After the operation

Upon return to the ward you are permitted sips of water. Because of the swelling of the oesophagus and stomach, everyone has some difficulty with swallowing initially so you build up to eating normal food gradually. Once water is swallowed easily, other fluids are permitted and then a pureed diet. You stay on this for one week, then move on to a soft diet and slowly graduate to a normal diet over three weeks. By this time you should be able to eat anything as long as you chew it well although tough meat and toast are best avoided. Any trouble swallowing at this stage is usually quite minor but will still continue to improve over the next three months. Because of the initial restricted diet it is normal to lose weight temporarily post-operatively.

You may shower with the dressings and then remove them one week after the surgery.

On return to the ward the nurses will encourage you to breathe deeply and mobilise as much as possible.

Please make a follow up appointment with me about three weeks after the surgery.

Are any foods prohibited?

Because of some difficulty with belching, it is important to avoid fizzy drinks eg beer, sparkling wine and soft drinks for six months. Small quantities of alcohol are permitted after one month.

Return to work

The five small incisions are not usually painful and do not restrict your activity. You will be discharged form hospital once you are able to drink and move easily. This will be about one to three days post-operatively. You are permitted any activity within your levels of discomfort and you may return to work (sedentary or manual) whenever your body tells you that you are ready. This is usually after one week or so. It is best to plan on working only half days at first. Heavy lifting should be avoided for one month to allow the diaphragm to heal. If laparotomy (open surgery) was required, the hospital stay is about one week and time off work is six weeks.

What can go wrong?

The wrapped oesophagus may migrate into the chest through the diaphragm bursting the anchoring sutures. This is normally only a problem if there is forceful vomiting post-operatively. That is why narcotics such as pethidine are not allowed. If the wrap is too loose, it slips and if it is too tight it narrows the oesophagus. In these cases swallowing is difficult or the reflux recurs. Sometimes a second operation is required but usually if the wrap is tight, it can be stretched with a balloon inserted via the gastroscope, without needing an operation. This would be performed if the swallowing difficulty had not improved by two months. Rarely, the stomach or oesophagus or spleen is damaged at operation or bleeding occurs and the operation is converted to an open one.

Some patients pass more wind after surgery. This is usually not troublesome. Some patients feel bloated. In others, their bloating is *lessened* by surgery.

Any operation contains risk of infection, bleeding, damage to nearby organs and (rare) risks associated with general anaesthetic

Success rate

The operation is a success in around 90% of cases. The vast majority of patients no longer have heartburn or any reflux and require no medication. Cough and asthma are usually improved. The literature shows that all this persists for many years. When the operation is unsuccessful, the symptoms can usually be controlled with medication, although sometimes a repeat operation is required.

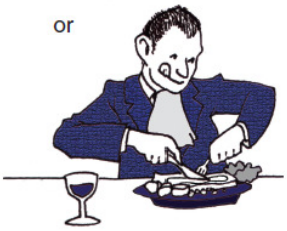
Report to me if.....

You have

- fever (more than 38° C) or chills
- increasing abdominal pain
- chest pain
- vomiting
- shortness of breath
- redness or increasing pain around an incision
- increasing difficulty swallowing

Laparoscopic Surgery for Reflux

or



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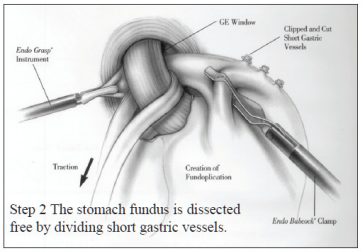
What is reflux?

Gastro-oesophageal reflux or GORD is a common condition caused by incompetence of the valve at the lower end of the gullet (oesophagus) where it joins the stomach. This valve normally prevents stomach contents refluxing back into the gullet. When the valve fails, the oesophageal lining is exposed to the corrosive action of stomach acid and also to bile. The oesophageal lining is not equipped to defend itself against acid and the oesophagus becomes inflamed (oesophagitis). Advanced cases of oesophagitis result in stricture (narrowing of the gullet), bleeding, bronchial irritation (from the acid refluxing into the windpipe) and a change in the lining of the oesophagus (a condition called Barretts oesophagus), which can lead to cancer of the oesophagus.

