



# Laparoscopic Surgery for Severe (Morbid) Obesity Patient Information from SAGES

Laparoscopic surgery for obesity is for people who are severely overweight. Laparoscopy involves using a specialized telescope (laparoscope) to view the stomach, which typically allows smaller abdominal incisions. This brochure will explain:

- What is severe obesity?
- Medical and surgical treatment options for severe obesity
- How laparoscopic obesity surgery is performed
- Expected outcomes of the procedure
- What can be expected after laparoscopic obesity surgery

## What is Severe Obesity?

Severe obesity, sometimes known as “morbid obesity”, is defined using various methods. One of these methods uses Ideal Body Weight and is defined as being approximately 100 pounds (45.5 kg) or 100% above ideal body weight. This is determined according to the Metropolitan Life Insurance Company height and weight tables. Body Mass Index or BMI is another method used to determine severe or morbid obesity. BMI is calculated based upon a person’s height and weight, and is generally more accurate than ideal body weight calculations. According to the Center for Disease Control (CDC), the rates of obesity have been increasing steadily with a prevalence of approximately 25% in most US states. This condition is associated with the development of life-threatening complications such as hypertension, diabetes, sleep apnea, and coronary artery disease, to name a few.

Numerous therapeutic approaches to this problem have been advocated, including low calorie diets, medication, behavioral modification and exercise therapy. However, the only treatment proven to be effective in long-term management of morbid obesity is surgical intervention.

## What Causes Severe Obesity?

The cause of severe obesity is poorly understood. There are probably many factors involved. In obese persons, the set point of stored energy is too high. This altered set point may result from a low metabolism with low energy expenditure, excessive caloric intake, or a combination of the above. There is scientific data that suggests obesity may be an inherited characteristic.

Severe obesity is most likely a result of a combination of genetic, psychosocial, environmental, social and cultural influences that interact resulting in the complex disorder of both appetite regulation and energy metabolism. Severe obesity does not appear to be a simple lack of self-control by the patient.

## What are the Treatment Options?



## Medical Treatment

In 1991, the National Institutes of Health Conference concluded that non-surgical methods of weight loss for patients with severe obesity, except in rare instances, are not effective over long periods of time. It was shown that nearly all participants in any non-surgical weight-loss program for severe obesity regained their lost weight within 5 years. Although prescriptions and nonprescription medications are available to induce weight loss, there does not appear to be a role for long-term medical therapy in the management of morbid obesity. Weight gain is rapid once medication is withdrawn. Various professional weight loss programs use behavior modification techniques in conjunction with low calorie diets and increased physical activity. Weight loss of one to two pounds per week has been reported, but nearly all the weight loss is regained after 5 years.

## Surgical Treatment

A number of weight loss operations have been devised over the last 40-50 years. The operations recognized by most surgeons include: Roux-en-Y gastric bypass, gastric banding (adjustable or non-adjustable), sleeve gastrectomy, malabsorption procedures (biliopancreatic diversion, duodenal switch) and vertical banded gastroplasty. The gastric bypass procedure involves dividing the stomach and forming a small gastric pouch. The new gastric pouch is connected to varying lengths of your own small intestine constructed into a Y-shaped limb (Roux-en-Y gastric bypass) (Fig. 1).

The laparoscopic gastric band involves placing a 1/2 inch belt or collar around the top portion of the stomach. This creates a small pouch and a fixed outlet into the lower stomach. The adjustable band can be filled with sterile saline. When saline is added, the outlet into the stomach is made smaller which further restricts food from leaving the pouch (Fig 2).

The sleeve gastrectomy involves removal of at least 75% of the stomach. This reduces the volume capacity of the stomach (Fig 3).

The malabsorption operations cause weight loss by decreasing absorption of calories from the intestines. These operations involve reducing the stomach size and bypassing most of the intestines (Fig 4).

The vertical banded gastroplasty involves the construction of a small pouch that restricts the outlet to the lower stomach. The outlet is reinforced with a piece of mesh (screen) to prevent disruption and dilation.

Choosing between the different operative procedures involves the surgeon's preference and consideration of the patient's eating habits.

