

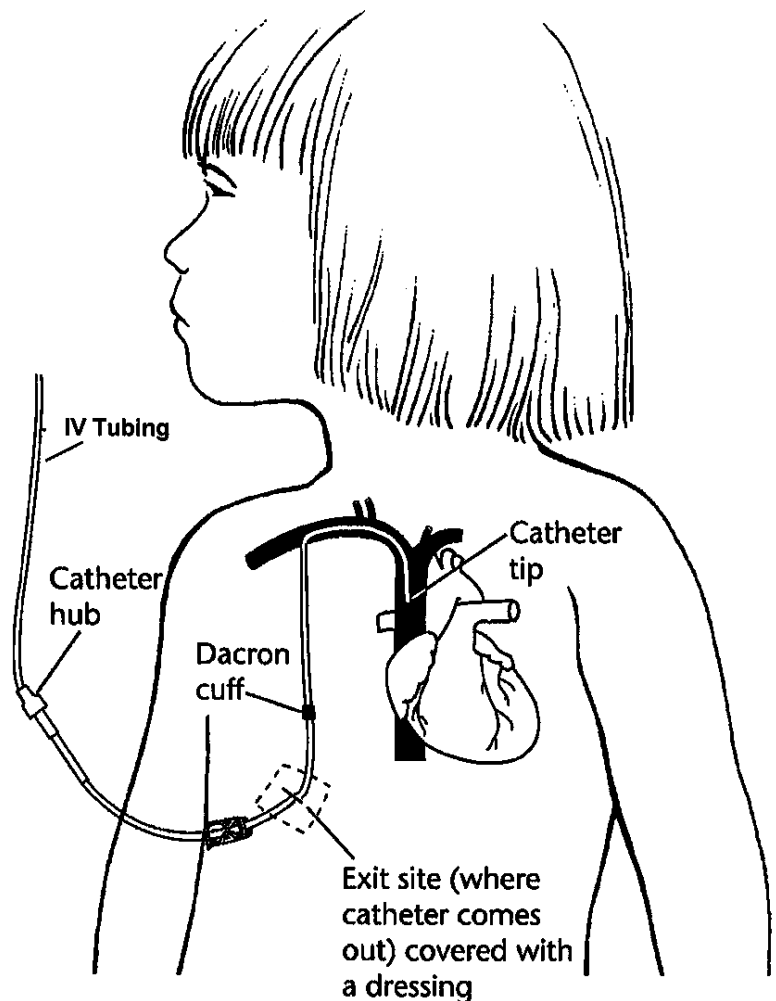
IV: Tunneled Central Venous Catheter - Care at home

The tunneled central venous catheter (CVC) is a plastic tube that is placed into one of the large veins in the body (Picture 1). Your child will go to the Operating Room to have this catheter inserted. Once the catheter is in place, you can give IV nutrition or medicines safely at home.

Please make sure your nurse contacts the unit care coordinator to help you get the supplies you will need to care for the catheter. A home visit from a homecare nurse will be arranged to finish and complete the teaching and answer your questions.

A Dacron® cuff on the catheter will be placed underneath the skin near the place where the catheter comes out (exit site). Over time, the body tissues will grow onto the cuff. This will keep the catheter in place. The cuff also keeps germs from getting into the blood stream around the catheter. If the cuff comes loose and moves toward the exit site, the catheter may need to be removed. Call your doctor, nurse clinician or nurse practitioner if this occurs.

A tunneled central venous catheter needs a dressing and a needle-less connector (also called a “cap”) to prevent infection. A solution called heparin is used to keep blood from clotting in the catheter.



Picture 1 The tunneled central venous catheter is inserted in the Operating Room.

