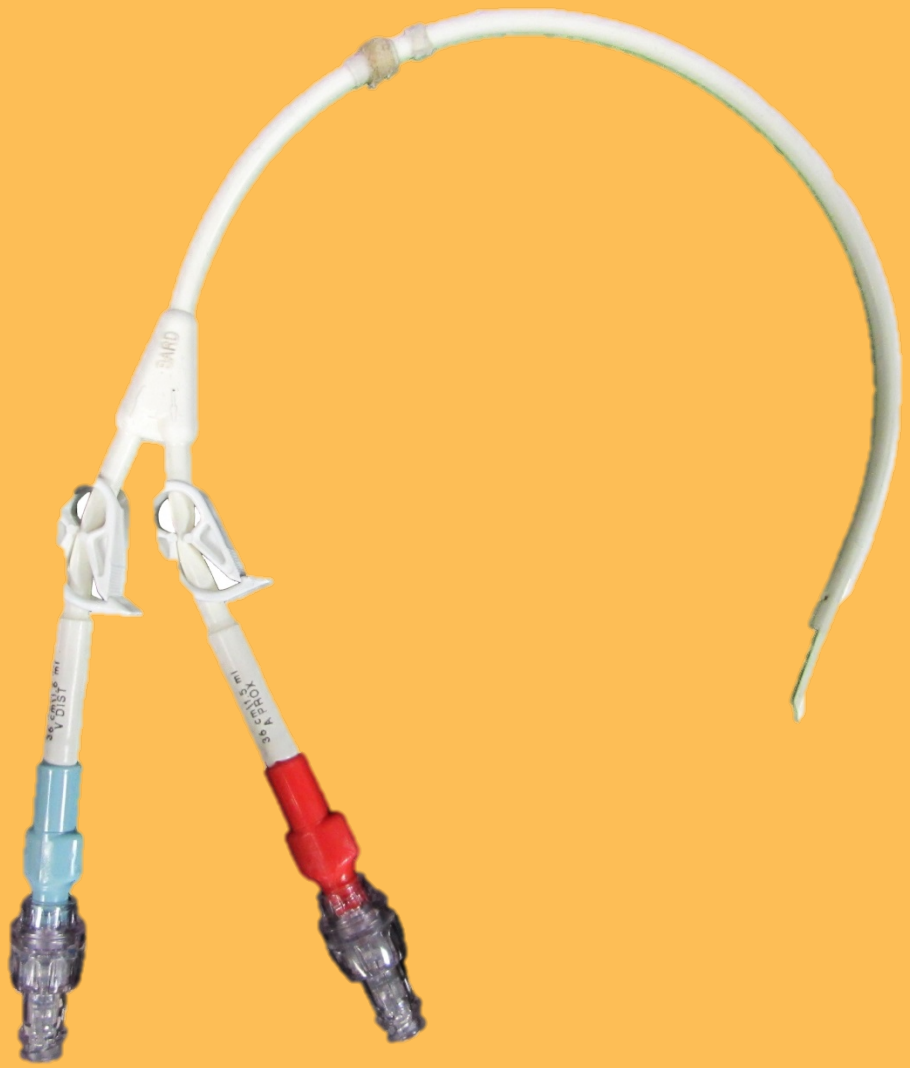
Care of the Tunneled Catheter

In the Home



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Tunneled Catheter Basics

What is a tunneled catheter?

A tunneled catheter is a small, flexible intravenous (IV) tube. It is called "tunneled" because it is inserted into a large vein and tunneled under the skin to a place where it exits your body. In this booklet, we will simply refer to it as a catheter (see diagram on page 2).

Why are tunneled catheters used?

A tunneled catheter is used to give medications, fluids, blood products, chemotherapy, or nutrition through a vein. It may also be used for drawing blood.

How is the catheter inserted?

