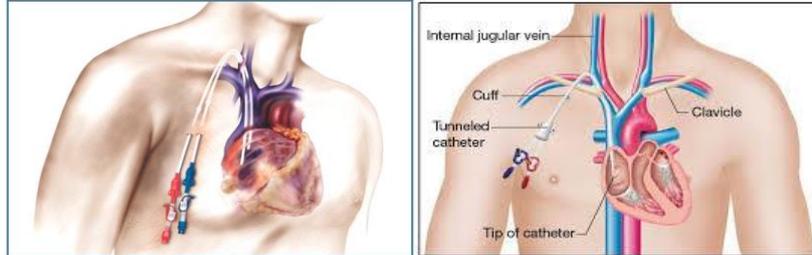


# Skin Tunnelled Dialysis Catheter (STDC) Insertion



**This leaflet explains more about STDC 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 an STDC?

An STDC dialysis catheter consists of one catheter with two internal tubes or two separate tubes which are used to get access to the blood for dialysis. It is usually inserted into a vein located in the neck (internal jugular vein). The tip of the catheter is passed along the vein until it is positioned in a larger vein.

STDC catheters generally stay in place from one to six months but sometimes longer. In most cases, the catheter will be used as a temporary measure. This is while arrangements are made to either surgically form an arterial-venous (A-V) fistula (a connection or passageway between an artery and a vein) or to place a catheter in the abdomen for peritoneal dialysis.

Part of the catheter is tunnelled under the skin (subcutaneous tunnel) so that it exits the body on the front part of the chest. During the insertion procedure, a cuff (which is part of the catheter) is positioned within the tunnel. The body tissue in the tunnel grows around the cuff and prevents the catheter from falling out.

## Why should I have an STDC?

The catheter is used to take blood from the body and into a dialysis machine. The dialysis machine removes the excess toxins that are usually excreted by the kidney. Blood needs to flow through the machine very fast (up to 400 mls per minute) and veins in the arms cannot deliver blood at this rate.

## What are the risks?

Although inserting the STDC is quite straightforward, there are specific 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 local bruising and some tenderness around the area.
- It is quite common for some bleeding (oozing) and bruising to occur (immediately after the procedure) from around the insertion site. Some patients with kidney failure have a tendency to bleed more. This is because the function of a type of blood cell (platelets - blood cells that help stop bleeding) is inhibited. Applying extra dressings which put direct pressure onto the site usually controls the oozing. The oozing may continue for several hours. You may be given an infusion of a drug called DDAVP which helps to improve the function of the platelets.
- On extremely rare occasions, the x-ray may show that the tip position is located in another vein. In this instance the line will be replaced in a controlled environment to ensure that the tip lies in the correct position.
- The carotid artery lies beside (and sometimes below) the internal jugular vein located in the neck. On 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 will be managed by applying pressure to the site for five to ten minutes.
- Sometimes the chest x-ray shows that the STDC 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 above the heart chambers. Once again, this is a simple and painless procedure that takes about five to ten minutes.
- The internal jugular vein lies near the top of the lungs. During the procedure, there is a risk that the top of the lung could be punctured. The puncture can cause a pneumothorax (air in the chest cavity), which makes part of the lung collapse. The collapse can be seen on the chest x-ray and may make you feel breathless. If the collapse is small, you will need to stay in hospital until the lung re-inflates (a few days). If the collapse is large, it may be necessary to insert a tube into the lung cavity, which helps to remove the air. Once again, you will need to stay in hospital until the pneumothorax resolves.
- The insertion procedure will cause a small amount of scarring (from the incisions). These usually fade within a couple of months. However, some skin is prone to forming keloid scarring. A keloid is an enlarged scar that projects above the skin surface, which may itch and be slightly tender to touch. As the months pass, the scar usually flattens.

## **Are there any alternatives?**

It is unlikely that you would be able to have your planned dialysis without an STDC, however you will be able to talk to the person who is going to insert the STDC before the procedure.

