

ASERNIP/S



Australian Safety
and Efficacy
Register of New
Interventional
Procedures – Surgical

Consumer summary

Laparoscopic ventral hernia repair: an [accelerated systematic review](#)

To navigate in this document in Word, click on the word (underlined in blue) to link to the glossary.

The standard surgical treatment for ventral hernia is an open operation in which mesh is placed over the tear in the abdominal wall. An alternative treatment has been developed which is [minimally invasive](#) and uses a [laparoscope](#). ASERNIP-S has reviewed the available published [evidence](#) to compare the safety and effectiveness of the laparoscopic and open techniques.

What are ventral hernias?

A patient suffers from ventral hernia (also known as abdominal wall hernia or [incisional hernia](#)) when a portion of an organ or tissue pushes out through a weakness in the wall of the [abdomen](#). The weakness may result from either a defect in the abdominal wall which may exist from birth, or after surgery (i.e. on the abdominal contents) or [laparoscopy](#). A balloon-like sac is formed which may trap a loop of intestine or part of another abdominal organ or tissue, and could cause serious problems requiring emergency surgery. Ventral hernias are the second most common type of abdominal hernias, after inguinal (groin), and account for about 10% of all hernias. Ventral hernias can range in size from very small to very large and complex. A hernia left untreated may in time get larger and symptoms will worsen. Surgery is the preferred treatment of ventral hernia with a choice of two methods – open repair and laparoscopic repair.

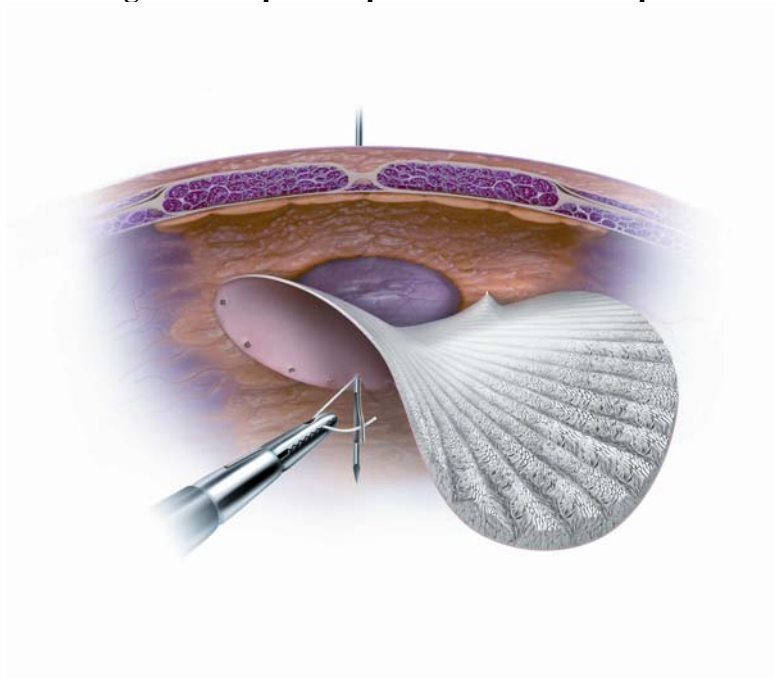
Standard open ventral hernia repair

Open repair is the standard way that surgeons repair tears or openings in the abdominal wall. An 'open' operation is one in which the surgeon approaches the site through a surgical cut. While the patient is under local or general anaesthetic, the surgeon cuts the abdominal wall at the site of the opening or previous operation and separates the bowel from the abdominal wall. The edges of the tear can then be stitched together and/or artificial mesh can be placed over the tear. The major disadvantage with this technique is that a large cut is required in the abdominal wall, which increases the risk of wound infection and wound-related complications. Patients who have had open repair of large ventral hernias may experience a painful period of recovery after the operation and take longer to return to normal activities compared with the laparoscopic approach.

Laparoscopic ventral hernia repair

Laparoscopic ventral hernia repair (LVHR) is a new [minimally invasive](#) technique which is an alternative to open repair. With the patient under general anaesthetic, a tube (called a nasogastric tube) is passed through the cavities in the nose to the stomach to release the pressure in the bladder and the stomach. A needle (or alternatively a larger tube called a port) is inserted through the abdominal wall to the space between the inner lining of the [abdomen](#) and the organs. Air is pumped into the space so that the surgeon can see and access the site of operation. At least three small cuts are made in the abdominal wall and surgical tubes (ports) are placed around the hernia to allow surgical instruments to be passed to the site. The number and placement of the surgical tubes will depend on the size and location of the hernia. Tissue is cleared from around the hernia and mesh is inserted through one of the surgical tubes and fixed to the abdominal wall. An advantage of the laparoscopic procedure is that large abdominal cuts are avoided, so that the patient may have less pain and a shorter hospital stay.

Figure 1: Laparoscopic ventral hernia repair



© Image courtesy of W.L. Gore & Associates, Inc.

How does the laparoscopic approach to ventral hernia repair compare with the standard open approach?

