

Laparoscopic Antireflux Surgery

What is gastroesophageal reflux?

- Gastroesophageal reflux disease is a digestive disorder that affects the lower esophageal sphincter. The sphincter normally prevents food from moving out of the stomach and back up into the esophagus.
- When a person has gastroesophageal reflux disease, the sphincter muscle becomes weak or fails to close tightly, causing food and stomach acids to flow back (reflux) into the esophagus. The lining of the esophagus can become inflamed or irritated from these acids, which can cause a burning chest pain and sometimes a sour taste or cough.

Gastroesophageal reflux disease can sometimes be managed by:

- Taking medications to reduce acid in the stomach
- Decreasing the size of meals
- Losing weight (if overweight)
- Quitting smoking
- Avoiding certain acidic foods that irritate the esophageal lining
- Not lying down for two to three hours after eating
- Elevating the head of the bed six inches

When is surgery necessary?

- People with severe, chronic esophageal reflux might need surgery to correct the problem if their symptoms are not relieved through other medical treatments. If left untreated, chronic gastroesophageal reflux can cause complications such as esophagitis, esophageal ulcers, bleeding, or scarring of the esophagus.
- Laparoscopic antireflux surgery (also called *Nissen fundoplication*) is used in the treatment of gastroesophageal reflux disease when medicines are not successful. Laparoscopic antireflux surgery is a minimally-invasive procedure that corrects gastroesophageal reflux by creating an effective valve mechanism at the bottom of the esophagus.

Who can have this surgery?

Laparoscopic antireflux surgery is most appropriate for people who have not had previous abdominal surgery, those who have small hiatal hernias without complications

of gastroesophageal reflux disease, and those who experience most symptoms of reflux when lying down.

An overview of laparoscopy

The word laparoscopy means to look inside the abdominal cavity with a special camera or scope. During laparoscopy, five small incisions are made in the abdomen. Then, the abdominal cavity is inflated with carbon dioxide to lift the abdominal wall away from the organs below and provide an operating space in the abdomen.

The laparoscope and surgical instruments are inserted through the incisions. The surgeon is guided by the laparoscope, which transmits a picture of the abdomen on a video monitor so the procedure can be performed.

Patients who have laparoscopic antireflux surgery generally experience less pain and scarring after surgery, have a quicker recovery, and less risk of infection than those who have traditional antireflux surgery.

	Laparoscopic antireflux surgery	Traditional antireflux surgery
Incision	Five 5-10 mm incisions in the abdomen	Six-inch vertical incision from the sternum to the navel
Hospital stay	2 days	Five to six days
Recovery	Less bleeding and scarring Less risk of infection after surgery No nasogastric tube needed	More bleeding and scarring Greater risk of infection after surgery Nasogastric tube (placed through your nose and into your stomach to remove air and digestive juices from the stomach).

Pre-surgical evaluation

- Have a complete physical examination.
- Have several tests to make sure you are physically ready for the surgery. Depending on your age and general health, the tests might include a chest X-ray, lung function test, blood test and electrocardiogram (EKG).
- Meet with several health care providers, including the surgeon, who will ask you questions about your condition and your health history.
- Meet with an anesthesiologist (a doctor who specializes in sedation and pain relief), who will discuss the type of pain medication (anesthesia) you will be given during surgery. You will also discuss the type of pain control after surgery.

- Have the opportunity to ask questions about the procedure.

Before surgery

You will need to follow a clear liquid diet for two days before surgery, as directed by your health care team. You may be given a prescription for a solution to take the day before surgery to properly cleanse the bowel. Your health care team will provide more detailed instructions to help you prepare for surgery.

The day of surgery

- Do not eat or drink anything after midnight the evening before surgery.
- Please do not bring valuables such as jewellery or credit cards.
- You will be told what time to report for surgery.
- You will be asked to change into a hospital gown and get into bed. You will be given a bag for your clothing. The person with you will be asked to take your personal belongings.
- An intravenous tube will be placed in your arm to deliver fluids and medication.
- You will be asked to remove contact lenses and dentures.
- A nurse might give you medicine through your IV to help you relax.
- Your family will wait in the family lounge. They will receive periodic reports about your progress throughout the surgery.
- Once the surgeon is ready for you, you will be taken to the operating room.