## **How can I prepare for STDC insertion?**

You will be asked to arrive at the x-ray department at a prearranged time. One of the nurse practitioners or radiology doctors 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 STDC insertion?**

A doctor or specialist nurse puts in the STDC. The procedure takes approximately one hour. The procedure will be done either in the Venous Access procedure room or in the x-ray department. Injection of a local anaesthetic is used to numb the skin areas and two small cuts (incisions) are made. One is made near the lower part of the neck (insertion site) and the second on the front part of the chest (exit site). These incisions enable the catheter to be tunnelled under the skin and inserted into the vein. The neck incision will be closed with a couple of absorbable stitches which take about four weeks to dissolve.

The exit site may be stitched to the skin depending on which type of STDC is used.

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 be sedated for the procedure?**

If your doctor decides that you need to be sedated for the procedure then you will need to have the procedure performed in the interventional radiology department. Separate information regarding the necessary preparation will be given to you ahead of the procedure date.

## **Will I feel any pain?**

The injection of the local anaesthetic stings slightly, however it begins to work quickly and then very little further discomfort should be felt. You may feel some pushing as the catheters are advanced through the skin tunnel.

## **What happens after STDC insertion?**

A routine chest x-ray will be taken after the procedure, to show exactly where the catheter tips are positioned. Immediately after the STDC has been placed, you will have a small dressing placed over each of the incisions. After the local anaesthetic has worn off, you

may feel some discomfort around the neck and chest wall (a bruised feeling) which can be relieved by taking a mild painkiller. The pain usually begins to ease after a day or two.

## What do I need to do after I go home?

If you are staying in hospital, the nursing staff will help you look after the STDC. The following information is for patients who go home with their STDC in place.

**The dressing over the insertion site needs** to be changed, by the nursing staff, 24 hours after the insertion procedure. Then it only needs to be changed at each dialysis session, unless it gets wet or soiled. Changing the dressing is easy and you will be given advice about the procedure by the nursing staff.

**The stitches** from the top (insertion) site are absorbable and will take three to four weeks to disappear. Any stitches at the exit site will be removed after about six weeks.

Once removed, there may be no need to apply further dressings. This will be discussed with the medical team supervising your care.

If any of the incisions or the skin around the tunnel, become **inflamed, red, swollen or painful**, please contact the unit looking after you. This may mean that an infection is present and antibiotics will need to be prescribed. Any infection along the skin tunnel is difficult to treat and the catheter usually needs to be removed.

**It is all right to shower and bathe** as long as care is taken to avoid getting the dressing wet. If the dressing does get wet, after washing your hands, remove it and pat the site dry with some sterile gauze. Clean the site with an antiseptic applicator (supplied by the hospital), let it dry naturally and then apply a new dressing.

**It is most important that you do not allow the catheter to be submersed in water. You should not swim with an STDC in place.**

**The nurses will flush the STDC** with a solution (saline) and then flush with a heparin solution which stays in the line after each dialysis procedure. If it is not being used regularly this is done once a week. This is to make sure it doesn't get blocked.

Having an STDC in place should not stop you from undertaking your normal daily activities.

## What do I need to know when I go home?

The following information is to help you understand some of the possible late complications associated with living with an STDC.

- **An inability to draw blood from the Catheter**

On occasions, fluids can be given into the catheter, but blood cannot be withdrawn at the necessary rate. This is most frequently caused by a small blood clot that attaches to the tips of the catheters. Sometimes a drug called Urokinase, which is injected into the catheter, can dissolve the clot. If this treatment is not successful, you may be referred to

the radiology department who can 'strip' the clot from the tip of the catheter. If none of these interventions are successful, the STDC may need to be removed and replaced.

- **Blocked lumen/s**

Sometimes one of the lumens can become completely blocked by a small blood clot. Periods of vomiting, straining on the toilet and excessive coughing can increase the risk of this occurring. A chest x-ray will initially be taken to identify as to whether there is another cause. In many cases, an injection of Urokinase, which dissolves clots, will resolve the problem.

