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Gallbladder Liver Pancreas

Brisbane Liver and Gallbladder Surgery
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LAPAROSCOPIC CHOLECYSTECTOMY & INTRA-OPERATIVE CHOLANGIOGRAM
(REMOVAL OF THE GALLBLADDER)

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

YOUR ADMISSION DETAILS:

Your admission date is: ______________________

On your arrival to hospital, present to Admissions at the designated time. From the main entrance of the hospital, there is a pharmacy on the left. At the end of the pharmacy, there is a lift. Take this to Level 1. This is Admissions.

You will need to stop eating food from: ____________________________

Drink the 2 DEX between: _____________________________

You can drink CLEAR fluids until: _____________________ then it is NIL BY MOUTH.

Your operation date is: _________________________

The Rooms will call you a day prior to when you are due to enter the hospital to confirm your admission time and when to start fasting.

Register your admission to confirm your personal details and health history.

This must be done at least 48 hours prior to your admission. It can be done in two ways:

You can complete the admission form online at:

http://www.greenslopesprivate.com.au then click on the ONLINE ADMISSION button

OR

Call Greenslopes Private Hospital Admissions on phone 1800 777 101.

Monday to Friday 8am – 7:30pm or Saturday 8:15am – 12:45pm.

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A word before we start......
This is a very extensive document and everything I have ever been asked about 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 your 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?

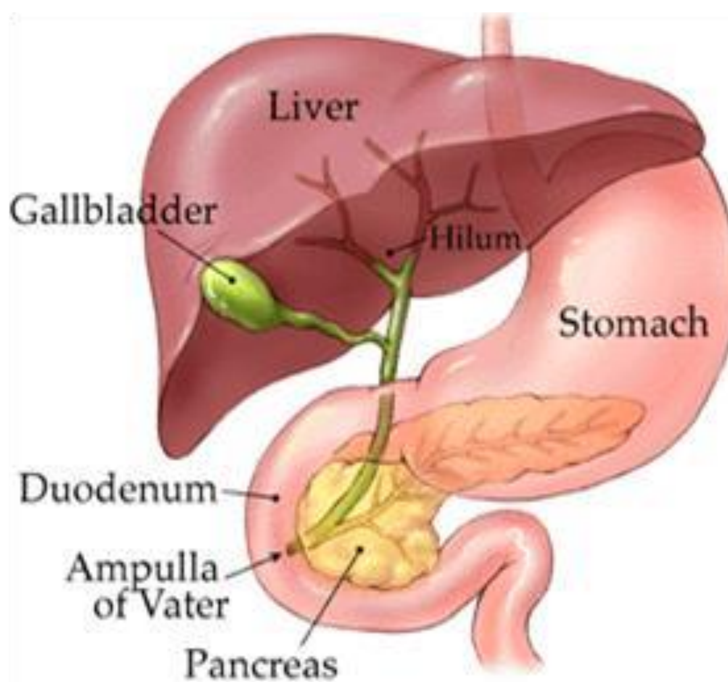
Gallstones are a very common human ailment and if they are causing pain, then it is time for you to have the stones and your gallbladder removed. The gallbladder might also be removed for polyps, cancer or during major liver surgery.

Gallstones can cause many symptoms including severe pain and infections. Less commonly, gallstones can cause jaundice or life-threatening inflammation of the pancreas. They can also erode their way into the bowel.

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. It may be your choice to have your gallbladder and stones removed before you ever have an attack.

WHAT DOES MY GALLBLADDER DO?

The gallbladder is attached to the undersurface of the liver, tucked up under the ribs. It is on the right side of the abdomen. The gallbladder does not make bile, the liver does that. The gallbladder's 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, ejecting a little extra bile into the bowel to digest the fat.



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WHAT CAUSES GALLSTONES?

We are not entirely sure why stones form in the gallbladder, but it seems to have something to do with the hormone oestrogen. Stones 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. Oestrogen seems to slow down the contraction of the gallbladder and this causes the bile in it to stagnate and form sludge. Sometimes the sludge moves on, but sometimes it builds up and stones will develop. This process can occur very quickly during pregnancy, weight loss or illness. Stones are also more common in diabetics, after weight loss surgery and if you carry too much weight.

