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## **ABDOMINAL WALL RECONSTRUCTION AND MAJOR INCISIONAL HERNIA REPAIR**

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

### **YOUR ADMISSION DETAILS:**

**Your admission date is:** \_\_\_\_\_

**Date of your operation:** \_\_\_\_\_

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/For-Patients/online-admission-form.aspx>

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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## WHAT IS A MASSIVE INCISIONAL HERNIA? WHAT PROBLEMS DO THEY CAUSE?

The abdominal wall has many functions. It protects the bowels and abdominal organs. During urination and bowel movements it helps to push the waste out. These muscles are also responsible for posture and movement.

An incisional hernia occurs when there is a hole in the deep layers of an old surgical scar. As the muscle layers separate, a piece of bowel or fat from inside the abdominal cavity may protrude through this hole. A hernia will appear as a lump in the surgical scar and become more prominent when standing up. The lump may disappear or become smaller when lying down. Hernias come in all shapes and sizes.



Diagram 1. Illustrates how the bowel protrudes through a hole in the deep muscle layer beneath a surgical scar

A massive incisional hernia often occurs after serious or repeated abdominal surgery. The muscles that have been stitched together after the operation come apart and allow the bowels to protrude through. A typical massive incisional hernia patient will have spent a long time in the hospital and will have suffered many complications. There may be open wounds on the abdomen. There may be bowel or stomas coming to the surface of the skin leaking mucous or faeces. Normally muscle and skin cover the bowels entirely, but when an incisional hernia occurs, there may be a wide gap between the muscles and the bowels may protrude, covered only by a thin layer of skin or skin grafts. In extreme cases, the bowels may sit completely outside the abdominal cavity. The bowels may even be exposed to the air and their only protection might be a special dressing.

When there is a massive incisional hernia, the abdominal wall does not perform its normal functions. The bowels may be very susceptible to injury. Bowel that has no coverage is at risk to developing holes called fistulas. Faeces will flow out of these holes and onto the skin. This is a very challenging problem to fix. The other feared complication of a large incisional hernia is when a piece of bowel becomes trapped in scar tissue and causes a bowel obstruction or even worse, loses its blood supply and dies. This is a surgical emergency and can be life threatening. Symptoms of this include sudden, extreme pain in the hernia, inability to push the hernia back in, vomiting or redness over the wound. This

can be a catastrophe for a patient with a massive incisional hernia as any surgery needs to be well planned.

In addition, living with a massive incisional hernia makes simple tasks like sitting up, walking and having a bowel movement very difficult. Finally, massive incisional hernias are cosmetically unappealing.

## WHAT CAUSES A MASSIVE INCISIONAL HERNIA?

There are many factors that contribute to a hernia.

- Poor wound healing after surgery
- Many operations via the same incision
- Wound infections after surgery
- Obesity
- Diabetes
- Operations for severe pancreatitis
- Colostomy or stomas
- Long term Prednisone or immunosuppression drugs

Patients with these types of hernias are very special. They have usually had life threatening surgical problems and may have been unwell for many months. They will have had multiple procedures and can be very run down.

## HOW ARE MASSIVE INCISIONAL HERNIAS TREATED?

Massive incisional hernias will not go away without surgical treatment. A great deal of planning must go into repairing a hernia like this. Each case is individual and there is no “one size fits all”. Patients with massive incisional hernias must be fully rehabilitated before an attempt at surgery is made. This is sometimes several years after the event that caused the hernia. Repairing someone’s abdominal wall may require the input of many other specialists including plastic surgeons, dietitians, physiotherapists, wound nurses and psychiatrists.

Incisional hernias can be extremely difficult to repair because the tissues we are working with are stretched thin and have very little strength. There may have been previous attempts made at repairing these hernias and this can make the surgery more complicated. A good way to think about fixing a hernia is to liken it to patching a hole in a plaster wall. The edges of the hole are difficult to pull together, so a patch or “mesh” is placed behind the defect. This reinforces the weakened tissue and muscle. The mesh can be made of several different types of material (see below). The mesh becomes incorporated into the body and adds extra strength. The mesh can be used in a variety of ways but it is usually placed against the muscle inside the abdominal cavity. A combination of stitches and staples can be used to hold the mesh in place. The weakened muscle layer is then pulled closed over the top of the mesh. The aim is to try and bring the muscles together to reconstruct the abdominal wall to the way it was. These tightened layers will eventually weaken again and the mesh is there to bridge the gap as they separate.