## What are the Advantages of the Laparoscopic Obesity Surgery?



Advantages of the laparoscopic approach include:

- Reduced post-operative pain
- Shorter hospital stay
- Fewer wound complications
- Faster return to work
- Improved cosmesis

## **Who Should Be Considered for Laparoscopic Obesity Surgery?**

The following guidelines for selecting patients for obesity surgery were established by the National Institute of Health:

1. Patients with a Body Mass Index (BMI) of  $\geq 40$  kg/m<sup>2</sup> or BMI  $\geq 35$  kg/m<sup>2</sup> with at least one obesity-related condition (type II diabetes, hypertension, sleep apnea, etc.).
2. Patients should have no known metabolic (chemical breakdown of food into energy) or endocrine (hormone) causes for the morbid obesity.
3. Patients should have an objectively measurable complication (physical, psychological, social, or economic) that might benefit from weight reduction. This includes hypertension (high blood pressure), diabetes (too much sugar in the blood), heart disease, breathing problems or lung disease, sleep apnea (snoring), and arthritis, just to name a few.
4. The patient should understand the full importance of the proposed surgical procedure including suspected risks and complications.
5. The patient should be willing to be observed and followed by a medical professional for many years.
6. The patient should have attempted weight reduction using medical treatment without success.

## **What Preparation Is Required?**

- A thorough medical evaluation to determine if you are a candidate for laparoscopic obesity surgery by your physician.
- Supplemental diagnostic tests may be necessary, including a nutritional evaluation.
- A psychiatric or psychological evaluation may be required to determine the patient's ability to adjust to changes after the operation.
- Consultation from specialists, such as a cardiologist, pulmonologist, or endocrinologist may be needed depending on your own specific medical condition.
- Continued participation in an Obesity Support Group is encouraged
- A written consent for surgery will be needed after the surgeon reviews the potential risks and benefits of the operation.
- Blood transfusion and/or blood products such as platelets may be needed depending on your condition.
- Your surgeon may request that you completely empty your colon and cleanse your intestines prior to surgery.



- It is recommended that you shower the night before or morning of the operation.
- After midnight the night before the operation, you should not eat or drink anything except medications that your surgeon has told you are permissible to take with a sip of water the morning of surgery.
- Drugs such as aspirin, blood thinners, anti-inflammatory medications (arthritis medications) and Vitamin E will need to be stopped temporarily for several days to a week prior to surgery.
- Diet medication or St. John's Wort should not be used for the two weeks prior to surgery.
- It is highly recommended, and sometimes required, that you quit smoking prior to surgery.
- Arrange for any help you may need at home.
- If you have sleep apnea and use a CPAP machine at home, you should bring it with you to the hospital on the day of surgery.

## **How is Laparoscopic Obesity Surgery Performed?**

In a laparoscopic procedure, surgeons use small incisions (1/4 to 1/2 inch) to enter the abdomen through trocars (narrow tube-like instruments). The laparoscope, which is connected to a tiny video camera, is inserted through the small trocar. A picture is projected onto a TV giving the surgeon a magnified view of the stomach and other internal organs. Four to six small incisions and trocars are placed for use of specialized instruments to perform the operation.

The entire operation is performed inside the abdomen after expanding the abdomen with Carbon dioxide (CO<sub>2</sub>) gas. The gas is removed at the completion of the operation.

## **What Happens If the Operation Cannot Be Performed by the Laparoscopic Method?**

In a small number of patients the laparoscopic method cannot be performed. Factors that may increase the possibility of choosing or converting to the "open" procedure may include a history of prior abdominal surgery causing dense scar tissue, inability to visualize organs or bleeding problems during the operation.

The decision to perform the open procedure is a judgment decision made by your surgeon either before or during the actual operation. When the surgeon feels that it is safest to convert the laparoscopic procedure to an open one, this is not a complication, but rather sound surgical judgment. The decision to convert to an open procedure is strictly based on patient safety.

## **What Should I Expect the Day of Surgery?**

- You will arrive at the hospital the morning of the operation.
- Preparation before surgery often includes changing into a hospital gown.
- A qualified medical staff member will place a small needle/catheter (IV) in your vein to



dispense medication during your surgery.

- Often pre-operative medications are necessary.
- You will meet the anesthesiologist and discuss the anesthesia.
- You will be under general anesthesia (asleep) during the operation, which may last for several hours.
- Following the operation you will be sent to the recovery room until you are fully awake. Then you will be sent to your hospital room.
- Most patients stay in the hospital the night of surgery and may require additional hospital days to recover from the surgery.

## **What are the Expected Results after Laparoscopic Obesity Surgery?**

### **\*\*Weight loss**

The success rate for weight loss is reported as being slightly higher with the gastric bypass operation than the gastroplasty or gastric banding, but all techniques show good to excellent results. Most reports show a 50% or greater excess weight loss after one year. Weight loss generally continues for all the procedures for 18-24 months after surgery. Some weight gain is common about two to five years after surgery.

