

Care of the Tunneled Catheter

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This document is not intended to take the place of the care and attention of your personal physician or other professional medical services.
Our aim is to promote active participation in your care and treatment by providing information and education.
Questions about individual health concerns or specific treatment options should be discussed with your physician.

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What Is A Tunneled Catheter?

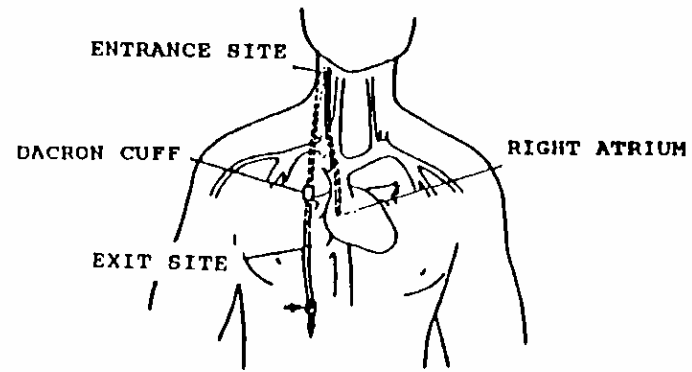
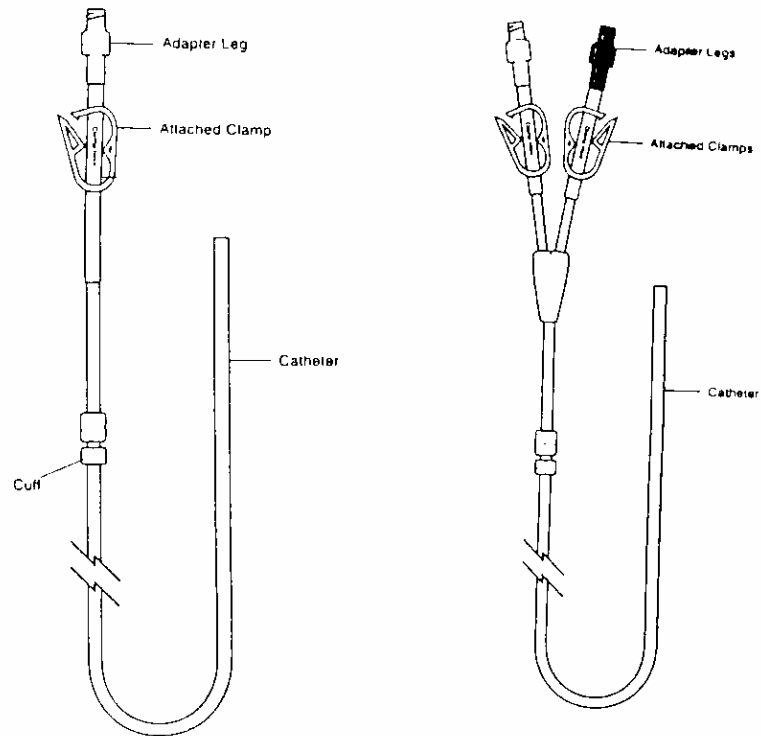
A tunneled catheter is a small tube made of a material called silicone. It is called “tunneled” as it is inserted into a large vein and tunneled under the skin to a place where it exits your body. There are different types of tunneled catheters. For example, your catheter may be a Broviac®, Hickman®, Powerline® or Neostar®. For the purposes of this booklet, we will always refer to it as a catheter.

The catheter is used for people who must receive medications, fluids, blood products, chemotherapy or I.V. nutrition into a vein. It may also be used for drawing blood. There are several things you will need to know to take care of your catheter. Your nurse will go over each step with you, and give you and your family time to practice.

The catheter will be placed in radiology or the operating room. This will take 30-60 minutes. The physician will make a small incision at the base of the neck. A second incision is made so that the catheter can be threaded under the skin to the site of the first incision. It is then threaded into the superior vena cava, the vein leading to the heart. The second incision is called the “exit site” of the catheter. After the catheter is inserted, the physician will check that the catheter tip is correctly placed. Tylenol® can be given for pain, if needed.

