



Brisbane Liver and Gallbladder Surgery
Suite 207, Ramsay Specialist Centre
Newdegate Street, Greenslopes QLD 4120
Phone: 3847 3000 Fax: 3847 3002
Email: admin@brisliver.com.au Web Site: www.brisliver.com.au

LAPAROSCOPIC CHOLECYSTECTOMY & INTRA-OPERATIVE CHOLANGIOGRAM (REMOVAL OF THE GALLBLADDER)

*THIS INFORMATION REFLECTS THE PERSONAL PRACTICE OF DR KELLEE SLATER ONLY
AND DOES NOT SUBSTITUTE FOR DISCUSSION WITH YOUR SURGEON.*

YOUR ADMISSION DETAILS:

Your admission date is: _____

Date of your operation: _____

Fasting time from: _____

Day Surgery Patient Stay

Overnight Patient Stay

Greenslopes Private Hospital Admissions (Phone 1800 777 101) will contact you
the day before you are due to enter the hospital to confirm the details.

A word before we start.....

This is a very extensive document and everything I have ever been asked about the gallbladder surgery is contained within these pages. Gallbladder surgery is surrounded by more myths than any other operation. This document is meant to reassure you that removing the gallbladder is the right thing to do for your condition and answer any questions you may have forgotten to ask.

WHY DO I NEED MY GALLBLADDER REMOVED?

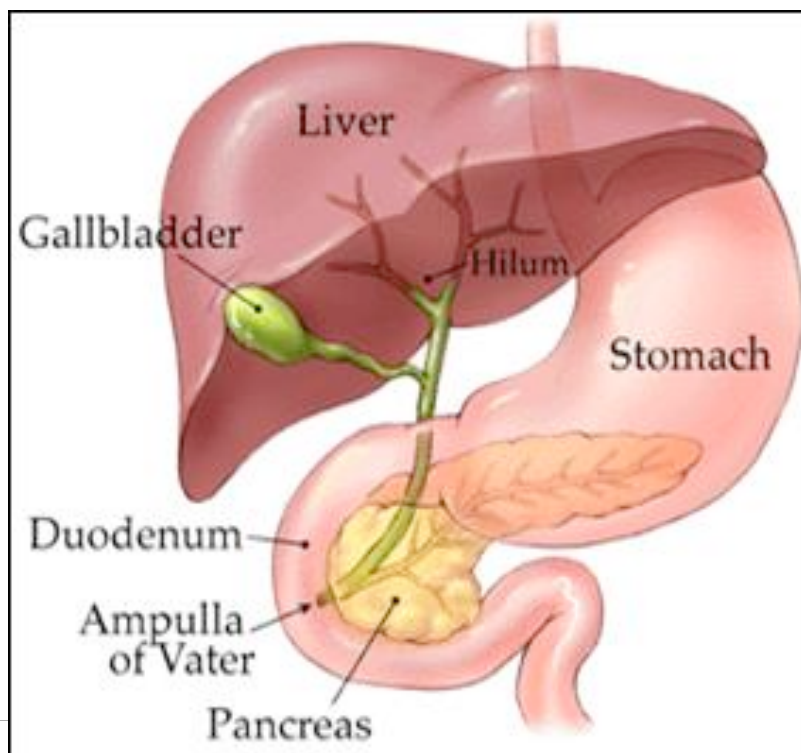
Gallstones are one of the most common abdominal problems in Australia. If gallstones are causing pain, then it is usual to recommend that the gallbladder be removed. Gallstones can cause severe pain and infections. Less commonly gallstones can cause jaundice or life threatening inflammation of the pancreas.

The only guaranteed way to prevent an attack of gallstone pain due to stones is to remove the gallbladder. Less commonly, the gallbladder will be removed for polyps, cancer or major surgery.

Some people know they have gallstones but have never had pain or problems. Stones are often picked up when they have a scan for another reason. Some people choose to have their gallbladder and stones removed before they ever have an attack.

WHAT DOES MY GALLBLADDER DO?

