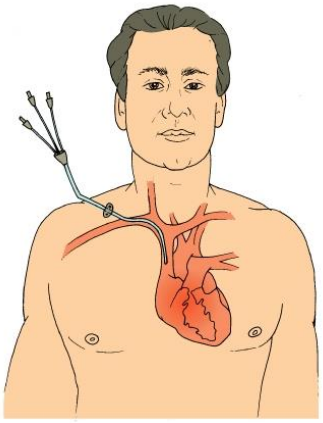
Central Venous Catheter Insertion

This leaflet explains central venous catheter insertion, including the benefits, risks and any alternatives and what you can expect when you come to hospital.
If you have any further questions, please speak to a doctor or nurse caring for you.



What is a central venous catheter (CVC)?

A CVC is a tube (catheter) that is inserted into a vein. This may be a vein located under your collarbone (subclavian vein), in the neck (internal jugular vein) or the groin (femoral vein).

The tip of the catheter is passed along the vein until it is positioned in a larger vein.

This vein is called either the superior vena cava or the inferior vena cava. The CVC is made from polyurethane and is designed to stay in place for periods extending from one to four weeks. The catheter

is secured in position with two stitches which stay in place until the device is removed.

Why should I have a CVC?

All types of intravenous drugs (for example, chemotherapy, antibiotics, blood products and other fluids) can safely be given via the device. Blood samples can also be withdrawn from it.
The catheter may have one, two, three or four tubes (lumens).
Your doctor may choose this type of device if:

- you require medication that must go into a large vein
- you require several types of intravenous medication
- the veins in your arms are difficult to access
- you require large volumes of intravenous fluids very quickly.

What are the risks?

Although inserting a CVC is quite straightforward, there are potential risks and complications known to be associated with the procedure.

- Sometimes a few attempts may be required to locate and insert the needle into the vein. This may cause bruising and some tenderness around the area.
- A small amount of bleeding can occur (immediately after the procedure) around the insertion site. This is quite common and is easily controlled by applying an extra dressing that puts direct pressure on the site.
- An artery runs parallel with the vein and on rare occasions, it can be punctured with the needle used to locate the vein. The blood in our arteries is under a greater pressure than in the veins, so artery punctures tend to bleed more. Any bleeding is

managed by applying pressure to the site for five to ten minutes.

- Sometimes the chest x-ray shows that the catheter may have been inserted too far. This rarely causes any problems but it is best practice to withdraw the catheter a few centimetres. This is so that the tip is correctly positioned just above the heart chambers. This is a simple and painless procedure which takes about five to ten minutes.
- There is a rare risk that the top of the lung could get punctured during the procedure. This may lead to one lung deflating (pneumothorax). If this occurs, it may be necessary to have an additional tube placed in the side of the chest to re-inflate the lung.

Are there any alternatives?

It is unlikely that you would be able to have the treatment which you require without a CVC. You will be able to talk to the person who is going to insert the CVC before the procedure.

How can I prepare for the CVC insertion?

You will be asked to arrive at the Venous Access Service at a prearranged time. One of the Nurse Practitioners will discuss the procedure with you.

Asking for your consent

It is important that you feel involved in decisions about your care. For some treatments, you will be asked to sign a consent form to say that you agree to have the treatment and understand what it involves. You can withdraw your consent at any time, even if you have said ‘yes’ previously. If you would like more details about our

consent process, please ask for a copy of our policy.

What happens during CVC insertion?

A specialist nurse or doctor puts in the CVC. The procedure usually takes approximately 30 minutes. A local anaesthetic is injected to numb the area where the catheter will be inserted. Great care will be taken by the person inserting the catheter to avoid introducing any infection. This will involve the use of sterile gloves and drapes.

Will I feel any pain?

The injection of the local anaesthetic does sting. Most patients say this is the most uncomfortable part of the procedure. However, the anaesthetic works quickly and then very little further discomfort should be felt.

What happens after CVC insertion?