Massive incisional hernias are mainly repaired with an open operation i.e. a big cut often through the previous scar. Sometimes keyhole techniques will also be used to help the muscles come together. These hernia repairs involve carefully separating the small bowel from the abdominal wall. Sections of bowel may need to be removed to repair fistulas and sometimes more than one operation is required. These operations can take hours.

Most often a variety of creative techniques are required to repair these hernias.

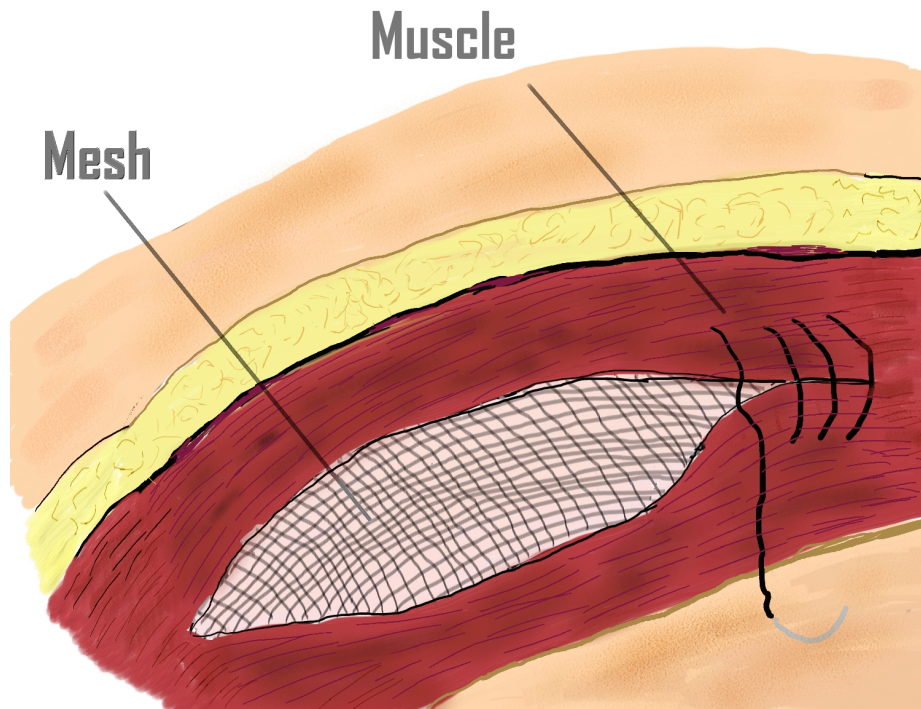


Diagram 2. This is how the mesh is inserted underneath the muscle layers.

### **Chronic Pneumoperitoneum**

Sometimes the abdominal muscles are so far apart, that the bowels and other organs may protrude forward and sit permanently outside the abdominal cavity. This is called “loss of domain”. The bowels may be out of the abdomen for so long that there is no longer space in the abdominal cavity. For this problem, it may be possible to use a technique called “Chronic Pneumoperitoneum”. This is a labour intensive procedure that might require a lengthy hospital stay. You may require more than one operation to pull the abdominal wall closed.

Under full anaesthetic, a small tube is placed in the abdominal cavity. You are then woken up and admitted to the ward. Each day several litres of air will be injected into the tube, effectively inflating the abdomen like a balloon. This technique increases the size of the cavity where the bowels should be, making way for their eventual return. This will also stretch the muscles sufficiently to allow them to close over the top of the bowels. Typically, air is injected daily for 2-3 weeks and then elective surgery is performed. You will be asked to wear a tight elastic garment to try and keep most of the air out of the hernia sac. This is major surgery with lots of risks. You will require intensive care after the operation because closing the abdomen like this can have an effect on your ability to take a deep breath for a while.

## **Laparoscopic or Open Component Separation**

When the abdominal muscles are separated by more than about 17cm, it will be impossible to pull the muscles back together to the midline. Something must be done to loosen the abdominal wall. The abdominal wall is made up of three layers. It is possible to release the tissue of one of the layers and this provides more “spring” in the abdominal wall. This is called component separation. This surgery can be done via the main surgical incision or with keyhole surgery via three cuts in both flanks. Most people will not notice that these muscles have been cut.