The catheter will be inserted in an operating room or radiology department and should take about 30-60 minutes. The practitioner makes a small opening in the mid-chest area. Another opening is made where the catheter will enter the vein. A tunnel is formed under the skin between the two openings. The catheter is passed through this tunnel and then gently threaded until the tip is near your heart in the large vein called the superior vena cava. After placement, the catheter will be checked by x-ray to confirm it is in the right position.

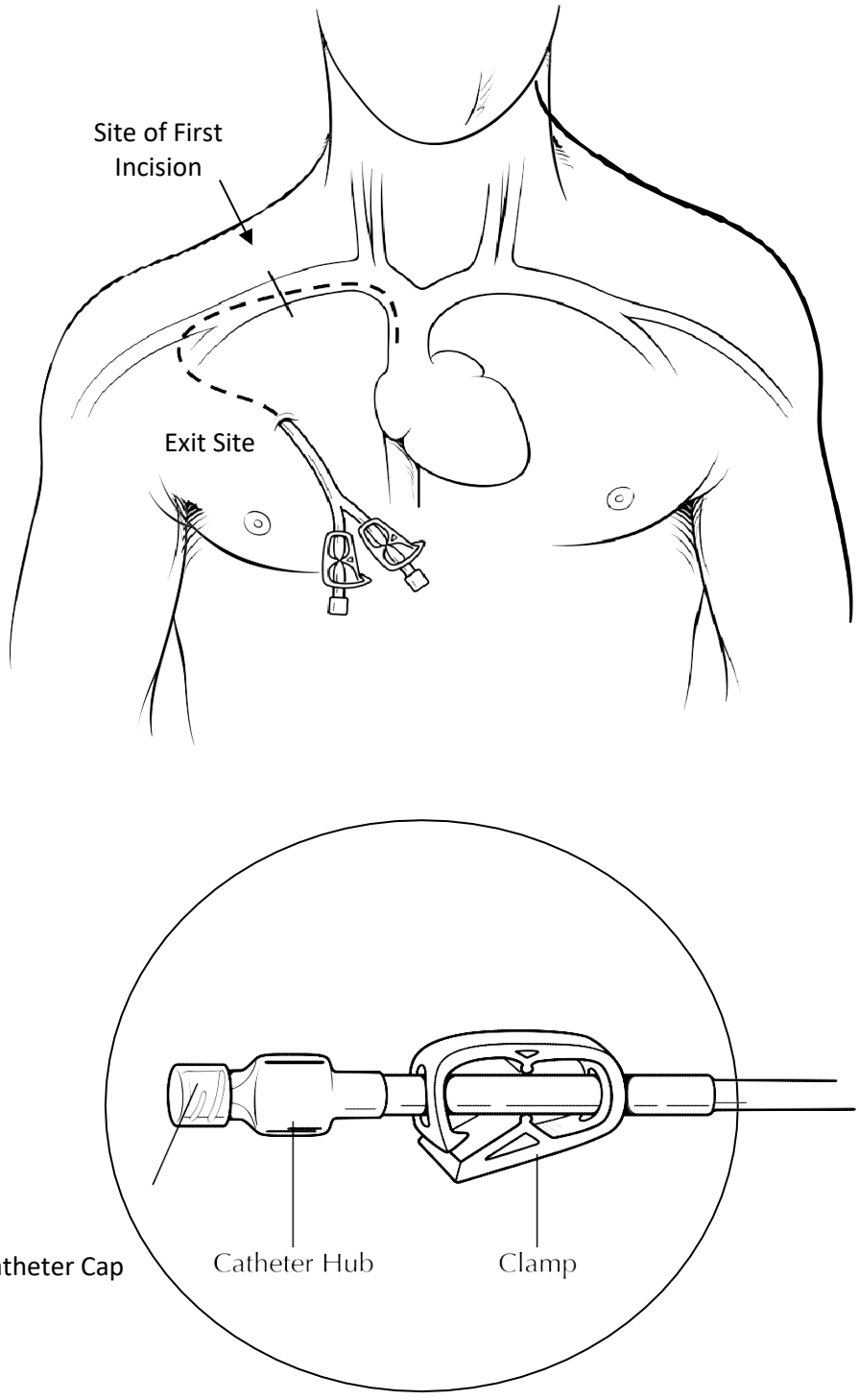
What is a cuff?

