



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

Insertion of a central venous catheter (CVC)

This information sheet explains about the procedure to insert a central venous catheter (CVC). It describes what the procedure involves and what to expect when your child comes to the Interventional Radiology department at Great Ormond Street Hospital (GOSH).

What is a central venous catheter (CVC)?

A central venous catheter (CVC) is a soft plastic tube which is tunneled under the skin into a vein in the neck. It is then threaded through the vein into the right side of the heart. A CVC provides easy and reliable access to your child's bloodstream.

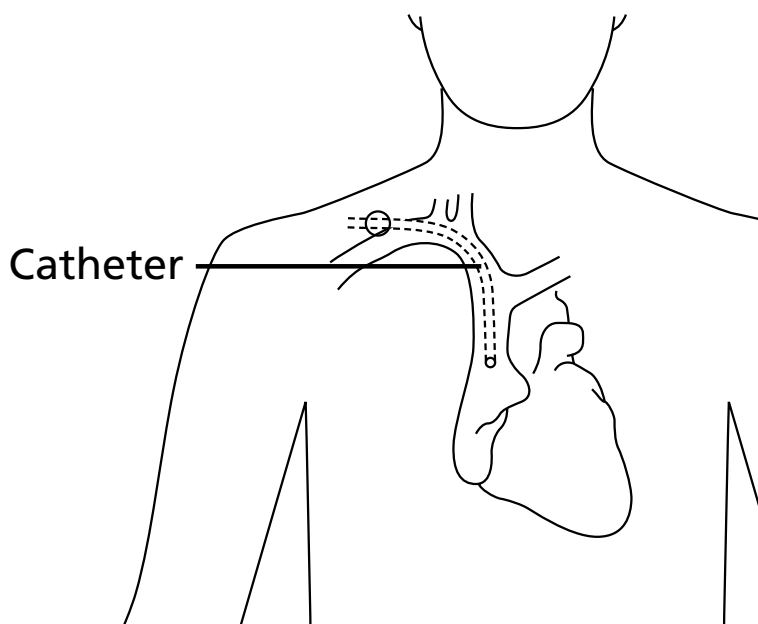
There are many reasons why your child might benefit from a CVC, but the most common reasons are for taking regular blood samples for testing, giving medicines such as chemotherapy on a long-term basis or giving nutrition directly into the bloodstream.

Most long-term CVCs have a cuff or collar around them holding it in place. Over time it becomes embedded under the skin. Some CVCs are only needed on a short-term basis, for instance, after surgery or in intensive care. These do not have a cuff so can be removed more easily.

What happens before the procedure?

You will already have received information about how to prepare your child for the procedure in your admission letter. You may need to come to GOSH before the procedure so that your child can have a pre-admission assessment to check that they are well enough. The appointment may involve taking blood samples and other tests.

Often CVC insertion happens while your child is still in hospital. The doctor will explain the procedure in more detail, discuss any worries you may have and ask you to sign a consent form giving permission for your child to have the procedure. If your child has any medical problems, please tell the doctors.





Many of the procedures we perform involve the use of x-rays. Legally, we are obliged to ask any girls over the age of 12 whether there is any chance they might be pregnant. This is to protect babies in the womb from receiving unnecessary radiation.

What does the procedure involve?

Your child will need to have a general anaesthetic for this procedure. It is very important that your child's stomach is as empty as possible on the day of the procedure, as this reduces the risk of vomiting during and after the anaesthetic. If someone vomits during an anaesthetic, there is a chance that the stomach contents could get into the lungs, damaging them. Your child's nurse will explain exactly what time your child can last eat or drink before the procedure, but as a general rule, the following applies.

Food and milk:

Breast-fed babies – give them their last feed four hours before the procedure is scheduled

Bottle-fed babies and children – give them their last milk feed, food or milk drink six hours before the procedure is scheduled

Clear fluids:

All babies and children can have a drink of water or weak squash, but no fizzy drinks, until two hours before the procedure is scheduled but no food or milk for six hours before.

Please follow these instructions carefully, otherwise your child's procedure may be delayed or even cancelled.

Once your child is under general anaesthetic, the doctor will use a variety of imaging techniques, such as ultrasound or x-rays, to look for a suitable vein in the neck. Once they have found one, they will inject the area around the vein and the side of the chest with local anaesthetic to make it numb for a few hours.

The CVC is tunnelled under the skin on the chest through a small incision until it is near the neck vein. They then make a small puncture into the neck vein and thread the CVC into it until it reaches the right side of the heart. The doctor makes a final check that the CVC is working correctly by injecting some contrast liquid that shows up well on x-rays.

The CVC is flushed through with salt water solution (saline) and then 'locked' with a liquid called heparin so that clots cannot form inside the tube. The neck incision is covered with a sticky paper stitch which should stay in place for five days or so. The CVC is held in place at the exit site with a stitch and covered with a see through dressing. The exit site is where the CVC comes out through the skin.



Are there any risks associated with the insertion procedure?

The CVC is inserted while your child is under general anaesthetic. Although every anaesthetic carries a risk, this is extremely small. There is a small risk of bleeding when the incisions are made but this is unlikely as they are very small. A risk of damage to the lung has been reported but this is very rare with the modern techniques used.

As the CVC gives direct access to the bloodstream, infection can be a risk after the procedure. The CVC may also become blocked, dislodged or fall out, meaning that it will need to be replaced. You will need to look after the CVC very carefully but we will teach you everything you need to know before you leave GOSH. The nurses will also give you a written information booklet to remind you about what we have taught you.

Are there any alternatives to CVC insertion?

The doctors will only suggest that your child needs a CVC or other central venous access device if they are having frequent or long term treatment needing access to the bloodstream. If your child only needs injections or blood samples occasionally, a cannula (thin plastic tube) inserted into a vein on the hand or foot each time might be a better option.

There are various types of central venous access device. However, depending on your child's age and the reason why they need one, some options may not be appropriate. The doctors and nurses

will explain the benefits and drawbacks of each available option before you and your child make a decision.

What happens afterwards?

Your child will return to the ward after they have recovered from the general anaesthetic. Some children feel sick and vomit after a general anaesthetic. Your child may have a headache or sore throat or feel dizzy, but these side effects are usually short-lived and not severe. The area where the CVC was inserted will feel uncomfortable for a while afterwards but this soon passes. The nurses will give your child pain relief as needed. Your child can start eating and drinking as normal once they feel like it. The CVC can be used immediately if required. The sticky paper stitches at the neck should stay in place for five days or so but will then start to drop off – this is normal. The see through dressing may need to be changed after 24 hours, particularly if the exit site has oozed after the operation.

Going home

If your child does not need to stay in hospital for treatment, you can return home once you are confident in caring for the CVC. Your nurse will provide you with instructions on how to look after the CVC at home. We will also give you a safety pack and teach you what to do if the CVC falls out or breaks.



In the first few days after insertion, you should call the hospital if:

- **The neck and chest incisions look red, swollen and feel hotter than the surrounding skin**
- **The incisions are oozing**
- **Your child is in a lot of pain and pain relief does not seem to help**
- **Your child has a temperature of 38°C or higher**

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

Notes

Compiled by the Interventional Radiology and Intravenous Therapy teams in collaboration with the Child and Family Information Group

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