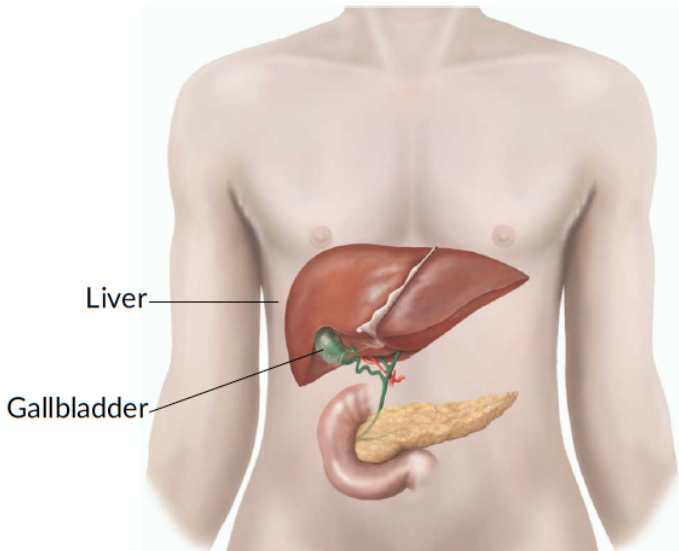


What are gallstones?

Gallstones are 'stones' that form in your gallbladder. They are common and can run in families. The risk of developing gallstones increases as you get older and if you eat a diet rich in fat.



The position of the gallbladder

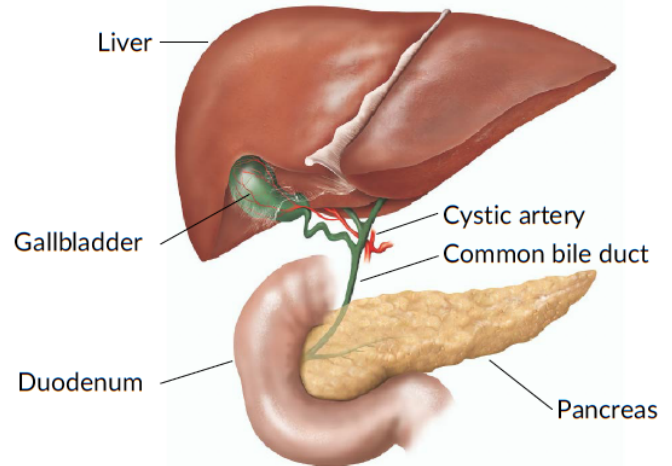
Your doctor has recommended an operation to remove the gallstones along with your gallbladder (cholecystectomy). However, it is your decision to go ahead with the operation or not. This document will give you information about the benefits and risks to help you to make an informed decision.

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 do gallstones happen?

When you eat food, your gallbladder empties bile into your intestines to help digest and absorb fats and some vitamins. Stones can develop in bile, particularly if you eat a diet high in refined carbohydrates and sugars.

For some people gallstones can cause severe symptoms, with repeated attacks of abdominal pain being the most common. Pain is due either to stones blocking the gallbladder duct (cystic duct) and preventing your gallbladder from emptying (biliary colic), or to inflammation of your gallbladder (cholecystitis). The pain can be so severe that you need to be admitted to hospital.



The gallbladder and surrounding structures

If the stones move out of your gallbladder into your common bile duct, they can cause jaundice (your eyes and skin turning yellow), serious infection of your bile ducts (cholangitis) or inflammation of your pancreas (acute pancreatitis). These problems can be serious and can even be life-threatening.

What are the benefits of surgery?

You should be free of pain and able to eat a normal diet. Surgery should also prevent the serious complications that gallstones can cause.

Your body will function perfectly well without a gallbladder.

Are there any alternatives to surgery?

Surgery is recommended as it is the only dependable way to cure the condition.

It is possible to dissolve the stones or even shatter them into small pieces but these techniques involve unpleasant drugs that have side effects and a high failure rate. The gallstones usually come back. Antibiotics can be used to treat any infection of your gallbladder. Eating a diet low in fat may help to prevent attacks of pain. However, for many people, this means eating more carbohydrates which cause further stone formation. These alternatives will not cure the condition and symptoms are likely to come back.

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

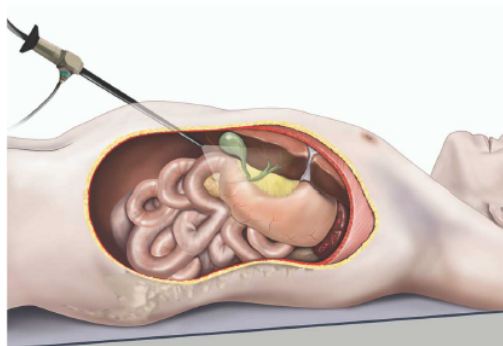
Your gallstones may not cause any symptoms. If you have already had symptoms, it is likely that these will continue from time to time. There is a small risk of life-threatening complications.

What does the operation involve?

If you are female, the healthcare team may ask you to have a pregnancy test as some procedures involve x-rays or medications that can be harmful to unborn babies. Sometimes the test does not show an early-stage pregnancy so let the healthcare team know if you could be pregnant.

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.

