

Angiography: Tunneled Central Venous Catheter

When you have a Hickman, Leonard, or Groshong catheter

This handout describes a central venous catheter and tells what to expect when you have one. It also explains how to prepare for the procedure to place the catheter.

What is a central venous catheter?

A *central venous catheter* (CVC) is long, hollow plastic tube that enters your body through the skin on your chest. The tip of the catheter is placed in a large vein inside your chest.

The CVC has a fabric cuff that sits under your skin. This cuff helps keep the catheter in place. It also keeps any skin infection from entering your bloodstream.

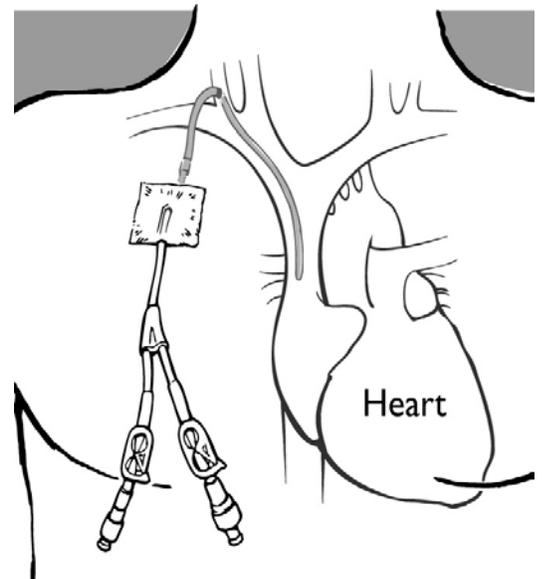
A CVC may be used for:

- Giving antibiotics, chemotherapy, or other drugs, or blood products such as plasma
- Filtering blood (*dialysis*)
- Exchanging or removing blood elements (*pheresis*)

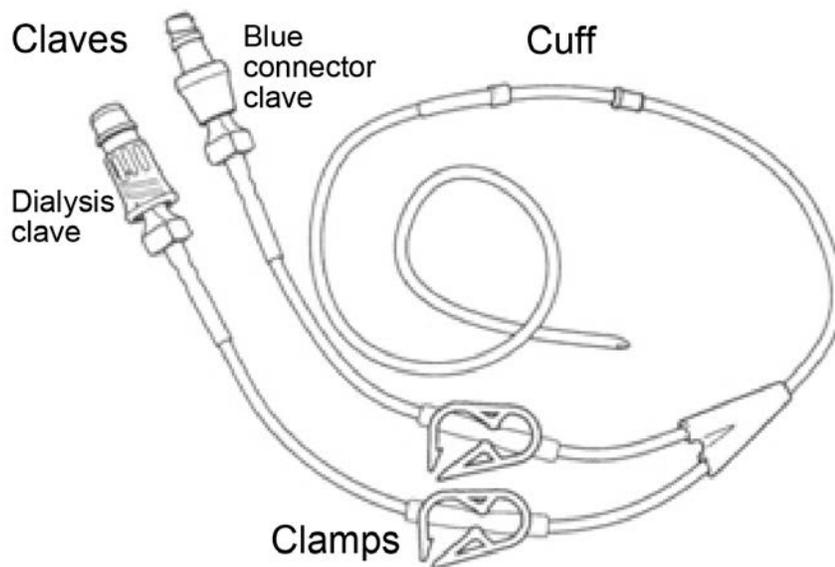
The procedure to place a CVC is done by an *interventional radiologist*, a doctor or physician assistant with special training in doing this kind of procedure.

Is a CVC better than an IV?

An *intravenous* (IV) line that is placed in an arm vein must be removed after a short time. But a CVC can stay in place for weeks to months. This allows your care providers to inject fluids or withdraw blood for lab tests without having to stick you with needles every time.



A central venous catheter enters your body through your chest.



A central venous catheter

Are there any risks from a CVC?