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. In most patients with stones, if they think carefully, they would have experienced an episode of pain or discomfort.

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 of the gallbladder and gets temporarily stuck.
2. **Fever**: may be due to an infection in the gallbladder because a stone is stuck or if a stone has gotten out of the gallbladder and into the bile duct. This needs urgent attention.
3. **Jaundice**: yellowness, best seen in the whites 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 main bile duct. This 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 is usually fatal.

WHAT IS THE BEST TEST TO DIAGNOSE GALLSTONES?

Gallstones are best seen on ultrasound. CT scan does not see stones very well.

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.

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CAN I LIVE A NORMAL LIFE WITHOUT MY GALLBLADDER?

Yes. Most people who have their gallbladder removed just feel so much better, they will not get any more terrible pain or have nights spent in Emergency Departments. There are no known long-term consequences of removing the gallbladder – we have been doing it for decades. If the gallbladder has stones, it is already functioning badly and you are already living without it. The bile duct that runs between the liver and the small bowel enlarges slightly 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. Some people experience 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?

Australians are some of the most overweight humans 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 more fat than 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 found when they are having a scan for another reason. Traditionally, surgeons have been taught to leave gallstones alone unless they are causing problems. For many people though, if they think hard enough about it, there has been an episode of pain even many years ago that you may have put out of your mind. Many people choose to be proactive and remove their relatively asymptomatic stones before they attack again. There are other very good reasons to remove stones, even if you have not been having serious pain.

These are:

- Patients <30 years old.
- Patients with serious health problems like heart valve or heart disease so the surgery can be done in an organized 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.

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WHAT IF I HAVE GALLBLADDER TYPE PAIN AND NO STONES?

This is a relatively common problem. When a patient has the typical right sided abdominal pain but no stones, we will do some tests to check 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 both you and your baby’s life.

X-ray is usually required during the surgery for removal of the gallbladder and every effort is made to cover the baby with lead shields to minimize the exposure.

Like all surgery during pregnancy, there is a risk to both mother and baby of premature labor, death of the baby and the possibility of cerebral palsy. Severe gallbladder infection also carries these risks.

If your symptoms are mild, I will take your gallbladder out 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.

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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 at all, but they can also 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 any stones from the bile duct at the time of the operation. This is frequently achieved by keyhole surgery. Occasionally, when this is not possible, I will need to make a bigger cut and do an open operation. 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:

- Stones can be broken into small fragments with a shock wave machine (lithotripsy). The danger in this technique is that the small stone fragments can block the flow of bile from the liver as they pass down the bile duct and may cause 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 to have 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 working 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, you should have your gallbladder removed. If there is no pain, I 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.

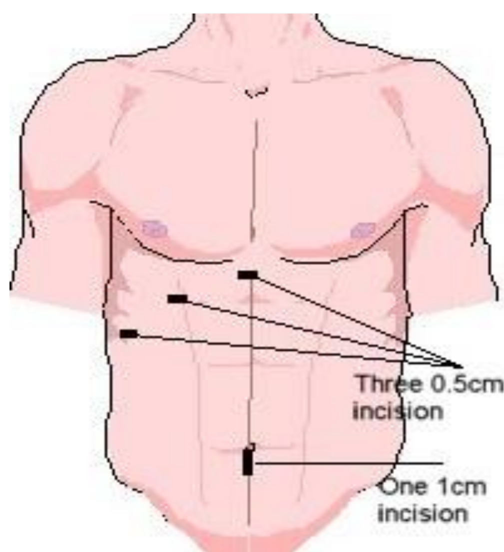
FATTY LIVER DISEASE

Fat in the liver is visible during the operation to remove your gallbladder. I will let you know how your liver looks after the surgery.

- Fat accumulating in the liver is a very common problem. 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 – just like alcoholics get. 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.
- Most fatty liver disease can be reversed with weight loss and cholesterol management.
- It makes the surgery more difficult because the liver is very fragile and may split and bleed during the operation.
- The causes of fatty liver 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 frequently with laparoscopic or "keyhole surgery".