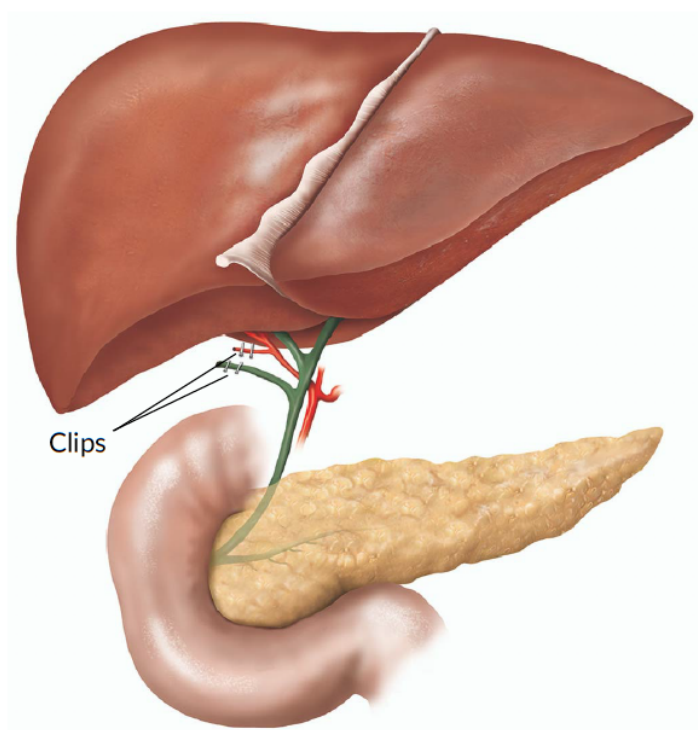
The operation is performed under a general anaesthetic and usually takes about an hour. You may also have injections of local anaesthetic to help with the pain after the operation. You may be given antibiotics during the operation to reduce the risk of infection. Your surgeon will use laparoscopic (keyhole) surgery as this is associated with less pain, less scarring and a faster return to normal activities. Your surgeon will make a small cut on or near your belly button 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. Your surgeon will insert surgical instruments through the ports along with a telescope so they can see inside your abdomen and perform the operation.



Laparoscopic surgery

Your surgeon will hold your gallbladder so they can free up your cystic duct and artery. They will clip and then cut the duct and artery, and separate your gallbladder from your liver.

Your surgeon will remove your gallbladder from your abdomen through one of the ports.



After the gallbladder has been removed

They may inject dye (colourless contrast fluid) into your common bile duct and take an x-ray or perform an intra-operative ultrasound scan of the bile duct. If the x-ray shows stones in your common bile duct, your surgeon may remove the stones during the operation or later using a flexible telescope that is passed down your oesophagus (gullet).

For about 1 in 20 people it will not be possible to complete the operation using keyhole surgery. The operation will be changed (converted) to open surgery, which involves a larger cut usually just under your right ribcage.

Your surgeon will remove the instruments and close the cuts. They may insert a drain (tube) in your abdomen to drain away fluid that can sometimes collect.

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. Your surgeon may suggest you follow a special diet for the 2 weeks before the procedure to reduce the size of your liver. The liver is a large organ that needs to be lifted to perform the surgery safely. If it is smaller, the risk of complications such as bleeding are reduced.

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. Rarely, you will need a blood transfusion or another operation.
- 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.
- 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.

- 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

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

Cholecystectomy complications

- Leaking of bile or stones. Your surgeon can usually deal with this at the time of surgery but you may need another operation.

- Retained stones in your common bile duct. Your surgeon may remove the stones during the operation or at a later date using a flexible telescope. In rare cases a further procedure may be needed.
- Continued pain.
- Needing to go to the toilet more often because you no longer have a gallbladder controlling the flow of bile into your intestines (risk: 3 in 100). You may get diarrhoea (risk: 1 in 100). Your doctor may give you some medication to slow down your bowel.
- Inflammation of the lining of your abdomen (peritonitis) caused by a collection of bile or blood.
- Bile duct injury (narrowing or blockage), which is potentially serious (risk: 3 in 1,000). You may need another operation.
- Allergic reaction to the equipment, materials, medication or dye. This usually causes a skin rash which settles with time. Sometimes the reaction can be serious (risk: less than 1 in 2,500) or even life-threatening (risk: 1 in 25,000). The healthcare team is trained to detect and treat any reactions that might happen. Let your surgeon know if you have any allergies or if you have reacted to any medication or tests in the past.
- Bowel injury, if your bowel is stuck to your gallbladder (risk: less than 1 in 500).
- Pancreatitis, if a stone moves into your common bile duct (risk: 3 in 1,000). This is serious and you may need another operation.
- Serious damage to your liver or its associated blood vessels. This is rare but you may need another operation.
- 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. You may need another operation.

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 should be able to go home the same day, however your doctor might recommend you stay in hospital for a little longer.

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.
- Jaundice (yellowing of the eyes/skin together with dark 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 should be able to return to work after 2 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 and be able to return to normal activities and eat a normal diet. If your pain continues or you develop jaundice, let your doctor know.

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

Gallstones are a common problem. An operation to remove your gallbladder should result in you being free of pain and able to eat a normal diet. Surgery should also prevent the serious complications that gallstones can cause.

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)

Illustrator: Medical Illustration Copyright ©

Medical-Artist.com