

Know About Your Tunnelled Central Venous Catheter (CVC)

Information for patients and families

Read this resource to learn:

- What a tunnelled CVC is
- What to expect when getting your tunnelled CVC
- How to care for your tunnelled CVC to prevent infections
- How to protect your tunnelled CVC from getting damaged
- Who to call if you have any questions

My tunnelled CVC will be put in on:

- Date: _____
- Time: _____

Check-in 30 minutes before your appointment at the Medical Imaging reception desk. Your CVC will be put in at one of these sites:

Toronto General Hospital
Peter Munk Building, 1st floor
585 University Avenue, Toronto
General Inquiries:
416 340 4800

Toronto Western Hospital
East Wing, 3rd floor
399 Bathurst Street, Toronto
General Inquiries:
416 603 2581



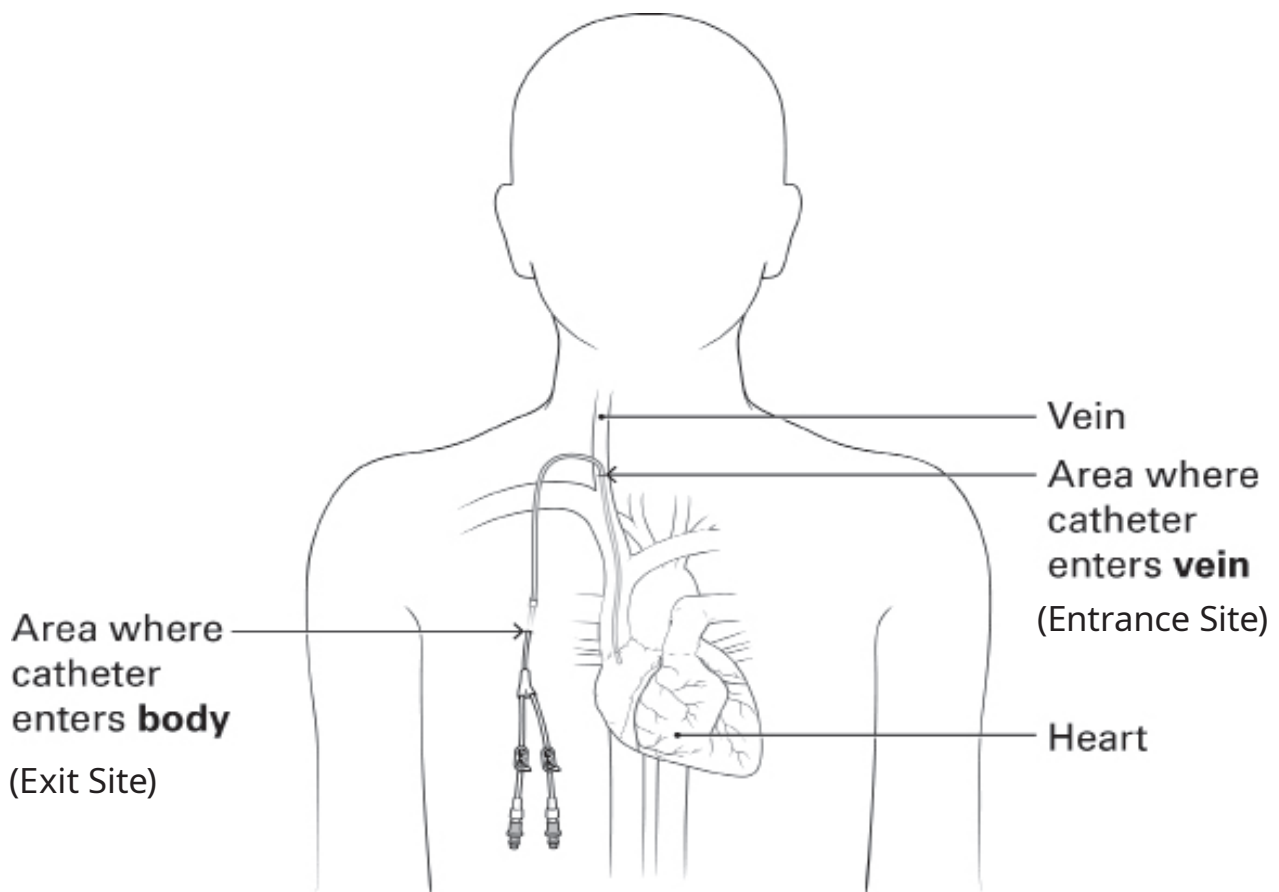
About your tunnelled central venous catheter (CVC)

What is a tunnelled central venous catheter (CVC)?

