



Care of your central venous catheter

A guide for patients and their carers

We care, we discover, we teach



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Christie website

For more information about The Christie and our services, please visit **www.christie.nhs.uk** or visit the cancer information centre at Withington, Oldham or Salford.

Introduction

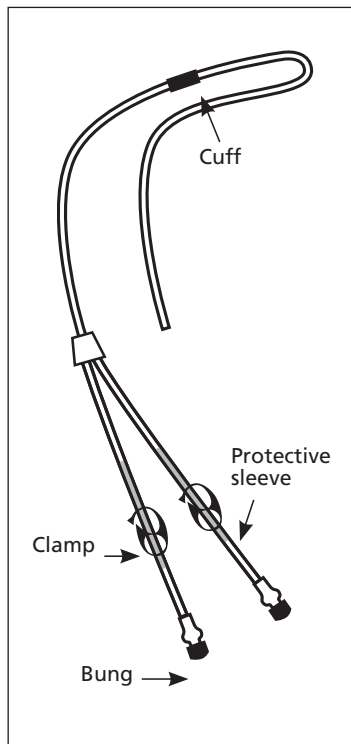
This booklet contains information about central venous catheters (CVC). These are sometimes called long lines or Hickman® catheters. The first part of the booklet describes what they are and how they are put in. Please make sure you read all this section before you have your line inserted. The second part of the booklet tells you how to care for the line and answers some frequently asked questions.

What is a central venous catheter?

A central venous catheter is a long fine hollow tube with an opening at each end. One end is outside your body, the other end is situated in a large vein in the chest. It can remain in position for several months or years.

There is a slightly thickened area on the line just above where it enters the skin. This is called the cuff, its purpose is to hold the line in position and help to prevent infection. About 30 cms of the line remains outside the chest. There is a plastic clamp on this which must always be closed when the line is not in use. The end of the line always has a plastic bung or cap attached to it when it is not being used.

If you need more than one drug at a time, you may have a central venous catheter with two lumens, that is, a line with two ends (see diagram).



What are the benefits of having a central venous catheter?

The line may be used to give chemotherapy, fluids, blood or other drugs directly into your bloodstream. Some drugs are not suitable to be given into the veins in your hand or arm, so these drugs must be given into a larger vein via a central venous catheter. It may also be used for taking blood samples which are needed regularly, avoiding the need for repeated needle stabs in your arm. Some patients are able to continue their treatment at home with a central venous catheter in place. People who have a phobia of needles may prefer to have a central venous catheter.

What to tell the doctor

It is important to tell the doctor or nurse **before attending for fitting of your central venous catheter** if you are on any medication to prevent or treat blood clots, such as **Warfarin, Heparin, Dalteparin (Fragmin), Aspirin, Clopidogrel or Rivaroxaban**. You must not take Aspirin or Aspirin-containing products for 5 days before line insertions, as this prevents blood clotting normally.

Before the procedure, we will take blood samples to make sure your blood count is satisfactory and your blood is able