Care before suture removal

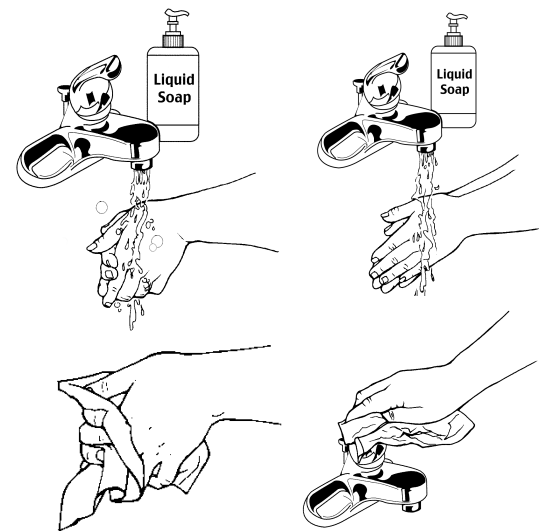
- Your child's CVC catheter has stitches at the exit site to hold it in place. After 6 weeks, the nurse will check the site. When it has healed completely, the stitches will not be removed, but they may loosen on their own.
- The tunneled catheter dressing **must ALWAYS stay dry**. During this healing period, your child is more likely to get an infection around the surgical wound. Do not let the dressing get wet from bathing. .
- If the dressing gets wet, it needs to be changed immediately.

Your child should never swim while he or she has a CVC catheter.

Aseptic (germ-free) technique

Aseptic (aye SEP tik) technique is a careful and precise way to handle products in a clean place to prevent infection. These steps must be followed when caring for the tunneled central venous catheter.

- **Good hand washing is very important.** Washing hands correctly and often is the best way to prevent the spread of germs.
- Before handling the tunneled catheter, you must wash your hands. Scrub your hands and wrists with soap and warm water for at least 15 seconds. Clean under your fingernails. Dry your hands with a clean paper towel. Turn off the faucets with the paper towel (Picture 2). Instead of soap and water, you may also use a waterless, alcohol-based product.
- After you have washed your hands, **do not touch anything except the catheter and IV supplies**. If you touch anything else, re-wash your hands. Remember, good hand washing is the best way to prevent the spread of germs.



Picture 2 Good hand washing is very important.

How to keep supplies clean

- **Do not touch** any part of the equipment that should be kept **STERILE**.
- Throw away any sterile supplies that accidentally touch anything (fingers, clothes, non-sterile equipment). Use new, sterile equipment.
- Keep IV medicines in a clean area in the refrigerator or freezer (as instructed by the home care agency).
- Do not handle anything other than the IV supplies until after the medicine is started. If you do, wash and dry your hands again before handling supplies.
- Do not let any supplies touch the floor or an obviously dirty area.
- Store IV supplies in a clean area and away from children and pets.

Changing the dressing

1. Gather the supplies:

☐ Dressing change kit –

- a. **Chloroprep®** for all patients unless there is an allergy or sensitivity to chlorhexidine (CHG).
- b. **Betadine®** for patient with allergy or sensitivity to chlorhexidine (CHG).

☐ Extra masks (optional)

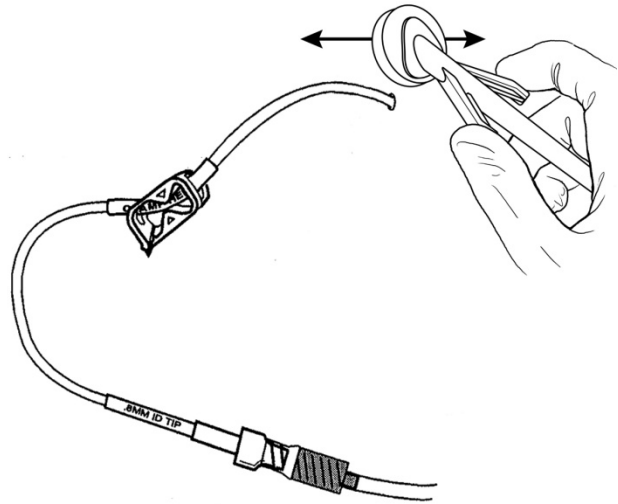
2. Put on the mask.
3. Wash your hands.
4. Put on clean gloves.
5. Remove the old dressing including the CHG-impregnated disc and any extra tape. Loosen the outer edges and pull toward the catheter exit site. Be careful not to pull on the catheter.
6. Check the exit site for redness, swelling or drainage. Check to see if the stitches are secure. Remove gloves.
7. Open the dressing change kit. Wash hands again. Carefully put on the sterile gloves. Do not touch anything that is not sterile with the gloves.