## **Scars and removal of excess skin or tummy tuck**

After the bowels are returned to the abdominal cavity, many patients will have excess skin. In addition, many people undergoing abdominal wall reconstruction may have a flap of fatty tissue that hangs over their genitals. This is called the pannus. It may be possible to remove this flap of skin combined with the hernia repair. This will involve a long incision across the bikini line from one hip to the other. It will leave a long scar and may need to be combined with a vertical incision in the middle of the abdomen to repair the hernia. Sometimes it is best to remove this skin a separate operation.

## **Multiple or staged operations**

If you have heavily infected wounds associated with your hernia or a colostomy, your abdominal wall reconstruction may need to be done with more than one operation. It is likely you will stay in hospital between operations.

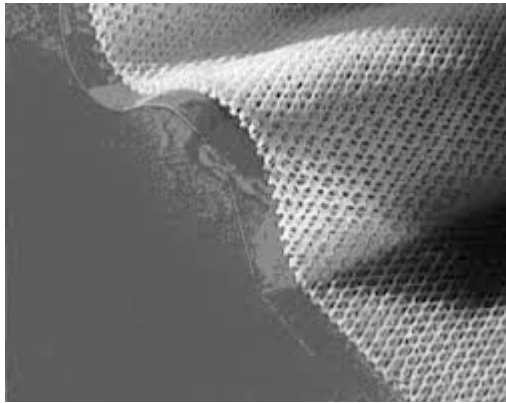
## **Flap repairs with the help of the plastic surgeons**

Some patients have had a loss of abdominal muscle so devastating that there is no hope of pulling the abdomen closed. Plastic surgeons can take a piece of skin and muscle from the thigh and rotate it up to the abdomen to fill the hole.

## **WHAT IS MESH?**

There are many types of mesh on the market and the choice will often boil down to surgeon preference and experience in using that type of mesh. Choice of mesh will also depend on whether active infection is present. Mesh falls into two main categories.

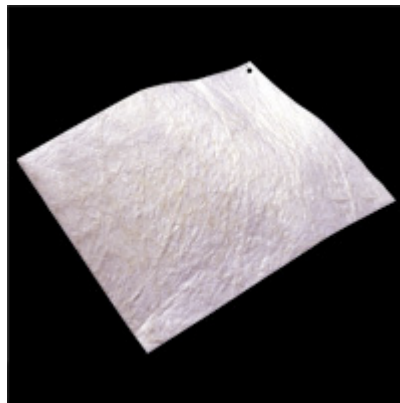
### **1. Synthetic mesh**



Parietex™ from Covidien

These meshes are made of nylon or polyester often coated with a dissolving material that can make these types of mesh safer to place in contact with the bowel. There are many different brands of mesh and one is not generally more effective than another.

## 2. Biologic mesh



Cook Medical Surgisis® Biologic Mesh

This type of mesh is made from highly purified animal products – usually pig and are mainly used in infected wounds.

## **ARE THERE ANY ALTERNATIVES TO HAVING INCISIONAL HERNIA SURGERY?**

There are no treatment alternatives for fixing incisional hernias other than surgical repair. Some people wear a support garment called a truss. This is an elastic band that attempts to keep the hernia in place. This will not fix the hernia and can be quite uncomfortable and hot. These garments are generally used when someone is unfit to undergo surgical treatment.

## **PLANNING FOR SURGERY**

### **WHAT IS THE PROBLEM WITH BEING OVERWEIGHT?**



- Obesity contributes to the formation of hernias because of the pressure created in the abdominal cavity by too much fat. As the pressure increases, it looks for a way to release and does this through the weakest point – a surgical scar.
- Most doctors measure obesity by a number called the Body Mass Index or BMI. This is calculated by taking your weight in kilograms and dividing it by your height in metres<sup>2</sup>.
- If your BMI is > 35 i.e. you are obese, the surgery is far more difficult and the risks of complications are far higher. If your BMI is > 50 there is a 100% chance the hernia will come back after repair.
- If your BMI is > 35, I will recommend a period of weight loss before you have surgery. I will work with you and we will set a realistic goal. You will not need to get down to a supermodel weight but you will need to show a commitment to this process. Weight loss is never easy and I strongly recommend you seek professional help for this. This may be with a dietitian or Weight Watchers.
- Obesity surgery: For some patients with a BMI > 50, diet strategies do not work and they may contemplate obesity surgery. This can be successful. Obesity surgery when there is a large incisional hernia present is not straightforward. A great deal of thought needs to be put into this decision and it is not suitable for everyone.