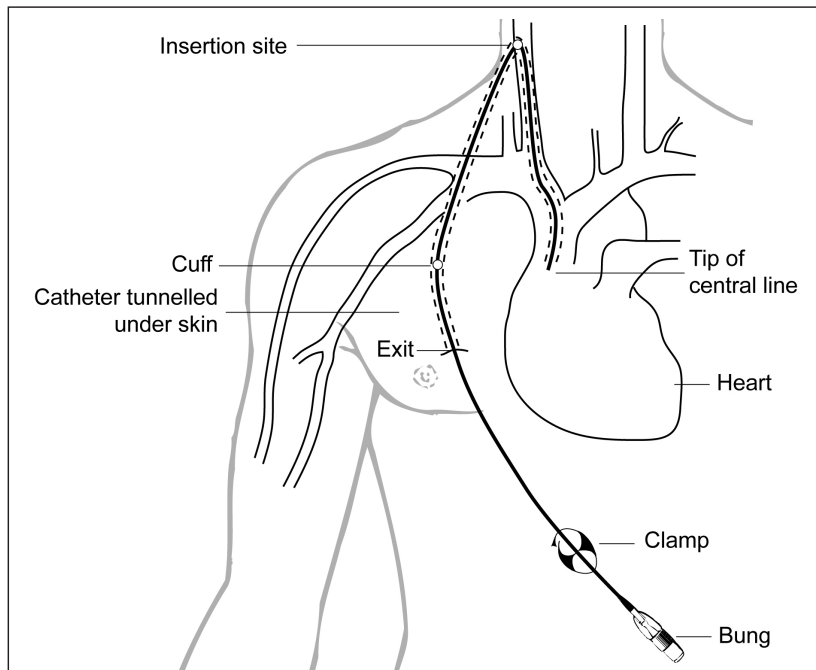


to clot normally. If your blood does not clot normally, we may insert an alternative central line.

You will need to have a routine swab taken to check for MRSA before the procedure. MRSA is a bacterium or germ that is resistant to some antibiotics.

Most people carry germs on their skin and in their nose which are usually harmless. However, when you have a line inserted it is possible that these germs can travel up the line and into your bloodstream causing infection, either in your blood or at the site on your skin where the line comes out of your body.

Insertion site – jugular vein in the neck



How is it put in?

The central venous catheter is inserted by a nurse specialist or a doctor. A local anaesthetic is used to numb the area where the line is put in. You may be given sedation so that you are drowsy and relaxed throughout the procedure. This is only for very anxious patients and is optional.

Once the line has been inserted there may be one stitch at the base of the neck (this will be removed after 7 days). This is called the 'insertion site'. There is one stitch at the exit site where the line comes out of the chest, which can be on your right or left side. The line has a small Dacron cuff around it. The tissues heal around it under the skin to help prevent the cuff from falling out. Following insertion, you will have a chest x-ray to ensure it is in the correct position.

The stitch at the exit site, holding the line in place, will be removed after 3 weeks.

If you have sedation you will not be able to drive, or use machines for 24 hours or sign any legal documents so please arrange for a relative or friend to collect you. You must also have an adult to stay with you for 24 hours. You should not drink alcohol for 24 hours after having sedation.

Are there any alternatives to a central venous catheter?

Your doctors have referred you for this type of device according to your medical history and treatment needs. It may be possible for some people to have a different type of central venous catheter inserted, for example a PICC (peripherally inserted central venous catheter) or an implanted port. If you would like more information, please discuss this with your doctor or procedure nurse.

What would happen if I decide not to have a central venous catheter?

For some treatments, it may be possible to have chemotherapy into a vein in the hand. In this case, you might have to be admitted to hospital which could delay the start of your treatment.

What are the risks of central venous catheter insertion?

As with most procedures there is a small risk of complications. The risk can depend on what type of cancer you have.

- Infection: as with all surgical procedures there is a risk of infection occurring.
- Accidental puncture of the lung: this happens to about 1 in 10,000 patients at The Christie who have a line inserted into a vein at the base of the neck. This allows air to leak into the chest and sometimes needs a tube to be placed in the chest to drain off the air.
- If the catheter tip in the vein is not in the correct position it may need adjusting, usually under live x-ray guidance.
- Accidental puncture of the artery, which may cause bleeding. About 1 in 1000 patients may have an artery punctured but staff are very careful to prevent any bleeding by checking your blood count and that your blood is able to clot normally. Please tell the staff if you have a bleeding disorder or history of bleeding abnormally.
- Embolus: a small risk of embolus (clot) if the catheter or guide-wire breaks, or air embolus (bubble of air) within the blood stream.

