

The background features a large, light-colored triangle pointing downwards from the top left, containing a pattern of small grey dots. To the left of this triangle are overlapping geometric shapes in shades of blue, red, and teal. On the right side, there is a vertical stack of three overlapping hexagonal shapes in blue, red, and teal. The main title is centered in a large, bold, dark blue serif font.

Health Facts for You



**Caring for your child's
tunneled catheter**

Your Child's Central Venous Access Device

A **central venous access device (CVAD)** or central line is a tube that is placed into your child's vein. This vein can be found in the arm, groin, leg, neck or chest. The purpose of the tube is to give medicine or nutrition. It can also be used to draw blood.

Tunneled Catheter

A tunneled catheter is a line that rests on the outside of the body at the chest area. The line itself runs up through the neck veins and then sits near the heart. Examples of a tunneled catheter include a Hickman[®], PowerLine[®], PowerHickman[®] or Broviac[®].

Power Injectable/Non-Power Injectable

A power injectable line can be used for IV contrast for radiology tests (e.g. CT). If your child has a non-power injectable line, they will need an IV placed to receive contrast for radiology tests.

Parts of the Tunneled Line

The Tunneled line is made up of multiple components, this includes: the catheter, cuff, lumens, needleless connector, and clamps.

Cuff

Tunneled lines have a cuff under the skin near where the line comes out of the body. The cuff is a small felt-like piece of material that circles the line. Skin will grow around the cuff to help hold the line in place.

Lumen

The tunneled line may have multiple lumens. Lumens are the tubes, or openings, within the line. A double lumen has two tubes, or openings, to give medicine or draw labs.

Needleless Connector

The needleless connector is the one-inch clear plastic piece at the end of each lumen of the central line. The needleless connector keeps the central line closed and helps keep air and germs out of the line. Your child's line should always have a needleless connector on each lumen.



General Information

Infection Risk

A central line increases your child's risk for an infection. A central line associated blood stream infection (CLABSI) is an infection that occurs by germs entering your child's bloodstream through their central line.

Preventing Infections in the Hospital

To reduce the risk of infection with a central line in the hospital, we will:

- Wear a mask, hat, sterile gown and gloves when the line is inserted.
- Clean the needleless connector when giving medicines or drawing blood from the central line.
- Wear clean gloves whenever touching the central line or dressing.
- Keep the dressing over the central line clean and dry.
- Change the tubing attached to the central line at scheduled times.
- Limit the number of times we need to draw blood or give medicines through the central line.
- Decide each day if the central line is still needed and remove when it is no longer needed.
- Teach you how to care for the line at home if your child will be going home with one.

Preventing Infections at Home

To reduce the risk of infection at home, you should:

- Wash your hands and put on clean gloves when caring for the central line and handling any supplies.
- Keep tubing off floor.
- Keep line out of diaper area.
- Not allow children to chew on the line or put the end in their mouth.
- Prevent your child from swimming in pools, hot tubs or lakes while the central line is in place.

Bathing

Bathing and showering are important to the care of your child's central line. Your nurse will show you how to cover the line and dressing for bathing before your child goes home. Follow the bathing tips below:

- Always cover the central line to keep it dry even if you will be changing the dressing afterwards.
- Use extra plastic cover to help to keep water from getting into the dressing or into the lumens. Some examples include: Glad Press'n Seal[®], a clean plastic bag or a product such as Aquaguard[®].
- Limit the amount of water in the tub to help keep the dressing and/or tubing out of the water.
- Keep the water spray from the shower on the back of your child. This will help the soap run away from the central line site and lumens.

Activity

Everyday activities are allowed. Your child should avoid rough play and contact sports. Talk with your doctor about specific restrictions.

- Do not use scissors near the line.
- Keep line secured and covered at all times to make sure it doesn't get pulled out.

Flushing the Central Line

Central lines must be flushed with Heparin once a day if not infusing and after each use. Heparin is a medicine used to prevent blood from clotting in the catheter. Always wash hands or use hand sanitizer and put on clean gloves before handling the central line. Please note:

- Each lumen **must** be flushed separately.
- If there is **blood, medicine, or other fluids** in the line, the line will need to be flushed with Normal Saline before the Heparin flush.

Saline Flush Volume	Heparin (10u/mL) Lock Volume
5-10 mL	2 mL

Supplies

- Sterile alcohol wipes
- Pre-filled heparin syringe
- Clean gloves
- If needed: Normal saline 10 mL syringe



Steps for Flushing the Central Line

1. Wash hands.
2. Put on clean gloves.
3. Scrub the needleless connector with sterile alcohol wipe for 15 seconds. OR remove alcohol cap on the needleless connector. Let alcohol dry for 5 seconds.