Small incisions are used in keyhole surgery

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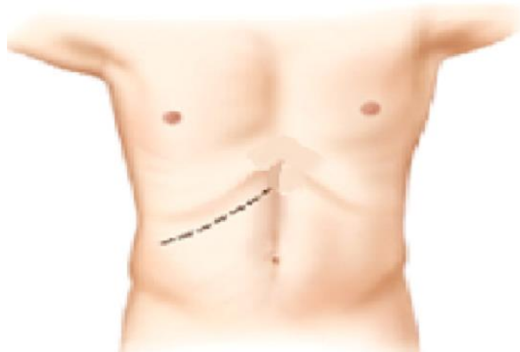
The operation begins by making four or more small (5 – 10mm) incisions on the abdomen. Carbon dioxide gas is pumped into the abdominal cavity to open it up, giving me a space to operate in. A fibre-optic telescope and long instruments are used to remove the gallbladder.

An 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 me to check the layout of your bile ducts.

The stump of the gallbladder and the gallbladder artery is secured 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 an 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 and 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 during keyhole surgery. Occasionally, I will need to do this 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 visualize 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 are very rare. Complications are dealt with on a case by case basis.

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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. There may also 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.
- 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 I must 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 gallstones that may have spilled in the abdominal cavity during the operation. This is a frequent and normal event during a difficult gallbladder operation. Rarely, one of these stones may be left behind and form an abscess in the abdomen 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 minimize your discomfort. Your surgeon and nurses will be monitoring your level of pain control frequently.

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It is very common to have pain in the right shoulder after keyhole surgery. This is because 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 that does not cause constipation.

   Must be used very cautiously in the elderly and those with kidney problems because it may 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, Endone (narcotics)**

   It is uncommon to need one of these medications for more than a day after the 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 coming out of your abdomen. It is usually removed the day after surgery. If there is any bile in the drain, it will be left in until the drainage stops.

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Eating

If it was a routine gallbladder operation, you will be allowed to have fluids as soon as you are awake and alert. You can eat food the next day. It is very common to feel nauseated for a day or two following surgery.

Urinating/Bowel Movements

After any surgery a patient may have trouble passing urine. This is not common and if it occurs,it 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 moisturizer 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.

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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 limiting factor is fatigue.

Other Important Information

You can expect to see me every week day while in hospital. On weekends or in times when I am operating elsewhere in an emergency, you will see one of the practice partners. All are very experienced in this type of surgery and we 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 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 can respond in an emergency.

You may climb stairs and start some light exercise like walking as soon as you feel comfortable.

You may swim after 2 weeks

Really heavy exercise may be started after 6 weeks. Use common sense and go slowly at first. You will need to regain your fitness and do not do it if your body is hurting.

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 or contact you via email in the week before your operation to confirm your personal details and medical history.

Fasting

You must have nothing to eat or drink for six hours prior to surgery. (You may have a drink of clear liquid (see through) or the carb drinks we have given you up to 2 hours before the operation. 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 as 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, krill 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.

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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 which must be paid 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 about 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.

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YOUR JOURNEY THROUGH THE OPERATING THEATRE

HOW YOU MAY FEEL BEFORE SURGERY

Having a general anaesthetic (being fully put to sleep) can very scary for some people. It brings up issues about loss of control. People worry about what may happen when they are asleep.

Having an anaesthetic involves a lot of trust and in the end you will have to take a leap of faith and believe that you have chosen a team that will look after every part of your body. You should read this article if you would like to know exactly what goes on just before, during and after an anaesthetic for major surgery. For some people, understanding precisely what happens in the operating room brings a sense of calmness.

CHECKING INTO THE OPERATING THEATRES

You will be greeted at the front desk by one of our friendly executive staff who will do the administrative paperwork. They will also collect any hospital excess you may have to pay. Please bring your health fund and Medicare cards. They will also want to know about your next of kin. With your permission I will call a nominated family member at the end of the surgery and the recovery nurse will also let them know when you are ready to go to the ward.

For major surgery, it is best that you remove ***all*** your normal clothes including your underpants and bra. This is so we don't lose them or mess them up with blood or antiseptic fluid during your surgery. You will meet one of the pre-op nurses who will help you change into your glamourous theatre gown and paper underpants. For abdominal operations, it is very common that you will wake up completely naked i.e. without your paper underpants. We often remove them in the operating theatre to keep them away from the area we are operating on. Your modesty will be protected as much as possible. Contrary to what you see in the movies, your bottom will not be on view out the back of your gown. Hospital robes wrap around your rear.

