

# Central Venous Catheter: What... Why... How...



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**A Central Venous Catheter (CVC) has several parts.**

**The Catheter:** A thin flexible tube. The tube may have one or two channels (lumens).

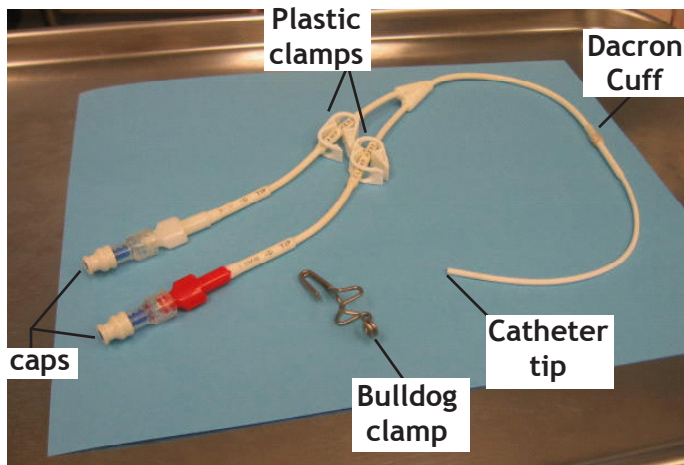
**A Dacron Cuff:** rests just under the skin where the tube leaves the body. Body tissue grows around the cuff and helps hold the catheter securely in place.

**A Small Adaptor:** at the end of the catheter. Intravenous lines, syringes, or caps connect to the adaptor.

**A Cap:** closes off the end of the lumens(s) when they are not in use.

**The Tip of the Catheter:** lies in a vein at the entrance to the right side of the heart.

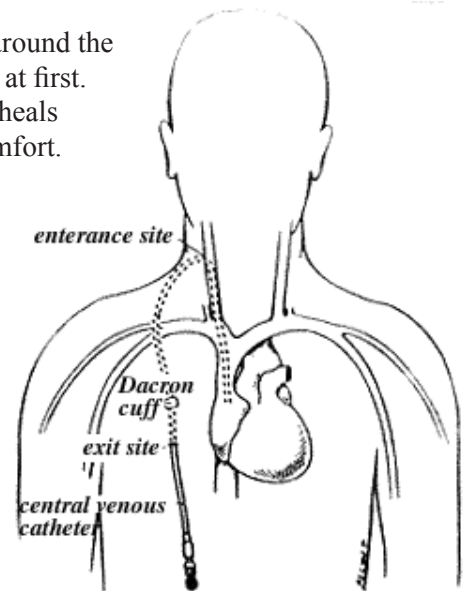
(The materials used to make the CVC are safe in the body.)



**When in place, the CVC looks like this:**

Most of the catheter lies just under the chest skin. It creates a safe way into a major blood vessel. You may be able to feel the slight bulge of the Dacron cuff under the skin.

It may feel sore around the incision (wound) at first. Once the wound heals there is no discomfort.



**Your doctor recommends a CVC if you need:**

- many injections directly into the blood stream
- frequent blood samples from blood vessels
- many transfusions of blood products, e.g. whole blood, platelets or bone marrow
- nutritional support over a long period of time

The CVC makes it possible to have these treatments, most of the time, without a needle going into the blood vessel. There is less pain, and less damage to the blood vessels and tissues.

A regular needle can only reach small veins close to the skin. These veins have delicate walls. Certain chemicals in the medications may irritate these veins and the surrounding tissue. This makes treatment difficult and painful.

**The CVC allows the medications to go into a large vein deeper in the body.**

The larger, stronger veins lie deep inside the body. They carry a larger volume of blood. The blood volume dilutes the chemicals in the blood so they cause less damage to the healthy tissues. Also, the blood flows more quickly through the large veins so the chemicals are not in one area long enough to cause damage.

## The CVC works like this:

To take a blood sample, the clinician withdraws blood through the cap with special equipment. S/He can also attach intravenous tubing if s/he needs it. This way s/he avoids many “pokes” into a vein.

**Note:** Taking blood from the CVC has some drawbacks. Therefore, some blood samples may need to come directly from a vein.

Putting a CVC in place is a simple surgical procedure. The child has the procedure in the operating room under an anesthetic. It usually takes about 30 minutes.

The surgeon makes a small incision on the neck. We call this an entrance site because this is where the tip of the catheter is threaded into the large vein.

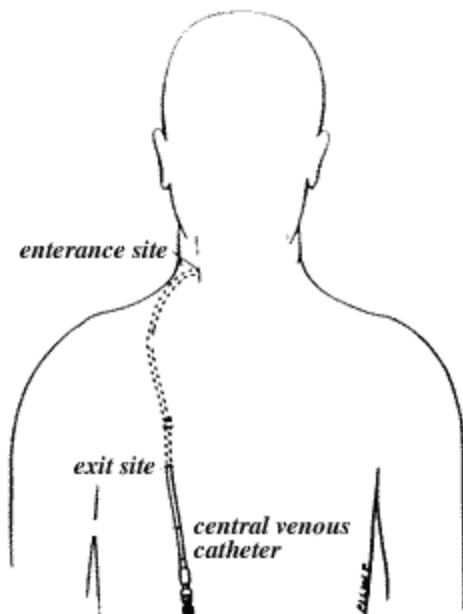
The surgeon prepares a little “tunnel” under the skin through which s/he can thread the catheter.

S/He makes a second incision on the chest, called the exit site at the end of the tunnel.

The surgeon threads the catheter through the tunnel, starting at the exit site. S/He sets the tip of the catheter into the vein.

The surgeon checks the position of the catheter in the vein on the X-ray and stitches the two incisions. The stitching at the exit site anchors the catheter into place. We remove the stitches at the exit site after about 30 days. The stitches at the entrance site come out after 2-4 weeks unless the surgeon uses stitches that dissolve over time.

The catheter can safely stay in place for months at a time.



## A nurse will help you learn to:

- care for the exit site
- change the cap
- flush the catheter to prevent blockages
- detect and take care of problems

With good proper care, you help reduce the risk of infection or blood clots in the CVC line.

### Suggestions:

Tell your doctor if your child has an appointment for dental work. The doctor may suggest an antibiotic to help prevent an infection.

*If your child shows any sign that all is not well, call the nurse or doctor.*



## Contacts:

Community nurse: \_\_\_\_\_

Telephone: \_\_\_\_\_

Doctor: \_\_\_\_\_

Telephone: \_\_\_\_\_

Hospital nurse or other contact: \_\_\_\_\_

Telephone: \_\_\_\_\_

At Children's & Women's Health Centre of British Columbia we believe parents are partners on the health care team. We want you to be as informed as possible. This brochure will answer some of your questions. Please ask about things you do not understand and share your concerns.

If you have any questions, please contact one of the contacts listed above.

Developed by the health care professionals of the OncologyHaematology/BMT Department and Parenteral Therapy with assistance from the Department of Learning & Development.