To cleanse with Chloroprep®

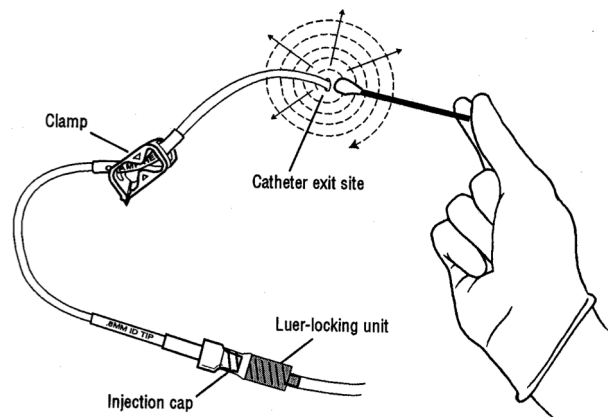
- Squeeze the wings of the Chloroprep® applicator until you feel a “pop.” The solution will soak the sponge.
- Press the sponge against the skin using a back-and-forth friction scrub for 30 seconds (Picture 3). Let dry until it is completely dry (about 30 seconds).
- Clean an area slightly larger than what will be covered by the dressing.

To cleanse with Betadine®

- Open the alcohol packet.
- Clean the skin with the first swab. Work in a circular motion from the exit site out, for a 2 to 3 inch area (Picture 4). Throw away the swab.



Picture 3 Using the Chloroprep® applicator.



Picture 4 Clean the skin, working in a circular motion from the exit site out. Clean an area slightly larger than what will be covered by the dressing.

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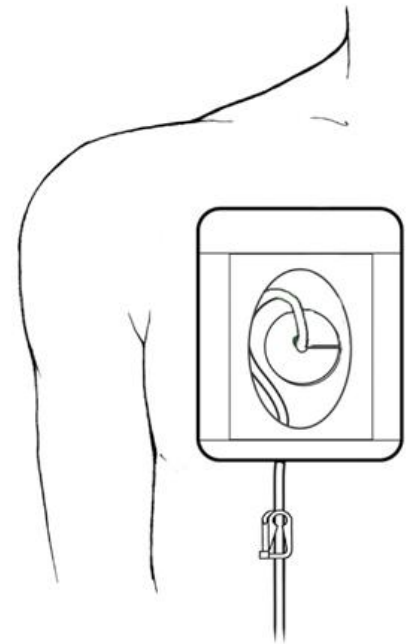
Changing the dressing, continued

To cleanse with Betadine[®], continued

- Clean an area slightly larger than will be covered by the dressing.
 - Clean the entire area 3 more times using the Betadine[®] swab sticks. Use a clean swab stick each time. Work in a circular motion as before. Do not over-saturate the skin.
 - Let the Betadine[®] dry for 2 minutes. Allow all liquid to dry completely.
 - Apply the skinguard solution from the catheter exit site in a circular motion out to the outer edges of the dressing area. Let it dry.
 - Remove the CHG-impregnated disc from the package using sterile technique and place around the tunneled catheter with the writing side facing up. Make sure the edges of slits touch each other.
8. Coil the catheter (coiling helps to prevent pulling and breaking of the tube). You may use the foam tape strips in the kit to secure the coil to the chest.
 9. Cover the area with a transparent dressing. Be sure no openings allow air under the dressing at any point.

Other Information about the dressing change

- Change the dressing every 7 days (Picture 5).
- If the dressing gets dirty, wet or loose (air able to get under dressing), you should change the dressing right away. Do not wait until your next scheduled dressing change.
- **Never use scissors near the catheter.**
- If there is any sign of redness, swelling or drainage at the catheter exit site, call your doctor.



