



Patient Information Sheet: Ventral Hernias

What are ventral hernias?

A ventral hernia is a condition where a part of your abdominal contents bulges through a defect in your abdominal wall. A ventral hernia can occur anywhere along front of the abdominal wall, but most commonly occurs near the belly button (paraumbilical hernia) or at the site of a previous surgical incision (incisional hernia).

Ventral hernias can be classified as primary or secondary. Primary ventral hernias are those that occur without a previous surgery or injury to the abdominal wall. Secondary ventral hernias are those that occur as a result of a previous surgery or injury that weakened the abdominal wall. Incisional hernias are a type of secondary ventral hernia, occurring after surgery.

What causes ventral hernias?

Ventral hernias are caused by a combination of factors that increase the pressure inside the abdomen and weaken the abdominal wall. Some of the common risk factors are:

- Obesity
- Pregnancy
- Chronic cough
- Smoking
- Poor nutrition
- Improper heavy lifting
- Family history or collagen disorders affecting connective tissue strength

- Previous abdominal surgery or injury

It is thought that some patients are more pre-disposed to the formation of hernias than others, based on the specific type of collagen their body naturally produces. This means it's common for these patients to have more than one hernia, or for these patients to develop an incisional hernia after a non-hernia surgery.

What are the symptoms of ventral hernias?

Ventral hernias may not cause any symptoms at first, but they can grow larger and more noticeable over time. Some of the common symptoms are:

- A visible or palpable lump or bulge in the abdomen, especially when standing, coughing, or straining
- Discomfort or pain in the abdomen at the site of the hernia, especially when straining or bending, and classically towards the end of the day

Less commonly the hernia may incarcerate or even strangulate:

- Incarceration means the hernia contents are stuck outside the abdominal wall, and can't be pushed back in (but the blood supply to those contents is still intact)
- Strangulation means the hernia contents have had their blood supply cut-off, and will die-off unless emergency surgery is performed. Such



a situation is accompanied by severe, un-remitting pain (usually very different from your ‘typical’ hernia pain) and potentially also nausea and vomiting and abdominal distension if bowel is involved.

How are ventral hernias diagnosed?

Ventral hernias are usually diagnosed by a physical examination, where your doctor will look for and feel the hernia. Commonly your doctor will order imaging tests, such as a CT or ultrasound scan, to confirm the diagnosis and assess the size and location of the hernia, as well as look for other separate occult herniae.

What is divarication or diastasis recti?

Divarication or diastasis recti is a condition where the rectus abdominus muscles, the two muscles that run along the midline of the abdomen, separate. The resulting ‘gap’ between the muscles is spanned by (intact) connective tissue. This happens most commonly due to obesity, pregnancy, and aging.

Unlike a hernia, there is no defect or hole in the abdominal wall and therefore no protrusion of tissue through a defect.

The main symptom of divarication recti/rectus is a bulge or dome shape on the abdomen, especially when straining, and usually occurs in the upper abdomen.

Surgery is not an option for this condition, as the divarication quickly re-establishes itself after any surgery. Some exercises and physiotherapy may help reduce the gap and improve the muscle tone.

What are the treatment options for ventral hernias?

The treatment options for ventral hernias depend on their location, size, and the presence and severity of symptoms, as well as your overall health and preference. Some of the possible options are:

Watchful waiting

This means monitoring the hernia for any changes or complications, without any active treatment. This may be suitable for small or asymptomatic hernias that do not interfere with your daily activities, or if your health otherwise makes elective surgery too risky a proposition. Hernias never heal themselves, however, and over time they often get bigger and more symptomatic.

Hernia belts

These devices do not fix a hernia but some patients find they can help to alleviate symptoms by helping to keep hernia contents reduced. Other patients, however, notice no differences in their symptoms with the use of a hernia belt, and they can be difficult to fit well.

Surgery

Physically closing the defect in the abdominal wall at operation is the only effective means of fixing a hernia.