### **\*\*Effect of surgery on associated medical conditions**

Weight reduction surgery has been reported to improve conditions such as sleep apnea, diabetes, high blood pressure and high cholesterol. Many patients report an improvement in mood and other aspects of psychosocial functioning after surgery

## **What Complications Can Occur?**

Although the operation is considered safe, complications may occur as they may occur with any major operation.

The immediate operative death rate for any of the laparoscopic obesity procedures is relatively low in reported case series (less than 2%). Other complications such as wound infections, wound breakdown, abscess, leaks from staple-line breakdown, perforation of the bowel, bowel obstruction, marginal ulcers, pulmonary problems, and blood clots in the legs are slightly higher. In the post-operative period other problems may arise that may require more surgery.

These problems include pouch dilatation, persistent vomiting, heartburn or failure to lose weight. In some individuals, revision or reversal of the operation is necessary and complication rates with secondary surgery are higher.

Gallstones are a common finding in the obese patient. Symptoms from these gallstones are a common occurrence with weight loss. Many physicians either treat patients with bile lowering medication (Actigall or URSO) or recommend gallbladder removal at the time of the operation. This should be discussed with your surgeon and physician.

After gastric bypass, nutritional deficiencies such as Vitamin B-12, folate, and iron may occur.



Taking necessary vitamin and nutrient supplements can generally prevent them. Another potential result of gastric bypass is “Dumping Syndrome”. Abdominal pain, cramping, sweating, and diarrhea characterize Dumping Syndrome after eating drinks and foods that are high in sugar.

Avoiding high sugar foods can prevent these symptoms. After the malabsorbtive operations, the same nutritional deficiencies that occur after gastric bypass may occur, as well as protein deficiencies. Diarrhea or loose “stools” are also common after malabsorbtion operations depending on fat intake.

Women who become pregnant after any of these surgical procedures need special attention from their doctors and clinical care team. In general, complication rates of the laparoscopic approach are equal to or less than the conventional, open operations. As with any operation, there is a risk of a complication. However, the risk of one of these complications occurring is no higher than if the operation was done with the open technique.

## **What to Expect after Surgery**

You will usually be in the hospital 1 to 3 days after a laparoscopic procedure. You may have a tube through your nose and not be permitted to eat or drink anything until it is removed. You should be out of bed, sitting in a chair the night of surgery and walking by the following day. You will need to participate in breathing exercises. You will receive pain medication when you need it.

On the first of second day after surgery you may have an X-ray of your stomach. The X-ray is a way for the surgeon to know if the stapling of the stomach is okay before beginning to allow you to eat. If no leakage or blockage is seen (the usual case) then you will be permitted to have one ounce of liquids every hour. The volume of liquid you drink will be gradually increased. Some surgeons allow you to eat baby food or a “puree” type of food. You will remain on a liquid or puree diet until your doctor evaluates you approximately 1-2 weeks after you return home. Patients are encouraged to walk and engage in light activity. It is important to continue the breathing exercises while at home after surgery. Pain after laparoscopic surgery is generally mild although some patients may require pain medication. At the first follow-up visit the surgeon will discuss with you any dietary changes.

After the operation, it is important to follow your doctor’s instructions. Although many people feel better in just a few days, remember that your body needs time to heal. You will probably be able to get back to most of your normal activities in one to two weeks time. These activities include showering, driving, walking up stairs, work and light exercise. You should call and schedule a follow-up appointment within 2 weeks after your operation.

## **When to Call Your Doctor**

Be sure to call your doctor if you develop any of the following:

- Persistent fever over 101F (39 C)



- Bleeding
- Increased abdominal swelling or pain
- Persistent nausea or vomiting
- Chills
- Persistent cough and shortness of breath
- Difficulty swallowing that does not go away within a few weeks
- Drainage from any incision
- Calf swelling or leg tenderness

#### ADDITIONAL INFORMATION

For additional information on surgical treatment for morbid obesity, please refer to the National Institutes of Health ([www.nih.gov](http://www.nih.gov)) or the American Society for Metabolic & Bariatric Surgery ([www.asmb.org](http://www.asmb.org)).

The American Society for Metabolic Bariatric Surgery provided the illustrations used in this brochure for Bariatric Surgery.

This brochure is not intended to take the place of your discussion with your surgeon about the need for laparoscopic obesity surgery. If you have questions about your need for obesity surgery, your alternatives, billing or insurance coverage, or your surgeon's training and experience, do not hesitate to ask your surgeon or his/her office staff about it. If you have questions about the operation or subsequent follow-up, please discuss them with your surgeon before or after the operation.