Most catheters have a small, fuzzy dacron cuff that lies underneath the skin about one to four inches above the exit site. The cuff serves two main purposes:

- ◆ The cuff holds the catheter in place by forming scar tissue. Scar tissue will grow around the cuff after 1-2 weeks, making it difficult to pull the catheter out.
- ◆ The cuff may help to protect against infection by creating a barrier to block bacteria that might get in at the exit site.



Routine Care

**Change transparent dressing every 7 days or gauze & tape dressing every 3 days. Change more frequently if it becomes soiled, wet, or loose.
Purpose: To prevent infection of your catheter.**

**Flush catheter with heparin flush solution once every 24 hours.
Purpose: To keep your catheter from clotting.**

**Change injection cap every 7 days.
Purpose: To decrease the risk of infection from overuse and leakage of the injection cap.**

Resources And Phone Numbers

Inpatient unit or contact: _____

Doctor: _____

Clinic : _____

Home Infusion Provider:

**After 5 p.m. and on weekends only, call
the University Hospitals paging
operator and ask for the physician who is covering for
your doctor (734) 936-6267**

Helpful Hints for Preventing Infection

Washing Your Hands

Although your hands may look clean, it is always important to wash your hands to remove invisible germs. Hands should always be washed before gathering supplies and before routine catheter care. You must repeat handwashing if your hands come in contact with anything that is considered dirty, such as: blowing your nose; picking something up off the floor; using the telephone; touching your face after handwashing etc.

Supply List with soap:

Warm water
Clean paper towels or clean cloth towel
Antibacterial Soap (such as Dial®)

1. Wet your hands and wrists under warm running water.
2. Apply soap and scrub **VIGOROUSLY** for 15 seconds.
3. Work lather between fingers, and under nails, over palms and back of hands.
4. Rinse your hands well. Make sure to keep your hands up so the dirty water runs toward your elbows.
5. Dry your hands with a clean paper towel.
6. Turn off the faucet with a clean paper towel.

Supply list for hand cleaner:

Check label for the gel or lotion to contain either ethyl alcohol (ethanol), normal propyl alcohol or isopropyl alcohol in concentrations between 60 to 90%

1. Place a dime size amount of gel into one hand
2. Rub into palms and backside of hands and between fingers.
3. Rub gently for about 10 seconds and let air dry.

Selecting Your Work Area

1. Select an area in your home that is free from drafts, dirt, dust and clutter.
2. Select a smooth table, counter top or tray (cookie sheet works well!) that can be cleaned with rubbing alcohol.
3. Select an area that has enough space and good light in which to work.
4. Select an area that is close to your supplies.
5. Do not use the bathroom -- most of the germs in your house are located in this room.

Helpful Hints For Preventing Infection

Preparing Your Work Area

1. Clean work area with rubbing alcohol, bleach or dish soap or you may place a clean paper towel on the work area. Allow the area to dry.
2. Nothing should be stored on the work area surface
3. If you dirty your work area during use, clean again.

Checking Your Supplies

1. Inspect all syringes. Do not use your syringes if:
 - Any leaks are present
 - There is cloudiness or discoloration of the fluid
 - Any particles or specks appear in the fluid
 - It has expired
2. Inspect all packages. Do not use the packages if the:
 - Seal is broken
 - Package is torn
 - Inside or outside of the package is wet
3. Do not use any items that you think may be damaged.

Preparing Your Supplies

1. Place supplies on your clean work area.
2. Open packages
3. Check to see that catheter cap and blunt cannula ends are kept sterile with the protective cover.
4. Do not use any supplies which have the protective covers missing.

Helpful Hints for Preventing Infection

Storing Supplies

1. Store all medications and supplies away from other household items and out of the reach of children and pets.
2. Store supplies close to your work area if possible.
3. Store supplies where they will not get wet.
4. You may want to use a box or case to keep your supplies in one place. Suggested containers include: plastic baskets; lunch box; fishing tackle boxes; etc.

Sterile Supplies

Some parts of the supplies are sterile. Sterile means that all germs have been removed by a special cleaning process. Parts of supplies that must be kept sterile are protected with a cover. Never touch sterile parts with your hands or allow a sterile item to contact a non-sterile surface. If you are inserting a sterile needle through a non-sterile surface, always use an alcohol wipe to clean the surface. Never retouch this area after cleaning it.