Surgery can be done in two ways: suture repair or mesh repair. Suture repair involves stitching the edges of the defect together with strong sutures. Mesh repair involves placing a synthetic mesh within the layers of the abdominal wall to reinforce it. Both methods can be done by open surgery or laparoscopic (keyhole) surgery.

Suture versus mesh repair

The benefits of a suture repair are best thought of as the avoidance of the risks of using a mesh to repair the hernia. If no mesh is used, a mesh infection cannot occur (although infection itself can still occur, the consequences of this are usually less in the absence of a mesh).

The problem with suture repairs is that the hernia is more likely to recur, especially if the underlying neck was greater than 2cm to begin with or the hernia represents an incisional hernia.

The benefits of a mesh repair are that any repair is likely to be more durable and thus far less likely to recur.

The downsides of using a mesh are that, although uncommon, if an infection occurs, it can lead to a cycle of complications requiring prolonged treatment and can be life-altering. Additionally, it is thought that the meshes themselves, or the methods used to secure them in the abdominal wall, may increase the likelihood of chronic pain post hernia repair.

Therefore pre-operative optimisation, important in any hernia repair, is especially

important to get right if a mesh is to be used.

Pre-operative optimisation in ventral hernia repair

Although the risk of complications from any surgery can never be eliminated, with good pre-operative health optimisation they can be significantly reduced, and your chances of a good recovery improved. The big three in ventral hernia repair are good diabetes control, smoking cessation, and weight loss.



The CeDAR app, available on both iOS and Android devices, is an excellent free resource for patients to quantify the risk of adverse outcomes and how that risk changes with pre-operative health optimisation.

Diabetes control

High blood sugar levels can impair wound healing and increase the risk of infection. Consistently keeping your blood sugar within the target range is important to reducing these risks and an HbA1c level of <7.3% is a good goal in this respect. This may require changes to how you manage your diabetes, including medication adjustments, which should be done in consultation with your GP.

Smoking cessation

Smoking reduces the oxygen supply to your tissues by damaging your lungs and blood vessels. This can slow down wound healing



and increase the risk of infection and bleeding. Smoking can also interfere with the function of the mesh and cause chronic pain.

Although not as robustly studied, it is thought vaping has a similar effect on complication risks as the traditional smoking of cigarettes.

A smoker's risk profile for post-operative complications will always be higher than that of a non-smoker's. However, a patient who smokes but who completely quits for at least four weeks before their surgery, and avoids smoking for at least another four weeks afterwards, will significantly reduce their risk of post-operative complications compared to a patient who continues to smoke during this period.

Quitting smoking can be hard, but there are many resources and support available to help you; seeing your GP or calling Quitline is a good first step.

Weight loss

Being overweight or obese can put extra pressure on your abdominal wall and increase the risk of developing a hernia or one recurring. It can also increase the risk of complications such as infection, wound breakdown and mesh failure. Losing weight can therefore help to reduce these risks.

Losing weight, and keeping the weight off, is hard and should not be underestimated. Eating a balanced diet is the essential first step, and in Australia it is diet (rather than exercise) that is the primary problem leading to obesity.

The relationship between diet and weight is a complex interplay between physiological,

hormonal, and psychological factors. Although it is true that if a person ingests fewer calories than their body uses, they will lose weight, the body's ability to modify its calorie usage, nutrient absorption and hunger signals depending on the situation it finds itself in complicates this relationship considerably.

Seeing a dietitian can be an excellent early step in understanding the relationship between diet and weight, and arming yourself more broadly with the requisite knowledge to successfully achieve and maintain weight loss.

Some medications such as semaglutide (eg. brand names Ozempic, Wegovy) work in large part by altering the factors influencing the above-described interplay between diet and weight, tilting them in favour of weight loss. This is also true for weight loss surgery.

A multi-modal approach is almost certainly the one most likely to result in long-term weight loss, and seeing your GP is an excellent first step to beginning this journey.