What are the symptoms?

GORD causes **heartburn** (a burning pain behind the breastbone), **regurgitation** (of food and acid), **water brash** (an acid taste in the mouth), **dysphagia** (food sticking in the gullet), **sore throat, chest pain, aggravation of asthma, cough, choking at night** and **hoarseness.** The symptoms are worse after eating, especially big meals and at night.



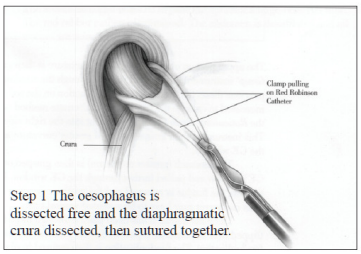
Step 2 The stomach fundus is dissected free by dividing short gastric vessels.

What causes it?

Some cases are congenital; others are associated with obesity, excessive alcohol intake, eating fatty food and **hiatus hernia,** which is where the stomach itself protrudes into the chest through the hole in the diaphragm that the oesophagus normally comes through. But the ultimate cause is unknown.

What is the treatment?

Losing weight, eating less fatty food, eating smaller meals (especially at night) and reducing alcohol intake will all help. Many people require drug treatment. This is directed at rendering the reflux contents less corrosive by reducing the acidity or even completely abolishing stomach acid output. Often, drug treatment is required permanently as symptoms recur upon stopping the drugs. There is no evidence that long-term acid-suppressing drug therapy is harmful. Drugs prevent the corrosion caused by acid but do not reduce the actual reflux of stomach contents which is a mechanical problem. Surgery is the only way to treat the mechanical abnormality.



Step 1 The oesophagus is dissected free and the diaphragmatic crura dissected, then sutured together.

Why have surgery?

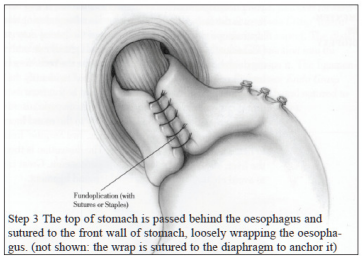
Most reflux is controlled with medication but surgery is indicated for those patients who

- prefer the one-off surgery cure rather than the inconvenience and cost of taking medication indefinitely
- have regurgitation of food or bile into gullet or mouth as one of their main complaints
- have respiratory symptoms (such as cough, hoarseness, night-time choking or asthma)
- have incomplete control of their reflux with medication
- have pre-malignant changes in their oesophagus

The patients who are troubled by the actual mechanical reflux of stomach contents (regurgitation, cough, asthma) as opposed to heartburn due to chemical acid are best treated by surgery.

What is involved in diagnosis?

A gastroscopy (telescope examination of the stomach and oesophagus) is required to find out the state of the oesophagus lining and then a pre-operative consultation to determine your suitability for surgery.



Step 3 The top of stomach is passed behind the oesophagus and sutured to the front wall of stomach, loosely wrapping the oesophagus. (not shown: the wrap is sutured to the diaphragm to anchor it)

The Surgery ("fundoplication")

The operation is designed to strengthen and support the oesophageal sphincter.

You are admitted on the day of the surgery. No preparation other than fasting for six hours is required. Water is permitted until three hours before surgery. You will be given an injection and special stockings to prevent clots developing in your leg veins. The anaesthetist will assess you to discuss the type of anaesthetic and answer questions you may have. A general anaesthetic is required however.

The **laparoscopic (keyhole)** operation takes from two to four hours. Five small incisions are made; one for the telescope, one for retracting the liver and three for instruments to be passed down to dissect the diaphragm oesophagus, and stomach. The hole in the diaphragm through which the oesophagus passes is sutured closed, snug against the oesophagus to ensure the stomach stays in the abdomen below the diaphragm and no longer slides into the chest. This repairs the hiatus hernia (Step 1). Then the top portion of the stomach is dissected free (Step 2), wrapped around the oesophagus and sutured back to the stomach to bolster the lower oesophageal sphincter muscle and thus prevent the reflux (Step 3).
The wounds (the largest is about 1.5 cm) are closed with dissolving sutures.
Rarely, the operation cannot be completed laparoscopically and a large incision has to be made.