A routine chest x-ray will be taken after the procedure to show exactly where the tip is positioned. This is not required if the CVC has been placed in the femoral (groin) vein. Immediately after the CVC has been placed, you will have a small dressing placed over the insertion site. After the local anaesthetic has worn off, you may feel some discomfort around the area where it has been inserted. This can be relieved by taking a mild painkiller. The pain usually begins to ease after a day or two. You will need to stay in hospital while you have a CVC.

What do I need to know after CVC insertion?

The following information is intended to give you more awareness of some of the late complications associated with a CVC.

- **Inability to draw blood from the CVC**
  On rare occasions, fluids can be given into the lumens but blood cannot be withdrawn. This is caused most frequently by a small blood clot which attaches to the tip of the catheter. It is not dangerous but can be frustrating because blood samples may have to be taken with a needle from another vein. A chest x-ray may be taken to ensure that the tip is still in the correct position in the vein. This is not applicable to femoral catheters. If it has dislodged, the device may have to be removed.
- **Blocked lumen**
  Sometimes one of the lumens can become completely blocked by a small blood clot. In this case the CVC is likely to be removed. If necessary, a new CVC may be inserted.
- **Infection**
  If you have a suspected infection, blood will be withdrawn (blood cultures) and sent to the laboratory. This is to see whether any bacteria are present in your blood. You may also be given antibiotics down the lumen/s of the catheter. If an infection is confirmed, the CVC may need to be removed. However, this decision is dependent on the type of infection that has been identified and how unwell it has made you.
- **Thrombosis (blood clot)**
  A rare complication of having a device placed in a vein is that a blood clot may form around it. The clot can slow down and congest the flow of blood through the vein. This is called a venous thrombosis. The most common signs of a forming venous thrombosis in the internal jugular or subclavian (neck) veins are:
    - swelling of the fingers (difficulty removing rings)

- pain in the back of the shoulder
- a headache that is worse when lying down.

For the femoral (groin) vein, the signs are swelling and pain in the calf or thigh. **It is important that you report such symptoms as soon as possible**. The device will need to be removed and quite often you will be prescribed drugs to thin your blood (anticoagulants). This will prevent any more clotting and help to dissolve the clot.

How are CVCs removed?

If you have a CVC in your neck or under the collar bone:
Whilst lying flat, your bed will be tilted so that your head is slightly lower than your feet.
The stitches will then be cut and removed. You will be asked to take a big breath and hold it; the catheter will be withdrawn and then you can exhale. This is a simple procedure and not overly uncomfortable.

If you have a CVC in your groin:
Whilst lying flat, the stitches will be cut and removed and the catheter will be withdrawn. This is a simple procedure and not overly uncomfortable.
The person removing the catheter will then apply gentle pressure to the site for up to five minutes. The hole in the vein closes naturally. A dressing will be placed over the site, which should be left undisturbed for 48 hours.

Contact us

If you have any questions or concerns about CVC insertion, please contact the Central Venous Access Office on 020 8725 3153

(Monday to Friday, 8.30 am to 4.30 pm). Out of hours, please speak to the nurse looking after you.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.stgeorges.nhs.uk

Additional services

Patient Advice and Liaison Service (PALS)

PALS can offer you advice and information when you have comments or concerns about our services or care. You can contact the PALS team on the advisory telephone line Monday, Tuesday, Thursday and Friday from 2pm to 5pm.

A Walk-in service is available:
Monday, Tuesday and Thursday between 10am and 4pm
Friday between 10am and 2pm.

Please contact PALS in advance to check if there are any changes to opening times.

The Walk-in and Advisory telephone services are closed on Wednesdays.

PALS is based within the hospital in the ground floor main corridor between Grosvenor and Lanesborough Wing.

Tel: 020 8725 2453 **Email:** pals@stgeorges.nhs.uk

NHS UK

The NHS provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health. **Web:** www.nhs.uk

NHS 111

You can call 111 when you need medical help fast but it's not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones. **Tel:** 111

AccessAble

You can download accessibility guides for all our services by searching 'St George's Hospital' on the AccessAble website (www.accessable.co.uk). The guides are designed to ensure everyone – including those with accessibility needs – can access our hospital and community sites with confidence.

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