

# A Parent's Guide to Central Venous Catheters (CVCs) or Central Lines

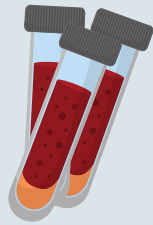
## What is a central venous catheter (CVC) or central line?

A thin tube inserted into a large vein that goes just up to or inside the heart.

## Uses of a Central Line



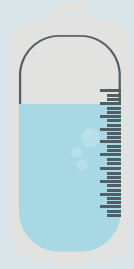
**Give Medicine**



**Draw Blood**



**Provide Nutrition  
(Parenteral Nutrition)**



**Give Fluids**

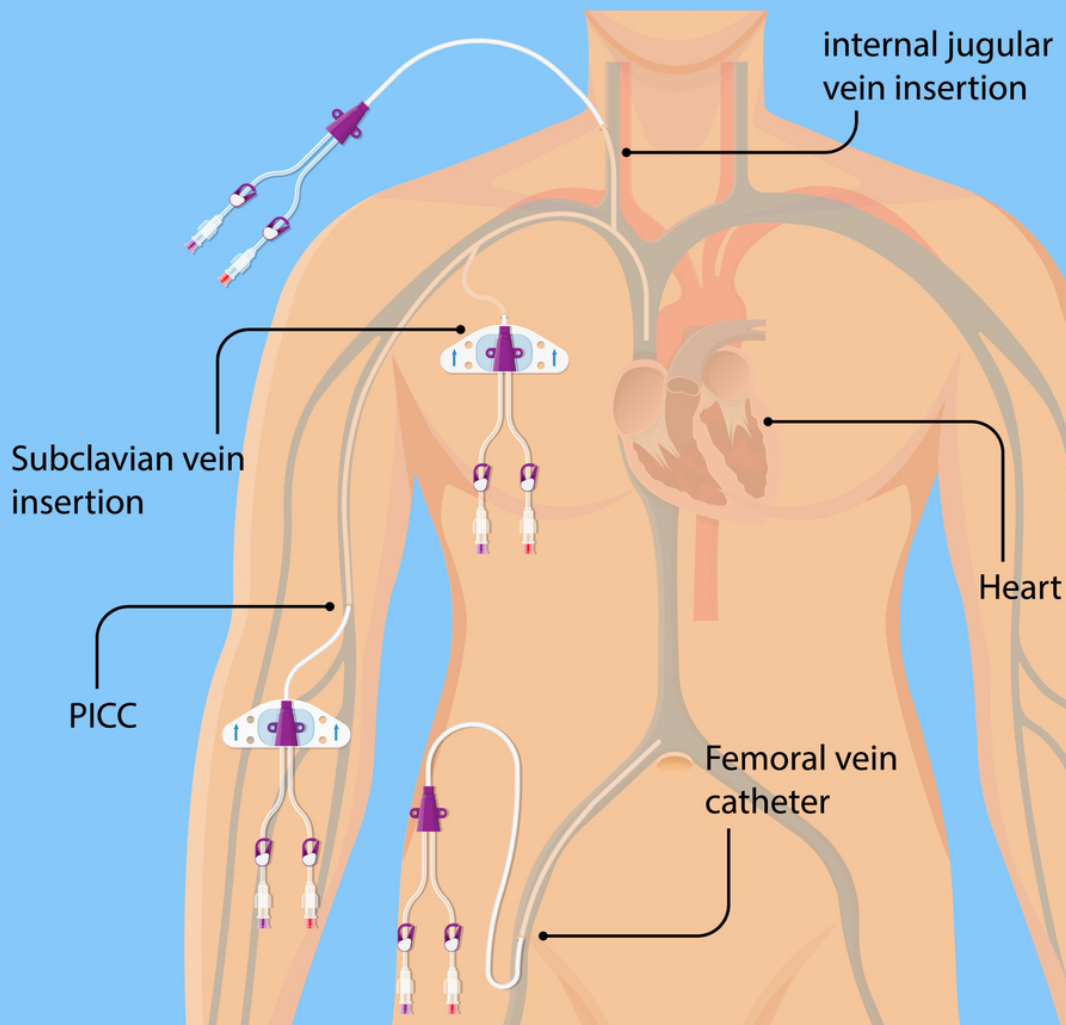
## Types of Central Lines

### Tunneled Catheter:

- The catheter is passed under the skin. This helps stabilize the line and makes it useful for long-term therapy.
- They can have one or more lumens (access points).
- Examples: Hickman®, Broviac®, Port-a-Cath