The gallbladder is attached to the undersurface of the liver, tucked up under the ribs on the right side of the abdomen. Its job is to store and concentrate bile. Bile helps to digest the fats in the food we eat. When fat comes into the bowel, hormones are released and the gallbladder contracts, injecting extra bile into the bowel to digest the fat.



WHAT CAUSES GALLSTONES?

We are not sure why stones form in the gallbladder. They seem to occur when there is an imbalance between the chemicals in the bile or when there is a problem with the ability of the gallbladder to expel the bile. It is commonly thought that the hormone oestrogen slows down the contraction of the gallbladder and changes the consistency of bile. Stones can develop slowly over a number of years or very rapidly during periods of illness or weight loss.

Gallstones occur more commonly in:

- Women
- Pregnancy
- Rapid weight loss or gain
- Obesity
- Severe illness

WHAT PROBLEMS CAN GALLSTONES CAUSE?

Some people can live their whole lives with gallstones and not experience any problems at all. However, a significant number go on to have symptoms and even life threatening complications.

Gallstones can cause:

1. Severe pain: typically felt on the right side, under the ribs and may radiate into the back and shoulder. Some people think they are having a heart attack. The pain commonly occurs at night and may be brought on by eating a fatty meal. It might be so bad that you need to go to the hospital for pain relief. The pain can come in attacks and you can be perfectly well in between times. This occurs when a gallstone is pushed into the outlet pipe of the gallbladder and gets temporarily stuck.
2. Fever: may indicate infection in the gallbladder because a stone is stuck in the outflow or that a stone has gotten out of the gallbladder and into the bile duct. This needs urgent attention.
3. Jaundice: yellowness of the eyes may occur if there is a stone in the main bile duct. This needs urgent attention.
4. Blood poisoning (sepsis): occurs when a stone gets into the bile duct. Requires urgent attention.
5. Inflammation of the pancreas (pancreatitis - a serious problem)
6. Blockages of the bowel (rarely): when a gallstone wears a hole in the bowel and the stone causes a blockage.
7. Cancer: it is thought that gallstones that have been present for over 20 years may be associated with an increased risk of gallbladder cancer. This condition is usually fatal.

WHAT IS THE BEST TEST TO DIAGNOSE GALLSTONES?

Gallstones are usually best seen on ultrasound. CT scans only pick up a small number of stones.

WHAT IS THE BEST TREATMENT FOR GALLSTONES?

The conventional treatment for gallstones that are causing problems is to remove the gallbladder. This can frequently be done with keyhole surgery.

CAN I LIVE A NORMAL LIFE WITHOUT MY GALLBLADDER?

Yes. Most people who have their gallbladder removed just feel happy that they will not get anymore terrible pain or have nights spent in Emergency Departments. There are no known long term consequences of removing the gallbladder. If the gallbladder has stones, it is already functioning poorly and you are already living without it. The bile duct running between the liver and the small bowel enlarges after the gallbladder is removed to take over the bile storage function.

After having their gallbladder removed, about 1 in 100 people will experience increased frequency of bowel movements. This usually manifests as an urgent need to pass a bowel movement shortly after eating. It is usually brought on by eating a very fatty meal. The cause of this reflex is unknown and usually resolves within a few months of surgery. This symptom can be controlled by eating a low fat diet. Many people already have this reflex when they eat a fatty meal even before their gallbladder is removed.

I HEARD FROM MY FRIEND THAT I CAN NEVER EAT FAT AGAIN AFTER MY GALLBLADDER IS REMOVED?

People in Australia are some of the most obese in the world. Because of this, gallstone disease is very common. The gallbladder's job is to inject bile into the bowel to help your body process and absorb fat. There is a little bit of fat in many healthy foods, but if you eat an enormous amount of fat without your gallbladder you may not have the required bile to absorb it. The fat will stay in the bowel and give you diarrhoea. If you have this symptom, you are eating fat in excess of what your body needs. If you have a healthy, low fat diet there will be more than enough bile running straight out of the liver and diarrhoea should not be a problem.

WHAT IF MY GALLSTONES ARE NOT CAUSING ANY PAIN?