Most catheters have a small cuff that lies beneath the skin about one to four inches from the exit site. The cuff serves two main purposes:

1. 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.
2. The cuff helps protect against infection by blocking bacteria from entering the exit site.

What is a lumen?

The word lumen means the opening or path that is inside the catheter. It is through this opening that you give medications or blood can be drawn. We also use this word to describe the ends of the catheter that are outside your body. You will notice that your catheter has 1, 2, or 3 lumens.



Tunneled Catheter Diagram

Preparing for Catheter Care

There are several things you will need to know in order to care for your catheter. Below are the steps you must take to prevent infection and ensure it will continue to work well for you as long as you need it:

- Properly store, check and handle supplies.
- Select and prepare a work area.
- Clean your hands.
- Flush your catheter with heparin every day.
- Attach new alcohol cap after every heparin flush.
- Change your catheter dressing regularly.
- Change your catheter caps weekly.

This booklet details the steps, then lists ways to protect your catheter and includes a table for troubleshooting problems that can happen. Your nurse will make sure you understand the procedures and provide time for you and your family to practice.

Storing Your Supplies

- Keep items away from children and pets.
- Store supplies in an area that is dry and free from dirt, dust, and clutter.
- Choose a place as close to your work area as possible.

Checking Your Supplies

Check your syringes and **do not use** if:

- Leaks are present.
- Fluid is cloudy or discolored.
- Particles or specks appear in the fluid.
- It has expired.

Check all packaging and **do not use** if:

- Seal is broken.
- Package is torn.
- Any part of the package is wet.

Selecting Your Work Area

Work on a table, laminate mat, counter top, or tray that can be cleaned with a household disinfectant or rubbing alcohol in an area:

- Free from drafts, dirt, dust, and clutter.
- With enough space and good lighting.
- Near your supplies.

Do not work in the bathroom since most of the germs in your house are located there. Also, avoid working in your kitchen where you prepare food.

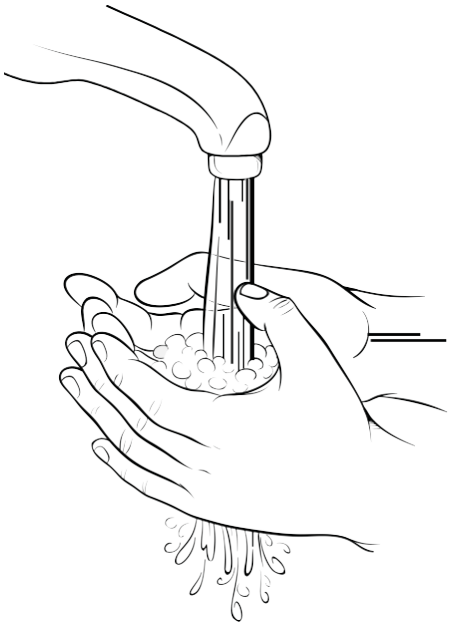
Preparing Your Work Area

1. Place a trash can next to your work area.
2. Clean your work surface or laminate mat with household disinfectant or rubbing alcohol. Let the area air dry.

Cleaning Your Hands

Although your hands may look and feel clean, it is always important to wash your hands in order to remove germs you can't see. Your hands should always be washed before any catheter care. You must wash your hands again if you touch anything that might be considered dirty.

There are two ways to properly clean your hands: washing with soap or using an instant hand sanitizer (containing 60-90% ethyl alcohol). If your hands are visibly dirty or you have a C. difficile infection, you must wash your hands with soap and water.

