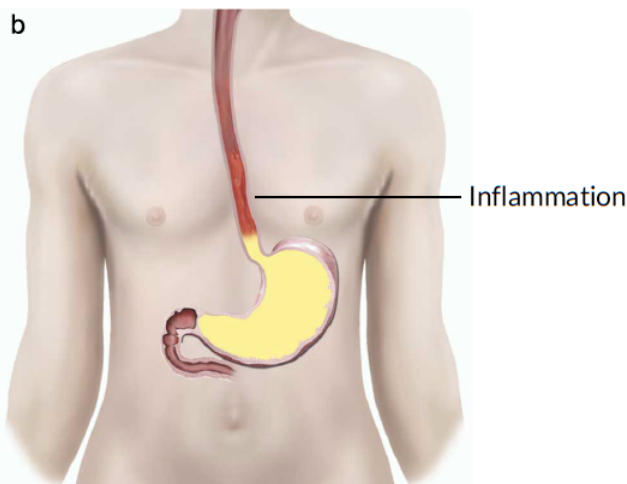
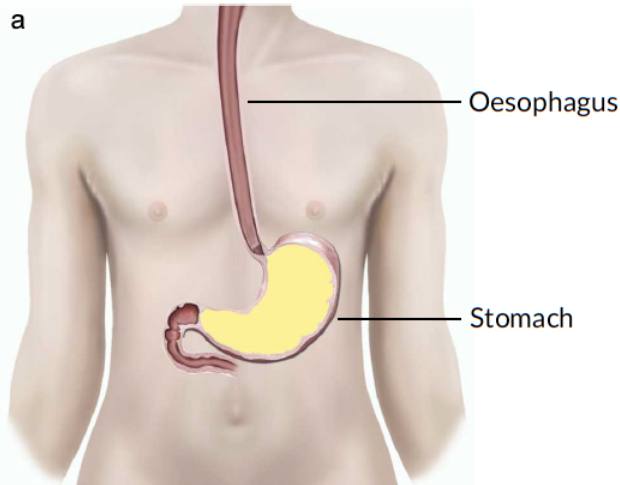


What is acid reflux?

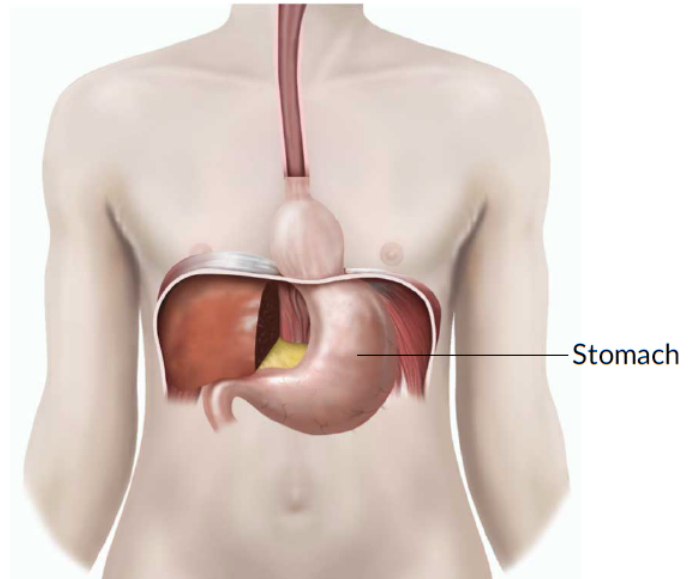
Acid reflux is a condition where acid from your stomach travels up into your oesophagus (gullet). It is normal for a small amount of acid to travel into your oesophagus. If this happens too often it can cause symptoms of a burning sensation in your chest ('heartburn') or acid in the back of your mouth. The acid can cause the lining of your oesophagus to become inflamed (oesophagitis) or scarred.



a A normal valve

b A faulty valve

Your surgeon has recommended an operation to prevent the acid from travelling into your oesophagus. This document will give you information about the benefits and risks to help you to make an informed decision.



A hiatus hernia

If you have any questions that this document does not answer, it is important that you ask your surgeon or the healthcare team. Once all your questions have been answered and you feel ready to go ahead with the procedure, you will be asked to sign the informed consent form. This is the final step in the decision-making process. However, you can still change your mind at any point before the procedure.

How does acid reflux happen?

At the join between your stomach and oesophagus there is a weak valve that prevents acid from travelling up into your oesophagus. Sometimes this valve does not work effectively, causing acid reflux.

Your oesophagus normally passes through a hole in your diaphragm. Acid reflux is commonly associated with a hiatus hernia, where the top of your stomach passes through the hole in your diaphragm.

What are the benefits of surgery?

You should get relief from symptoms of acid reflux without needing to take medication.

Are there any alternatives to surgery?