Patient Consent Form for Ventral Hernia Repair

What is a ventral hernia repair?

A ventral hernia is when tissue bulges through an opening in the front of your abdominal wall. Sometimes it is termed an umbilical or paraumbilical hernia if the hernia is around your umbilicus (belly button).

A ventral hernia repair is a surgical procedure to fix a ventral hernia, aiming to return the bulging tissue to its proper place and close the opening in the abdominal wall.

How is it performed?

The repair can be done using either open surgery or laparoscopic surgery, and using suture only or a mesh with suture.

Open Surgery: An incision is made in the abdomen at the hernia site to allow the surgeon to access and repair the hernia directly. Most hernias are repaired this way. If the hernia neck is small, typically <2cm, a suture only approach will usually be used. If the hernia neck is larger, or there are risk factors for recurrence, a mesh will commonly be recommended.

Laparoscopic Surgery: Several small incisions are made, and a laparoscope (a thin tube with a camera) and surgical tools are used to repair the hernia. Laparoscopic approaches always use a mesh.

What are the benefits?

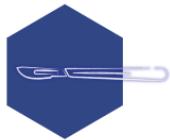
- Relief from pain and discomfort caused by the hernia.

- Prevention of complications such as strangulation or obstruction of the intestines.
- Improved abdominal wall function or appearance.
- Enhanced quality of life.

What are the risks?

As with any surgical procedure, there are potential risks, including:

- Infection of the surgical site, including potentially of the mesh (if used), necessitating antibiotics and sometimes mesh removal.
- Other potential mesh complications include migration and bowel adhesions causing obstruction or fistulation and requiring further surgery. This is rare if the mesh is placed within the abdominal wall (rather than within the abdominal cavity).
- Development of a pocket of serous fluid (a seroma).
- Bleeding, sometimes this necessitates another operation.
- Damage to surrounding organs such as bowel, including occult damage (not recognised at the time of operation). This would require a larger operation and potentially a bowel resection to fix.
- Chronic pain at the surgery site.
- Thickened scarring at the site, including hypertrophic scarring.
- Recurrence of the hernia.
- General operative and anaesthetic risks such as a heart attack, stroke, deep vein thrombosis or pulmonary embolus development, infection of other organs such as the lung.



- Death as a result of this operation is rare.

What are the alternatives?

- Watchful waiting: Monitoring the hernia without immediate surgery may be recommended, especially if the hernia is small and not causing significant symptoms.
- Non-surgical treatments: Using a truss or binder to support the hernia externally, though this is variably effective and typically a temporary solution.

What to expect before, during, and after the procedure

Before the procedure:

- Pre-operative patient optimisation is vital to good outcomes in hernia surgery - see the Patient Information Sheet.
- There will be a period of fasting on the day of surgery before the procedure.
- Discuss any medications you are taking with your surgeon and anaesthetist, as some may need to be paused.

During the procedure:

- You will receive general anaesthesia to ensure you are comfortable and pain-free during the surgery.
- Typically the operation takes about 30-60 minutes, although it may be longer if the hernia is more complex.

After the procedure:

- You will be monitored in the recovery room until the anaesthesia wears off and typically discharge the same day.
- The dressings should be kept clean and dry and remain on for 5-7 days. The sutures are usually dissolveable.
- After a hernia repair you need to plan to take it easy and in particular avoid vigorous exercise and lifting >5kg for 6 weeks.
- Attend your planned follow-up appointment. If you have concerns prior to this, contact our surgeon, see your GP or present to the Emergency Department.

Questions

Please write any questions you may have regarding the procedure below:

Consent

I understand the information provided above regarding the ventral hernia repair procedure, its benefits, risks, and alternatives. I have had the opportunity to ask questions and have received satisfactory answers. I hereby give my consent to undergo the ventral hernia repair.

Patient Name: _____

Patient Signature: _____

Date: _____

Surgeon Name: _____

Surgeon Signature: _____

Date: _____