## SMOKING IS BAD TOO

You will not undergo incisional hernia surgery while you are still smoking. There is strong evidence that smoking leads to poor wound healing and failure of the repair. Many studies show that even stopping for one month before surgery makes a big difference to complications. Ideally, it would be great if you could stop smoking for good, but for this operation to be successful you need to stop smoking one month before and two months after the surgery. There is lots of help available and nicotine patches are OK to use prior to surgery. Electronic cigarettes are just as bad as smoking. See your GP for alternatives or call the Quitline (13 18 48) if you wish to seek advice.

## CONTROL OF DIABETES

It has long been understood that good control of diabetes is vital prior to major surgery to prevent wound infection and improve healing. I will be checking your HbA1C (blood test to measure your overall control). If it is over 8, I will ask you to see a diabetic specialist to improve your levels. Remember that weight loss will improve your diabetes and in some instances will cure it.

## WHAT CAN YOU DO TO HELP LOWER THE RISKS OF SURGERY AND HAVE THE BEST OUTCOME?

### Exercise or Prehabilitation

There is lots of good evidence that light exercise prior to surgery helps to reduce the risk of having complications after. Ideally, you should be trying to walk about 20-30 minutes at a moderate pace every day. I understand that for many hernia patients this is not possible but any physical activity will help. I will give you some exercises that I think are good. Remember that even small amounts of exercise help.

You could try:

- Walking around the block – even 10 minutes helps
- Riding an exercise bike or walking on a treadmill while watching TV
- Water exercises in a swimming pool (I can give you an exercise sheet for this)
- Use your Smartphone and set alarms to remind you to take some deep breaths or go for a walk
- See a physiotherapist or gym trainer to give you some other ideas.

## **Medications and supplements**

I recommend that you take:

- A multivitamin every day prior to your surgery (purchased from the chemist or the supermarket, any brand)
- A probiotic like Inner Health (from the chemist). There is lots of evidence to suggest this decreases the risk of post-op infections.
- Fibre supplement like Metamucil or Benefiber. These can be taken in capsule or drink form and are excellent to keep the bowels moving regularly prior to surgery.

## **Diet**

It is very important that you eat a healthy diet prior to surgery and for the rest of your life. Your body relies on what you put into it so it can heal and high protein food just before the surgery is very important. Most people think that they understand about healthy eating but it is rare that they have the full story. Typically, Australian's eat far more than their body needs. It is so much more than just avoiding fatty foods. I recommend that you see a dietitian prior to surgery for abdominal wall reconstruction so you can understand the principles of healthy eating.

## **WHAT TESTS MIGHT I HAVE BEFORE AN OPERATION IS CONSIDERED?**

Planning for a massive incisional hernia repair requires a number of tests. You must be medically and physically fit to undergo an operation of this calibre.

Some of the tests you can expect to have may include but are not limited to:

### **1. Blood Tests**

Full blood count, Kidney and Liver function tests. If you are diabetic, you will have your HbA1C checked with a blood test and it should be less than 8. If you have been a smoker, I will check a urine test to make sure there are no traces of cigarette smoke in your body.

### **2. CT scan of the abdomen**



Scan performed to inspect the state of the muscles of the abdominal wall and measure how far apart they are. It will also assess how much of the bowel is outside the abdominal cavity. This scan is also done to look for any undiagnosed problems in the abdomen like gallstones and tumours.

### 3. Colonoscopy

Bowel cancer is relatively common in our society (1 in 12) and if you have not had a colonoscopy (a telescope passed around the large bowel) this will be done to ensure you do not have an undetected cancer.

### 4. Heart and lung tests

These will be performed to assess your fitness for major surgery. This will depend on your age and other health problems. The tests may be an ultrasound of the heart (Echocardiogram), lung function tests and exercise tests. You may be asked to see a heart or lung specialist.

## **WHAT WILL MY ABDOMEN LOOK LIKE AFTER HAVING AN ABDOMINAL WALL RECONSTRUCTION?**

No surgeon can ever make your abdomen look the way it did when you were born. Your abdominal wall will always be scarred and lumpy. You will never have a so called “wash-board” appearance to your abdomen. The aim of incisional hernia surgery is to bring the muscles back together in the middle. This returns some function to the abdominal wall and gets rid of the unsightly hernia bulge. To do this usually requires the old scar to be re-opened and then several tiny cuts all over the abdomen to put in anchoring stitches for the mesh. If you have a large amount of excess skin then this will be removed in an attempt to flatten the abdomen as much as possible and give you the best cosmetic result.