As with all medical procedures, there are some risks. The most common problems after placing a CVC are:

- **Bleeding.** Any bleeding is usually minor and does not last long.
- **Infection right after the CVC is placed.** There is a small risk of infection right after the CVC is placed.
- **Infection more than 1 week after the CVC is placed.** This infection is more common. It is **not** related to the procedure.
- **The CVC does not work.** This may occur if the catheter moves or a clot forms on the tip.

There are also other less common risks. Your doctor or physician assistant will talk with you about these before your procedure. Please ask any questions you have. Make sure all of your concerns are addressed.

Can I do my usual activities while I have the CVC?

For about 1 week after your CVC is placed:

- Avoid activities that stretch or put pressure on your neck or chest.
- Do not get the area wet.

After 1 week, you may resume all of your usual activities.

Will I feel the catheter?

At first, you may feel the catheter under your skin in your neck or collarbone area. After 1 to 2 weeks, you should not feel it any more.

How do I care for the catheter?

- Keep your skin where the catheter enters your chest clean and dry.
- Keep the catheter well covered with a bandage so that it does not catch on clothing or objects that might move it. It is most likely to move in the first few weeks after it is placed.

Can the catheter be removed?

Yes. We will remove your catheter:

- When you no longer need it. You will only need a local *anesthetic* (numbing medicine) when we remove your catheter.
- If the catheter does not work right, or if it cracks.
- If you get a skin infection at the catheter entry site that does not go away when treated with antibiotics.
- If you get a serious bloodstream infection.

How do I prepare for the procedure to place the catheter?

Arrival Time

If you are an *outpatient* (not staying in the hospital), a nurse will call you the afternoon before your procedure. If your procedure is on a Monday, the nurse will call you the Friday before. The nurse will:

- Tell you when to arrive at the hospital
- Remind you what to do on the morning of your procedure
- Answer any questions you have

Blood Tests

You most likely will need blood tests done within 14 days of your procedure. We may do this when you arrive for your procedure. We will let you know if we need a blood sample before procedure day.

Interpreter Services

Please have a family member or friend tell us right away if you:

- Do not understand or read English well
- Need help reading these instructions or understanding the details of the procedure

If needed, we will arrange for a hospital interpreter to help you. This service is free.

A family member or friend may not interpret for you.

If You Take a Blood-thinning Medicine

If you take Lovenox, Coumadin, Plavix, or another blood-thinning medicine, you may need to stop taking it before your procedure. The length of time depends on the medicine you are taking. Some patients may need to stop taking their medicine for only 12 hours. Others may need to stop taking it for 5 to 7 days before the procedure.

If you have not been told when to stop taking your blood-thinning medicine, contact your primary care provider or the clinic that prescribed your medicine. Tell them you are having this procedure and ask when to stop taking your blood-thinning medicine.

IMPORTANT: If you have ever had a heart stent, prosthetic heart valve, or a pulmonary embolism, or if you have atrial fibrillation with a history of a stroke, **contact the provider who prescribes your blood-thinning medicine.** Ask how to change your dose before the procedure.

If You Have Diabetes

If you take insulin or oral diabetes medicines, we will explain how to hold or adjust your dose for the day of your procedure.

Sedation

When your CVC is placed, you will be given a *sedative* (medicine to make you relax) through an IV. You will be awake, but feel sleepy. This is called *conscious sedation*. You will still be sleepy for a while after the procedure.

Conscious sedation may not be a safe option for you if you have certain health conditions. Tell us **right away** if you:

- Have needed anesthesia for basic procedures in the past
- Have *sleep apnea* or other breathing problems (you might use a CPAP or BiPAP device while sleeping)
- Use high doses of prescription painkiller
- Have severe heart, lung, or kidney disease
- Cannot lie flat on your back for about 1 hour because of back or breathing problems
- Have a hard time lying still during medical procedures
- Weigh more than 300 pounds (136 kilograms)

If you have any of these health issues, we may need to give you different medicines. Instead of a sedative, you might receive:

- Only a *local anesthetic* (numbing medicine), such as lidocaine.
- *Minimal sedation* (a local anesthetic and a pain or anxiety medicine)
- *General anesthesia* (medicine to make you sleep). This medicine is given by an anesthesia provider.