You will be measured and fitted with white, knee high stockings to prevent clots in the legs. For some operations, you may have a pair of pneumatic leg warmers placed on your calves to gently massage your legs while you are asleep. This prevents clots in the legs. The look is complete with a puffy paper hat. Any jewelry you would like to keep wearing, like a wedding band will be covered with tape.

You will be weighed and your temperature, blood pressure and pulse will be checked. You will be asked about your allergies and will be given an ID band that will stay on for your entire stay. The nurse will ask you if there are any implants or metal in your body. We ask this because we need to place an earthing plate on your body during the surgery and need to place it away from any internal metal.

You will then go through many repetitive identification processes to make sure we have the right patient and that everyone agrees on the operation you are having done. You will be put on a bed and you will wait and wait and wait until it is your turn to be called into

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theatre. This waiting can be quite stressful, and you will feel hungry. You may want to bring something to do during this time. There is also a TV to watch and magazines to read. Rest assured we are moving as fast as we can and because unexpected events happen all the time, delays in hospitals are inevitable. It is possible to develop a headache due to caffeine withdrawal. This is not harmful, and you may have two Panadol with a sip of water to help.

Your clothes, glasses, valuables will be put into a bag and your belongings will be put into a locker whilst you are in theatre. You will be reunited with them when you return to your room in a ward or intensive care. If you have come to theatre from the ward, your belongings will stay in your room and await your return. If you are going to intensive care after the surgery, your belonging will travel with you.

Why do I have to starve before surgery?

For an arranged operation, you must have absolutely nothing to eat or drink for six hours before you go to sleep. When you have an anaesthetic, all the muscles in your body relax. If you have food in your stomach, it can reflux back up into your mouth and even worse, your lungs. This can produce a life-threatening pneumonia. You must also not chew gum prior to surgery as this increases the fluid in your stomach. You may drink clear liquid up until 2 hours prior to your operation. I may give you a sugary drink two hours prior to surgery to help you feel less thirsty and speed up your recovery. It is OK to take your normal medications with a sip of water any time before surgery. It is also fine to brush your teeth.

Special circumstances

There are a few instances where certain precautions take place.

Latex allergy:

Please let the admission nurses know if you have a latex allergy. We need to remove all the latex products from the operating theatre to protect you.

If you take certain medications:

If you have recently had chemotherapy or take immune suppressing drugs like azathioprine or methotrexate, special measures will be taken to protect staff members against coming into contact with these drugs.

If you have certain bacteria on your skin:

Many people have bacteria living on their skin that have been given special names by hospitals. It is likely you will know this from a previous hospital admission. This does not mean you have an infection. We all have bacteria living in and on our bodies, some just have special names and some have a higher chance of being resistant to some antibiotics. It is best if these bacteria are not passed onto other patients as it promotes antibiotic resistance. If you are MRSA "golden staph", VRE, CRE or MRAB positive, then isolation precautions will be taken throughout your stay in the hospital.

If you have false teeth or plates:

Please leave these in. It makes it easier for the anaesthetist to help you breathe as you go off to sleep. If needed, the anaesthetist will remove them after you are asleep and they will be returned to you in recovery.

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TAKING YOU INTO THE OPERATING THEATRE

You will be wheeled around to the operating room by one of the theatre orderlies or a nurse. This is where you will say goodbye to your relatives. They will be next able to see you when you return to the ward. Because there are other patients in the recovery unit, relatives are not permitted.

The next stop is the anaesthetic room. This is a small cubicle adjoining the main operating theatre. The orderly will hand you over to the nurse assisting the anaesthetist. You will then have another identification check (you will be very good at reciting your name by this point).

Then the anaesthetist will arrive. They are the person with the good drugs that will make you relaxed, so be nice to them! If they have not met you earlier, they will go through your medical history again and what to expect. They may also explain some risks of anaesthesia, but because you have read this book, you will be aware of them already. This is not meant to scare you. It is our job to tell you about the good and bad aspects of surgery.