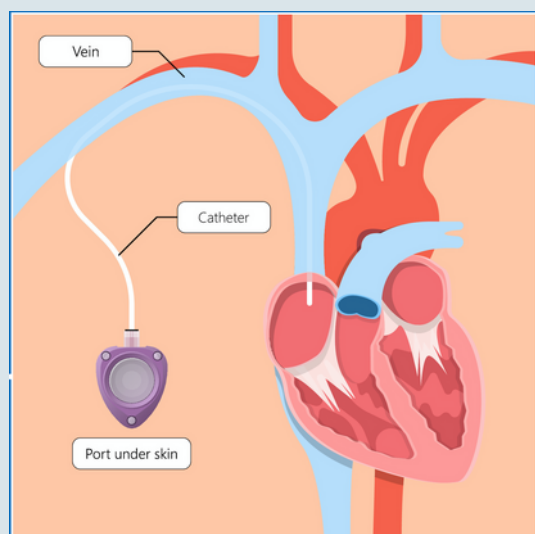
### Non-Tunneled Catheter

- Short-term use.
- Placed in a large vein of your child's arm, neck, groin, or leg.
- Example: Peripherally Inserted Central Catheter (PICC)



## Central Venous Catheter

**Note:** The PICC and Internal jugular CVC are non-tunneled, short-term options. The subclavian vein insertion is a tunneled central line for long-term use.



This is a picture of a **Port-a-Cath**, a type of tunneled central line. The port itself is placed under the skin and accessed as needed. When not accessed, they must be flushed occasionally but otherwise do not require care. A port can have multiple lumens (access points) and can be used long-term.

## How is a central line (tunneled) inserted?

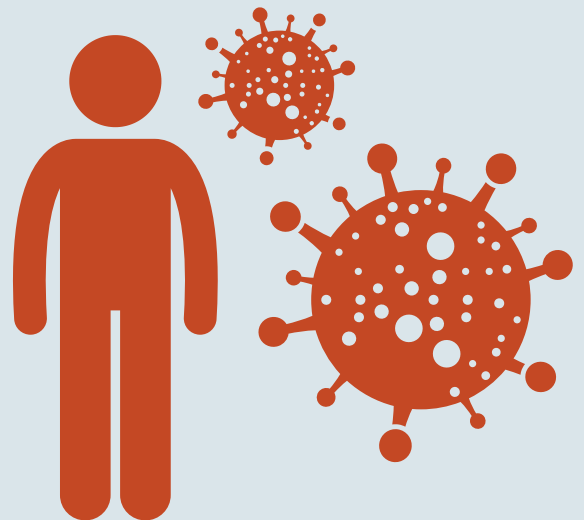
- During surgery, the surgeon inserts the tip of the catheter under the chest skin and tunnels it into a large vein that goes to the heart.
- There will be two small incisions on the chest after surgery, one where the catheter was inserted into the vein and one where it comes out of the chest skin (the "exit site").
- Your child may have soreness or discomfort at the incision sites.

## How to prepare your child for the central line?

- Use simple words to explain why the catheter is needed and what to expect.
- Use age-appropriate detail and terminology.
- Explain procedures before they are done, especially what your child will see, hear, and feel.
- Instruct your child on what is expected ahead of time, such as, "Your job is to hold still while I change the dressing."
- Be honest.
- Stress hand-washing and infection prevention.

# Central Line Infection

Central lines bring an increased risk of infection for your child. A **Central Line-Associated Blood Stream Infection** or **CLABSI** occurs when bacteria grow in your child's catheter and travel to the bloodstream. This can be very serious and life-threatening.

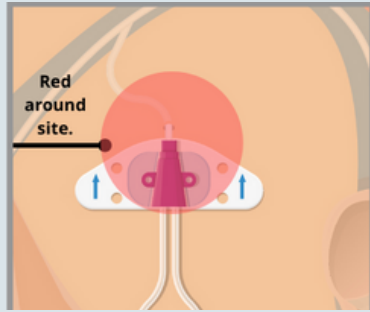


# Central Line Infection

## Signs and Symptoms of Central Line Infection:



**Fever**



**Redness or swelling  
around the line.**



**Pain or tenderness  
around the line.**

## Preventing Central Line Infection

### Number One: Handwashing!

- You, your child, and anyone that handles your child's central line must be vigilant in handwashing.
- Teach your child to wash for 20 seconds: Sing the ABCs or Happy Birthday, twice.
- If soap and water are not an option, use an alcohol-based hand sanitizer (Purell® or another brand) according to directions.



### Other Important Infection Prevention Points:

- When doing a dressing change, preparing parenteral nutrition (PN), or doing anything else with the central line, prepare a clean work area by cleaning a solid surface with a disinfectant cleanser (such as Lysol® or another brand).
- Wear sterile gloves and a mask when changing your child's dressing. You should have your child wear a mask, too.
- Always wipe off the end cap of the line for 15 seconds with an alcohol swab before, between, and after each use or flush.

