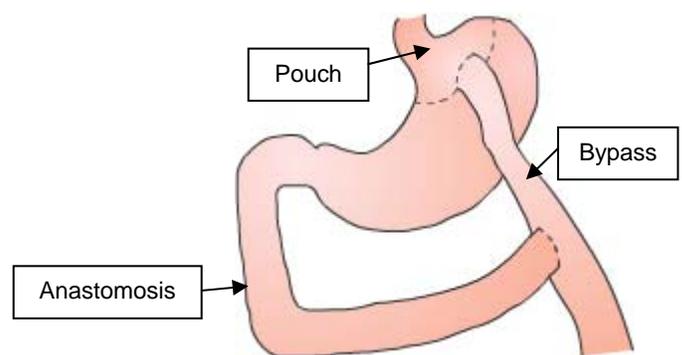
This reference summary discusses the gastric bypass operation also known as Roux-en-Y gastric bypass or RGB. It is done under general anesthesia. This means that you will be put in a deep sleep and will not feel any pain.

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This operation can either be done through a big incision in the abdomen or through a few small incisions in the abdomen with the help of scopes. When it is done through small incisions with the help of scopes it is called laparoscopic. The benefit of a laparoscopic operation is that the patient has less discomfort and tends to go home earlier.

Patients who have had previous abdominal operations or those who exceed 350 pounds may not be candidates for a laparoscopic operation. The surgeon may also start the operation using the scope and then change to an open operation if she or he feels it is safer for the patient.

During the operation, the surgeon first divides the stomach into a small and large section. The small section is called the pouch. The surgeon then connects the pouch to the small intestine, bypassing the lower stomach, the duodenum, and the first part of the jejunum. The connections between the stomach and the intestines and the intestines themselves are known as anastomosis.



The patient will lose weight for two reasons. First, the stomach is smaller causing the patient to eat less food. Second, part of the food digested in the stomach is not absorbed in the small intestine because the small intestine is now shorter.

Rarely, a cholecystectomy which is a gall bladder removal is performed to avoid the gallstones that may result from rapid weight loss. More commonly, patients take medications after the operation to dissolve possible gallstones. After the operation is finished, the patient is allowed to wake up and is taken to the recovery room.

Risks and Complications

Gastric bypass is a major abdominal operation, which includes certain risks and complications. The risks can be related to:

- Anesthesia
- Surgery in general or
- The gastric bypass procedure

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Common risks and side effects of general anesthesia include nausea, vomiting, problems with urination, sore throat, and headache. Less commonly the lip could be injured or the teeth chipped while the breathing tube is inserted into the mouth. Your anesthesiologist will discuss these risks with you and ask if you are allergic to certain medications.

Blood clots may form in the legs as you stay still during or after surgery. The blood clot can move to the heart causing a heart attack or to the lungs, causing pulmonary embolism, which can be fatal. Walking as soon as possible after surgery helps to prevent blood clots. Use of compressive leg stockings and blood thinners, such as enoxaparin and heparin, also help to prevent blood clots in the legs.

Like any other surgical procedure, gastric bypass surgery includes the risks of scarring, bleeding, and infection.

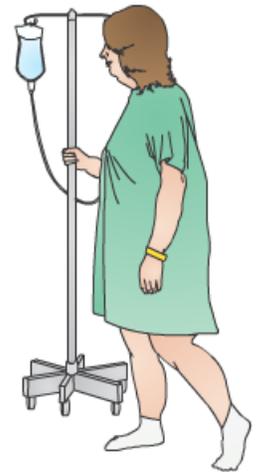
The scar could be unsightly, especially for the open RGB procedure where the incision is straight down the middle of your belly. It goes from the breastbone to above the belly button. For the laparoscopic procedure, the incisions are smaller, measuring about an inch each on both sides of the abdomen.

Significant bleeding may happen. You may need blood transfusions and possibly another operation.

Although uncommon, infections may occur, which may be superficial or deep. Superficial infections may lead to delayed wound healing, which may require antibiotic treatment and daily dressing of the incision site until it heals. In some cases, another operation may be needed. Deep infections, known as peritonitis, may also require antibiotic treatment, and another operation. They may also cause internal scarring.

Some risks are specific to the RGB procedure. Risks specific to this operation include injuring internal organs, such as the liver, spleen, major arteries and veins. Such injuries may require another operation to repair the injured organ. They may also rarely cause death.

The surgical staple lines and connections between the stomach and the intestines may leak and break down, causing a deep infection and requiring another operation to fix them.

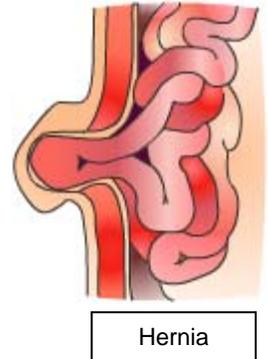


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Another unlikely complication is known as small bowel obstruction, or blockage of the intestines. This happens because internal scar tissue known as adhesions may develop and block the intestines.

Signs of a small bowel obstruction include nausea, vomiting and abdominal pain. An operation may be needed to open up the obstruction.

Hernias can occur, especially in the open RGB procedure. A hernia is when the muscle of the abdomen becomes weak because of the operation and the intestines bulge under the skin. Hernias may need to be repaired surgically. Combined bariatric procedures are more difficult to perform than the restrictive procedures. They are also more likely to result in long-term nutritional deficiencies. This is because the operation causes food to bypass the duodenum and jejunum, where most iron and calcium are absorbed.