The only thing that will go into your body while you are awake is a small plastic tube in your hand called a cannula, drip or IV. This is a small needle and will hurt for a second or two. When it is in the vein, the needle is taken out and a soft plastic tube is all that is left. Once in, you should not be able to feel it. It is secured with tape and you may move your arm. The drip is used to give the medication that will put you off to sleep. If you are having an epidural for post-operative pain relief then this will be done prior to going off to sleep.

Occasionally, some patients have a severe needle phobia. This one small needle can create terrible anxiety. If this is the case, we can sometimes give the anaesthetic without a needle at the beginning. This is done by asking you to breathe on gas for a few minutes. You will drift off to sleep. The IV is placed once you are fully out and you will know nothing about it. This is a slower way to go off to sleep, but for some people avoiding a needle while awake makes a big difference.

Once the IV is in, you will be taken into the main operating theatre. This can be a confronting place too. There are usually 5 - 10 people in the room, all wearing masks and talking. We are all there to look after you. Most operating theatres are set up in a predictable way. There will be an anaesthetic machine with all the monitors to ensure you are safe. There will be several tables filled with surgical instruments ready to perform your surgery. There will also be nurses preparing this equipment and counting each and every instrument to ensure that nothing is missing at the end of your operation. There may also be junior medical staff and orderlies. The operating table is in the middle of the room under big lights. They will not be turned on until you are asleep. The table is narrow and cold. It is narrow because we need to stand close to you to operate and it won't be cold for long because during the surgery you will covered with a heating blanket.

The trolley you are on will be placed beside the operating table and if you are mobile, you will be asked to move yourself across onto it. The nurses will make sure you are not lying on your gown as it will usually need to be moved aside to expose the area we need to operate on. If you are in pain or not mobile, we will slide you across to the operating table on a special board or float you over on a noisy hover mattress. A lot of activity will then

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happen around you. We will place padded boards on the side of the bed for you to rest your arms on. Your leg massagers will be hooked up and switched on and you will feel a gentle compression on your calves.

You will have three stickers placed on your forehead. This helps the anaesthetist monitor how deeply asleep you are. Sticky dots to monitor your heart beat will be placed on your chest. Fluid will be hooked up to your IV line and a clip that reads your pulse placed on your finger. A blood pressure cuff will be wrapped around your arm and the first time it takes your blood pressure, it will inflate very tightly. It will only do that once.

You may already be feeling happy, drowsy or talkative as the anaesthetist may have given you a relaxing medication via the IV. You will not go to sleep yet, but it is unlikely you will remember anything after this until you wake up in recovery even though you will continue to talk to us.

WHAT HAPPENS DURING AN ANAESTHETIC

Sometimes knowing what happens during an anaesthetic really helps you relax and realize that you are well taken care of while you are asleep. Many people's greatest fear is the anaesthetic. They worry about vomiting afterward, being aware during surgery and not waking up. Whilst these things very, very rarely occur, having an anaesthetic is actually far safer than anything you have already done that day, like driving into the hospital.

General anaesthetic consists of three phases

1. **Going to sleep – similar to taking off in a plane**

   Just before you go to sleep, the anaesthetic nurse will ask you to breathe into a mask and fill your lungs with oxygen. This makes sure that you have the maximal amount of oxygen in your blood. This does not put you to sleep. A white medication called Propofol is then given through your IV. The anaesthetist will ask you to keep your eyes open. As this medication goes into your veins, it can cause a stinging sensation in your arm. This is normal and does not damage you. After this injection you will be asleep in about ten seconds. Your breathing will temporarily stop and the anaesthetist will take over your breathing for you by blowing oxygen into your lungs. As soon as you are asleep and if you are having abdominal surgery, the anaesthetist will give a medication that stops your muscles moving. This has many functions. It allows your throat to relax so the anaesthetist can safely place the breathing tube into the windpipe. It also relaxes your abdominal muscles and makes surgery on the abdomen easier. If you have false teeth, they will be removed at this point and returned to you in recovery.

   As soon as the muscle relaxer has worked, the anaesthetist will use a special tool called a laryngoscope. This is a smooth spatula with a light that is inserted over your tongue and deep into your throat. The anaesthetist will be able to see your vocal cords and beyond this is your trachea or windpipe. A specially designed hollow tube is placed down the spatula and into the wind pipe. A balloon on the end of the tube is inflated by the nurse to fully occlude your airway and stop any vomit or secretions from entering your wind pipe.

