



Surgery in the abdominal cavity via natural openings in the body

This information is about surgery in the abdominal cavity performed through natural openings in the body, rather than via a cut in the skin. This procedure is called Natural Orifice Transluminal Endoscopic Surgery™ (NOTES™), also known as incisionless or ‘no scar’ surgery. The Australian Safety and Efficacy Register of New Interventional Procedures - Surgical (ASERNIP-S) looked at the safety and effectiveness of NOTES compared with traditional abdominal surgery.

THE FOLLOWING INFORMATION IS NOT INTENDED TO REPLACE THE ADVICE OF YOUR DOCTOR, BUT RATHER TO HELP YOU AND YOUR DOCTOR MAKE DECISIONS ABOUT YOUR CARE THAT ARE BEST FOR YOU.

Main messages

As the use of NOTES in intra-abdominal surgery was at a very early stage of development, the available evidence was limited and only involved animal studies. Hence it was not possible to compare the safety and effectiveness of NOTES with traditional techniques. However, ASERNIP-S noted that:

- At this early stage it appeared that NOTES was less safe and effective for intra-abdominal surgery than traditional techniques (laparoscopy and laparotomy).
- The technique was evolving rapidly and it was likely that more evidence would become available.
- Well-managed human studies were needed to compare the safety and effectiveness of NOTES for intra-abdominal surgery with traditional techniques. Studies could begin with hybrid NOTES/laparoscopic procedures and move to NOTES trials.

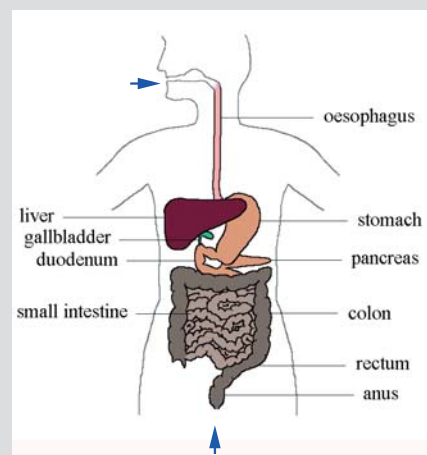
Conventional abdominal surgery

Traditionally surgeons have operated on organs of the abdomen through a large cut in the abdominal wall; however, this can lead to complications such as infection, scarring and pain. Over the last 20 years, minimally invasive surgery has become popular. With this approach the surgeon accesses the organs through small cuts in the skin (laparoscopy). This reduces the complications which are associated with large cuts. Laparoscopy, however, has its own risks, such as organ puncture, abscesses and adhesions; in addition, surgeons need to learn to use the new technology and expensive instruments are needed.

Abdominal surgery through natural openings in the body

A technique is being developed so that surgeons can pass an endoscope through a natural opening in the body into the stomach, colon, bladder or vagina, cut a small hole in the wall of this organ and thread the endoscope through into the abdominal cavity. This new procedure, called Natural Orifice Transluminal Endoscopic Surgery™ (NOTES™), allows a surgeon to operate on abdominal organs like the gall bladder without cutting the patient’s skin; hence the nickname ‘no scar’ surgery. The advantages of this procedure are: no skin wound complications; less anaesthesia; better access to abdominal cancers in overweight patients; and its potential use in children to avoid long-term skin wound complications. The disadvantages are: it has many of the complications of laparoscopy; longer tubes reduce the surgeons’ view and movement; and the need for more specialised equipment.

Figure 1: endoscope passes into the body through natural openings





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The aim of the ASERNIP-S review was to assess the safety and effectiveness of surgery in the abdominal cavity through natural openings before the technique becomes widely used in the community.

What is the evidence?

The evidence available was very limited at this early stage of development of the procedure and all studies were conducted in animals. It was not possible to compare the safety and effectiveness of NOTES with traditional procedures. However, the Review Group noted that:

- At this early stage it appeared that NOTES was less safe and effective for intra-abdominal surgery compared to existing techniques.
- In animal studies, complications included failure to close the small cut in the wall of the stomach, colon, bladder or vagina that could result in peritoneal infection.
- It was not possible to determine the best entry point into the body (mouth, anus, vagina, urethra).
- NOTES was developing rapidly and the evidence base would likely increase.
- Although NOTES could be suitable for use in some intra-abdominal surgery in humans, it was too early to state if the potential advantages of using NOTES outweighed the disadvantages.

(Review published in June 2007)

What is ASERNIP-S?

The Australian Safety and Efficacy Register of New Interventional Procedures - Surgical (ASERNIP-S) is a program of the Royal Australasian College of Surgeons. ASERNIP-S conducts literature reviews on the safety and effectiveness of new surgical techniques before they are widely used. 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 endorsed by the College, sent to hospitals and surgeons in Australia and overseas, and published on the website with summaries for consumers.

For further information on surgery in the abdominal cavity through natural openings, please see the full systematic review on the ASERNIP-S website:

<http://www.surgeons.org/asernip-s>

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Surgery in the abdominal cavity via natural openings in the body

Glossary

Abdominal cavity: the space between the thorax and the pelvis in which the abdominal organs lie

Endoscope: a tube with a viewing mechanism at the end, used to see inside hollow organs in the body and to perform various surgical procedures

Laparoscope: a tube with a video camera attached to the end, which is passed through a small cut in the abdominal wall and used to see inside the abdomen and to perform various surgical procedures

Laparotomy: a cut through the abdominal wall

Literature 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 the College.

Minimally invasive treatment: operation accessing the site using a telescope through an opening in the body or small cuts

NOTES: natural orifice transluminal endoscopic surgery, also known as incisionless or 'no scar' surgery

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Figure () is provided courtesy of ().

Consumer information group

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