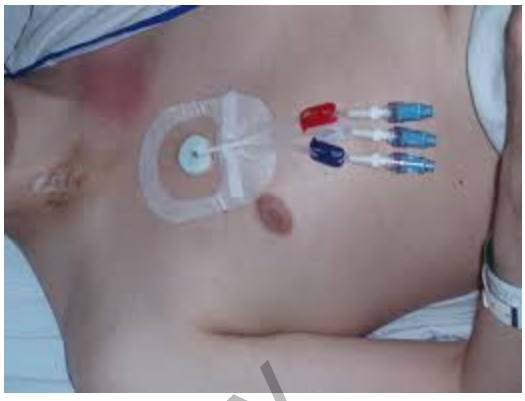
# Managing Your Tunneled Catheter: Hickman, Neostar, Broviac, Leonard

This information was adapted from the National Institutes of Healthcare. By providing this information, we hope to make you more comfortable with your catheter and teach you to take care of it. Soon, you, perhaps with a family member, will be caring for your catheter with confidence. While your doctor and nurse have discussed the need for a tunneled catheter with you, you may still have questions and concerns.

Handy Phone Numbers:
Your Doctor: _____-_____-_____
Your Nurse: _____-_____-_____
Your Clinic: _____-_____-_____

To help you understand what you need to do, your nurse will review this information with you or with someone who will be caring for you. You will learn how the catheter is inserted, how the dressing and catheter cap is changed, and how the catheter is flushed. Your nurse will also discuss safety and hygienic precautions you may need to take, and what to do when problems arise.

Many people have had tunneled catheters, and most have managed well with these devices. We encourage you to learn and master the care of your tunneled catheter. Once you are confident with your catheter, daily care will be simple.





## What is a tunneled catheter?

The tunneled catheter is a thin, long, and hollow tube made of flexible, silicone rubber. It is surgically inserted into one of the main blood vessels leading to your heart. Depending on your therapy needs, the catheter may have either a single (1), double (2), or triple (3) lumen (channel) at the tip.

Single, double, and triple lumen catheters can be used for drawing blood samples and for giving intravenous fluids, blood, medication, or nutrition. With a tunneled catheter, you will not need to have as many needle sticks during your care.

## How will the catheter be inserted and anchored?

The doctor will talk to you before the procedure. Please be sure to talk to your doctor or medical team if you have any questions or concerns.

The catheter will be inserted under local anesthesia. You may receive medications that make you sleepy during the procedure. However,

during catheter placement, you will be able to talk to the team and you may feel pressure, but no pain.

Because this procedure may be uncomfortable, you will receive medication to help you relax. This medication will most likely make you drowsy, and you should not drive for 24 hours after receiving it. **If you are having this procedure as an outpatient, you must have someone take you home and stay with you for 24 hours.**

## How will the catheter feel when it is in place?

There will be a small Dacron cuff on the catheter located just under your skin at the catheter site. You may feel or see it under your skin.

The cuff serves two purposes:

- To help hold the catheter in place as your skin heals around it.
- To help prevent infections by stopping bacteria from entering the tunnel and traveling up to the vein.

## After the procedure

The procedure usually takes about 1 hour. After the procedure, you may feel some discomfort. Please let your nurse know when you are uncomfortable. You should be able to receive medication to make you feel better.

You will notice a dressing over the catheter site. This dressing should be changed in 24 hours. If you see a lot of bleeding on the dressing during this time, call your nurse (if you are in the hospital) or call the clinic (if you are at home).

There will also be a dressing over the surgery site near your collarbone or on your neck. Usually, this dressing is removed after 24 hours. Sutures (stitches) may be present, so check with your doctor or nurse for specific instructions on dressing changes and suture removal. You should also watch this site for any bleeding.

## Catheter care: Dressing Changes

**Hospital:** While you are in the hospital, your nurse will use sterile technique to change your dressing once a week. Sterile technique means that the nurse will follow special procedures to reduce your risk of infection.

**Following hospital discharge**: Your dressing will be changed by a nurse in the BMT Clinic, Infusion Center or by a Home Health nurse.

**In rare circumstances** (e.g. dressing falls off, wet) it may be necessary for you or your caregiver to change the dressing.