A central venous catheter (CVC) is a soft flexible tube that is inserted into a vein in your neck, chest, arm or groin, and end at a large vein near your heart.

When a part of the catheter is placed under the skin, it is called a **tunnelled CVC**. You may also hear it being called a central line, a CVC line, or a Hickman[®] line.

Here is an image of a tunnelled CVC.



Why do I need a tunnelled CVC?

You may need a tunnelled CVC if you are getting long-term intravenous (IV) therapy. IV therapy means fluids and medicines can be put right into your veins.

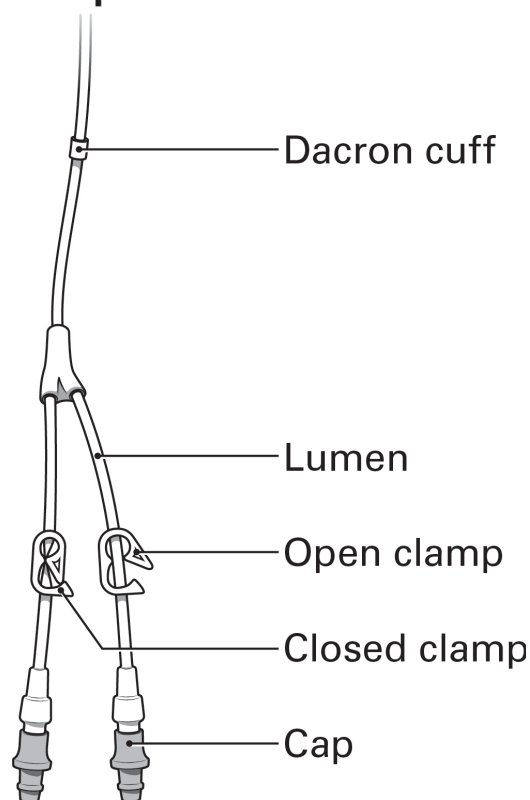
Your tunnelled CVC can stay in for the whole time you are on treatment, as long as it is working well and shows no signs of infection. Having this catheter also means you do not need to be poked as many times with a needle.

Your nurse can use your tunnelled CVC to collect blood samples and to give:

- fluids
- medicines, like chemotherapy and antibiotics
- a blood transfusion
- IV nutrients (food) – this is called Parenteral Nutrition
- hemodialysis treatment (for patients with kidney disease)

Your doctor will remove your catheter when you don't need it anymore.

What are the different parts of a tunnelled CVC?



- **Dacron Cuff**

The Dacron cuff is placed under your skin, just above the exit site. In about 3 to 4 weeks, tissue will grow onto the cuff and create a seal. The seal helps keep the catheter from slipping out. The seal also prevents germs from going into the bloodstream. Tell your doctor or nurse if you can see the Dacron cuff.

- **Lumens**

Your tunnelled CVC may have 2 or 3 lumens (tubes) that come out of your skin. Each lumen is a separate tube. Lumens are the part of the catheter used to give IV treatments or take blood.

Having more than 1 lumen means your nurse can give 2 or 3 different IV treatments at the same time.

On each lumen, you will find a:

- **Clamp**

The clamp is used to prevent blood from coming out of the catheter.

Keep the clamp closed when:

- the catheter is not in use
- removing IV tubing from the catheter
- changing the lumen cap

Some tunnelled CVCs do not have a clamp. Instead they have a special valve inside the catheter that works like a clamp. Your nurse will let you know if you have this type of catheter.

- **Cap (the lumen cap)**

A cap is added at the end of each lumen opening. This cap is used to:

- stop blood from coming out of the lumen if the catheter is not clamped
- prevent germs from entering the catheter
- allow IV tubing and syringes to attach to the lumens safely

What to expect when getting your tunnelled CVC

How should I prepare for getting a tunnelled CVC?

Do your bloodwork at least 3 days before the procedure (getting your CVC put in). Your results must be reviewed by the health care team 2 – 3 days ahead of the procedure. You may get a call from your nurse if extra blood tests are needed.

Let your health care team know if you have history of low platelets or liver disease. Low platelets or liver disease can increase your risk of bleeding.