Many people will have gallstones diagnosed when they are having a scan for another reason. Generally, we do not remove stones if they are not causing problems. Of course there are exceptions to this and we recommend surgery if the risks of having a serious attack outweigh the risks of surgery.

We may recommend surgery for asymptomatic stones in:

- Patients <30 years old
- Patients with serious health problems like heart valve or heart disease so the surgery can be done in an arranged manner
- Diabetic patients, because gallbladder disease is often more serious
- Patients who are travelling overseas and do not wish to risk having an attack while away. Gallstones are a pre-existing condition and will not be covered by travel insurance. This can be very expensive.

WHAT IF I HAVE GALLBLADDER TYPE PAIN AND NO STONES?

This is a common problem. When a patient has the typical right sided abdominal pain but no stones, other tests will be done to look for other reasons. A test called a HIDA scan can be done to check whether the gallbladder is contracting properly. This condition is called gallbladder dyskinesia. Some patients with this problem may benefit from having their gallbladder removed. This decision must be carefully considered and there is no guarantee that it will fix the pain.

HOW ARE GALLSTONES TREATED DURING PREGNANCY?

Pregnancy is perhaps the most common time for a woman to develop gallstones. It can be a very challenging problem to deal with. For the mother, repeated attacks of gallstone pain during pregnancy can be debilitating.

If you have known gallstones, it is better to have your gallbladder removed before you get pregnant.

If you develop gallstone pain during pregnancy I will carefully consider your case before treatment. To operate for gallstones during pregnancy, the benefits must outweigh the risks.

If you are experiencing multiple attacks of pain during your first trimester, every effort is made to wait until the second trimester to operate. At this time, the baby's organs are formed and the risk to the fetus is lowest.

If you develop jaundice, severe infection or pancreatitis during pregnancy, surgery must be undertaken at that time otherwise it is likely that there will be a threat to life of both the baby and mother.

X-ray is usually required during the surgery for removal of the gallbladder and every effort is made to shield the fetus with lead shields and minimal x-rays.

Like all surgery during pregnancy, there is a risk to both mother and fetus of premature labour, death of the baby and possibly cerebral palsy. Severe gallbladder problems also carry these risks.

If your symptoms are mild, gallbladder surgery will be recommended within a month or two of delivery.

You can continue to breastfeed after gallbladder surgery. I recommend that you pump and discard the milk for 24 hours after surgery until the anaesthetic drugs are out of your system.

WHAT HAPPENS IF I HAVE A STONE IN MY BILE DUCT?

A stone in the pipe that carries bile from the liver to the bowel is a serious issue. These stones may have no symptoms and be seen only on ultrasound or they may cause jaundice, blood poisoning, pancreatitis and death. How they are treated depends on the preference of the surgeon and in big trials, there is no difference between the results in any of the methods.

In this practice, every attempt is made to remove the stones at the time of the operation. This is frequently achieved by keyhole surgery. Occasionally, when this is not possible, open surgery is performed. Another alternative is to remove the gallbladder at surgery and on another day pass a telescope via the mouth and pull the stones out via the bowel in a procedure called ERCP.

I will make the decision about what is the best treatment based on many factors.

ARE THERE ANY ALTERNATIVES TO HAVING GALLBLADDER SURGERY?

Other alternatives are not effective:

- Breaking the stones into small fragments with a shock wave (lithotripsy). The danger in this technique is that the small stone fragments can block the flow of bile from the liver and lead to severe infections or inflammation of the pancreas. This technique is only effective in very specific circumstances. This is usually only after surgery has been tried or if the patient is too ill for an anaesthetic.
- Dissolving therapy. This therapy is unreliable, rarely works and does nothing to change the reasons the gallstones formed in the first place. It does not stop them from coming back.

WHY CAN'T YOU JUST REMOVE THE STONES AND LEAVE MY GALLBLADDER?

Technically it is much safer to remove both the gallbladder and stones together. If there are gallstones present, the gallbladder is not functioning properly. There would be no guarantee that gallstones would not form again and cause more problems. It is also difficult (often impossible) to make a hole in the gallbladder and repair it safely without leakage of bile.