During the surgery

- An anesthesiologist will inject medication into your intravenous tube that will put you to sleep.
- After you are asleep, the nurses will cleanse your abdomen with antibacterial soap and cover you with sterile drapes.
- The surgeon will make a small incision in your abdomen, through which a small sterile tube is passed. Through the tubing, carbon dioxide is passed into the abdominal cavity to lift the abdominal wall away from the organs below. This space provides your surgeon a better view and more operating space.
- The laparoscope, which is connected to a video camera, is placed through the small incision, made above your belly button. The images your surgeon sees in the laparoscope are projected onto video monitors placed near the operating table.
- Before starting the surgery, your surgeon will inspect your abdominal cavity to make sure that laparoscopy will be safe for you. Some reasons why laparoscopy might not be done include multiple adhesions (scar tissue), infection, or any unsuspected or widespread abdominal disease.
- If your surgeon decides that laparoscopic surgery can be safely performed, 4 to 5 additional small incisions will be made. Instruments called trocars and cannulas are inserted through the small incisions. These incisions will give your surgeon access to the abdominal cavity in order to perform the surgery.

- The surgeon reduces the hernia (returns the stomach into the abdomen), and wraps the upper part of the stomach (called the fundus) around the lower portion of the esophagus. This reinforces the lower esophageal sphincter so that food will not reflux back into the esophagus.
- Finally, your surgeon will check that there are no areas of bleeding, rinse out the abdominal cavity, and close the small incisions.

After the surgery

When you wake up from surgery, you will be in a recovery room. You will have an oxygen mask covering your nose and mouth. This mask delivers a cool mist of oxygen, which helps eliminate the remaining anesthesia from your system and soothes your throat. Your throat might be sore from the breathing tube that was present during your surgery. This soreness usually subsides after one or two days.

Once you are more alert, the nurse in the recovery room will switch your oxygen delivery device to a nasal cannula, a small plastic tube that hooks over your ears and lies beneath your nose. Your nurse will frequently check your blood oxygen level. Depending on the percentage of oxygen measured in your blood, you might need to keep the oxygen in place after you are transferred to your hospital room.

Some patients experience bloating, cramping and shoulder pain from the carbon dioxide that was placed in the abdomen during surgery. You will be given pain medicine to relieve your discomfort. Bloating and pain will subside during your hospital stay.

Recovering from surgery

Once you have recovered from anesthesia, you will be transferred to your hospital room. You may begin to drink water the night of surgery. You may progress to other clear liquids the day after surgery. You will gradually be able to drink other liquids and eat soft foods. You will gradually be able to eat solid foods (within three to four days after surgery).

You will be encouraged to get out of bed, starting the night of surgery. The more you move, the less the chance for complications such as pneumonia or blood clots in the veins in your legs. Activity will also help remove the carbon dioxide in your abdomen.

Your recovery at home

Normally, you will be discharged from the hospital the day after surgery.

- **Activity** -- For 8 to 12 weeks after surgery, do not lift or push anything heavier than 5 pounds. Avoid activities that increase abdominal pressure, especially sit-ups. You are encouraged to gradually increase your activity level. Walking is

great exercise. Walking will help your general recovery by strengthening your muscles, keeping your blood circulating to prevent blood clots, and helping your lungs remain clear.

- **Diet.** A registered dietitian will visit you on your day of discharge to review your dietary instructions. You will be following a soft antireflux diet. While on this diet, avoid caffeine, carbonated beverages, and citrus drinks. Follow this diet until your next appointment (within 7 to 10 days after you are discharged from the hospital).
- **Incision care.** You might notice some minor swelling around the incision. This is normal. However, call your health care provider if you have a fever, excessive swelling, redness, bleeding, or increasing pain. The small pieces of tape covering your incisions (called steri-strips) will gradually fall off on their own. **Do not** pull these strips off yourself. If the strips do not fall off on their own, your health care provider will remove them at your follow-up appointment.

Follow-up appointment

A follow-up appointment will be scheduled 2 days after surgery if you live far away. You will be asked to stay in a hotel/motel the day before the appointment. If you live in the area, your follow-up appointment will be about one week after your surgery.

You will have a chest X-ray, and your surgeon or nurse practitioner will assess the wound site and your recovery. The surgeon or nurse practitioner will provide guidelines about your activity and diet at this time.