Clean Technique

When changing your catheter dressing you will use clean technique. This method does not require sterile gloves or a face mask but still involves thorough handwashing, cleaning your work surface, and avoiding contamination of sterile items.

Dressing Change Procedure Using Transparent Dressing

Supply List

- (1) ChloroPrep® swabstick for children; (3) swabsticks for adults
(1) Transparent dressing

Key Points

1. Clean the skin and change the dressing every 3 days or more often if it becomes soiled, wet, or loose.
2. **NEVER** use scissors near the catheter.
3. Do not pull, bend or kink the catheter. This will help prevent cracking or leaking.

Procedure

1. Wash hands for 15 seconds.
2. Gather supplies.
3. Clean work area.
4. Carefully remove old dressing and throw away. Avoid tugging on the catheter, or the use of scissors, or any sharp objects near the catheter. Do not touch or allow your child to touch the catheter site while the dressing is off.
5. Look around the catheter site for swelling, redness, tenderness or drainage. These could be signs of an infection, if present, call your nurse or doctor.
6. Wash hands for one minute.
7. Open the transparent dressing package. Do not remove the protective backing.
8. Remove ChloroPrep® swabstick from package.
9. Carefully clean the area around the catheter using a back & forth motion for 30 seconds. Completely clean an area 2 inches around the catheter exit site. Allow the area to air dry for about 1 minute. Do not blot or wipe away.
10. Discard swabstick after single use. Repeat with the remaining swabsticks as needed.
11. Remove the protective backing from the transparent dressing. Be sure not to touch the gauze pad. Apply transparent dressing over the exit site while pinching the adhesive portion around the catheter. The catheter must be secured. Loop catheter next to the dressing & tape. Use burn-net®, tape, vests, or other clothing to cover the catheter from view from infants and children. Infants & children should **NEVER** be allowed to chew or pull on the catheter.

Flushing The Catheter

Your catheter must be flushed once a day and after any blood is drawn or medications are given through the catheter. This prevents blood from clotting inside the catheter, and helps keep the inside of the catheter clean.

**HAVE YOU WASHED YOUR HANDS?
HAVE YOU CHECKED ALL OF YOUR SUPPLIES?
IS YOUR WORK AREA CLEAN?**

Supply List

- (1) prefilled heparin flush syringe (10 units/mL)
- (1) blunt cannula
- (2) alcohol swabs
- sharps needle disposal container

*If the catheter has more than one lumen you will need 1 flush syringe with blunt cannula for each lumen.
Caution: Always use a 10ml syringe (or larger) and flush slowly to avoid rupturing the catheter (smaller syringes generate more pressure than larger syringes and can increase the chance of the catheter breaking).

Key Points

The heparin flush syringe does not need to be refrigerated.

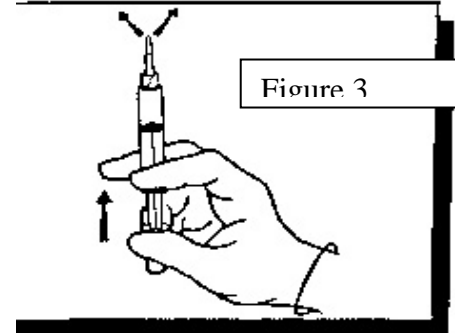
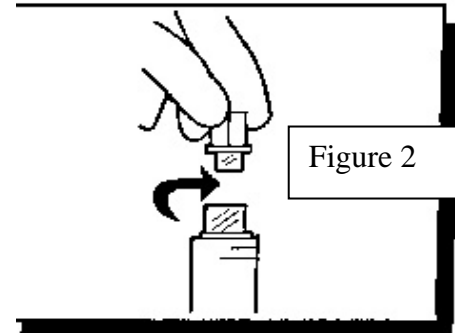
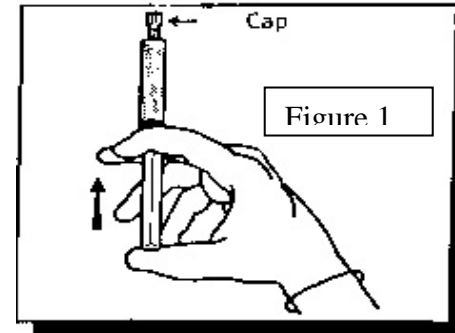
Do not use your syringe if you see anything floating, it has expired or if you see any change in the color of the fluid.