WHAT ARE GALLBLADDER POLYPS?

These are usually seen on ultrasound as little mushroom like growths attached to the gallbladder wall. There are two types of polyps:

1. Cholesterol polyps – these are gallstones in waiting and can cause the typical pain. If you are having pain, we will recommend removal of the gallbladder. If there is no pain, we may recommend a period of observation and do another scan in 6 months.
2. Tumour polyps – very rarely, pre-cancerous polyps grow in the gallbladder. If the polyp is greater than 1cm, it is strongly recommended that it is removed because of the risk of cancer. Once you have gallbladder cancer, it is rarely curable.

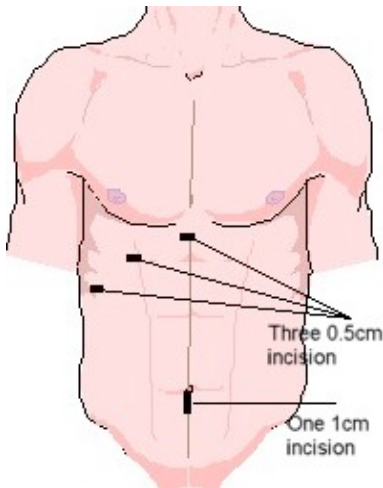
FATTY LIVER DISEASE

Fat in the liver is visible during the operation to remove the gallbladder. I will let you know about it after the surgery.

- Fat accumulating in the liver is a very common problem in Australia. It occurs in about 1 in 10 people. This fat collects in and around the liver cells and can cause progressive damage. It can lead to cirrhosis of the liver. Fatty liver disease is more common if you are overweight, diabetic, have high cholesterol or drink alcohol. There also seems to be genetic factors involved.
- It makes the surgery more difficult because the liver is very fragile and may split and bleed during the operation.
- The causes of this disease are not completely understood but there are some steps that can be taken to lower the fat content of the liver.
- If your Body Mass Index is >40 and the surgery is elective, you may be asked to undergo pre-operative weight loss. There are supervised rapid weight loss programs like INTENSIV (<http://www.intensivweightloss.com/>) available to reduce the fat in the liver prior to surgery. Weight loss of even 10 kg makes a big difference in lowering the risks of surgery.

HOW IS THE OPERATION TO REMOVE THE GALLBLADDER DONE?

The gallbladder and stones are removed most often with laparoscopic or “keyhole surgery”.



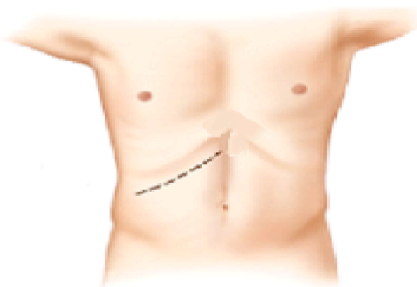
Small incisions are used in keyhole surgery

The operation begins by making four or more small (5 – 10mm) incisions in the abdomen. Carbon dioxide gas is pumped into the abdominal cavity to give us a space to operate in. A fibre-optic telescope and long instruments are used to remove the gallbladder along with all the stones.

A special X-ray called a cholangiogram is performed during the surgery to ensure no gallstones have escaped from the gallbladder into the bile duct. It also allows us to check the layout of your bile ducts.

I then secure the stump of the gallbladder and the gallbladder artery with several titanium clips that will remain in your abdomen. These do not cause any harm. They are used in almost all major abdominal surgeries. They will not set off the metal detectors at the airport nor do they interfere with a MRI. Occasionally a clip will migrate out of the gallbladder area and end up elsewhere in your abdomen. This can be seen on a scan. This is not harmful.

CONVERSION TO AN OPEN OPERATION



The incision used to convert to an open operation

Conversion to an open operation via a larger incision is not considered a failure in keyhole surgery. Occasionally I will need to make a larger cut on your abdomen to finish the operation. This may be done if there is a stone that has moved out of your gallbladder and into the main bile duct. While I remove about 80% of these stones with keyhole surgery, this is technically challenging and open surgery may be required.