This is often the trickiest part of the anaesthetic and your life can depend on it. There are many signs the anaesthetist will look for before you go to sleep to predict whether getting this tube down will be difficult or not. If you have a small jaw, previous difficulties with intubation, neck problems, difficulty opening your mouth, the anaesthetist will be ready with a different strategy to get the tube down your throat safely. Because your breathing is our number one priority, occasionally putting the breathing tube down can result in damage to your teeth or cuts to your lips. All care is taken and this is uncommon. Having a tube in your throat can leave it sore and dry for a day or too. This is transient. You may also have a swollen uvula (the dangly bit at the back of your throat) for a few days.

Before the surgery starts, if appropriate, you will be given a dose of antibiotics via your drip to help lessen the risk of wound infection. Soft tape will be placed over your eyes to keep them closed and protected. There are other devices we use to monitor your wellbeing during surgery. Tubes like urinary catheters and IV lines will now be placed. Your arms and legs will be padded to protect your pressure areas and you will be positioned for surgery.

2. Staying asleep during the surgery – cruise control

You will be kept asleep by anaesthetic gas piped in via the tube in your windpipe or by a continuous infusion of Propofol in your drip. The anaesthetic machine will steadily and precisely breathe for you. Your anaesthetist will never leave your side and constantly monitors your vital signs. They will give you small doses of medications and fluids to keep everything steady.

3. Waking up – landing the plane

As the surgery comes to an end, the anaesthetist will give you strong dose of pain killer, so you will wake up in comfort. They will turn the gas off and give a medication to reverse the paralysis. While you are still asleep, you will be transferred onto your bed. When you are breathing by yourself, the anaesthetist will remove the breathing tube and suction your throat. Patients rarely remember this. An oxygen mask will be placed on your face and you will be wheeled out to recovery.

APART FROM THE SURGERY, WHAT ELSE HAPPENS WHEN I AM ASLEEP

If you have body hair on the area having surgery, it will be clipped off. Often a larger area that is needed will be shaved. An earthing plate will be placed somewhere on your body, so the electrocautery device can be used to stop bleeding as required. This will be removed before you wake up.

Just before surgery, everyone in the theatre will stop what they are doing and check once again your identity and the operation we are performing.

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WHAT SOME PEOPLE WORRY ABOUT BUT WERE TOO AFRAID TO ASK

What if I have my period on the day of surgery?

This makes no difference to you or us. Having a period is a normal part of life. I would suggest that you use a pad and not a tampon as it may be some time before you can change it. If you have any questions about this, ask the nurse who checks you in.

My bladder feels full – will I wet myself?

Just before you go into the operating theatre, many people feel like they need to pass urine. This is usually anxiety. If you have gone to the toilet in the waiting area, it is very unlikely that you will need to go again.
For big operations, we will put a tube in your bladder that will catch all your urine. If you are having a smaller operation and still need to go once you reach the theatre, the nurse will take you to the bathroom.
It is a fact of life that some people occasionally wet themselves during the operation. It does not bother us and you will be cleaned up before you go to the recovery room.

What if I think I am pregnant?

You must let us know at check in, even if you are only suspicious. If you are pregnant it is likely we will delay the surgery. If you are not sure, there are quick pregnancy tests available to check. It is essential that we know because the surgery and anaesthetic drugs can harm your unborn child and even lead to miscarriage.

I always vomit after an anaesthetic

Nausea and even vomiting can happen after an anaesthetic. It is such an unpleasant feeling that it may be an enduring memory of previous surgery. Post anaesthetic nausea is more common if you suffer with motion sickness. Your anaesthetist will discuss this with you and there are many strategies to avoid this troubling side effect.

What if I am breastfeeding?

Breast feeding should not stop you from having a surgery you need. Very small amounts of anaesthetic and pain relieving drugs will pass into your breast milk. Theoretically, this is low risk for your baby. Anaesthetic guidelines suggest you pump and discard breast milk for 24 hours after an anaesthetic. Your baby will need to be fed with previously pumped milk or formula. It is almost certainly perfectly safe however to feed your baby less than 24 hours later. Whether you are up to it of course is another matter. Occasionally, surgery may cause a decrease or even cessation of your milk supply.

Who will be in the operating theatre with me?