### Seromas – fluid collections

Almost all incisional hernia operations will result in an accumulation of fluid under the surgical wound. This is expected and is not a complication. Frequently, one or more surgical drains will be left in the wound for a few days or even a few weeks to minimise this problem. Despite this, it is still common, for a leak of fluid to occur and this will often present as a lump under the wound several days and even weeks after surgery. Occasionally, it is necessary to insert a fine needle into these fluid collections to drain them. This may need to be done several times. It is usually painless. Sometimes the fluid may escape from the wound in a dramatic gush and the wound may open up.

When biologic mesh is used, the inflammation that occurs as the mesh incorporates can be significant. The wound may suddenly become red several weeks after the repair. The seroma will persist for weeks and even months. This is normal.

### A little bit about belly buttons

Most people really like their belly buttons. It is the punctuation point of the abdomen. After you are born, however, it does not have a function. Almost all patients having a massive incisional hernia repair will have already lost their belly button due to the bulge. If it is still there, it may need to be removed during the operation. I will discuss this with you. Where possible, I will try and reconstruct a new belly button for you but it may not look the same as before.

### **Good results take time**

Abdominal wall reconstruction patients take many months to heal. Your abdominal wall will change shape over time. It will take at least six months for the inflammation, fluid collections and scarring to settle completely. Be patient during this time.

## **WHAT ARE THE RISKS THAT MAY OCCUR WHEN YOU HAVE HAD AN ABDOMINAL WALL RECONSTRUCTION?**

- **Recurrence of the hernia:** Mesh pulling away from the edge of the repair is very common. It is likely that approximately 20 - 30% of incisional hernias come back. This risk can be minimised by not lifting heavy weights for at least six weeks after surgery. Lifting very heavy weights after an abdominal wall reconstruction will be off limits forever. The risk of the hernia returning is increased in patients who have a poor immune system, diabetes, obesity, smokers or those who have had multiple previous hernia repairs.
- **Injury to the bowel** may occur. This is because the bowel may be caught up in scar tissue (adhesions) and easily torn. This is usually repaired at the time of the operation but it may prohibit the use of mesh. Rarely, bowel contents may leak out of the wound after surgery and require another operation with many weeks in the hospital. Bowel perforation can occur several days after the operation and can occasionally be fatal.
- **Mesh infection:** The mesh used to repair the hernia may become infected. This is rare. If infection occurs, the mesh needs to be removed at another operation. Synthetic mesh is rarely used where there has been leakage of bowel content or if the wound is already infected. Biologic mesh will be used in this case.
- **Exposed Mesh:** Occasionally the mesh may wear through the skin and become exposed. If this happens it will need to be removed. Mesh has been known to migrate from its original position and end up in the bowel, bladder or other organ. Further surgery is often required in this situation.
- **Wound infection:** Occurs in 4 - 10% of patients having this surgery.
- **Loss of skin:** When you have had multiple incisions, there is a risk that the blood supply to the skin may be very poor. Another incision may result in the death of the skin over the wound. This is a big problem if it occurs and may require weeks of dressings and further plastic surgery including skin grafts and wearing a special dressing called a vac. This can be quite common after an abdominal wall reconstruction.
- **Abdominal compartment syndrome:** This can be a deadly condition. The bowels and kidneys do not get enough blood supply due to a corset like effect from the closed abdominal muscles. The kidneys may stop working and an urgent operation to release the tight abdominal wall will be required.

- **Numbness of the skin:** After any surgery, there will be numbness of the skin around the wound that is permanent. This is something that your body gets used to.
- **Bowel obstruction:** Because the mesh is often placed fully in the abdominal cavity, there is the risk of a piece of bowel sticking to the mesh leading to a blockage of the bowel or leakage of bowel content. This is uncommon but the risk is life long.
- **Pain:** It is very common to have discomfort or pain for several days and weeks after the surgery. This is usually manageable with pain medication. Sometimes there can be pain related to nerves being trapped in scar tissue. This can be permanent and required treatment by a pain specialist. Occasionally these trapped nerves can result in chronic pain that alters lifestyle.
- **Complications from the metal or absorbable tacks used to hold the mesh in place:** It is possible that the tacks used to secure the mesh may erode through bowel, muscle, bladder and skin and cause further problems.