Some medicines can increase your risk of bleeding. Talk to your doctor if you are taking any of these medicines:

- warfarin (Coumadin)
- dabigatran (Pradaxa)
- rivaroxaban (Xarelto)
- fondaparinux (Arixtra)
- dalteparin (Fragmin)
- enoxaparin (Lovenox)
- tinzaparin (Innohep)
- apixaban (Eliquis)

Your doctor may tell you to stop taking these medicines. Your doctor will tell you how many days before your procedure to stop these medicines.

On the day of the procedure

- Stop eating 6 hours before your procedure.

If your procedure is later in the day, you may have a light breakfast (for example a muffin or a yogurt).

- You can have sips of clear fluid (such as water) up to 2 hours before your procedure.
- Take your daily medicine with a small amount of clear fluid (like water, apple juice, or tea and coffee without milk).

Before coming to hospital, make sure to:

- Bring your government issued health card (OHIP).
- Carry a list of all medicines you take.
- Bring an adult with you to take you home. Be aware that the whole process of getting your tunnelled CVC takes about 2 hours.
- Leave anything of value at home, such as jewellery and credit cards.

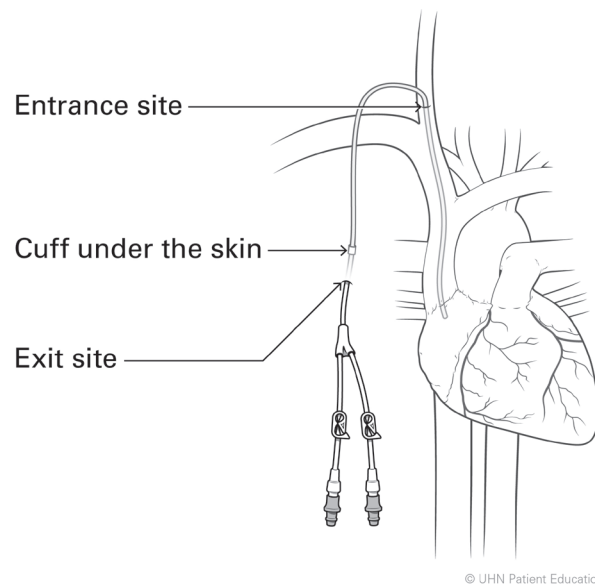
What to expect during the procedure

Your tunnelled CVC is put in at the Interventional Radiology (IR) department in Medical Imaging.

1. You lie on your back while the tunnelled CVC is put in. You will be awake when the CVC is put in. The procedure takes about 30 to 45 minutes.
2. Your doctor may give you sedation (medicine to relax you). This may make you feel sleepy.
3. Your doctor injects medicine to numb the area where the catheter goes in. You should only feel a small amount of pain or discomfort during the procedure.

4. The doctor makes 2 small cuts:

- A cut at the bottom of your neck near the collarbone. This is where the catheter is put into a central or large vein. It is called the **entrance site**.
- A second cut is made further down your chest above the nipple area. This is where the catheter comes out. It is called the **exit site**. A tunnel is made under the skin between the 2 cuts. This tunnel allows the catheter to be passed through the skin. (See image below).



5. Once the catheter is in place, the cuts are closed with stitches.

- Stitches on the entrance site will dissolve in 7 to 10 days. The area is covered with a gauze tape or bandage that you can remove in 2 days.
- Stitches on the exit site will stay in place for about 4 to 6 weeks. The area is covered with a dressing to prevent infection. Your doctor or nurse will remove the stitches when the site has healed.
- Let your doctor or nurse know if the stitches come out by themselves.
- Make sure to tape the lumens securely to prevent tugging on the stitches. See page 13 for how to secure your lumens.

What happens once I get home?

- Relax for the rest of the day.
- Wear loose clothes or clothes with a front opening so you can easily access your catheter.
- Avoid wearing tight bras, suspenders or carrying a purse or bag across your chest the exit site is no longer tender.
- Check your dressing for bleeding. If the entrance or exit site bleeds, apply firm pressure to the site with sterile gauze until the bleeding stops. Put on new dressing after bleeding has fully stopped. If blood still leaks out after you apply constant pressure, go to the nearest emergency department.
- You may feel sore around the area where the catheter was put in. This area may be bruised and swollen. These symptoms will usually go away within 2 to 3 days. Ask your doctor if you need medicine to manage your pain.
- Keep the dressing dry, and do not take a shower until the dressing is changed for the first time.