Flushing The Catheter

PREPARING YOUR HEPARIN FLUSH SYRINGE

1. Wash your hands for 15 seconds.
2. Remove the prefilled syringe from package.
3. Hold the prefilled heparin syringe upward (figure 1).
4. Do not remove the cap. Press on the plunger (figure 1). **DO NOT** pull back on plunger.
5. Remove the protective cap from the end of the prefilled syringe (figure 2).
6. Attach a blunt needle to the syringe by:

Twisting the green cap off the blunt needle. Attach the needle to the syringe by turning the needle clockwise. Do not remove the gray cap that protects the blunt needle.
7. Hold the syringe with the needle pointing upward. If bubbles appear, gently tap the sides of the syringe. The bubbles will rise to the top of the syringe.
8. Push the plunger to push all the air out of the syringe (figure 3).
9. You are now ready to flush the catheter with the heparin solution.



Flushing the Catheter

HOW TO FLUSH

1. Clean the catheter cap VIGOROUSLY with an alcohol swab.

2. Carefully remove the plastic protective cover from the blunt cannula on the syringe.

3. Without touching any part of the blunt cannula, carefully insert the blunt cannula into the center ring on the top of the injection cap.

4. Push the heparin flush into the catheter with a pumping action. When 0.5 mL of solution remains in the syringe, gently push forward on the syringe plunger while clamping the catheter over the thickened area of the catheter. Remember to use a “pump- pump- push and clamp” method (this helps prevent a vacuum which can pull a small amount of blood into the catheter tip).

WARNING: Do NOT use force when flushing your catheter. If the catheter will not flush, stop and call your physician.

5. Dispose of the syringe and blunt cannula in your sharps needle disposal container.

Changing the Cap

The catheter cap must be changed every 7 days.

**HAVE YOU WASHED YOUR HANDS?
HAVE YOU CHECKED ALL OF YOUR SUPPLIES?
IS YOUR WORK AREA CLEAN?**

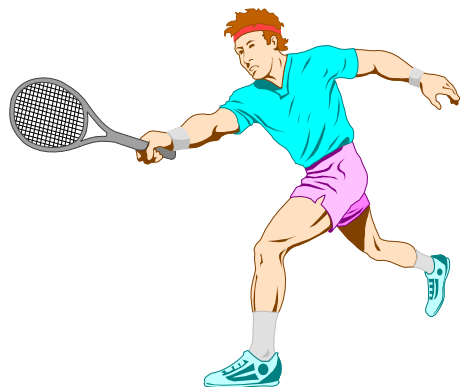
Supply List

- (1) Sterile injection cap
- (2) Alcohol swabs
- 4 inch piece of cloth tape

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| <ol style="list-style-type: none">1. Wash hands for one minute.2. Open the sterile catheter cap package carefully. Leave it in the package without touching it.3. Close the catheter clamp over the thickened area of the catheter.4. Remove the tape from around the catheter cap. While holding the catheter's adapter leg with an alcohol swab in one hand, cleanse the catheter's hub/cap junction with a second alcohol swab. | <ol style="list-style-type: none">5. Carefully remove the catheter cap and discard. If you cannot get the cap off, try using rubber gloves, or tape to get a better grip. DO NOT USE PLIERS. Be careful not to touch the open end of the catheter.6. Unscrew the protective covering on the new catheter cap making sure that you do not touch the protected area.7. Screw on new cap.8. For children, place a new piece of tape around the catheter/cap connection, leaving the end of the cap exposed. |
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Activities

Most normal activities can be done including things like riding a bike, or playing tennis.



You may swim in chlorinated pools with your dressing. The dressing should be changed afterwards, as well as the tape around the cap. Clean the cap with alcohol before applying fresh tape.

Do not allow your catheter ends to soak in bathtub water. Clean the cap and connection with alcohol and apply fresh tape after baths and showers.

Do not do any high diving. Do not play football, wrestle, or any contact sports where the catheter might be pulled or grabbed.