Day Before Your Procedure

- You may eat as usual.
- Make plans for a responsible adult to drive you home after your procedure and stay with you the rest of the day. **You may not drive yourself home or take a bus, taxi, or shuttle by yourself.** If you need to take a bus, taxi, or shuttle, a responsible adult must ride with you.
- Plan to spend most of the procedure day in the hospital. If there is a delay in getting your procedure started, it is usually because we need to treat other people with unexpected and urgent problems. Thank you for your patience if this occurs.

Procedure Day

At Home

- Other than the blood-thinning medicines or diabetes medicines that you were told to stop, take all of your other usual prescription medicines on the day of the procedure. Do **not** skip them unless your doctor or a nurse tells you to hold them.
- Do **not** take vitamins or other supplements. They can upset an empty stomach.
- Starting **6 hours** before your procedure, you may have **only clear liquids**. These are liquids you can see through such as water, broth, apple or cranberry juice, or weak tea.
- Starting **2 hours** before your procedure:
 - Take **nothing** at all by mouth.
 - If you must take medicines, take them with **only** a sip of water.
- Bring with you a list of all the medicines you take.

At the Hospital

- Unless you are told otherwise, check in at Admitting on the 3rd (main) floor of the hospital. Admitting is to the right and behind the Information Desk in the lobby.
- You may have been told to go to the Outpatient Lab for a blood draw. The lab is behind the Cascade elevators, next to the Outpatient Pharmacy. You may go to the lab either before or after you check in at Admitting.
- After checking in at Admitting and having your blood drawn, take the Pacific elevators to the 2nd floor. When you leave the elevator, turn left and check in at Radiology reception.

- A Radiology staff member will then:
 - Take you to a pre-procedure area
 - Give you a hospital gown to put on
 - Give you a bag for your belongings
- While you are in the pre-procedure area:
 - A family member or a friend can be with you.
 - A nurse will ask you some health questions, take your vital signs (such as heart rate), place an IV tube in your arm, and go over what to expect.
 - A radiologist or physician assistant will talk with you about the procedure. They will ask you to sign a consent form, if you have not already signed one, and answer any questions you have.
- A nurse will then take you to the radiology suite. This nurse will be with you for the entire procedure.

What happens during the procedure?

- You will lie flat on your back on a narrow bed. The X-ray machines will move around and over you.
- We will use these devices to monitor you during the procedure:
 - **Wires** on your chest will help us watch your heart.
 - A **cuff** around your arm will let us check your blood pressure.
 - **Prongs** in your nose will give you oxygen.
 - A **probe** on one of your fingers will show us how well your body is using the oxygen.
- The entire medical team will ask you to confirm your name, go over your allergies, and tell you what we plan to do. This is for your safety. We do this for every procedure and every patient.
- Your nurse will give you the sedative to make you feel drowsy and relaxed before we begin.
- Most times, the catheter is inserted into a vein at the base of your neck. This is usually on the right side. It comes out the skin below your collar bone (see the drawing on page 1).
- A radiology technologist will clean your skin around your neck and chest with a special soap. We will then put special drapes over you to keep the area very clean.
- If needed, an interpreter will be in the room or will be able to talk with you and hear you through an intercom.

- A local anesthetic (numbing medicine) will be applied in 2 places. One spot is on your neck, where the guiding wire is placed into your jugular vein. The other spot is where the catheter will tunnel under your skin and exit from your chest. Each time the anesthetic is applied, you will feel a sting for about 5 to 15 seconds. Then the area will be numb and you should not feel sharp pain.
- At one point, we will ask you to hold your breath for a few seconds.
- The procedure takes about 30 minutes. When it is done, we will put a sterile dressing (bandage) on your chest where the catheter comes out.

What happens after the procedure?

