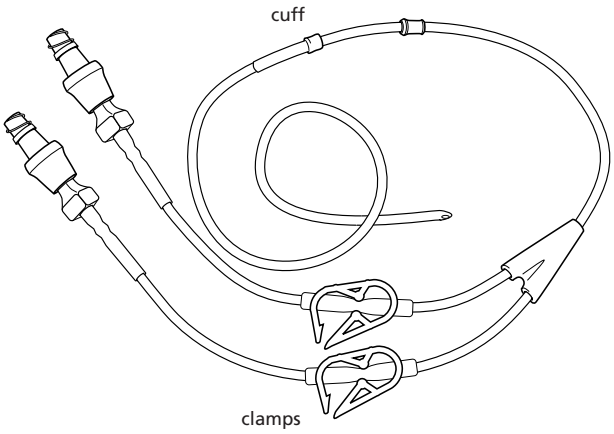
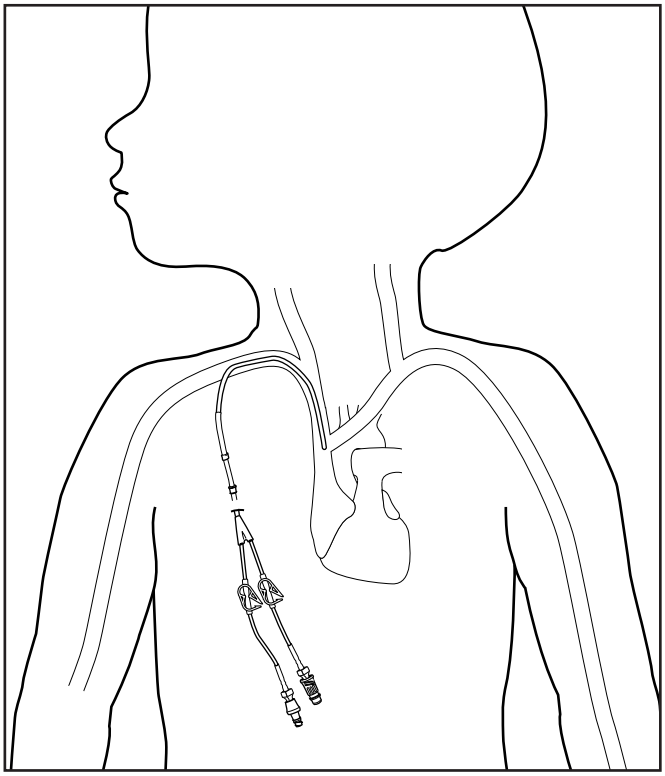
Let's Talk About...

Central line care, tunneled

A tunneled central venous catheter is a tube made of soft, flexible plastic. The doctor tunnels the catheter under the skin and places it in one of the veins just under the collarbone. The catheter is long and reaches the large vein that enters the heart. This vein is called the superior vena cava (VEE-na CAVE-uh). Your child's surgeon tunnels the catheter under the skin to help prevent infection. There is a small cuff around the catheter about one inch inside your child's skin. Skin grows into this cuff and keeps the catheter in place. The cuff also helps prevent infection. Tunneled catheters have one, two, or three outside openings (lumens).





Why does my child need a tunneled catheter?

A tunneled catheter is for children who need an IV for a long time (usually more than one month). An IV (or intravenous line) is a way to give a child chemotherapy, medicine, nutrition, and to take blood samples. Children with tunneled catheters do not need a needle stick with these procedures. If an anti-clotting medicine is put into the tunneled catheter regularly, it does not need to have IV fluid attached all the time. This lets your child move around and do normal activities. Your child may have the tunneled catheter only while he is in the hospital, or he may go home with it.

How and where is a tunneled catheter placed?

Your child's doctor will place the tunneled central venous catheter in the operating room or at your child's bedside if your child is in the Intensive Care Unit (ICU). Your child will receive medicine to help him sleep during the procedure.

The doctor makes a small opening in the area around the middle of the chest. Then the doctor makes another opening where the catheter will go into the vein. The doctor forms a tunnel under the skin between the two openings.

The doctor passes the catheter through the tunnel and then gently threads it into the vein. Then your child will have a chest X-ray to make sure the end of the catheter is in the right place.

The doctor will place small bandage tapes called Steri-strips™ over the two openings. The catheter may have a few stitches to hold it in place. It is common to have a small amount of bleeding at the site where the line goes into the skin. This is normal. There may be some bruising there, too. This is normal.

Are there any possible complications?

The most common complications of central lines are infection, the catheter moves out of the proper position, and catheter damage. Proper daily care helps prevent these complications.

How will the hospital staff care for the tunneled catheter while my child is in the hospital?