Picture 5 The catheter in place after a dressing change.

Preparing syringes with medicine

You will be giving the following IV medicines at home:

☐ Saline ☐ Heparin ☐ Other _____

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Preparing syringes with medicine, continued

Pre-filled Syringes

You may receive medicine syringes that are already filled by the pharmacy. Before using them, check to make sure it is the correct medicine and right amount and that a sterile cap is covering the syringe.

1. Wash your hands.
2. Open packages and make sure the sterile cap is on the syringe. **Do not use the syringe if the cap is off.**
3. Check the correct amount of medicine to be given.

Filling syringes with IV medicine

1. Gather the supplies:
☐ Syringe ☐ Vial of medicine ☐ Alcohol swabs
2. Wash your hands.
3. Open all packages and keep the contents germ-free.
4. Remove the cap from the medicine vial.
5. Clean the top of the vial vigorously with an alcohol swab for 15 seconds. Allow to dry for 5 seconds.
6. Attach the blunt needle to the end of the syringe. Do not touch the open ends of the syringe or needle.
7. Pull back the plunger of the syringe so that it is filled with air. The amount of air should be equal to the amount of medicine that will be drawn out of the vial.
8. Remove the sterile cap from the blunt needle and push the tip of the needle into the medicine vial. Inject the air into the vial.
9. With the needle still in the vial, turn the vial upside-down. Draw the correct amount of medicine out of the vial.
10. Remove the needle from the vial. Carefully recap the needle.
11. With the sterile cap in place, squirt out any air or extra medicine in the syringe.
12. Throw away the vial.

To flush the tunneled catheter with heparin

When there is no solution infusing into your child's tunneled catheter, blood may collect in the catheter and clot. Heparin is a medicine that keeps the blood from clotting inside the catheter. A small amount of heparin will prevent clotting but will not harm your child.

The tunneled catheter needs to be flushed with heparin every ____ hours when it is not connected to an infusion.

Heparin amount _____ mL. Heparin strength: ☐ 10 units/mL. ☐ 100 units/mL.

1. Gather the supplies:

☐ 2 alcohol swabs ☐ Heparin-filled syringe
2. Wash your hands.
3. Check the heparin syringe to make sure it has the right amount, and there is no air in the syringe.
4. Unclamp catheter.
5. Clean the top of the connector (cap) vigorously with an alcohol swab for 15 seconds. Allow to dry 5 seconds.
6. Remove the cap from the heparin syringe, expel any air and attach the syringe to the needleless connector (cap) by resting the threads of the syringe on the threads of the needleless connector (cap). Tip the syringe up and twist them together. Inject the heparin into the catheter.
7. Remove the syringe and clamp the catheter. Always firmly hold the needleless connector (cap) and not the catheter line to prevent accidentally loosening the needleless connector (cap).
8. Secure the catheter with tape.
9. Discard the syringe in a used needle container.

To change the needleless connector (CAP)

The needleless connector on the catheter is also called a “cap.” It should be changed every 7 days or any time the fluid is not clear in the connector (cap).

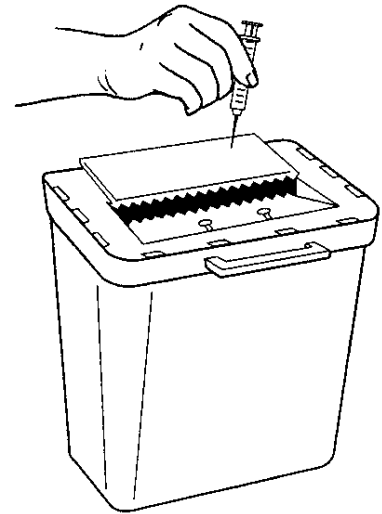
1. Gather the supplies:

☐ Needleless connector (cap) ☐ Alcohol swabs ☐ Heparin filled syringe
2. Wash your hands.