### If parts of the surgery are performed via a keyhole or laparoscopic technique

All the previously mentioned complications apply in addition to:

- **Injury to the bowel** may occur more easily in laparoscopic surgery and is more difficult to detect. This will result in a leak of bowel fluid into the abdominal cavity and require an open operation to repair. This is a serious and possibly life threatening complication and can result in many months in hospital.
- **Conversion to open operation:** This is not really considered a complication. Sometimes it is just not possible to repair hernias with keyhole surgery. This is usually due to bowel stuck in the hernia that is not safely removable. If this is the case then we will make a bigger cut and fix it with the open technique. This is considered sound judgment.
- **Injury to any other organ** in the abdomen may occur with laparoscopic surgery: aorta, liver and stomach. This is rare.
- **Gas embolism:** In keyhole surgery, gas is used to inflate your abdomen. A bubble of carbon dioxide may get into a blood vessel and cause life threatening heart problems. This is very, very rare.
- **Re-operation:** If we have to re-operate for any reason, this may be done with keyhole surgery or an open operation.

### General Risks:

- **Death:** approximately 1/1000 risk for all patients having this type of operation. The risk of death might be much higher than this for patients with large hernias because of the myriad of medical problems usually associated with these.
- **Bleeding:** usually occurs in the first 24 hours and may require further surgery. This bleeding may be from the abdominal wall or from inside the abdomen. You may require a blood transfusion if the bleeding is severe.
- **Other blood vessel problems:** heart attack, stroke. This is very rare.
- **Infections:** wound, pneumonia, urine, intra-abdominal, IV line related.
- **Permanent or temporary damage to nerves** in the arms, legs and neck due to prolonged immobilisation on the operating table. This may result in loss of feeling or movement in arms or legs.
- **Clots in the legs** that may travel to the lungs and be fatal.
- **Wound pain, abnormal (keloid) scarring or hernia of the wound.**

## WHAT TO EXPECT IMMEDIATELY AFTER SURGERY

### Intensive Care

Because your abdominal wall has been tightened, you will need the support of Intensive Care. After the operation is finished, you will be transferred to the Intensive Care Unit. You may be kept asleep (induced coma) for a short time after the operation. Alternately, you may be woken up straight away. There are many factors that go into making this decision and your family will be told whether you will be awake or left asleep. You will spend at least one night in Intensive Care. When you are stable you will move to the ward.

### Pain Relief

In the first few days after surgery there may be a moderate amount of discomfort. All efforts will be made to ensure you are not in terrible pain but you will have a number of tubes attached that will make things reasonably uncomfortable.

You will have some form of pain relief. There will usually be a choice of:

- Epidural (if medically suitable) – This is a fine tube placed in the back that delivers local anaesthetic to the nerves around the spinal cord. It is highly effective and you will still be able to walk with it in. There are small risks associated with its use and your anaesthetist will discuss this with you at length. The epidural will be in place for three to four days after surgery and you will be able to stand up and walk while it is in.
- Patient Controlled Analgesia (PCA) – A button you will press that results in strong pain killers (like Morphine) running straight into your IV line. These devices are very safe and have locking mechanisms to prevent overdose.

**IT IS VERY IMPORTANT THAT YOUR RELATIVES DO NOT PUSH THE PAIN BUTTON FOR YOU. THIS WILL RESULT IN AN OVERDOSE OF MEDICATION THAT MAY STOP YOUR BREATHING.**

Your anaesthetist will discuss the pros and cons of each with you prior to surgery and it is your choice in conjunction with what your anaesthetist feels is in your best interest. Either option may not be suitable for every person.

Regular Panadol and anti-inflammatories are also used and are very effective.

Every effort will be made to minimise the discomfort and make it bearable. It is very important that you keep your pain under control so you can move and cough. Your nurses will be monitoring your level of pain frequently. When you are eating, you will be converted to oral pain relief.

### Tubes and IVs

You will have a number of plastic tubes in your body following the operation. They will vary a little depending on your particular medical need. They will be removed at variable times

following your surgery under my direction. All tubes except for an IV in your hand will be put in under anaesthesia so you will not be aware of them going in.

1. IV line: central venous line placed in your neck (done under anaesthesia) to give you fluids and pain relief after surgery.
2. Urinary catheter: tube placed in your bladder so you don't have to get up to pass urine.
3. Arterial line: a fine catheter inserted into the artery of the wrist to monitor the blood pressure.
4. Nasogastric tube: all patients require a tube that goes from their nose into their stomach for a variable time after the operation.