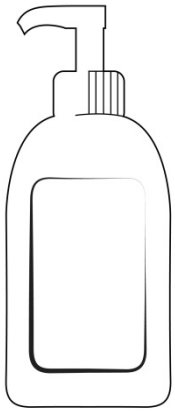


Washing Your Hands with Soap

1. Wet your hands and wrists under warm running water.
2. Apply soap and **scrub vigorously** for 15 seconds.
3. Work lather between fingers, under nails, over the palms and back of your 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 or cloth towel.
6. Turn off the faucet with a clean towel.

Using an Instant Hand Sanitizer



1. Place a dime-size amount of instant hand sanitizer in one hand.
2. Gently rub the gel into palms and backside of hands and between fingers.
3. Allow your hands to **air dry.**

Handling Sterile Supplies

- Some 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 touch a non-sterile surface.

Flushing Your Catheter

Your catheter lumen(s) must be flushed to prevent infection and keep blood from clotting within the lumen. Flush **each** lumen once a day with heparin if not in use.

Supply list:

- Prefilled heparin flush syringe (10 units/mL)
  - one for each catheter lumen
  - removed from package
- Alcohol pads
- Alcohol cap

Key Points

- The heparin syringes do not need to be refrigerated.
- If your catheter has more than one lumen, you will need one flush syringe for **each** lumen.
- **Do not** use force when flushing your catheter. If you cannot flush your catheter easily, call your clinician.
- Check your catheter cap to make sure it is attached securely to your catheter (always hold your catheter cap while connecting/disconnecting syringes to prevent accidental removal of your cap).
- Never reuse a syringe.

Follow these steps for flushing your catheter:

1. Place a trash can next to your work area and clean your work surface.
2. Wash hands with soap for 15 seconds or use an instant hand sanitizer.
3. Gather your supplies and place on your clean work surface.
4. Remove alcohol cap from your IV catheter cap.

5. Open an alcohol pad and **vigorously** scrub the end of the cap on your catheter for 15 seconds and allow the alcohol to dry. Do not fan or blow on it. Do not place the lumen down or contaminate the end of the cap.
6. **Do not** remove the cap from the prefilled syringe and press forward on the plunger to break the seal. Do not pull back on the plunger.
7. While holding the syringe upright, gently tap the sides of the syringe so the bubbles rise to the top. Remove the cap and push the plunger to remove all the air.
8. Push and twist the heparin syringe into your catheter cap to the right until secure.
9. Unclamp your catheter.
10. Push the heparin flush solution into your catheter until 0.5 ml remains in the syringe. Clamp your catheter, remove the syringe and discard in your trash.
11. Attach new alcohol cap onto end of your IV catheter cap.
    - **Repeat steps** if your catheter has more than one lumen.

Changing the Catheter Dressing

Supply list:

- IV Dressing Change Kit
    - Sterile drape
    - Sterile gloves
    - Skin protectant pad
    - ChloraPrep®
    - Gauze sponge
    - Mask
- IV Dressing

Key Points

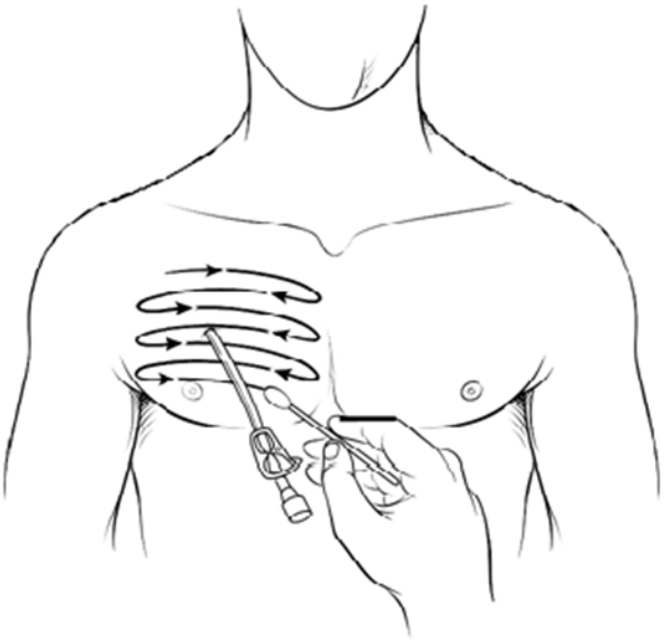
- Clean the skin and change the dressing 3 times a week for **gauze and tape** dressing (such as Monday, Wednesday and Friday).
- Clean the skin and change the dressing every 7 days if you have a **clear** dressing.
- Change the dressing as soon as possible if it becomes dirty, wet or loose.
- **Never** use scissors near the catheter.
- Do not pull, bend or kink the catheter.