The hospital staff's goal is to prevent complications, especially infection and movement of the line out of proper position. While your child is in the hospital, staff will follow these special care procedures:

1. The staff will tape the catheter in at least two places (when possible) outside the dressing, being careful not to pull on the catheter or tubing.
2. The staff will place a dressing over the site where the catheter exits the body. The dressing helps keep the site clean. The dressing is sealed around the edges and it should be kept clean and dry.
3. The staff will change the dressing for the first time 24–48 hours after the catheter was inserted or if it becomes soiled, loose, or is no longer intact.
4. To prevent infection the dressing is changed according the type of dressing material:
   - Transparent dressings (for example Tegaderm™) once a week.
   - Gauze dressings every 48 hours.
   - Specialty dressings (for example Covaderm™) twice a week.
   - Regardless of the type, they will change the dressing when it is wet, loose, or soiled. This helps prevent infection.
5. The nurse will check for signs for infection, when she changes the dressing. Some signs of infection are redness, swelling, or drainage.
6. The nurse will flush the catheter with a medicine that prevents blood from clotting (Heparin) at least twice a day, if the catheter is not connected to an IV bag.
7. The nurse will change the cap on the catheter at least once a week. The cap on the end of the catheter should not be disconnected or used by anyone except a doctor, nurse, or trained family member.
8. The nurse will dress your child to keep him from pulling on the catheter or picking at the dressing.
9. You should always have a clamp on the catheter and a spare clamp close by for emergencies (see the handout ***Let's Talk About…Central line catheter emergencies***).

How can I prevent central line infection?

Occasionally a central line becomes infected. The best way to prevent an infection is to take good care of the line. You can do these things:

1. Make sure all your healthcare providers caring for your child wash their hands with soap and water or alcohol based hand sanitizer before and after caring for your child.
2. If the bandage comes off, or becomes wet or dirty, tell your healthcare provider immediately.

3. Don't let family or friends touch the port unless they put on a glove.
4. Make sure family and friends clean their hands with soap and water or alcohol-based hand sanitizer before and after visiting.
5. Make sure healthcare providers scrub the cap (end of the line) with antiseptic before using the port.
6. Tell your healthcare provider immediately if the tubing becomes disconnected.
7. If you child wears diapers, make sure the cap of the line does not get into the diaper.
8. Do not let the cap dangle in a bathtub.
9. In general keep the dressing clean and dry.
10. Keep the cap clean.

How do I know if the central line is infected?

Watch the line for infection. Tell your healthcare provider right away if you see any of these:

1. The skin where the line enters your child is red.
2. The skin where the line enters is swollen.
3. The skin where the line enters is warm to the touch.
4. The area where the line enters is painful.
5. Your child has a fever greater than 101 F and there is no other known reason for the fever.
6. The area where the line enters has pus coming out.
7. The area where the line enters has a foul odor.

More suggestions

- Your child should have a "Go Bag" that contains supplies needed for a dressing change, cap change, or catheter flush. Keep a clamp with the "go bag" so you can clamp the catheter in emergencies.
- Use "onesie" undershirts (snap at the bottom of a T-shirt) or other one-piece clothing to keep a young child from pulling on the tunneled catheter. You can use Surg-o-flex™ and tubular stockinette to cover a toddler's chest.
- Do not let your child swim with his PICC line. Take care to protect the site if he plays contact sports, such as soccer or basketball. Your child's doctor should approve these activities before he participates.

How do I care for a tunneled catheter at home?

- If you have been trained to change the dressing, change it according to the type of dressing your child has (see above).
- When the line is not being used, flush the catheter with the medicine prescribed by your doctor and as directed. Flush the catheter before and after you give your child medicine or fluid in the catheter.
- If you have been trained to change the cap on the end of the catheter, do this at least once a week.

If your child goes home with a tunneled catheter, a home care company may provide the following services:

- Supplies for the central line
- Instruction in the following areas:
  - Dressing change
  - Cap changes
  - Flushing techniques
  - Signs of a complication and what you should do
- Nursing support until you can say and provide your child's central venous catheter care

The home care company may provide care that is slightly different from what is done in the hospital. This is OK.

Important reference information

Record information about your child's home care company and catheter in this chart:

Home care company:	
Phone number:	
Catheter brand:	
Catheter size:	
Catheter length:	
Heparin flush concentration:	
Volume of flush:	
Frequency of flush:	
Type of dressing:	
Frequency of dressing change:	
What is used to clean the site:	

Intermountain Primary Children's Medical Center

The Child First and Always®

© 2011 Intermountain Healthcare, Primary Children's Medical Center. All of the information contained in the ***Let's Talk About . . .*** series is for educational purposes only. This educational information is not a substitute for medical advice or for care from a physician or other health care professional. If you have questions about your child's health, contact your health care provider.

Pediatric Education Services, 801.662.3500 | Rev. 11/11, LTA520440665 | *Available in Spanish*