Medication that lowers the acid content in your stomach is effective at controlling symptoms and healing the inflammation in your oesophagus. Medication called 'proton pump inhibitors' is currently the most effective and is the main treatment for acid reflux.

Surgery is recommended only if the symptoms continue while you are taking the medication, or if you feel that you would prefer to have an operation than take medication for the rest of your life.

What will happen if I decide not to have the operation?

Surgery is not essential and you can continue on the medication to control your symptoms.

It is important to follow the eating and drinking instructions that your doctor gives you. You should eat smaller meals and avoid chocolate, caffeine and alcohol. Try to eat at regular times and not in the 2 hours before you go to sleep.

What does the operation involve?

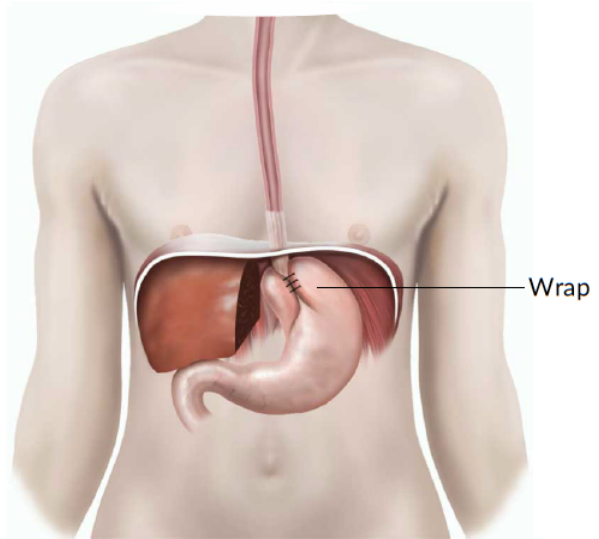
The healthcare team will carry out a number of checks to make sure you have the operation you came in for. You can help by confirming to your surgeon and the healthcare team your name and the operation you are having.

The operation is performed under a general anaesthetic and usually takes 1 to 2 hours. You may also have injections of local anaesthetic to help with the pain after the operation. You may be given antibiotics during the operation to reduce the risk of infection.

Your surgeon will hold your liver out of the way and free up the upper stomach and lower oesophagus, along with the muscular part of your diaphragm.

They will stitch your diaphragm to reduce the size of the hole your oesophagus passes through.

Your surgeon will wrap and stitch the top part of your stomach around your lower oesophagus, to produce a valve effect.



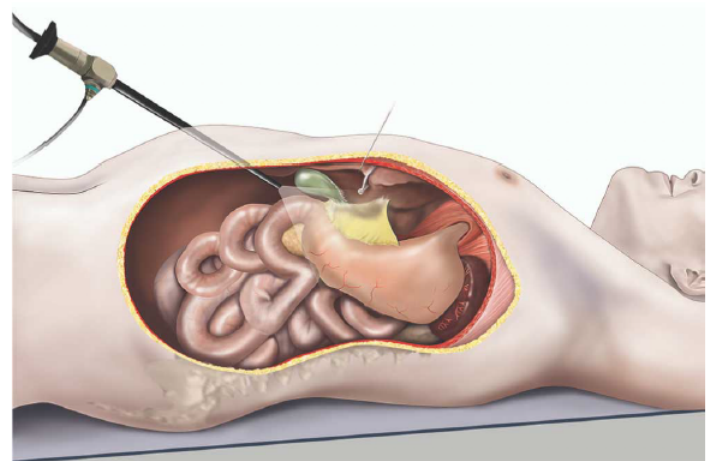
The stomach stitched around the oesophagus

Your surgeon can wrap your stomach all the way round your oesophagus or just part-way round. Partial wraps can be performed behind or in front of your oesophagus. Your surgeon will tell you the best wrap to perform for you.

Laparoscopic (keyhole) surgery

Your surgeon may use keyhole surgery as this is associated with less pain, less scarring and a faster return to normal activities.

Your surgeon will make a cut in your upper abdomen so they can insert an instrument in your abdominal cavity to inflate it with gas (carbon dioxide). They will make several small cuts on your abdomen so they can insert tubes (ports) into your abdomen.



Laparoscopic surgery

Your surgeon will insert surgical instruments through the ports along with a telescope so they can see inside your abdomen and perform the operation.

For about 3 in 100 people it will not be possible to complete the operation using keyhole surgery. The operation will be changed (converted) to open surgery.

Your surgeon will remove the instruments and close the cuts.

Open surgery

The operation is the same but it is performed through a larger cut on your upper abdomen. Sometimes your surgeon may recommend that the operation is performed through a cut on your chest.

Your surgeon may decide that keyhole surgery is not appropriate for you and recommend open surgery. They will discuss the reasons with you.

What should I do about my medication?

