



Great Ormond Street Hospital for Children NHS Foundation Trust: Information for Families

Keyhole (minimally invasive) surgery

This leaflet explains about keyhole or minimally invasive surgery and what to expect when your child comes to Great Ormond Street Hospital (GOSH) to have an operation.

What is keyhole surgery?

Keyhole or minimally invasive surgery is a method of carrying out an operation without having to make a large incision. It is also known as laparoscopic surgery when used to operate on the abdomen and thoracoscopic surgery when used on the chest area. Many different types of operations can now be carried out using keyhole surgery. This type of surgery reduces the length of time your child needs to stay in hospital and leaves little scarring.

How long does a keyhole operation take?

This varies, depending on the type of surgery being carried out. Most operations last between 30 minutes and four hours. The surgeon will give you an estimate of how long the operation will take when he or she is explaining it to you.

What are the advantages of keyhole surgery?

Children tend to recover more quickly after keyhole surgery. There is little scarring after keyhole surgery which becomes more important as your child grows older and becomes more self-conscious. One side effect of 'open' surgery – minimised with keyhole surgery – is 'adhesions'. This is where internal organs stick together and form bands of scar tissue, which can be painful and cause obstruction.

Are there any alternatives to keyhole surgery?

All operations carried out as keyhole surgery can also be carried out using 'open' surgery, that is, with a larger incision.

What happens before the operation?

For many operations at GOSH, you and your child will need to come to a pre-admission appointment shortly before the operation is scheduled. The purpose of this is to check that your child is well enough for the operation. It is also an opportunity to meet the surgeon again and ask any questions you might have. Your child's surgeon will explain the operation in detail, discuss any worries you may have and ask you to give permission for the operation by signing a consent form.

Your child should not have anything to eat or drink beforehand for the amount of time specified in the letter. It is important to follow these instructions – otherwise your child's operation may need to be delayed or even cancelled. An anaesthetist will visit you to explain your child's anaesthetic in more detail. If your child has any medical problems, like allergies, please tell the doctors.

Your child may need to have some special preparation for the operation. This may include an enema to empty your child's bowel, so that this does not block the surgeon's view of the other internal organs. This is particularly used for children who have special needs.



What does the operation involve?

Your child will be given a general anaesthetic and will be asleep during the operation. Once your child is asleep, the surgeon inserts a small metal tube called a cannula into your child's tummy button. A telescope, with a miniature video camera mounted on it, is inserted into this tube to project a very high quality video image onto a television screen. The abdomen is then inflated with carbon dioxide to create space in which the surgeon can operate. The operation is performed by inserting specialised instruments which are passed through small hollow tubes which are inserted through separate very small incisions. There may be two or more small incisions required to perform the operation. Once the operation is over, the surgeon will stitch up the inside of the holes and your child will be taken to the recovery room to wake up from the anaesthetic.

Are there any risks?

Every anaesthetic carries a risk of complications but this is very small. Your child's anaesthetist is an experienced doctor who is trained to deal with any complications. After an anaesthetic, children sometimes feel sick and vomit, may have a headache, sore throat or feel dizzy. These effects are short-lived.

There is always a chance that keyhole surgery will not be possible for your child. If the surgeon feels that the operation cannot be carried out as well and as safely using keyhole surgery, then he or she will carry out the operation using a larger incision instead. This is usually for technical reasons or because of unexpected findings.

Any surgery carries a small risk of infection or bleeding. The risk of infection is much smaller with keyhole surgery because smaller incisions are used. Occasionally, the tools used to carry out the operation may damage the internal organs in the chest or abdomen, but this will be corrected during the same operation.

There are some risks with keyhole surgery linked to the gas used to inflate your child's abdomen. Some older children may complain of shoulder pain. Your child may also feel some crackling under the skin because the carbon dioxide sometimes escapes into the tissue just under the skin. These side effects are usually short-lived and do not require any specialised care. Very small babies may absorb some of the gas into their bloodstream, causing a change in the chemical make up of the blood, but this passes quickly without the need for treatment. Very rarely, gas can pass into the circulation if an organ is punctured during the operation, which will require further treatment.

What happens after the operation?

After the operation, your child will return to the ward to recover. He or she will always have some form of pain relief, usually in the form of an intravenous infusion followed by oral pain relief when your child is able to eat and drink. After some large operations, we use nurse-controlled analgesia (NCA) or patient-controlled analgesia, or occasionally an epidural. For more information about the various pain relief options available, please ask for a copy of our Pain relief after surgery information sheet, available from the ward team, the Pals office or our website at www.gosh.nhs.uk/gosh_families/information_sheets/pain_surgery/pain_surgery_families.html

You may be able to feel a few lumps under the skin by the wound sites, which are stitches inside the body. This is nothing to worry about and the stitches will dissolve in about three months. The skin incisions will usually be closed using Steri-strips®, which are strong sticking plasters, and skin glue. The Steri-strips® fall off within a week or so and the skin glue gradually flakes away over the same period.



When you get home:

- Your child may need some pain relief when you get home. Please make sure you have some paracetamol ready. If your child is likely to need stronger pain relief, this will be prescribed by your doctor and should be collected from Pharmacy.
- Your child should not have a bath or shower for 48 hours after the operation to let the wounds settle down.
- With some operations there is a small risk of infection, so your child may need to take antibiotics for a while after the operation.
- Your child can return to school or nursery when he or she is feeling well. This is usually about one week after the operation. The surgeon will advise you about activities such as swimming, contact sports or games.
- The doctor will see you again six to eight weeks after the operation to check that your child is progressing well.

You should call the hospital if:

- **Your child is in a lot of pain and pain relief does not seem to help.**
- **The wound sites look red, inflamed and feel hotter than the surrounding skin.**
- **There is any oozing from the wound sites.**

If you have any questions, please telephone 020 7405 9200 and ask for the ward from which your child was discharged.