- Thrombosis: a blood clot may develop around the line in the bloodstream. Signs of this include pain, swelling and discomfort in the neck or arm on the side the catheter is placed.
- Scarring: there are usually two scars on the chest wall after the catheter is removed. If there is an infection the scarring may be worse and sometimes a reddened tract may remain.
- Malpositioning: sometimes during insertion the catheter tip is positioned in the wrong vein. This may be identified by an x-ray following the procedure. The position of the catheter may be readjusted or replaced in the x-ray or procedures department.

Rarer, more infrequently occurring risks may occur (see list below). Please ask the doctor or nurse if you would like more details on any of these potential complications:

- brachial plexus injury
- cardiac tamponade
- endocarditis
- haematoma
- cardiac arrhythmia
- breakage between first rib/clavicle (subclavian approach)
- hydrothorax
- laceration of the vessel
- perforation of the vessel
- thoracic duct injury
- risks normally associated with local anaesthesia

Can I eat and drink before having my central venous catheter inserted?

It is advisable to have a light breakfast before coming to the hospital as you will not need a general anaesthetic for your line insertion.

Will I need to stay in hospital after my central venous catheter has been inserted?

Some patients will be admitted routinely if they are starting chemotherapy treatment on the same day as the central venous catheter is inserted.

Patients who are going to have their central venous catheter inserted but no chemotherapy that day, do not have to stay in hospital as long as there are no complications.

Living with your central venous catheter

Can I have a bath/shower?

As a general rule we encourage people with lines to take a shower. The line or exit site must not be submerged in bathwater, because of the risk of infection.

Can I lead a normal social life?

Having a central venous catheter in place should not interfere with your social life. However, your chemotherapy drugs may temporarily restrict certain social activities either immediately after treatment or if your 'blood counts' are low. Your nurse or doctor will give you more specific information. Please talk to your doctor before planning a trip abroad with a central line in place.

Can I play sports and swim?

Sports and exercise that include vigorous activity should be avoided. There is a small risk that your central venous catheter could become dislodged because of excessive upper-body movement. There are many other pursuits which are acceptable. If in doubt ask your nurse or doctor. We advise you not to go swimming because of the risk of infection. If you have any questions about any aspect of your central venous catheter position or appearance, do not hesitate to contact either your ward or the procedure team nurses.

Will my central venous catheter affect my sex life?

Having a central venous catheter in place should not interfere with your sex life. To minimize the risk of damage to your line ensure it is secure before making love. Sometimes, when you are feeling unwell or having cancer treatment, you may lose interest in sex.

Adequate contraception is essential during cancer treatment to avoid pregnancy because of the risk of damage to the baby.

What happens if the central venous catheter breaks?

In the unlikely event of your line cracking or breaking, don't worry: clamp, pinch or tie your central venous catheter immediately above the break. Contact The Christie as soon as possible. You will have to return to have it repaired or replaced.

How is the central venous catheter removed when it is no longer needed?

The central venous catheter is removed by releasing the cuff which holds it in place under the skin. A local anaesthetic is given to numb the area around the cuff. A stitch is placed to close the skin and tissues, this will be absorbed internally and the dressing will be removed after 7 days.

How will I know if something is wrong?

Contact The Christie Hotline on **0161 446 3658** immediately if any of the following occur:

■ **Infection**

If you have a temperature above normal (temperature greater than 37.5 degrees centigrade), fever, chills or feel generally unwell, this could indicate the beginning of an infection.

■ **Other signs of infection**

If you have pain, redness or swelling around the exit site, or oozing from around the line.

■ **Signs of a blood clot**

Tell us immediately if you have any pain, swelling or discomfort in your neck or arm on the side the catheter is inserted. This may be a symptom of a clot forming or the line may have moved out of position.