Troubleshooting Catheter Problems

PROBLEM	POSSIBLE CAUSE	WHAT TO DO
Infection ♦ fever and/or chills after flushing ♦ tenderness or pain at or above the exit site. ♦ drainage, odor, or swelling at the exit site.	Possible infection in or around the catheter. Other possible causes of fever, such as flu, kidney/bladder infections, or pneumonia.	Call your nurse or doctor immediately. If pus or drainage present, check the color, odor, and general amount and tell this information to your nurse or doctor.
Catheter damage	Break or puncture in catheter (may be caused from repeated clamping, excessive pulling on catheter, or from contact with a sharp object). Rupture from attempt to flush an occluded catheter (higher risk when using small syringes).	The catheter should be immediately clamped above the damaged area. This will prevent bleeding and keep air from entering the catheter. Call your nurse or doctor immediately.
Loss of catheter	Excessive pulling on catheter. Tripping over catheter line.	Immediately apply pressure over the catheter site to stop bleeding. Call you nurse or doctor immediately.
Occluded catheter ♦ cannot flush ♦ cannot withdraw blood	Catheter is clamped, kinked, curled, clotted or positioned against the wall of the vessel.	Visually check catheter for kinks and make sure that the catheter is unclamped. Reposition patient (move patient's arms, shoulders, and head to see if a change in position helps). If still unable to flush the catheter call your nurse or doctor.

Troubleshooting Catheter Problems

PROBLEM	POSSIBLE CAUSE	WHAT TO DO
<p>Air embolism (air in the blood stream)</p> <p>You may have one or more of the following symptoms:</p> <ul style="list-style-type: none"> ◆ Shortness of breath ◆ Coughing ◆ Chest pain 	<p>Tear or hole in the catheter.</p> <p>The catheter is not clamped when the cap is being removed.</p> <p>The IV tubing becomes separated.</p> <p>The injection cap falls off the catheter.</p>	<p>If you notice any of these symptoms, you should:</p> <ol style="list-style-type: none"> 1. Clamp catheter and breathe shallowly. 2. Lie on your left side with your feet and legs elevated and your chest and head slightly lower than your feet. 3. Attach a syringe to the end of the catheter; unclamp the catheter and withdraw any air; continue to withdraw the air until you get blood in the syringe. 4. Flush the catheter with heparin solution. 5. Notify your doctor immediately.
<p>Cuff showing outside of the skin exit site.</p>	<p>Pulling or tugging on the catheter line (tripping over IV tubing when it is hooked up to the catheter can cause tugging or pulling on the line).</p>	<p>Loop the catheter onto the chest with tape.</p> <p>Use a vest to further secure the catheter.</p> <p>Keep the catheter out of the sight of infants or small children.</p> <p>On the next business day notify your nurse or doctor that the cuff is showing outside of the skin exit site.</p>

Troubleshooting Catheter Problems

PROBLEM	POSSIBLE CAUSE	WHAT TO DO
<p>Movement of the catheter.</p> <p>You may experience pain in the neck or shoulder.</p>	<p>Since these catheters are flexible, they may move up the vein in the neck.</p>	<p>Do not use the catheter.</p> <p>Call your nurse or doctor immediately.</p>
<p>Skin Irritation</p> <ul style="list-style-type: none"> ◆ redness ◆ tenderness ◆ blistering of the skin. 	<p>Irritation from the dressing or tape.</p>	<p>May need to use another type of dressing, or change the areas of the skin you are taping. Call your nurse or doctor if the irritation persists.</p>
<p>Fluid leakage from the end of the catheter or along the catheter.</p> <p>Blood back-up into catheter and tubing.</p>	<p>Connection between the catheter and cap is loose or disconnected.</p> <p>Catheter is damaged from a puncture or rupture (small syringes can generate very high pressures with very little force). The pressure from an occlusion may not be felt when using a small syringe until the damage to the catheter has already occurred.</p>	<p>Check catheter and cap connection. Be sure they are tight.</p> <p>Check the cap for excessive punctures. Change if necessary.</p> <p>Flush catheter and observe exit site for signs of fluid leakage. Notify your nurse or doctor.</p> <p>Check for catheter damage. If found, clamp the catheter and call your nurse or doctor.</p>

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