4. Remove any air bubbles from the syringe by pushing up on plunger.
5. Connect the syringe to the needleless connector. Twist on completely. **Note:** If the tip of the syringe touches anything other than the end of the catheter, stop, and replace syringe. If anything touches the end of the needleless connector, **stop** and repeat step 3 and 4 before proceeding.
6. Unclamp the line.
7. Flush the line using push-pause method.
8. Clamp the line.
9. Remove syringe. Throw in trash.
10. If there are multiple lumens, repeat steps 3-11 for each lumen.
11. If supplied with alcohol filled caps, apply to each lumen after line flushed and capped.



Giving Medicines Through Central Line

If you are giving medicines through your child's tunneled catheter, use the acronym **SASH** to help remember the order of each medicine and flush.

- **S-** saline
- **A-** administer medicine
- **S-** saline
- **H-** heparin

Flushing Problems

If you have any trouble flushing your child's central line, see page 7 for instructions.

Changing the Needleless Connector

Needleless connectors are changed twice a week. If the needleless connector gets wet or dirty, it needs to be changed right away. If you have a continuous IV (intravenous) infusion, it is best to change needleless connector and IV tubing at the same time.

Changes at the hospital are done using a sterile technique. Changes at home are done using clean gloves.

Needleless Connector Change Supplies

- Needleless connector
- Heparin 10 unit/1mL syringe (5 mL in a 10 mL syringe) or Normal Saline 10 mL syringe
- Clean gloves
- Alcohol wipes (2)
- Mask

Steps for Changing a Needleless Connector

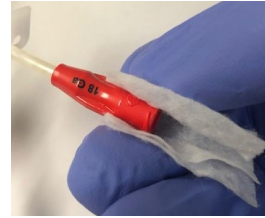
1. Prepare a clean area to work. Use soap and water or antiseptic wipes to clean a table or countertop. Dry with a clean towel or paper towel.
2. Put a face mask on your child, yourself and anyone in the area who may be helping you.
3. Wash hands.
4. Put on clean gloves.
5. Make sure the central line is clamped.
6. Remove cover from the syringe. **Do not** touch end of the syringe.
7. Firmly insert and twist the syringe into the new clean needleless connector. **Do not** touch the end of the needleless connector to anything other than the syringe. **Note:** If the tip of the syringe or needleless connector touches anything, stop and replace.
8. Push the syringe slowly until the fluid comes out the end of needleless

connector. Keep syringe attached.

9. Clean for 15 seconds with an alcohol wipe where needleless connector and lumen connect.
10. Remove the old needleless connector from the central line.



11. Clean around the open hub of the catheter with an alcohol wipe for 15 seconds and allow to dry.



12. Place and twist the new needleless connector on the end of the central line.
13. Unclamp the central line.
14. Flush into catheter using a “push-pause method.”
15. Clamp the central line.
16. Remove the syringe from needleless connector.
17. If supplied with alcohol filled caps, apply to each lumen after line flushed and capped.
18. Dispose of supplies. Wash hands.

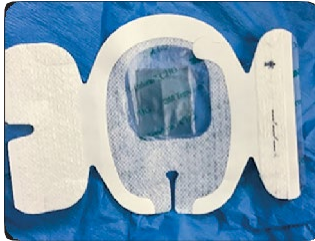
Dressings

Dressings are changed every seven days. If the dressing is loose, wet or gets body fluids on it, the dressing needs to be changed when possible. Central line dressing changes are done using **sterile technique** at the hospital and at home. Dressing change supplies are provided by your home health company.

Preventing Infection

When changing the dressing, put a face mask on your child, yourself and anyone in the area who may be helping you. This will help decrease the risk for infection.

- **Antimicrobial cleaner:** Products that contain chlorhexidine (CHG*) are best.
- **Antimicrobial dressing:** Transparent dressings with CHG* antimicrobial gel pads or discs (BioPatch®) are best.



- If your child has an allergy to Chlorhexidine, there are other products that can be used. Please ask your doctor or nurse for more information.

Securement

Your child will have securement to help keep the central line in place. When the tunneled line is first placed, it will have sutures to hold the line in place. Sutures are important for the first few months until the line has healed in place.

- **Do not** remove sutures yourself. If sutures come out of the skin in the first month, or are causing irritation, please contact your provider right away.
- After the line is healed, it is okay if the sutures come out of the skin. You do not need to contact the provider.
- Non-power injectable (white) lines should be looped under the dressing to protect the line and help prevent the line from being pulled out.