# List of What You Need To Know About Your Child's Central Venous Catheter (CVC)

## Circle What Fits Your Child

### Type of Central Venous Catheter: Catheter Features:

Hickman®

PICC

Single Lumen

Broviac®

Other:

Double Lumen

Triple Lumen

Port-a-Cath

Power Injectable

Date of Insertion: \_\_\_\_\_

Clinic/Hospital Where Line was Inserted:

\_\_\_\_\_

How often should I change my child's dressing?

\_\_\_\_\_

How often should I change the caps on my child's line?

\_\_\_\_\_

When should I flush my child's line?

- After infusing medicines, parenteral nutrition (PN), or fluids
- After drawing blood
- At least every 24 hours
- Other: \_\_\_\_\_

# Important Considerations

## Bathing and Showering

- Cover your child's line with a waterproof dressing.
- If the transparent dressing becomes wet, replace it right way.
- Avoid soaking in tubs, which increases the risk for infection.



## Physical Activity

- Your child should be able to participate in most activities.
- If you are unsure about a particular activity, please consult your care team.

## Ordering and Handling Supplies

- Your child's supplies will be ordered through a home care pharmacy. Your care team will help to set this up before your child leaves the hospital.
- Be sure always to have the home care pharmacy number on hand and a list of what supplies are needed.
- Pay attention to expiration dates and storage instructions; certain items like parenteral nutrition (PN) and heparin syringes only last for 7 days. PN must be refrigerated unless specified otherwise.
- Refer to your homecare pharmacy for specific storage and handling instructions.

# Possible CVC Problems and Troubleshooting

## **Problem:** Line will not flush.

### **Possible Causes:**

- The line is clamped.
- The line or tubing is kinked.
- There is a clot or blockage in the line.

### **Prevention:**

- Flush the line frequently and as directed by your care team.

### **What to do:**

- Unclamp it.
- Remove the kink.
- If the line is not kinked or clamped, do not force the solution into the tube. Call your care team or home health company immediately.

## **Problem:** Tenderness, redness, or pus at the line insertion site.

### **Possible Cause:**

- Infection

### **Other Signs:**

- Fever
- Poor appetite
- Decreased activity, sleeping more.

### **What to do:**

- Call your care team **right away**.
- Check your child's temperature.

### **Prevention:**

- Always wash your hands when handling the line.
- Use sterile (germ-free) supplies.
- Change dressing if it is wet or loose.
- Secure line to stop it from dangling.

## **Problem:** Leakage or Breakage.

### **Signs:**

- Liquid leaking from anywhere along tubing or line; dressing is wet after flushing line.

### **What to do:**

- Clamp the line above the point of leakage or breakage.
- Call your child's care team immediately.

### **Prevention:**

- Never flush against resistance.
- Do not use sharp objects, such as scissors, around the line.
- If you have a young child, pay attention to times when they are teething or possibly chewing on the line.

## **Problem:** Central Vein Thrombosis (CVT)

A blood clot has formed in the vein where the catheter lies.

### **Signs:**

- Swelling of the neck, arm, or hand.

### **What to do:**

- Call your child's care team immediately.

### **Prevention:**

- Flush your child's line regularly and as recommended by your team.
- Some care teams may recommend flushing your child's line with heparin to prevent clots.

**A helpful set of animations on parenteral nutrition (PN) and central lines can be viewed on the [Transplant Unwrapped Kid's Site](#)**



# Terms to Know

**Adhesive tape remover:** Helps to remove dressing and tape, usually in the form of a pad. Must be completely removed with Chloraprep before placing new dressing, or the dressing will not stick.

**Antibacterial soap:** Soap that will kill bacteria or germs. Always use before handling your child's line.

**Biopatch:** A medicated disc placed around the exit site of your child's central venous catheter (CVC). Not all dressing change kits contain a biopatch. Consult your care team for their recommendations.

**CC (cubic centimeter) or mL (milliliter):** Units used to measure how much liquid is in a syringe. One cc is the same as one mL.

**Chloraprep:** The solution used to clean the skin around the exit site of your child's central venous catheter. It helps prevent infection.

**Clamp:** Compresses the catheter line when not in use. You should clamp your child's line at the thickest portion. Many lines will have an area marked to indicate a proper clamping area.

**Exit Site:** Area on chest (or other location) where the catheter comes out through the skin.

**Heparin:** A medication that helps prevent blood clots from forming. Your child's care team may prescribe heparin flushes to help prevent clots in your child's central line.

**Cap:** The special cap at the end of the line that keeps blood from leaking out and germs from going in. Most care teams recommend changing the caps every seven days.

## Do you want to learn more?

Visit us on our **Main Website** where you will find helpful webinars, downloads, and support systems. Our **Parents Page** on the Kid's site also offers helpful downloads and information.



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