

## Central lines (skin-tunnelled venous catheters)

This information is about skin tunnelled venous catheters, which are often called central lines. They are used to give chemotherapy treatment and/or other medicines to both adults and children with cancer.

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We hope this information answers your questions. If you have any further questions, you can ask your doctor or nurse at the hospital where you are having your treatment.

### Central lines

Central lines are long, hollow tubes made from silicone rubber. They are also called skin-tunnelled central venous catheters. Examples of some of the makes that are used are Hickman® or Groshong®.

The central line is inserted (**tunnelled**) under the skin of your chest into a vein. The tip of the tube sits in a large vein just above your heart. The other end of the line hangs out of your body, from the chest. The line will usually be sealed with a special cap or bung that can be attached to a drip or syringe. Sometimes there is also a clamp to keep the line closed when it isn't being used.

The space in the middle of the line is called the lumen. Sometimes there are two or three lumens. This allows different treatments to be given at the same time.

### What they are used for

A central line can be used to give you treatments such as chemotherapy, blood transfusions, antibiotics and intravenous (IV) fluids. It can also be used to take samples of your blood for testing.

This means that you won't need to have needles put into veins in your arms every time you have treatment. Central lines can also be used to pass liquid food into the vein if your digestive system is not able to cope with food for any reason.

You can go home with the central line in place, and it can be left in for weeks or months.

A central line may be helpful if doctors and nurses find it difficult to get needles into your veins, or if the walls of your veins have been hardened by previous chemotherapy treatment. A central line is also helpful if you don't like needles.

### How a central line is put in

Your central line will be put in at the hospital by a specially trained nurse or a doctor. Although a central line is usually put in under a local anaesthetic, a general anaesthetic is sometimes used.

Your neck will be checked for a suitable vein using a small ultrasound machine. The area where the line is to

be inserted is then cleaned with an antiseptic solution.

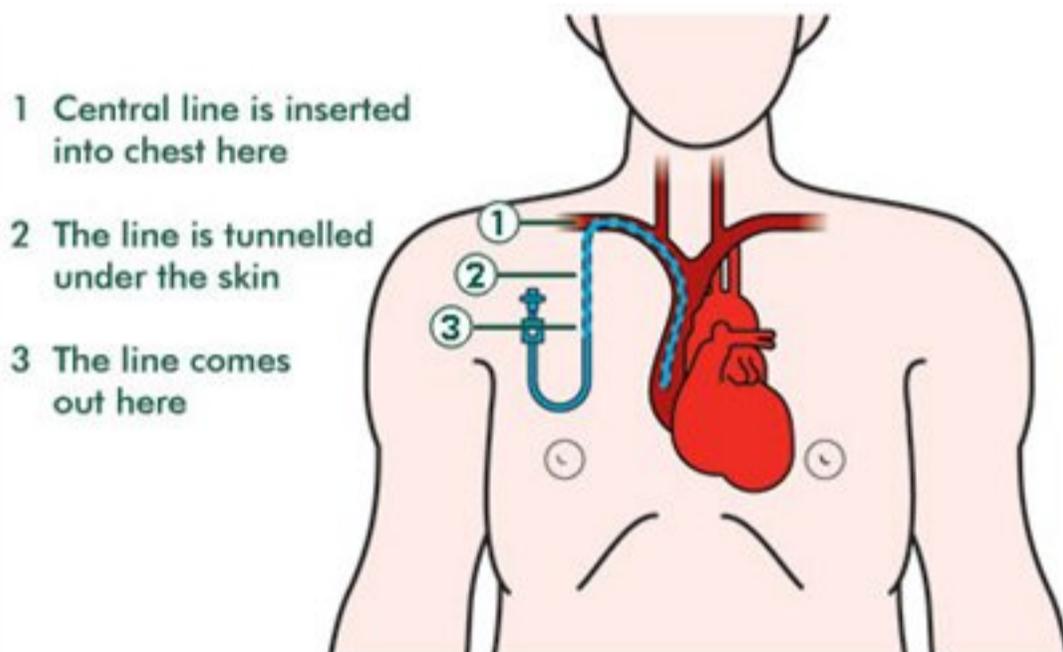
A local anaesthetic is used to numb the area. You shouldn't feel any pain when the tube is being put in, but you may feel a bit sore for a few days afterwards.