Caring for your central venous catheter

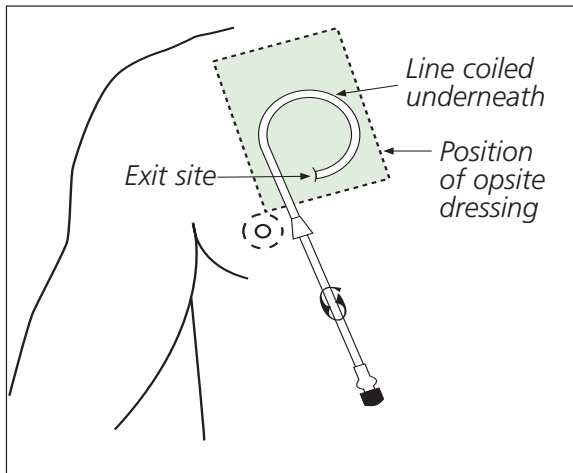
Caring for the exit site

To prevent infection your central line must be kept clean and dry at the exit site, where it comes out of your chest, and also at the end where the bung is attached.

It is important that you take care of your central line to prevent it from becoming infected or blocked. The following guidelines should be used.

A transparent dressing will cover the exit site while the stitch is in place. If the wound appears clean and dry your nurse will change this dressing each week. After about 3 weeks, when the wound has healed, the stitch will be removed.

A dressing will then no longer be needed, but the line must always remain looped and secured with tape. If you have any problems at home, please ring The Christie using the numbers on page 18 of this booklet.



Position of central line on chest following insertion

If you have an infusor connected continuously to your central line, it will require flushing 12–18 hours after it empties. For further information see The Christie booklet 'The Baxter Infusor'.

It is not advisable to wear jewellery, necklaces or beads around your neck as this can lead to an infection of your catheter.

Keeping the central line clear

Guidelines for your district nurse are included at the end of this booklet to enable them to carry out this procedure at weekly intervals. Alternatively, you can return to The Christie to have your line flushed if it is more convenient for you to do so.

When your central line is not being used the clamp must remain closed.

Regular flushing of your line is necessary to prevent it becoming blocked. The line is flushed with sterile saline and new bung is attached.

If your central line has two or more ends, each end must be flushed separately.

If you experience a cold and shivery feeling during or after flushing your line, contact The Christie Hotline immediately as this could be due to an infection in the line.

When your line is not being used, remember to check daily that the bung is securely attached and the clamp is closed.

PLEASE NOTE:

This should always be a sterile procedure so do not hesitate to remind anyone who handles your central line to wash their hands to protect you from infection.

Information for the district nurse

Your patient had a tunnelled central venous catheter (Hickman® line) inserted on:

There is a small Dacron cuff on the part of the line which lies in the skin in the 'skin tunnel', between the clavicle and the exit site where the line comes out.

The cuff takes about 3 weeks to knit into the tissues under the skin. It helps to secure the line and also acts as a barrier to help prevent infection.

There may be two sutures in situ: one at the insertion site at the base of the neck, (this suture may be removed after one week) and one just below the clavicle. The second suture is at the exit site on the chest and should be removed after three weeks when the cuff has firmly knitted in.

Dressing

Formal dressings are required over the catheter exit site until after the sutures have been removed (3 weeks). During this time the exit site should be cleaned using a solution of 2% Chlorhexidine Gluconate and 70% isopropyl alcohol e.g. ChloraPrep®.

Whilst the sutures are in place, the line must be dressed weekly or more frequently if the dressing becomes loose or soiled. During the first three weeks a strict aseptic technique must be used. The line must remain looped and firmly secured with a transparent, semi-permeable IV dressing e.g. IV3000.

Once the sutures have been removed, formal sterile dressings are no longer required but the line must remain looped. Surgical tape is sufficient to support the line.

The patient is allowed to shower or take a bath as usual, however, showers are preferable. If bathing, please remind the patient to tape the line up and ensure that neither the hub nor exit site is submerged.

When continuous infusion pumps are running the line does not need to be flushed. However, if no therapy is in progress, the line will need to be flushed with sterile saline 0.9% once every week whilst the patient is at home.