## **Drain tubes**

It is likely that you will wake up after surgery with one or more soft plastic drain tubes coming out of your abdomen. I will advise when these need to be removed. When using the biologic mesh made from animal products, the manufacturer recommends that the drains be left in for many days after the operation. These types of mesh tend to make the body produce a great deal of fluid as they incorporate into the tissues. You may need to go home with the drains in place and they will be removed as an outpatient.

## **Eating**

You will not have anything to eat or drink for a short time after surgery. This depends on how much dissection of the bowel has taken place. Your bowels may be slow to wake up. An intravenous infusion will provide you with the necessary fluids. You may have a nasogastric tube (NG) in your nose that will usually be removed the day after surgery. I will let you know when you will be able to eat. You will start on liquids first and then take solids. If you are unable to eat adequate amounts of food after a short period of time, you will be fed via an IV or a tube in your nose.

People who drink more than two cups of coffee a day may notice caffeine withdrawal headaches and irritability for a few days after surgery.

You may lose your taste for food. It will return within a few months. It is normal to have a sore throat for a few days after the surgery because of the anaesthetic tube and the nasogastric tube.

## **Urinating/Bowel Movements**

For the first few days after the surgery, a tube placed in your bladder will drain your urine. As your bowels start to wake up, you will pass excessive amount of urine. This is a good sign.

After any surgery, a patient may have trouble passing urine once the catheter is removed. This is uncommon and if it occurs, is usually temporary. Occasionally, a catheter needs to be reinserted to help you pass urine. If this is the case, a urology doctor (kidney specialist) will be asked to see you. It is normal to have the sensation of passing wind with the urine. This will go away.

You will probably not have a bowel movement until 5 – 7 days after the surgery. Many patients worry about this but it is normal. You will pass wind a few days before your bowels work.

There may be some disturbance to your bowels for many weeks after surgery. Moving your bowels relies heavily on the muscles of the abdominal wall. The best strategy is to drink plenty of water (about 8 glasses a day) to stay active. Do not lie in bed all day long. I recommend continuing to take a fibre supplement. If this does not work, you should take a mild laxative like Movicol. When you sit on the toilet to have a bowel movement, lean slightly forward and relax. Sometimes, sitting with your feet resting on a small footstool will help.

### **Activity**

You can expect your nurse and physiotherapist to help you get out of bed on the first day after surgery. You will be able to walk short distances even with all of the tubes and intravenous lines. As each day passes, your tolerance for walking and sitting in a chair will increase. This is extremely important to prevent pneumonia, clots in the legs and loss of general condition.

### **Other Medications and Preventative Measures**

You will be given a blood thinner once or twice a day as an injection under the skin. This helps to prevent clots in the legs or deep vein thrombosis (DVT) that may travel to the lungs and be life threatening. If you are in a high risk group for DVT, you may be sent home with this injection for several weeks after surgery. You or a family member will be taught how to give the injections. You will be asked to wear TED stockings throughout your hospital stay. These prevent clots in the legs. You may stop wearing these when you are able to get up and walk easily by yourself.

In some instances you will be given a medication to decrease the acid secretions in the stomach. This prevents stomach ulcers that may occur after major surgery. You must not smoke at all.

### **Your Incision**

Your dressing will be waterproof and left in place for 5 days after the surgery. The dressing is like a second skin and some fluid will collect underneath. This is normal and not an infection. The dressing will be removed after 5 days and you can wash the wound in the shower and leave it open to the air. You may wear loose clothing over the top of it.

Most commonly the wounds will be closed with dissolving stitches and there will be nothing to remove.

Some patients have wounds that are not suitable to stitch up. This is when there has been a colostomy, infection or the skin is at risk of dying. If this is the case the wound will be left open and a special dressing called a “vac” will be used. A vac is a sponge that is placed in the wound and attached to suction. This will help to close the wound slowly over many weeks and lowers the risk of infection.



It is normal to have patches of numbness around the surgical wound. This will not go away but you will stop noticing it.

Your deep muscle layers are sewn together with nylon stitches that do not dissolve. If you are thin, you may feel the knotted end of one of these stitches under your wound. This is harmless. If it annoys you, it can be easily removed at some time after your surgery. Occasionally, a stitch may poke out of your wound. This is quite safe. Please come and see me on a non-urgent basis if this occurs.

