

Care of a double lumen Broviac/Hickman central line

A central line is a polyurethane or silicone tube, which is tunnelled under the skin on the chest and into one of the large veins leading to the heart. The tip of the line sits in one of the heart chambers (called the right atrium). It is quite safe for the line to be in this position. It rarely causes blockage and the veins and heart continue to work normally.

The other end of the central line comes out of the skin on the chest wall, which heals around the line.

There are several different types of central line, including Hickman/Broviac and Leader Cuff, which may have one or two lumens. They all work in the same way, but may have different types of switches or clamps to open and close them. All lines should be switched off when not in use. A screw-on cap (bung) is attached to the end of the line, through which injections can be given or blood taken. This cap re-seals after each use.

Your child has a double lumen Broviac/Hickman central line.



Inserting a central line

The line is put in under general anaesthetic. First the line is put into the vein. Double lumen Broviac lines are inserted upwards from the exit site area in the chest. There will be a small cut in the neck to insert it correctly in the vein. The neck wound is then stitched (with dissolvable stitches under the skin), and covered with a clear dressing.

The line is then flushed to make sure it works, and its position is checked with an x-ray of the chest. A single dose of an antibiotic is routinely given in theatre at the time of insertion. There is initially a risk that the line can fall out, so it will be held in place with a clear dressing. The dressing will be left in place for a week and will then be changed weekly.

The line will be susceptible to falling out for the first four to eight weeks, so be careful to ensure the line is safely secured at all times. If possible the line should be looped up under the dressing (as in the picture); this will help take some of the weight of the line.

The whole procedure usually takes about 40 minutes. However, children are often away from the ward for about one and a half hours, which includes the time for recovery from the anaesthetic.

Double lumen lines have one tube which is divided into two separate barrels right through to the end so they can be used for different things at the same time. They are used for children having the most intensive types of therapy, or if intravenous feeding (TPN) is needed at the same time as having treatment. There will be a stitch at the exit site and an internal one at the area around the cuff. These do not need removing but if they cause discomfort or other problems, a surgeon should review before removing the sutures. The lines should be 'flag' taped (i.e. have a secondary secured method of taping) to the chest to reduce any pulling. Because the lumens are separate throughout the line, both lumens of the line need to be flushed each week, even if only one has been used for blood taking etc.

What the central line is used for

The line is used for giving drugs and fluids and for taking blood samples. The bung on the end can be attached to a blood transfusion, or an infusion of fluids. This means that we can give treatments whilst avoiding the distress caused by many injections. Some injections may still have to be given, so please do not promise your child that they will never have to have an injection.

How it stays in

The central line has a cuff made of Dacron, which lies under the skin and forms scar tissue around it that holds it in place.

The tunnel under the skin is only the size of the line but smaller than the cuff which prevents the line from slipping out. Looping the line up under the dressing will help take some of the weight of the line and will help prevent it falling out.

Central lines can stay in place throughout treatment. This may be for a few months, but may be for as long as two or three years, depending on the length of your child's treatment. Sometimes lines need to be replaced if they become blocked, broken or infected.

How to look after your lines

When the line is not in use, it should be tucked out of the way. For children over the age of four years a wiggly bag may be used. For children under four years and babies, a gauze vest should be used. Lines should be strapped to the chest or clothes by 'flag' taping at all times when an infusion is attached. The exit site should be covered by a clear dressing. You must ensure that the weight of the line is held by a wiggly bag or gauze vest at **all** times.

For any further advice or information, please speak to a member of staff on Piam Brown day ward on 023 8120 4249 or Piam Brown ward on 023 8120 4816/4817.