It is necessary for your safety for a number of staff, both male and female to be in the operating theatre both before and during you surgery. In addition to your surgeon and anesthetist, there may be junior doctors, a number of nursing staff, theatre orderlies and x-ray technicians. As this is a teaching facility there may be medical students present.

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All of these staff are highly professional. There are definitely moments where you will be exposed whilst preparing you for surgery, but extreme efforts are made to preserve your modesty.

Do you play music while I am asleep?

No. We are concentrating on your care. Music tends to be a distraction. There are many sounds of machines and monitors in the operating theatre and we are listening to those. We also need quiet to enable communication between staff.

What if my bowels work while I am asleep?

This is quite uncommon. If it does occur however, you will be cleaned up prior to moving to recovery.

I am worried about waking up during the operation

Awareness during anesthesia is exceptionally rare. Making sure you are fully asleep is the anaesthetists' main objective. There are a number of monitors and alarms that you will be hooked up to absolutely ensure that this doesn't occur.

I am on the oral contraceptive pill

There is a medication given as the end of some anaesthetics that can interfere with the effectiveness of the pill. Please tell your anaesthetist if you are on the pill. If the medication is used, then you will need to use an alternate contraception for two weeks to avoid pregnancy.

I am worried about my memory after the anaesthetic

There is no doubt that a condition called post anaesthetic cognitive disorder is a real thing. It is more common on patients over 60 and it can result in memory loss that may be permanent. It is not fully understood. If you have concerns, your anaesthetist would be happy to discuss it with you.

RECOVERY – THE WAKE-UP ROOM

When you wake up, is likely that you will be wearing a gown but be completely naked underneath. You will be covered with a blanket.

The recovery room is the first thing most patients will remember after going to sleep. It will almost be like no time has passed.

You will have a nurse by your side monitoring your vital signs. You will stay in recovery until you are fully awake and your observations are within normal limits. The nurse will monitor your pain and keep you comfortable.

If you have a catheter in your bladder, you may feel a need to pass urine. This feeling will go away.

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As you wake up you may have a tube in your throat that the nurse will remove. It is unlikely you will remember this.

If you snore you may have a small tube in your nose or mouth to help you breathe until you are fully awake.

If you have false teeth, they will be returned to you in recovery.

Your family is not allowed in recovery so we can respect the privacy of other patients.

RETURN TO THE WARD

When you return to the ward you may be drowsy, nauseated or in pain. Your nurse will be monitoring these things closely.

They will be checking you pulse, blood pressure, temperature and dressings regularly for abnormalities.

There is a very strict criteria of observations that the nurses must follow. If you fall outside these criteria for any reason the nurses must notify the medical team. Very often this is just a false alarm. It may sometimes seem dramatic, but it is done for your safety.

If you are on strong pain killers like morphine or Fentanyl you will be required to wear an oxygen mask.

HOW DO I HANDLE MY ANXIETY?

Every person suffers from some level of anxiety. You are not human if you do not. Having an operation is up there in the top ten of major life events. A little bit of anxiety can be good thing. It can make you hesitate before taking a misstep. When anxiety gets out of control however, it becomes a medical problem and stops you doing things that you should or want to do. Some people suffer anxiety about many things and for some it can be an issue only in certain situations.

Common symptoms of anxiety are

- Overwhelming negative thoughts
- Sleepless with worry
- A constant stream of bad thoughts “the chatter”
- Physical symptoms such as chest pain, nausea, headache

There are many techniques to address your anxiety. There are mindfulness, meditation and distraction techniques. Sometimes anxiety is so bad that medication is needed.

It is normal to be anxious before surgery but if the feeling of anxiety is overwhelming please talk to me or your GP about it. Help and suggestions are also available at Beyond Blue: www.beyondblue.com.au

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ABOUT YOUR SURGEON

A/Prof Kellee Slater MBBS (Hons) FRACS FACS

2018	Associate Professor University of Queensland
2015	Fellow of the American College of Surgeons
2017-2019	National Chair of the Australian Board in General Surgery
2006 – Present	Staff Surgeon Hepatopancreatic-Biliary-Liver Transplant Princess Alexandra Hospital and Greenslopes Private 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
1989 – 1994	MBBS (Honours) University of Queensland