For routine flushing of tunnelled CVCs, aspirating blood first is NOT required.

Please note: All essential equipment will be provided for the first dressing/flushing of the line when patients are discharged from The Christie. Lines may be flushed and locked using Aseptic Non Touch Technique (ANTT) by practitioners who are trained in ANTT.

For queries related to the care and management of the central line please contact the procedure team on **0161 446 3446**. For training on accessing and flushing central lines (Hickman® lines) contact clinicalskillsteam@christie.nhs.uk or call **0161 446 3796**.

Procedure for flushing and locking a tunnelled central venous catheter (CVC) in the community

Materials required:

- Blue tray or sterile field, e.g. dressing pack
- Disposable apron
- Non-sterile gloves
- Bin
- Alcolgel
- 3 x 2% chlorhexidine, 70% alcohol wipes, e.g. sanicloth
- 1 x 10ml posiflush or 1 x 10ml luer lock syringe, 1 x 10ml saline, 1 x drawing up needle, 1 x bung.

1. Clean hands with soap and water or alcolgel using the six step technique. Dry.
2. Put on apron.
3. Clean blue tray using 2% chlorhexidine, 70% alcohol wipe. Allow to air dry. Alternatively open sterile dressing pack.
4. Assemble equipment in the tray using an Aseptic Non Touch Technique (ANTT), protecting the key parts.
5. If not using posiflush, draw up saline and place a bung on the syringe or carefully return to packet, protecting the key part. Place in tray.
6. Clean hands and dry hands.
7. Put on gloves and remove dressing and place in bin.
8. Remove gloves and clean hands.
9. Assess sites for signs of infection or thrombosis.

10. Check the line is intact and the clamp is closed.
11. Clean and dry hands and put on non-sterile gloves.
12. Ensure the clamp is closed.
13. Remove bung and place in bin.
14. Hold the line at all times to protect the key part.
15. Clean the hub of the line thoroughly with 3 parts of a 2% chlorhexidine 70% alcohol wipe, for a minimum of 15 seconds with 3 parts of the wipe. Place wipe in the bin.
16. Allow hub to air dry.
17. Attach 10 ml saline syringe.
18. Open clamp.
19. Flush using the push pause technique.
20. The line must be clamped as the last ml is being administered.
21. Dispose of syringe.
22. If required clean the hub with a 2% chlorhexidine, 70% alcohol wipe and allow to dry.
23. Attach a clean bung to the hub.
24. Redress line as appropriate.
25. Dispose of any remaining waste appropriately.
26. Clean blue tray or dispose of sterile field.
27. Remove apron and gloves.
28. Clean and dry hands.
29. Complete all documentation.

If you need information in a different format, such as easy read, large print, BSL, braille, email, SMS text or other communication support, please tell your ward or clinic nurse.

For problems or queries about your central venous catheter, please contact the procedure team on:

0161 446 3446 **(9am – 5pm)**

Out of hours please ring The Christie Hotline.

The Christie Hotline: 0161 446 3658

We try to ensure that all our information given to patients is accurate, balanced and based on the most up-to-date scientific evidence.

If you would like to have details about the sources used please contact patient.information@christie.nhs.uk

Notes



Contact The Christie Hotline for urgent support and specialist advice

The Christie Hotline: 0161 446 3658

Open 24 hours a day, 7 days a week

Visit the Cancer Information Centre:

The Christie at Withington Tel: 0161 446 8100

The Christie at Oldham Tel: 0161 918 7745

The Christie at Salford Tel: 0161 918 7804

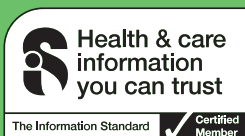
Open Monday to Friday, 10am to 4pm.

Opening times can vary, please ring to check before making a special journey.



The Christie NHS Foundation Trust
Wilmslow Road
Manchester M20 4BX

T. 0161 446 3000
www.christie.nhs.uk



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