### **Length of Stay in Hospital**

Length of stay is variable depending on the size of the hernia. Patients with massive incisional hernia repairs may need many days and even weeks in hospital. You may even need some time in the rehabilitation ward.

### **Other Important Information**

You can expect to see me every week day. On weekends or at times when I am operating urgently, 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.

We will make every effort to keep you informed of your progress. We are always honest and open with you and your family. Feel free to ask questions.

## **WHAT ELSE DO I NEED TO KNOW BEFORE THE OPERATION?**

### **Hospital**

The hospital and my office 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.

### **Shaving and showering**

You do not need to shave any body hair from your abdomen before the surgery. If needed, I will do this with sterile clippers after you are asleep, just before the surgery commences. This gives the lowest chance of infection.

There is no evidence to suggest that having a shower in antiseptic prior to surgery decreases infection rates so just shower normally on the morning of surgery. Do not use any perfume.

## **Make up, nail polish and jewellery**

I understand that some women feel quite anxious about going without their make up. Most of your body will be covered during the operation so it is important that the anaesthetist can see your face clearly. Your colour can be a good monitor of how much oxygen you are getting. For this reason, it is best to come to theatre with a clean, make up free face.

Nail polish is OK with me as long as you keep it clear on your fingernails. Coloured nail polish can interfere with the device we use to measure the oxygen in your blood. For many women, having a pedicure the day before the surgery is a good way to relieve some anxiety.

Any jewellery you are comfortable with removing, you should leave at home. If you would like to leave your wedding ring on, you may, but this will be covered with tape for the duration of the surgery.

## **Glasses and contact lenses**

You should remove your contact lenses prior to coming to the hospital. You don't need to bring your glasses to the operating theatre. Just put them with your belongings and they will be given back to you in the ward.

## **False teeth, caps, crowns**

Don't take your teeth out before you come to the operating theatre. They will usually be removed by the anaesthetist after you go to sleep. Keeping your teeth in will help the anaesthetic doctor get a good seal on your mouth with the oxygen mask. Your teeth will be well taken care of during your operation and returned to you in recovery before anyone can see you.

## **Preparations at home**

Ensure that you have someone to care for small children for a little while to take the pressure off your recovery. If you are handy in the kitchen, try to cook and freeze some easy meals to have on hand for when you do not feel like cooking. Another option is to consider ordering precooked meals from companies like Lite n' Easy. Consider hiring some help around the house for a few weeks after the surgery or enlist willing (or unwilling) relatives to help out. Make sure all your bills are paid ahead or on automated payments to reduce the things you have to think about in the recovery period.

## **Medications**

- Aspirin is usually fine to continue taking before the surgery.
- If you are on blood thinners such as 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 the operation. You must let me 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 complementary 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.
- 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.
- You should also abstain from drinking alcohol 24 hours prior to any surgery and before that, no more than two standard drinks a day.
- Bring all your current medications with you to the hospital.
- You will wear a hospital gown for the first few days but have comfortable pyjamas on hand along with personal toiletries, small change for newspapers etc.
- Bring something to do - DVDs, books, laptops. Alternately, you can use hospitalisation as an opportunity to rest completely without distractions of the outside world.
- Do not bring large amounts of cash or valuables.

## **WHAT WILL THIS SURGERY COST ME?**

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 pay in full prior to the operation.**

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.

If your Body Mass Index is  $>35$ , the surgery is far more difficult and the risks of complications are higher. If it is medically suitable, I may recommend a period of weight loss before surgery so it can be done more safely. This may involve a supervised weight loss program called INTENSIV to get the best results in the shortest time. This will incur an extra out of pocket expense.

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.

If you do not live in Brisbane, you will be responsible for all accommodation, hotel, meal and transport costs for you and your family. There is some monetary assistance available for private patients through the Patient Travel Subsidy Scheme (PTSS) providing assistance to patients and in some cases their carers, to enable them to access specialist medical services that are not available locally. Please see Queensland Health's Patient Travel Subsidy Scheme site for details <http://www.health.qld.gov.au/iptu/html/ptss.asp>. The Greenslopes Private Hospital web site has an extensive list of hotels available in the local area <http://www.greenslopesprivate.com.au/For-Visitors/off-site-accommodation.aspx>

## ABOUT YOUR SURGEON

### **Dr Kellee Slater MBBS (Hons) FRACS**

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