**Dressing change and site care:**

Site care means cleaning and inspecting the place where the catheter leaves your body. By keeping this area clean, you will help prevent infections at the catheter site. ***It is very important to look carefully at this site and along the tunnel each time you change the dressing.*** You need to check for redness, tenderness, swelling, and drainage from the site. Notify your doctor or nurse if any of these signs are present. The following section describes how to do the dressing change and site care at home. **Do not change your dressing until taught**

**and instructed to do so by your nurse.**

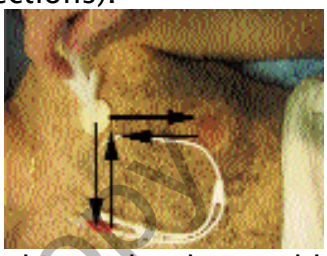
**Frequency:**
Change your dressing and perform site care according to the following guidelines:

- Clear dressing is changed once each week (e.g., every Friday)
- **The IV line and site should not get wet when showering**. You will be taught how to cover your line. Even if covered, keep line and dressing out of the flow of water when showering and do not immerse in bathwater.
- **If the dressing becomes soiled, loose, or moist, it should be changed immediately.**

**Supplies:**

- chlorhexidine gluconate applicator
- transparent dressing
- pair of sterile gloves
- clean medical tape

**Procedure:**
l. Prepare a clean work area. Gather the supplies listed above.
2. Wash your hands thoroughly with soap and water.
3. Remove the old dressing. Be careful not to tug on the catheter or touch the catheter site.
4. Open the chlorhexidine gluconate applicator and the transparent dressing. Leave them open and in the packaging until you are ready to use them.
5. Check the site and tunnel carefully for redness, tenderness, swelling, or drainage. (Any of these symptoms may indicate an infection developing and should be reported to your infusion nurse or MD)
6. Rewash your hands.
7. Apply sterile gloves.
8. Grab chlorhexidine gluconate and alcohol applicator by the handle and squeeze the two wings on either side of the handle until you hear a "snap." Hold the applicator with the pad facing down until you see the pad become wet. Then, clean the catheter site and surrounding skin using an up and down and side to side motion. (two directions).



9. Allow skin to dry thoroughly
10. Apply the transparent dressing. Be careful not to touch the piece that will cover your catheter site.
11. Loop a piece of catheter over the dressing and secure it with the medical tape.
12. May also tape the ends of the catheter in a comfortable position.

## Catheter Care: Flushing the Catheter

To keep your catheter working, it must be flushed routinely. Normally your nurse will flush the catheter. **You or your caregiver cannot flush the line unless taught and instructed to do so.**
**Frequency:** Your nurse will instruct you on the frequency.

**Supplies:**

- alcohol prep pads
- 10 cc syringe prefilled with 10cc normal saline or 0.9% Sodium Chloride—one syringe for each lumen, each time flushed. Sometimes heparin is added.

**Procedure:**

l. Prepare a clean work area. Gather the supplies listed above.
2. Wash your hands thoroughly with soap and water.
3. Remove the prefilled normal saline syringe from the plastic packaging. Remove the cap from the syringe. Be careful not to touch the tip of the syringe.

4. Check for air bubbles in the syringe. *Note: if there are air bubbles, flick the syringe with your finger to make the bubbles rise to the top. Then, gently push the plunger forward to force the air out.*
5. Carefully replace the cover over the syringe tip, without touching the inside of the cap or the syringe tip.
6. Hold the catheter in your non-dominant hand and scrub the catheter cap with an alcohol swab. **BE VIGOROUS** and scrub for 15 seconds. Allow the cap to dry.
7. Continue to hold the catheter in your non-dominant hand. Remove the syringe cap and insert tip of the syringe into the center of the catheter cap.

9. Unclamp the catheter.
10. Inject all of the normal saline into your catheter.
11. Reclamp your catheter.
12. Remove the syringe from the catheter. Discard the used syringe.
13. Repeat for each lumen.

## Changing the catheter cap

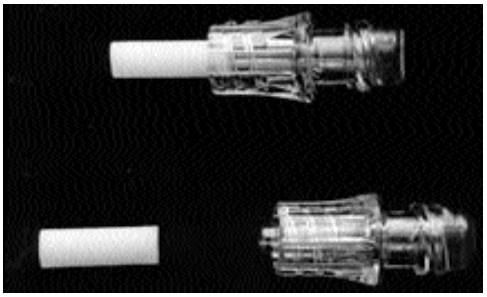
The catheter cap is changed regularly to prevent infection and overuse.