The open operation is also performed when I cannot complete the operation safely with keyhole surgery. This may be due to severe gallbladder inflammation making it impossible to understand the anatomy or safely secure the stump of the gallbladder. Keyhole surgery can also be more difficult if there has been previous surgery. This is because scarring in the abdomen can obscure the view. This is another common reason to convert to an open operation. This is considered sound judgment and cosmetic appearance should never be preferred over safety.

WHAT ARE THE COMPLICATIONS OF SURGERY TO REMOVE THE GALLBLADDER?

Even though the incisions are small, gallbladder removal is still a major operation. Whilst laparoscopic surgery is considered a relatively safe and low risk procedure, like all surgery there are a number of serious complications that may occur. It must be stressed, these complications are very rare. Complications are dealt with on a case by case basis. Some of these are:

Risks Specific to Laparoscopic Cholecystectomy:

- Injury to the bile duct: this is very uncommon (1/1500), but if it occurs may result in further operations, infections, removal of part of the liver and very rarely, liver transplantation or death.
- Leakage of bile into the abdominal cavity: this may be related to the failure of the titanium clips used to seal the tube the gallbladder was attached to. This may lead to a further operation. Additionally there may be a leakage of bile from the liver bed.
- Retained gallstones: gallstones may float out of the gallbladder and up into the bile ducts inside the liver. These stones are difficult to detect at operation. Occasionally, you may experience another attack of pain caused by a retained gallstone and need a further procedure to remove these stones.

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- Injury to any organ in the abdomen may occur with keyhole surgery: bowel, aorta, liver and stomach. This is rare.
 - Gas embolism – a bubble of carbon dioxide gets into a blood vessel and causes life threatening heart problems. This is very, very rare.
 - Re-operation: if the surgeon has to re-operate for any reason, this may be done with keyhole surgery or an open operation.
 - Gallstones left in the abdominal cavity. Great care is taken to retrieve any and all gallstones that may have spilled in the abdominal cavity in the course of the operation. This is a frequent event during a difficult gallbladder operation. Rarely, one of these stones may be left behind and form an abscess in the tummy that requires further surgery. These stones have been known to erode into the chest cavity.

General Risks:

- Death: approximately 1/50,000 risk for all patients having this type of operation.
- Allergy (anaphylaxis) to the anaesthetic drugs, antibiotics or contrast used in the x-ray.
- Bleeding: usually occurs in the first 24 hours and may require further surgery. This bleeding may be from the abdominal wall or from the gallbladder bed.
- Other blood vessel problems: heart attack, stroke. This is uncommon.
- Infections: wound, pneumonia, urine, intra-abdominal, IV line related.
- Clots in the legs that may travel to the lungs and be fatal.
- Damage to the nerves of the arm, legs and neck from prolonged stillness on the operating table. This is rare, but may be permanent.
- Inability to pass urine requiring a temporary catheter.
- Wound pain, abnormal (keloid) scarring or hernia of the wound.
- Bowel obstruction due to hernia or adhesions. This risk is life long.
- You may require a blood transfusion (this is rare).

WHAT TO EXPECT IMMEDIATELY AFTER SURGERY

Pain Relief

Every effort will be made to minimise your discomfort. Your surgeon and nurses will be monitoring your level of pain control frequently.

It is very common to have pain in the right shoulder after keyhole surgery. This is due to the effect of the gas pumped into your abdominal cavity during the surgery. The pain typically disappears one day after surgery.

On the first day after surgery, there may be a moderate amount of discomfort at the site of the operation. You will have a few choices for pain relief.

There are two major types of pain relievers after keyhole surgery.

1. Panadol, Panamax, Paracetamol

You will be amazed the power of regular Paracetamol. It will cut down the need for the very strong pain pills.

They do not cause constipation.

Do not take more than 8 tablets a day or serious liver damage may occur.

2. NSAIDs (Indocid, Brufen, Mobic)

Another excellent pain reliever. They do not cause constipation.

Must be used very cautiously in the elderly and those with kidney problems because it might cause kidney failure.