- **Damage to the STDC**

STDC catheters do not tear easily, however, this can happen. If you notice any leaking of fluid or blood from the catheter, check from where it is coming. If it is between the clamp and your skin, you must put an extra clamp (blue, toothless clamp) above the tear. This ensures that no air can enter into your blood circulation. If the fluid is in between the STDC clamp and hub, ensure that the clamp is closed. **You must ring the unit looking after you** as soon as possible, because a torn catheter can quickly become a source of infection. In most cases, tears can be repaired and the catheter usually does not need to be removed.

- **Movement of the line outwards**

STDCs are at risk of moving back outside the body, especially in the first few weeks (until the cuff has secured). Care must be taken to ensure that the tubes do not get tugged at any time. It is best to take the weight off the tunnel by securing the lumens to another part of the chest with some tape. For women this can be done by placing them in the bra strap. If the cuff becomes visible or you notice that the catheter is longer, never try to push it back in. Always report to the nursing staff as the catheter may have to be removed.

- **Infection**

All devices that are inserted into the body can become a source of infection. Also, some of the tablets that you are given may leave you at greater risk of acquiring infection. Therefore, it is very important that you report any unusual signs and symptoms. These include redness or discomfort around the site of insertion or any fever (high temperature).

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 STDC 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 are

- swelling of the fingers (difficulty removing rings)
- pain in the back of the shoulder
- a headache that is worse when lying down.

The catheter 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 is the STDC removed?

If the catheter has been in place for more than three weeks, one or two small incisions need to be made over the cuffs in their tunnels. This is to enable them to be loosened from the adhered skin tissue. This is a simple procedure, which takes between 20 and 30 minutes. An injection of local anaesthetic will be used to numb the skin. Once the cuff(s) have been freed the catheter can be removed. Whilst lying flat your bed will be tilted so that your head is slightly lower than your feet. You will be asked to take a big breath and hold it; the STDC catheter(s) will be removed. This is a simple procedure and not overly uncomfortable.

The person removing the catheter will then apply gentle pressure to the site for about 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. You will be instructed to lie flat for up to half an hour after the procedure, in order to ensure that any bleeding from the vein has completely stopped before you sit up.

## Contact us

If you have any questions or concerns about your STDC catheter please contact the relevant department below:

<b>Central Venous Access Office:</b>	020 8725 3153 (office hours only)
<b>Champneys Acute HD:</b> sessions)	020 8725 0336/1080 (during dialysis sessions)
<b>St George's Dialysis Unit (SDU):</b> sessions)	020 8725 4706/1113 (during dialysis sessions)
<b>Renal Transplant Clinic:</b>	020 8725 2455 (office hours only)
<b>Colliers Wood HD:</b>	020 8685 2100 (during dialysis sessions)
<b>North Wandsworth HD:</b>	020 7501 3682/3 (during dialysis sessions)

**St Helier HD:** 020 8296 2507/3172 (during dialysis sessions)

**Kingston HD:** 020 8296 4888 (during dialysis sessions)

**For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit [www.stgeorges.nhs.uk](http://www.stgeorges.nhs.uk)**

## Additional services

### Patient Advice and Liaison Service (PALS)

PALS can offer you on-the-spot advice and information when you have comments or concerns about our services or the care you have received. You can visit the PALS office between 9.30am and 4.30pm, Monday to Friday in the main corridor between Grosvenor and Lanesborough wings (near the lift foyer).

**Tel:** 020 8725 2453 **Email:** [pals@stgeorges.nhs.uk](mailto:pals@stgeorges.nhs.uk)

### NHS Choices

NHS Choices provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health.

**Web:** [www.nhs.uk](http://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 of our services by searching 'St George's Hospital' on the AccessAble website ([www.accessable.co.uk](http://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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