Follow these steps for changing your catheter dressing:

1. Place a trash can next to your work area and clean your work surface.
2. Wash your hands for 15 seconds with soap or use an instant hand sanitizer.
3. Gather your supplies and prepare for the procedure.
    - Open the dressing kit.
    - Put on the mask.
    - Remove the sterile drape.
    - Open the drape and place on your clean work surface.

- Place contents of the kit on the sterile drape.

4. Carefully remove the old dressing.
    - Pull the dressing one corner at a time toward the catheter exit site.
    - After all the corners are loosened, hold the catheter down and pull the dressing up and off. **Do not** touch the area surrounding the insertion site while the dressing is off.
5. Throw the old dressing away and clean your hands again with an instant hand sanitizer.
6. Look around the catheter insertion site and surrounding area for swelling, redness, tenderness or drainage. These could be signs of an infection. If present, call your clinician after finishing the dressing change procedure.
7. Put on the sterile gloves.
8. Remove the cleansing swabstick from the package.
9. Carefully clean the area around the catheter.
    - Using a back-and-forth motion for 30 seconds.
    - Completely clean at least 2 inches around the catheter exit site.
    - Allow the area to air-dry completely. Do not blot or wipe dry.
    - Discard the swabstick.



➢ Clean the area **again** with the remaining swabsticks, discarding after each use and allowing the solution to dry.

10. Apply the skin prep to the area around the catheter insertion site starting 1 inch away from the catheter and working outward. Let dry

until smooth and shiny. Always wait until the area is **completely** dry before proceeding to the next step.

11. Apply the new dressing.
    - Remove the protective backing from the dressing.
    - Apply dressing over the exit site.
    - Pinch the adhesive portion around the catheter.
    - Check that the catheter is secure.
    - Loop and tape the catheter next to the dressing.

Changing the Catheter Cap

Supply list:

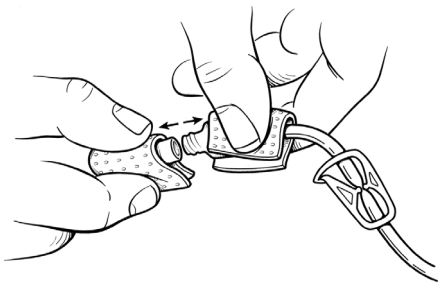
- IV catheter cap (needleless connector)
- Alcohol pads

Key Point

- Change each cap every 7 days.

Follow these steps for changing your cap:

1. Place a trash can next to your work area and clean your work surface.
2. Wash hands with soap for 15 seconds or use an instant hand sanitizer.
3. Gather your supplies and place on your work surface.
4. Open the sterile catheter cap package carefully and leave the cap in the package without touching it.
5. Check that your catheter is clamped.
6. While holding the catheter lumen with an alcohol pad in one hand, vigorously clean the catheter/cap connection with a second alcohol pad for 15 seconds.