Dressing Changes

Gather Your Supplies

- Clean gloves
- Sterile gloves
- Mask for your child, yourself and any helpers
- Central line dressing
- Chlorhexidine-alcohol product (ex. Chloraprep[®])
- Alcohol wipes (3-4 wipes)
- Skin protectant (if used)
- Biopatch[®] (If applicable)

Steps to Change Dressing

1. Gather equipment and prepare clean work area. Use soap and water or antiseptic wipes to clean a table or counter. Dry with a clean towel or paper towel.
2. Put a face mask on your child, yourself and any helpers.
3. Wash hands.
4. Prepare sterile field.
5. Open central line dressing kit by grasping sides of package. **Do not** touch the items inside of sterile field until wearing sterile gloves.
6. Open any other supplies and drop onto sterile field without touching each item.
7. Put on clean gloves to remove dressing.
8. Remove dressing.
9. Check site for infection (i.e. redness, swelling or drainage).
10. Remove gloves and wash hands.
11. Put on sterile gloves.
12. Clean around the insertion site and area under the dressing using the chlorhexidine-alcohol swabstick for 30 seconds. Use a gentle back and forth motion. Do not wipe off. Do not scrub roughly.

13. Allow the site to air dry for 30 seconds or until dry.
14. Apply skin protectant on skin where the transparent dressing will be placed. Do not apply near insertion site. Allow to dry for 30 seconds.
15. If patient has white flexible tunneled line, create a loop with the line to place under the dressing.
16. Place transparent dressing.
17. Remove gloves.

Common Problems and Emergencies with a Central Venous Catheter	
Sign or Symptom	What to do
<ul style="list-style-type: none"> • Fever of 100.4° (38.0°) or higher • Chills, fatigue or a decrease in activity. • Swelling, warmth, tenderness, redness, oozing, odor or drainage at the exit site • Pain or swelling along catheter tract or pain while flushing the catheter 	Call doctor or nurse right away
Leaking of fluids, visible hole or break in catheter	<ol style="list-style-type: none"> 1. Do not use the central line. If the central line is leaking, clamp the line with the clamp on the line or a hemostat between the child and the leak. 2. Cover the break or leak with sterile gauze 3. Call doctor or nurse right away.
Catheter is further out of body than it should be	<ol style="list-style-type: none"> 1. Do not push catheter back in. Keep a dressing in place. 2. Call doctor or nurse right away.
Catheter falls out	<ol style="list-style-type: none"> 1. If the central line falls out, apply pressure right away with a sterile gauze pad to the exit site for about five minutes. Then place a transparent dressing over the gauze on the exit site. 2. Call doctor or nurse right away.
Catheter will not flush or draw blood	<ol style="list-style-type: none"> 1. Do not force fluid into the catheter. 2. Make sure catheter is unclamped. 3. Make sure there are no kinks or twist along the catheter or under the dressing. 4. Pull back on syringe gently to draw back blood. If blood is visible, try to flush again. 5. If unable to flush catheter or get a blood return, Call doctor or nurse.
Needleless connector comes off catheter	<ol style="list-style-type: none"> 1. Scrub open catheter end with alcohol pad for 15 seconds and allow to dry for 5 seconds. 2. Place new needleless connector by following steps on page 4.
Skin issues- irritation, open skin	<ol style="list-style-type: none"> 1. Call your doctor or nurse to discuss different dressing or cleanser options.
Swelling of chest, neck, face or arm	<ol style="list-style-type: none"> 1. Stop infusion into catheter. 2. Call doctor or nurse right away.
Shortness of breath or complains of chest pain	<ol style="list-style-type: none"> 1. This is an emergency! 2. Make sure the catheter is clamped right away, lay child down on left side. 3. Call 911 for urgent help.

Your Child's Catheter and Home Supplies

Who to Call

Clinic: _____

Doctor/Nurse who manages the line and orders supplies: _____

Home Care Agency

When you are discharged from the hospital, supplies and equipment will be delivered by your home care agency. To reorder supplies, contact your home care agency.

Home care agency: _____

Phone number: _____

Home health nurse (if applicable): _____

Phone number: _____

Catheter Information

Company/Brand: _____

Model Number: _____

French Size: _____

Is the catheter power injectable? YES NO

If no, the catheter cannot be used for Radiology studies that use IV contrast.

Dressing Information

Dressing: _____

Cleaning agent: _____

Other

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 12/2023 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing HF#8336.