Make sure your healthcare team knows about all the medication you take and follow their advice. This includes all blood-thinning medication as well as herbal and complementary remedies, dietary supplements, and medication you can buy over the counter.

What can I do to help make the operation a success?

If you smoke, stopping smoking now may reduce your risk of developing complications and will improve your long-term health.

Try to maintain a healthy weight. You have a higher risk of developing complications if you are overweight.

Regular exercise should help to prepare you for the operation, help you to recover and improve your long-term health. Before you start exercising, ask the healthcare team or your GP for advice.

You can reduce your risk of infection in a surgical wound.

- In the week before the operation, do not shave or wax the area where a cut is likely to be made.

- Try to have a bath or shower either the day before or on the day of the operation.
- Keep warm around the time of the operation. Let the healthcare team know if you feel cold.
- If you are diabetic, keep your blood sugar levels under control around the time of your procedure.

If you have not had the coronavirus (Covid-19) vaccine yet, ask your healthcare team if this can be done before your operation. This will reduce your risk of serious illness related to Covid-19 while you recover.

What complications can happen?

The healthcare team will try to reduce the risk of complications.

Any numbers which relate to risk are from studies of people who have had this operation. Your doctor may be able to tell you if the risk of a complication is higher or lower for you.

Some complications can be serious and can even cause death. Using keyhole surgery means it may be more difficult for your surgeon to notice some complications that may happen during the operation. When you are recovering, you need to be aware of the symptoms that may show that you have a serious complication.

You should ask your doctor if there is anything you do not understand.

Your anaesthetist will be able to discuss with you the possible complications of having an anaesthetic.

General complications of any operation

- Bleeding during or after the operation. You may need a blood transfusion or another operation.
- Infection of the surgical site (wound). It is usually safe to shower after 2 days but you should check with the healthcare team. Let the healthcare team know if you get a high temperature, notice pus in your wound, or if your wound becomes red, sore or painful. An infection usually settles with antibiotics but you may need special dressings and your wound may take some time to heal. In some cases another operation might be needed. Do not take antibiotics unless you are told you need them.

- Allergic reaction to the equipment, materials or medication. The healthcare team is trained to detect and treat any reactions that might happen. Let your doctor know if you have any allergies or if you have reacted to any medication or tests in the past.

- Developing a hernia in the scar. This appears as a bulge or rupture called an incisional hernia. If this causes problems, you may need another operation.

- Blood clot in your leg (deep-vein thrombosis – DVT). This can cause pain, swelling or redness in your leg, or the veins near the surface of your leg to appear larger than normal. The healthcare team will assess your risk. They will encourage you to get out of bed soon after the operation and may give you injections, medication, or special stockings to wear. Let the healthcare team know straight away if you think you might have a DVT.

- Blood clot in your lung (pulmonary embolus), if a blood clot moves through your bloodstream to your lungs. Let the healthcare team know straight away if you become short of breath, feel pain in your chest or upper back, or if you cough up blood. If you are at home, call an ambulance or go immediately to your nearest Emergency department.

- Chest infection. If you have the operation within 6 weeks of catching Covid-19, your risk of a chest infection is increased (see the 'Covid-19' section for more information).

Specific complications of this operation

Keyhole surgery complications

- Surgical emphysema (a crackling sensation in your skin caused by trapped carbon dioxide), which settles quickly and is not serious.

- Damage to structures such as your bowel, liver or blood vessels when inserting instruments into your abdomen (risk: less than 3 in 1,000). The risk is higher if you have had previous surgery to your abdomen. If an injury does happen, you may need open surgery. About 1 in 3 of these injuries is not obvious until after the operation.

- Developing a hernia near one of the cuts used to insert the ports (risk: 1 in 100). Your surgeon will try to reduce this risk by using small ports (less than a centimetre in diameter) where possible or, if they need to use larger ports, using deeper stitching to close the cuts.

- Gas embolism. This is when gas (carbon dioxide) gets into the bloodstream and blocks a blood vessel. This is very rare but can be serious.

Anti-reflux surgery complications

- Difficulty swallowing for a few months because the site where your stomach is wrapped around your oesophagus is inflamed. This is normal and you should be able to swallow most foods normally by 3 months.

- Pneumothorax, where air escapes into the space around your lung. Sometimes the air will need to be let out by inserting a tube in your chest (chest drain).

- Tear of the stitches used for the wrap, if you retch (strain to be sick) or vomit in the first few weeks. This may cause the wrap to become loose. Sometimes a tear can make a hole in your stomach that will need to be repaired by surgery straight away.

- Making a hole in your oesophagus or stomach (perforation), which needs repairing. This is serious but rare.

- Damage to your liver when holding it out of the way (risk: 5 in 100). If the damage is serious, you may need another operation.

Long-term problems

- Continued difficulty swallowing where you cannot swallow most foods normally (risk: 5 in 100). If you find that food such as bread and meat get stuck, avoid them.