They may cause stomach ulcers. If you experience any pain in the upper abdomen you must stop this medication immediately and seek advice.

It is uncommon to need anything stronger than these medications after you go home. Try and avoid Codeine or narcotic containing products – like Panadeine, Panadeine Forte or Endone as they cause constipation which may put strain on wounds.

3. Morphine, Fentanyl (narcotics)

It is uncommon to need an injection of these powerful painkillers after the first day of surgery.

I will discuss your pain relief to take home with you prior to discharge.

It is not usual to have to go home after keyhole surgery with narcotic pain relievers.

Drain tubes

Sometimes you will wake up after surgery with a soft plastic drain tube in your abdomen. It is usually removed the following day.

Eating

If it was routine gallbladder surgery you will be allowed to have fluids 4 hours after you wake up and a light diet the following day. It is very common to feel nauseated for 12 hours following surgery.

Urinating/Bowel Movements

After any surgery a patient may have trouble passing urine. This is not common and if it occurs, is temporary. Occasionally a catheter needs to be inserted to help you pass urine.

There may be some disturbance to your bowels in the week after surgery. Any over the counter laxative will fix with this problem. Your bowels will not work before you go home. It is normal for you not to have a bowel motion for 2-3 days.

Activity

It is usual to be discharged 1 – 2 days after routine gallbladder surgery. It is very important to begin light activity shortly after surgery. This is to prevent pneumonia, clots in the legs and loss of general condition. You can expect to have to wear stockings on your legs whilst in hospital to prevent clots and have an injection of Heparin twice a day under the skin for the same reason. Increase your activity as you feel able.

Your Incision

You can expect to have a waterproof dressing over your incisions for the first 5 days. You will be discharged with these dressings on. You will be able to shower with these dressings in place. It is quite common to have a small amount of leakage from the wounds. The dressings do not have an absorbent pad, so a small amount of fluid will collect underneath. If it leaks out the side of the dressing, wash it off in the shower. If the dressing comes off, replace it with a band aid.

You can peel the dressing off, 5 days after the surgery. The wounds should be healed by this time. You may get the wounds wet after 5 days. It is common for the wounds to be bruised. There may be a rim of redness around the wound from the first day. This is not an infection. There will not be any stitches to remove. They will be of the dissolving type.

Your incision may be slightly red along the cut. This is normal. You may gently wash dried material around your incisions and let water run over it. Pat them dry with a towel. Do not rub soap or moisturiser into your incision for at least 4 weeks or until it is fully healed. After this you may rub vitamin E cream along the wound.

It is normal to feel a ridge along the incisions. This will go away. It is normal to have a patch of numbness under the wound. Over the next few months your incision will fade and become less prominent.

Length of Stay in Hospital

On average most patients will expect a 1 – 2 night hospital stay for routine gallbladder surgery. For open gallbladder surgery, expect to stay 3-5 days.

Time off Work

Most patients will find they need 7-10 days off work. For open surgery you may need 2-3 weeks off. The main rate limiting step is fatigue.

Other Important Information

You can expect to see me every week day. On weekends or in times when I am operation elsewhere in an emergency, you will see one of the practice partners. All are very experienced in this type of surgery and commonly assist each other in the operating theatre. I will make every effort to keep you informed of your progress. I am always honest and open with you and your family. Feel free to ask questions.

AFTER DISCHARGE

What can I eat after I have my gallbladder removed?

There are no significant restrictions to your diet. As discussed, a low fat diet is considered to be healthy and a very fatty meal may initially result in diarrhoea. This is not harmful, just uncomfortable. Try to eat lower fat options and this is a lifelong recommendation for healthy living. Try to avoid alcohol for a week or two after surgery.

How you may feel

It is quite common to feel very tired and to want to have daytime naps for the first 2 weeks after surgery. Listen to your body and rest when you need to.

This is transient and can be expected to resolve in 2 – 4 weeks.

Activity

Do not drive until you have stopped taking narcotic pain medication and feel you could respond in an emergency.

You may climb stairs.