A small cut is made in the skin near your collarbone (the insertion site), and the tip of the line is gently threaded into a large vein, towards the heart. The other end of the line is then tunnelled under the skin to reach the exit site. The exit site is the place where the tube comes out of your body.

You will have a chest x-ray to make sure the line is put in the right place.

The position of the exit site will vary. You can ask the person who is going to put in the central line to show you where on your chest the exit site is likely to be.

When the line has been put in you will have dressings covering the insertion and exit sites. For a few days you may have some pain or discomfort where it has been tunnelled under the skin. A mild painkiller such as paracetamol will help ease this.



Position of a central line

## What stops the central line from falling out?

There is a small cuff around the central line that can be felt under the skin just above the exit site. The tissue under the skin grows around this cuff over a period of about three weeks and holds the line safely in place.

Until this has happened you will have a stitch holding the line in place. This stitch usually stays in place for about three weeks

## Care of your central line

When the central line isn't being used there is a small risk that it may become blocked. To stop this from happening, a small amount of fluid is 'flushed' into the line using a syringe. This is usually done once a week. The caps or bungs at the end of each lumen should also be changed every week.

The exit site will also need to be cleaned once a week to reduce the risk of infection. If you have a dressing on the site it will need to be changed once a week. To help reduce the risk of infection, an antibiotic patch may be put around the exit site.

The nurses at the hospital will teach you (if you feel able to), or a relative or friend, how to flush the line and change the dressings. Otherwise a district nurse can do it for you at home.

When you're at home, it's safe for you to have a shower or bath with your central line in place. Your nurse can give you waterproof covers to stop the line getting wet.

## Possible problems

## Infection

It is possible for an infection to develop either inside the central line or around the exit site. You should contact your hospital doctor or nurse if:

- the exit site becomes red, swollen or painful
- you notice discoloured fluid coming from the exit site
- you develop a high temperature (fever).

If an infection develops you will be given antibiotics. If these don't clear the infection, or if the infection is serious, the line may be removed.

## Blood clots

It is possible for a blood clot (thrombosis) to form in your vein at the tip of the line, and you may be given medication to help prevent this. If a clot does form, you will be given some medication to dissolve the clot and your line may have to be removed.

Signs of a blood clot around the central line include swelling, redness and/or tenderness in the arm, chest area or up into the neck (on the same side as the central line). You should also contact your hospital doctor or nurse immediately if you develop any shortness of breath or tightness in your chest.

## Air in the central line

No air can be allowed to get into your central line. The clamps should always be closed when the line is not in use. The line must not be left unclamped when the caps or bungs aren't in place.

Groshong lines don't have clamps. They have a special valve inside the line instead that stops air getting into the line.

## Break or cut in the line

It's important that you don't get a break or cut in the line. Do not use scissors near the line, and only use the clamp on the thicker, strengthened part of the line.

It's uncommon to get a cut or split in the line, but in the unlikely event of this happening, try to clamp or tie your line immediately above the break, so it's sealed between the split and the exit site (where the line comes out of your body). Contact your hospital straight away. The nurses may be able to repair the line, but if this can't be done, it will be removed.

## How the central line is removed

When you no longer need the central line, it will be taken out. A doctor or specially trained nurse will do this for you, usually in the outpatients department. This procedure should take about 30 minutes. You won't usually need to have a general anaesthetic.

Once you are lying down comfortably, the skin over your chest will be cleaned with antiseptic. The doctor or nurse will then numb the area around the cuff with local anaesthetic. They will then make a small cut to release the cuff, and slowly remove the line. You might find this uncomfortable, but it shouldn't be painful.

Once the line is out, the nurse or doctor will put a dressing over the exit site. You'll be asked to stay lying down for about 10 minutes until it is certain that there is no bleeding.

## References and thanks

This section has been compiled using information from a number of reliable sources, including:

- Bishop, et al. Guidelines on the Insertion and Management of Central Venous Access Devices in Adults. International Journal of Laboratory Haematology. 2007.
- British Committee for Standards in Haematology. Guidelines on the insertion and management of central venous access devices in adults. 2006.
- Perry MC. The Chemotherapy Source Book. 4th edition. 2008. Lippincott Williams and Wilkins.

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## Thanks

Thank you to Mr Andrew Jackson, IV Consultant Nurse, and the people affected by cancer who reviewed this edition. Reviewing information is just one of the ways you could help when you join our Cancer Voices network.

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