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To change the needleless connector (CAP), continued

3. Open the new needleless connector (cap) package and clean the top of the connector (cap) on the tunneled catheter vigorously with an alcohol swab for 15 seconds. Allow to dry 5 seconds.
4. Carefully attach the syringe to the connector (cap) and prime it in an upright position. Tap while priming to get all the air out. Make sure the plastic protector is intact on the connector (cap), keeping it sterile.
5. Clean the area where the catheter joins the needleless connector (cap) vigorously with an alcohol swab for 15 seconds. Allow to dry 5 seconds.
6. Clamp the tunneled central venous catheter.
7. Remove the needleless connector (cap) from the end of the tunneled catheter. Screw the new needleless connector (cap) with attached syringe onto the end of the tunneled catheter. Screw the new one on securely, but not so tightly that it is hard to remove.
8. Unclamp the catheter.
9. Inject the heparin into the catheter.
10. Remove the syringe and clamp the catheter.
11. Throw away the syringe in a “sharps” container.



Picture 6 Dispose of used needles in a “sharps” container.

Points to remember

- **Never use scissors or other sharp objects near the tunneled catheter.**
- Use only a plastic clamp or the clamp on the tunneled catheter to clamp the catheter.
- Never let the child or anyone else pull on or play with the catheter. Do not let your child touch the exit site when the dressing is off.

How to dispose of used needles and syringes

1. **Do not recap used needles. Do not bend or break off the needle. Do not remove the needle from the syringe.**
2. **Put the used syringe with attached needle into a “sharps” container.**
3. **Do not let the container get too full.** When the container is two-thirds full, return it to your local hospital for disposal.

CAUTION: Syringes and needles should be used only once. Keep syringes and supplies out of the reach of children and others who might misuse them.

Emergency care

Clotted Catheter

If it is very hard to flush the catheter, STOP! Do not try to force the solution. Check the catheter to see if it is kinked or clamped. If you still meet resistance, there may be a clot in the catheter. This should be treated as soon as possible. Call your child's doctor or bring your child to the Nationwide Children's Hospital Emergency Room.

Leaking from the Catheter

A hole or tear may develop in the catheter or a crack may develop in the hub. You will know there is a crack or hole if fluid or blood leaks from the catheter. If this happens, clamp the catheter between the site of leakage and the child. Call your child's doctor or bring your child to the Nationwide Children's Hospital Emergency Room.

If the catheter is accidentally pulled out, apply pressure to the exit site and call the doctor right away. Save all of the parts of the catheter for examination.

Taking your child's temperature

A fever is often a sign of infection. You should check your child's temperature each day. If you will be taking the temperature by mouth, make sure your child has not had anything to eat or drink in the last 30 minutes because this may change the temperature reading. Call your child's doctor if the temperature is 100.4°F or higher. Refer to Helping Hand HH-II-27: *Temperature: Oral, Rectal and Axillary*.

Signs of infection

You should suspect an infection around the exit site of the catheter (local infection) if there is:

- Redness, swelling or warmth
- Drainage - yellow or green
- Tenderness or pain

You should suspect an infection in the blood stream (systemic infection) if there is any of the following:

- Temperature of 100.4°F or higher
- Increased irritability (child is more fussy than usual)

If you suspect an infection, contact your child's doctor immediately.

Going to school or day care

Your child may go to school or day care with a tunneled catheter. He should be able to do most of the same activities as other children. Swimming and other water activities are not permitted. Contact sports or activities that involve significant upper arm movements (monkey bars, weightlifting) should be avoided. If you have a question about an activity or sport, check with your doctor.

The teacher, school nurse and caregiver will also need information to care for your child. They should be told to contact you if there are any problems with the catheter or dressing on the catheter. (Refer to Helping Hand HH-II-141, *IV: Central Venous Catheter, Going to School or Child Care.*)

Important phone numbers

Home Health Agency _____

Phone _____

Doctor's Office _____

Phone _____

Clinic _____

Phone _____

Other _____

Phone _____