Do not lift more than 10kg for 4 weeks after keyhole surgery. (This is about the weight of a briefcase or a bag of groceries) This also applies to lifting children, but they may sit on your lap. It is fine to lift small babies.

You may start some light exercise like walking when you feel comfortable.

You may swim after 2 weeks

Heavy exercise may be started after 6 weeks - but use common sense and go slowly at first.

You may resume sexual activity when you feel ready.

WHAT PREPARATIONS DO I NEED TO MAKE BEFORE MY SURGERY?

Hospital

The hospital will call you the day before your operation to confirm your admission time.

Fasting

You must have nothing to eat or drink for six hours prior to surgery. (You may take sips of water up until 2 hours before the operation and you may take your medications with a sip of water). You must not chew gum or smoke on the day of the operation.

Medications

- If you are on blood thinners such as Aspirin, Warfarin, Plavix, Iscover, Clopidogrel, Pradaxa, Dabigatran, Rivaroxaban, Xarelto or anti-inflammatory drugs (Brufen, Mobic, Voltaren, etc), they can cause bleeding during surgery. I will advise you about what to do with these drugs prior to surgery. You must let us know about these drugs and the decision to stop them is based on each individual patient's needs.
- Diabetic medications: I will give you advice on whether to take your diabetic medications on the morning of surgery or not. Some diabetics will be admitted the night before the operation and be looked after by a diabetic doctor.
- If you are on Prednisone, you should not stop this drug suddenly.
- Cholesterol lowering medication should not be taken when you are fasting.
- If you are taking any alternative medications e.g. St John's Wort, fish oil or garlic, you should stop these tablets one week before surgery as they may result in excess bleeding.
- You may continue to take a multivitamin.
- Continue to take all other medications, even on the morning of surgery with a small sip of water.

Other things to know

- You must bring all relevant x-rays to the hospital with you.
- If you smoke, it is in your best interests to stop completely as soon as you can. See your GP for alternatives or call Quitline (13 18 48) if you wish to seek advice.
- You should also abstain from drinking alcohol 24 hours prior to any surgery.
- Bring all your current medications with you to the hospital.
- Bring comfortable pyjamas, personal toiletries, small change for newspapers etc.
- Do not bring large amounts of cash or valuables.

WHAT WILL THIS SURGERY COST?

I largely work as a 'no-gap' doctor. This means that the surgeon fee for your operation will be sent to your health fund and there will be no 'gap' or extra amount of money to pay. There are always exceptions and decisions regarding this are made on a case-by-case basis.

If you do not have private health insurance or if you have overseas insurance, you will be given a quotation for surgery, anaesthetic and hospital fees and must pay in full **prior** to the operation.

There will be an out of pocket charge from Queensland X-Ray for the x-ray performed during your operation. You are welcome to discuss this with them on 3421 0444.

Outpatient consultations are not covered by the health funds and there will be a charge for these meetings. You will get a proportion of this money back from Medicare. There is no fee to be paid for normal care after the operation.

There may be other out-of-pocket fees from your anaesthetist and any other specialists who are asked to look after you. You should ask them ahead of time any out-of-pocket costs. Ask us who will be performing your anaesthetic and you can make enquiries with them about any out-of-pocket expenses.

There may be extra costs for x-ray, pharmacy and pathology. You have a right to gain 'informed financial consent'. Fees from other practitioners are beyond our control and you should ask for the costs from each person who is asked to look after you. Patients have a choice when it comes to paying for their health care and you are fully within your rights to shop around.

ABOUT YOUR SURGEON

Dr Kellee Slater MBBS (Hons) FRACS

2006 – Present	Staff Surgeon Hepatopancreatic-Biliary-Liver Transplant, Princess Alexandra Hospital, Greenslopes Private Hospital, Royal Children's Hospital, Brisbane, Queensland
2004 – 2006	Hepatobiliary and Liver Transplant Fellowship Princess Alexandra Hospital Brisbane, Queensland
2002 – 2004	Liver and Kidney Transplant Fellowship University of Colorado Hospital Denver, Colorado, United States of America

2002

Fellow of the Royal Australian College of Surgeons (FRACS)
General Surgery