Safety

More complications were reported for open repair patients (than laparoscopic repair patients) and tended to be wound-related:

- The most common complications were [seroma](#), [haematoma](#), wound infection, the need for suction drainage and prolonged [ileus](#).
- A small number of accidental cuts in the intestine during surgery, abscess and intestinal obstructions were reported.

Less complications were reported for the laparoscopic approach:

- Most common were wound-related complications, such as [seroma](#) and the need for suction drainage, and procedure-related complications, such as the accidental [incision](#) of the intestines.
- A few cases of [haematoma](#), postoperative trapping of tissue or organs, damage to the bowel and prolonged [ileus](#) were reported.

Effectiveness

The [laparoscopic](#) approach appears to have a lower rate of hernia recurrence (from none to 1 in 10 [laparoscopic](#) patients versus from none to 2 in 10 open patients) and leads to a shorter hospital stay (around 1 to 5 days for [laparoscopic](#) versus 1.5 to 11 days for open). Conversion to open surgery is required in 0 to 14 in 100 patients. The time taken to perform the operations for the [laparoscopic](#) and open approaches was similar.

What are the recommendations of the Royal Australasian College of Surgeons?

Based on the current level of [evidence](#), the relative safety and efficacy of the [laparoscopic](#) and open approaches is still uncertain. However, results from the included studies suggest some advantages for [laparoscopic](#) over open repair. The [laparoscopic](#) approach may be more suitable for straightforward hernias, and open repair for the more complex hernias. As there is uncertainty as to whether an open or [laparoscopic](#) approach should be used, it is important that patients are well informed of the risks and benefits of each technique. [Laparoscopic](#) ventral hernia repair appears to be an acceptable surgical operation that can be offered by surgeons experienced in advanced [laparoscopic](#) techniques.

July 2004

Important note The information provided is based on up-to-date research. However, it is not intended to replace the advice of your medical practitioner. Please ask your doctor if you have any further questions about the management of this condition.

For further information about ASERNIP-S

Contact Professor Guy Maddern, ASERNIP-S Surgical Director, PO Box 553, Stepney, SA 5069, ph. (08) 83637513, fax (08) 83622077, or visit the website (<http://www.surgeons.org/asernip-s.htm>). If you would like to provide feedback on this consumer summary, please contact us at consumer.asernip@surgeons.org

ASERNIP-S is a programme of the Royal Australasian College of Surgeons (RACS).

LVHR CONSUMER INFORMATION GROUP MEMBERS

ASERNIP-S Director

Professor Guy Maddern
Surgical Director
ASERNIP-S
PO Box 553 STEPNEY SA 5069

Protocol Surgeon

Mr Scott Watkin
Hepatobiliary Pancreatic Surgeon
Suite 2/79 Pennington Tce
NORTH ADELAIDE 5006

Consumer Representatives

Barbara Beacham
Primary Health Care Research Information Service
Department of General Practice
Flinders University, Adelaide BEDFORD PARK SA 5042

Jane Doyle
Channel Seven Adelaide Pty Limited
45 Park Terrace GILBERTON 5081

ASERNIP-S Programme Manager

Dr Wendy Babidge
ASERNIP-S

ASERNIP-S Research Manager

Ms Philippa Middleton
ASERNIP-S

ASERNIP-S Research Officer

Ms Clarabelle Pham
ASERNIP-S

ASERNIP-S Project Officer

Ms Eleanor Ahern
ASERNIP-S

Glossary

Abdomen: The part of the body between the chest and the pelvis.

Accelerated systematic reviews (ASR): These are produced in response to a pressing need for a systematic assessment of the available literature for a new or emerging surgical procedure. This need may arise if: the procedure is being introduced into the Australasian healthcare system too quickly or too slowly; the clinical or cost-effectiveness of the new procedure needs to be assessed; or there are significant concerns regarding its safety or its use in particular populations. ASRs use the same methodology as full [systematic reviews](#), but the types of studies included may be restricted so that the review can be produced in a shorter time period.

Evidence: The studies included in the review.

Haematoma: A bruise or collection of blood in a tissue.

Ileus: A condition associated with persistent vomiting and abdominal distension. It is caused by a (usually) temporary failure of the muscular process by which the bowel contents are moved forward.

Incision: The cut or wound made by the surgeon with surgical instruments during an operation.

Laparoscope: Long thin tube (telescope) with a video camera attached to the end, passed through a small cut in the abdominal wall and used to see inside the [abdomen](#).

Laparoscopy: Use of a [laparoscope](#) to see inside and access the [abdomen](#).

Minimally invasive: Accessing the site of the operation through small surgical holes.

Seromas: Persistent fluid collections under the skin that occur commonly in the abdominal area, especially after the removal of large amounts of tissue. Seromas may be present in up to 10% of patients following surgery.

Systematic review: ASERNIP-S conducts literature reviews on the safety and effectiveness of new surgical techniques before they are widely accepted into the health care system. Each review collects all relevant information, or [evidence](#), on new and standard techniques used to treat a medical condition. The quality of [evidence](#) is assessed. ASERNIP-S then makes recommendations on the safety and effectiveness of the procedures that are then endorsed by RACS.