- We will watch you for a short time in Radiology. Then you will go to a recovery unit for about 1 to 2 hours until the sedation wears off. You will be able to eat and drink, and a family member or friend may visit you.
- Before you leave the hospital, your nurse will tell you what activities you can do, teach you how to take care of your incision, give you other important instructions, and answer any questions you have.
- Your responsible adult may escort you home when you:
 - Are fully awake
 - Can eat
 - Can use the restroom
 - Can walk
- Problems are rare with this procedure. If they occur, we may need to keep you in the hospital overnight so that we can watch or treat you.

When You Get Home

- Relax at home for the rest of the day. Make sure you have a responsible adult to help you.
- You may feel sleepy and have some mild memory loss. This should last only for rest of the day.
- For 24 hours, do **not**:
 - Drive a car or use machinery
 - Drink alcohol
 - Make important decisions or sign legal documents
 - Be responsible for the care of another person
- There is usually only minor pain after CVC placement.
 - If your doctor says it is OK, take acetaminophen (Tylenol) to ease discomfort.

- If your doctor thinks you might have more severe pain, you will receive a prescription for a stronger pain medicine.
- Resume taking your medicines as soon as you start to eat. Take **only** the medicines and supplements that your doctors prescribed or approved.
- Do **not** shower or bathe until you have had your dressing changed for the first time. This is usually done in clinic 1 to 3 days after your procedure. If water gets on your incision, it will not heal as well. It might also become infected.
 - If you must shower before your clinic visit, cover your bandages with plastic wrap and tape the edges of the plastic to keep your bandages dry. Try to keep the water from hitting your bandages. Gently pat the area dry.
- Let the white tapes (Steri-Strips) fall off on their own. This will take at least 1 week.
- Do **not** scrub the glue that may cover your incision. The glue may look like dry, peeling skin.

When to Call

Call us **right away** if you have:

- Increased or severe bleeding
- Redness, swelling, or tenderness that is getting worse, either around the catheter or on your neck
- Fever higher than 101°F (38.3°C) or chills
- New shortness of breath or chest pain
- Dizziness
- Vomiting

Caring for Your Catheter

Over time, a CVC might stop working or become infected. If the catheter stops working, we have ways to fix it. Rarely, it needs to be taken out and a new one placed.

But, an infection can be serious. **The best way to avoid infection is through careful catheter care.**

Changing the Dressing

At your clinic visit 1 to 3 days after your procedure, a specially trained nurse will teach you how to change your dressing. If this visit is not already set up, call your doctor to have it scheduled.

Protecting the Catheter

When caring for your catheter:

- Make sure the clamps on the catheter are closed when it is not being used.
- Make sure the clamps are on **only** the thick, reinforced area of the catheter.
- Do **not** use safety pins or scissors near the catheter. It could get cut or damaged.

If your catheter is **not** being used for dialysis:

- Always keep your extra safety clamp with you.
- **Never let the catheter hang loose.**
 - Use plastic tape and the clamp to attach the catheter close to your chest (for example, on clothing).
 - Place the tape **between** the clamp and blue connector on the catheter. Do **not** put tape over the connection between the catheter and the *clave* (cap).

What to Do

- **If your dressing falls off or becomes very wet:**
 - Put on a new dry dressing with gauze and tape.
 - Call us at 206.598.6209.
- **If your catheter leaks, gets cut, or breaks:**
 - Clamp the catheter close to where it enters your skin.
 - Call your primary care provider right away.
- Never take the blue claves off your catheter. **If a cap falls off:**
 - Make sure the catheter is clamped.
 - Scrub the tip with an alcohol wipe.
 - Place a new cap.
- **Keep your dressing supplies clean and dry.** Do not store them near the bathroom or kitchen sink.

Who to Call

UWMC Radiology Care Coordinator 206.598.6897

Procedure scheduling 206.598.6209

After hours (between 5 p.m. and 7 a.m.), and on weekends and holidays

Ask for the Interventional Radiology Fellow on call 206.598.6190

If You Need Urgent Care

Go to the nearest Emergency Room or call 911 right away. Do not wait to talk with one of our staff.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

UWMC Imaging Services:
206.598.6200