7. Carefully remove the catheter cap and throw it away. If you cannot get the cap off, try using rubber gloves or tape to get a better grip. **Do not** use pliers. Once the cap is off, be very careful **not** to touch the open end of the catheter or place the lumen down.
8. While holding the lumen in one hand, remove the new cap from the package with your other hand. Unscrew the protective covering from the new cap making sure that you do **not** touch the open end of the new cap.
9. Screw on the new cap.

   ➢ **Repeat steps** to change the cap on each lumen.

How will I protect the catheter?

You may participate in most normal activities including work, school and exercise. The following precautions will help prevent damage and infection:

- Do not participate in any contact sports where the catheter might be pulled or grabbed.
- Keep the dressing and catheter clean and dry when you shower or bathe.
    - Cover the dressing and catheter with plastic and tape the edges of the plastic onto your skin.
    - If the dressing or catheter gets wet, change the dressing as soon as possible.
    - Never let the catheter ends get wet.

If you have any questions about activities or protecting your catheter, contact your clinician.

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.	• Infection in or around the catheter.	• Call your clinician immediately. • If pus or drainage is present, note the color, odor, and amount. Give this information to your clinician.
Catheter Damage		
• Break • Puncture	• Repeated clamping, excessive pulling on the catheter, or contact with a sharp object. • Rupture from attempt to flush a blocked catheter: higher risk when using small syringes.	• The catheter should immediately be clamped above the damaged area. This will prevent bleeding and keep air from entering the catheter. • Call your clinician immediately.
Blocked Catheter		
• Cannot flush. • Cannot withdraw blood. • Cannot infuse medication.	• Catheter is clamped, kinked, curled, clotted, or positioned against the wall of your vein.	• Visually check the catheter for kinks and make sure that the catheter is unclamped. • Move your arms, shoulders, and head to see if a change in position helps. • If still unable to flush the catheter, call your clinician.
Cuff Showing Outside of the Skin Exit Site		
• Cuff showing outside of the skin exit site.	• Pulling or tugging on the catheter line.	• Loop the catheter onto your chest with tape. • Call your clinician immediately.
Movement of the Catheter or Pain in the Neck or shoulder		
• New onset pain in the neck or shoulder.	• The catheter is flexible and in rare cases may move out of position.	• Call your clinician immediately.

Troubleshooting Catheter Problems

Problem	Possible Cause	What to Do
Catheter Comes Out of the Body		
• Catheter comes out of body.	• Excessive pulling on the catheter.	• Immediately apply pressure over the catheter site to stop any bleeding. • Notify your clinician immediately.
Air Embolism — Air in the Blood Stream		
• You may have one or more of the following symptoms: o Shortness of breath o Coughing o Chest pain	• A tear or hole in the catheter. • The catheter was not clamped when the catheter cap was removed. • The IV tubing became separated. • The catheter cap fell off the catheter.	If you notice any of these symptoms, you should **notify your doctor immediately** and do the following: 1. Clamp catheter and breathe slowly. 2. Lie on your left side with your feet and legs elevated with 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.
Skin Irritation		
• Redness • Tenderness • Blistering of the skin.	• Irritation from the dressing or tape.	• Notify your clinician. o You may need to use another type of dressing and try to avoid placing the dressing over irritated skin.

Troubleshooting Catheter Problems		
Problem	**Possible Cause**	**What to Do**
Fluid or Blood Leakage		

• Fluid leakage from:
  ○ Along the catheter
  ○ The end of the catheter
• Blood seen in the catheter lumen or cap.
	• Connection between the catheter and cap is loose or disconnected.
	• Catheter is damaged from a puncture or rupture.
		• Check catheter and cap connection. Be sure they are tight.
		• Flush catheter and observe exit site for signs of fluid leakage. Notify your clinician.
		• Check for catheter damage. If found, clamp the catheter above the damaged area and call your clinician immediately.

Resources and Phone Numbers

Contact:_____

Doctor/Clinician:_____

Clinic:_____

Home Infusion Provider:_____

Notes

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