**Frequency:** Change the cap once a week or as needed. **Do not change the cap until taught and instructed to do so.**

**Supplies (per lumen)**

- 1 alcohol prep pad
- 1 new sterile needleless **cap**

**Procedure:**
1. Prepare a clean work area. Gather the supplies listed above.
2. Wash your hands thoroughly with soap and water.
3. Open the supplies, leaving them in the paper packaging. DO NOT remove the protective tip covering the luerlock cap. This tip keeps the luerlock sterile until you place it on your catheter.



4. Check to be sure the catheter is clamped.
5. Hold the catheter in your non-dominant hand and scrub the cap-catheter connection with an alcohol swab. Let the cap-catheter connection dry.
6. While continuing to hold the catheter in your non-dominant hand, remove the old cap from the catheter.
7. Remove the protective tip from the new cap and screw the new cap on the catheter. After the protective tip has been removed, remember not to touch the sterile tip with your fingers.
8. Repeat for each lumen.

## Precautions to observe with your catheter

After your catheter is in place, there are a few key things you will need to remember.

**Never use scissors near your catheter.**

In case the catheter breaks, always carry the clamp your nurse gave you.

After your catheter is implanted, a gauze and tape dressing will be in place. This needs to be changed in the first 24-48 hours as described under the dressing change section already mentioned.

You may shower or bathe, but the dressing and catheter must be covered with plastic. If the dressing or catheter gets wet, change the dressing immediately. Never let the catheter dangle in the water.

You may continue your normal activities including work, school, exercise, and sexual activity. Contact sports are not recommended.

## What to do when problems occur

While most patients continue their daily activities unhindered by their catheters, problems may develop.

**Air embolism**
This may occur if air enters your vein through the catheter. If the clamp on the catheter is not secure or if the infusion cap is removed before the clamp is in place, air can enter the catheter. You may feel short of breath or develop a cough. If this occurs, clamp the catheter and call your doctor or nurse immediately. If the clamp on the catheter is missing or broken, use the clamp enclosed in the Emergency Kit.

**Catheter breakage or hole in a lumen**
While it is rare, the catheter can break. This is why you must carry a clamp at all times. If the catheter breaks, immediately place your clamp above the break closest to your skin. **Call your doctor immediately.** Hickman and Neostar catheters can be repaired.

**Catheter cuff protruding through the skin**

a. Do not attempt to reinsert the catheter.
b. Secure the line with tape against the dressing or skin.
c. Apply clean gauze over the protruding site.
d. **Notify your doctor** within 24 hours.

**Accidental catheter removal**

a. Do not attempt to reinsert the catheter.
b. Apply pressure to the opening in the skin immediately, with hands if necessary.
c. Use gauze from Emergency Kit to cover the insertion site and then cover the gauze with a transparent dressing. Make sure no air is allowed in to the insertion site under the transparent dressing.
**d. Call your doctor immediately.**

**Catheter cap accidentally falls off**

If the cap comes off of the catheter inadvertently, make sure that the catheter is clamped. Place a new cap on the end of the catheter and notify your nurse or doctor.

**Clotting**

A clot may block the flow of fluid through the catheter if the catheter is not flushed promptly after blood drawing or if blood backing up in the catheter is not cleared. To prevent clotting, flush each lumen of the catheter as instructed by your nurse.

If you cannot flush a lumen:

a. Ensure the clamp is open
**b.** If clamp is open – **STOP**
c. Do not use force
d. Attempt to flush other lumens
e. Notify your doctor within 24 hours.

**Infection**

Infection may occur if the catheter site is not kept clean and dry.

- Be sure that you and your caregivers **always wash hands** thoroughly prior to handling the catheter for any reason.
- Closely monitor your catheter site for signs of infection: redness, tenderness, or drainage. If your white blood cell count is low, you will not see drainage or pus. Make sure dressing is changed regularly, maintained securely and stays in place well. **Keep it clean and dry always!**
- Every time the infusion cap is used or removed, bacteria may enter the catheter and travel to your blood stream. If you feel chills after flushing, call your doctor or nurse immediately. **Anytime you have fever 100.5F or greater and/or chills, it can be a sign of infection. Call your doctor immediately** if you notice these signs and symptoms of infection.

**Thrombosis**

Thrombosis may occur if a blood clot forms and blocks the flow of blood through the vein in which your catheter is placed. Signs of thrombosis are pain and/or swelling in your neck, face, chest, or arm. You may also have a feeling of fullness in your face. If you notice these signs, call your doctor or nurse immediately.