Patients, especially women who still have their menstrual period, may develop anemia because not enough vitamin B12 and iron are absorbed. Decreased absorption of calcium may also bring on osteoporosis and related bone diseases. Patients must take nutritional supplements that usually prevent these deficiencies.

RGB operations may also cause “dumping syndrome,” an unpleasant reaction that can occur after a meal high in simple carbohydrates, which contain sugars that are rapidly absorbed by the body. Stomach contents move too quickly through the small intestine, causing symptoms such as nausea, bloating, abdominal pain, weakness, sweating, faintness, and sometimes diarrhea after eating. Patients after RGB need to avoid foods high in sugars and fats to avoid “dumping syndrome”.

Ulcers may develop, which can be treated with anti-ulcer medications. Most RGB stomach ulcers can be prevented by avoiding tobacco smoking, alcoholic beverages, and use of anti-inflammatory medications such as ibuprofen (Motrin®, Advil®), aspirin, naproxen (Aleve®), and prednisone. The bypassed stomach may enlarge, which may cause hiccups and bloating.

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There are no guarantees for any method, including surgery, to produce and maintain weight loss. Success is only possible with maximum cooperation and commitment to changing eating and exercising behavior. Medical follow-up is needed. Such cooperation and commitment must be carried out for the rest of your life.

After the Operation

You will spend 2 nights on telemetry/monitored unit before you are ready to go home. You will also have a Foley® Catheter which drains urine from your bladder. During your hospital stay, it is very important to remain active and walk in the halls. This will help prevent blood clots, pneumonia, and constipation.



During your hospital stay, you will also have a small machine to help with your breathing. It is called an incentive spirometer. It helps to prevent pneumonia, lung collapse, and other breathing problems. Coughing and deep breathing can also be helpful.

As soon as your surgeon allows you to eat, you will have a liquid diet the first two weeks followed by two weeks of mushy or pureed foods.

Because the stomach is made smaller by gastric bypass surgery, you cannot eat large amounts of food. You will have to take vitamins including iron and calcium supplements regularly along with other medications that your doctor or nutritionist deems appropriate.

Weight loss surgery is considered successful when 50% of excess weight is lost and the loss is sustained up to 5 years. For example, a patient who is 200 pounds overweight should lose at least 100 pounds and should be able to maintain this loss for the following 5 years.

Estimated weight loss in the first 2 years after a RGB surgery is approximately 50% to 70% of excess body weight. Though some patients may gain some weight in subsequent years, many patients maintain a weight loss of 60 to 70 percent of their excess weight for 10 years or more.

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Healing at Home

As you go home, you need to do half an hour of activity every day. You need to walk for the first month. After this, speak with your doctor about other activities you can do. You will be discharged on a full liquid diet for the first two weeks, followed by two weeks of mushy or pureed foods. Your meals should be high in protein to help with the healing process.

You may vomit if you eat too fast, too much, or drink fluids with meals. Keep a food diary to help find the reason for vomiting. Eat and drink very slowly. Drink fluids 30 minutes to 1 hour before or after meals. You will be asked to limit the amount of caffeine you drink to 2 cups. Alcoholic beverage intake is discouraged as you may be more sensitive to it after surgery. If you do drink alcohol, do so in moderation and only on special occasions.



To allow your body to heal, you should follow these rules:

- No strenuous activity, exercise or lifting for two weeks. Do not lift anything more than 20 pounds.
- No driving until approved by your surgeon.
- Do not cover your incisions in water for two weeks. No using sit-down baths or hot tubs for 2 weeks.

The incision will be held together with sutures and dermabond. Call your doctor or nurse if your incision becomes red, hot, or swollen. Call if you notice more drainage, a bad odor, or more pain in the abdomen or at the drain site. Also call if you have a fever greater than 101 degrees F.

Your doctor will prescribe medicine and vitamins for you, take them every day for the rest of your life. Discuss with your doctor any prescription and over-the-counter medication you are currently taking.



Your doctor does not want you to take any over-the-counter medication that can cause bleeding or an ulcer. Serious problems can occur if you do not take your vitamins and minerals every day. You need calcium for strong bones, iron for healthy blood, and

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vitamin B12 for healthy nerves. If you do not take vitamin and mineral pills you could have health problems. If you feel dizzy or weak, call your doctor.

Constipation can be common after surgery. It may be necessary to take stool softeners for the first month. Foods that can help resolve constipation are pureed prunes, applesauce, and oatmeal. Drinking plenty of water and exercising also helps. You may have an ulcer, which can be treated with an anti-ulcer medication. If you have severe nausea or pain while eating, call your doctor or nurse.

You will need to schedule regular follow-up visits. Annual checkups are also scheduled during which your blood is tested to make sure you do not have a vitamin deficiency.

You must not get pregnant for the first year after your Gastric bypass surgery. Pregnancy is dangerous to you and to your baby.

Conclusion

Obesity causes many serious diseases such as diabetes, high blood pressure, heart problems, and degeneration of the joints. When dieting and exercising fail, bariatric surgery may help patients lose weight. Gastric bypass surgery is a major abdominal surgery with risks and complications. You should know about them to help detect them early in case they happen.

Gastric bypass surgery is usually very successful. Most patients lose weight quickly and continue to lose for 18 to 24 months after the procedure. With the RGB procedure, many patients maintain a weight loss of 60 to 70 percent of their excess weight for 10 years or more.

Gastric bypass surgery is not a guarantee that the patient will maintain the weight loss. Long-term success is only possible with the patient's full commitment to changing eating habits and exercising regularly.

If you have any questions about this operation including how it works as a tool for weight loss, potential complications, expected outcomes, and how you should utilize this new tool for long term success and safety, contact your healthcare provider.



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