- Incomplete control of reflux symptoms, if the wrap is not tight enough or becomes loose (risk: less than 5 in 100). This may settle with medication.

- Tissues can join together in an abnormal way (adhesions) when scar tissue develops inside your abdomen. Adhesions do not usually cause any serious problems but can lead to bowel obstruction. The risk is lower if you have keyhole surgery.

- Weight loss during the first 2 months. It is normal to feel fuller than usual and you may be able to eat only small meals. Sit up when you eat and take a drink with your meal to help the food go down. Eat more often than before to try to keep your weight up. If you do lose weight, you will usually put it back on. If you have any concerns about your diet, ask the dietician.

- Abdominal discomfort (risk: 3 to 5 in 10). You will probably not be able to burp as usual, which can cause gas to build up in your abdomen. You may pass more wind than usual.

- Diarrhoea (risk: less than 3 in 100). If loose or more frequent stools are troublesome, your doctor may give you some medication to slow down your bowel.

If any of these problems are severe and continue for over 3 months, you may need another operation (risk: less than 5 in 100). If you have these symptoms for over 3 months, let your surgeon know.

Covid-19

A recent Covid-19 infection increases your risk of lung complications or death if you have an operation under general anaesthetic. This risk reduces the longer it is since the infection. After 7 weeks the risk is no higher than someone who has not had Covid-19. However, if you still have symptoms the risk remains high. The risk also depends on your age, overall health and the type of surgery you are having.

You must follow instructions to self-isolate and take a Covid-19 test before your operation. If you have had Covid-19 up to 7 weeks before the operation you should discuss the risks and benefits of delaying it with your surgeon.

Consequences of this procedure

- Pain. The healthcare team will give you medication to control the pain and it is important that you take it as you are told so you can move about and cough freely. After keyhole surgery, it is common to have some pain in your shoulders because a small amount of carbon dioxide gas may be left under your diaphragm. Your body will usually absorb the gas naturally over the next 24 hours, which will ease the symptoms.

- Unsightly scarring of your skin.

How soon will I recover?

In hospital

After the operation you will be transferred to the recovery area and then to the ward.

You will be given anti-sickness medication. You will be able to drink from the first day and then you will go on a soft diet. You should no longer need to take your acid-reducing medication.

You should be able to go home the next day. However, your doctor may recommend that you stay a little longer, particularly if the operation was converted to open surgery.

You need to be aware of the following symptoms as they may show that you have a serious complication.

- Pain that gets worse over time or is severe when you move, breathe or cough.
- A high temperature or fever.
- Dizziness, feeling faint or shortness of breath.
- Feeling sick or not having any appetite (and this gets worse after the first 1 to 2 days).
- Not opening your bowels and not passing wind.
- Swelling of your abdomen.
- Difficulty passing urine.

If you do not continue to improve over the first few days, or if you have any of these symptoms, let the healthcare team know straight away. If you are at home, contact your surgeon or GP. In an emergency, call an ambulance or go immediately to your nearest Emergency department.

Returning to normal activities

To reduce the risk of a blood clot, make sure you carefully follow the instructions of the healthcare team if you have been given medication or need to wear special stockings.

You will need to eat slowly and chew your food thoroughly. Eat only soft foods for a few weeks, gradually moving on to a normal diet when you can cope with it. Do not have fizzy drinks.

You should be able to return to work after 3 to 4 weeks, depending on how much surgery you need and your type of work.

Your doctor may tell you not to do any manual work for a while. Do not lift anything heavy for a few weeks.

Regular exercise should help you to return to normal activities as soon as possible. Before you start exercising, ask the healthcare team or your GP for advice.

Do not drive until you can control your vehicle, including in an emergency, and always check your insurance policy and with the healthcare team.

Ask your healthcare team if you need to do a Covid-19 test when you get home.

The future

You should make a full recovery, with the symptoms of acid reflux gone or much improved.

How much will the operation cost?

Your doctor will give you information to make sure you understand the expected costs to you of having this procedure, as well as your choices for having it done through the public hospital system or at a later time.

Summary

Acid reflux can cause heartburn or acid in your mouth. The acid can cause the lining of your oesophagus to become inflamed or scarred. Surgery may be recommended if your symptoms continue while you are taking medication.

Surgery is usually safe and effective but complications can happen. You need to know about them to help you to make an informed decision about surgery. Knowing about them will also help to detect and treat any problems early.

Keep this information document. Use it to help you if you need to talk to the healthcare team.

Some information, such as risk and complication statistics, is taken from global studies and/or databases. Please ask your surgeon or doctor for more information about the risks that are specific to you.

This document is intended for information purposes only and should not replace advice that your relevant healthcare team would give you.

Acknowledgements

Reviewer: Roger Berry (MBBS, FRACS)

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