If you have questions about your tunnelled CVC within 1 to 2 weeks after the procedure, call the numbers below.

- **If you had your CVC put in at Toronto General Hospital**
Monday to Friday, 8:00 am to 4:00 pm – Call 416 340 4800, ext. 5403
- **If you had your CVC put in at Toronto Western Hospital**
Monday to Friday, 8:00 am to 4:00 pm – Call 416 603 5800, ext. 6301

See page 18 for who to contact if you have questions after 2 weeks.



Call for emergency help (911) or go to the nearest hospital emergency department if you have:

- fever of 38 °C (100.4 °F) or higher, with or without chills
- trouble breathing, with or without dizziness
- sudden onset of chest pain
- swelling of the face, neck, arm or chest on the same side where your tunnelled CVC was put in
- heavy bleeding from the catheter sites that does not stop (apply pressure to the site with sterile gauze while waiting for help)

Caring for your tunnelled CVC

How do I care for my tunneled CVC?

Your tunnelled CVC needs to be kept clean to keep the CVC working well and to prevent infection. This care includes:

- changing the exit site dressing
- changing the lumen cap
- flushing the lumens when the catheter is not in use

Your nurse will change your CVC dressing while you are in hospital. Before you go home, your nurse will show you and your caregiver how to change the dressing if needed. See pages 11 – 13 for step-by-step instructions for changing CVC dressing.

When the catheter is not in use, your nurse will change the lumen cap and flush your catheter every week.

What can I do to prevent tunnelled CVC infections?

- Always wash your hands well with soap and water for at least 30 seconds before and after taking care of your tunnelled CVC. Anyone who helps you with catheter care must also wash their hands.
- Do not swim or take a tub bath while you have a catheter. Putting any part of your catheter under water increases your chances of getting an infection.
- Change your dressing right away if it is damp or wet, dirty, has blood on it, or is no longer sticking to the skin.
- Use only new unopened supplies when changing the dressing or flushing the catheter.
- Do not touch the open end of the catheter lumen when you are changing the cap.
- Never push any part of the catheter lumen back into the exit site.
- Never put a cap back on after it has come off the lumen.

How often should I change my CVC dressing?

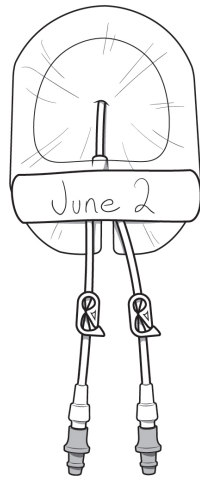
A dressing is a sterile pad used to protect the CVC exit site. You need to keep the dressing clean and dry at all times.

You will normally have a gauze dressing for the first 24 to 48 hours after the catheter is put in. A nurse or a home care nurse will remove the gauze dressing and put on a transparent dressing once the site is no longer bleeding.

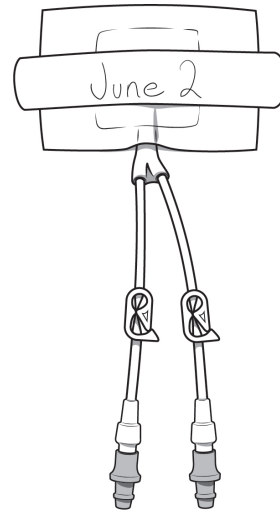
Change the exit site dressing:

- every 2 days if you have gauze (cloth) dressing
- every 7 days if you have a transparent (clear) dressing

You should also change the dressing sooner if it is damp or wet, dirty, has blood on it, or is no longer sticking to the skin.



This is an image of a transparent dressing



This is an image of a gauze and tape dressing

Once the area is healed, your nurse will let you know when dressing is no longer needed.

Tell your nurse if you have problems with your dressing like itchiness, rash or blister. You may need a different dressing. Your nurse can help find the right dressing for you.

How to change your dressing

Follow these steps for changing your dressing:

1. Clean your work surface with a disinfectant wipe to kill the germs.
2. Set up your supplies on the clean work surface. You can buy all these supplies at a pharmacy close to you.

You will need:

- transparent dressing
- chlorhexidine swabsticks to disinfect skin
- tape
- open trash can

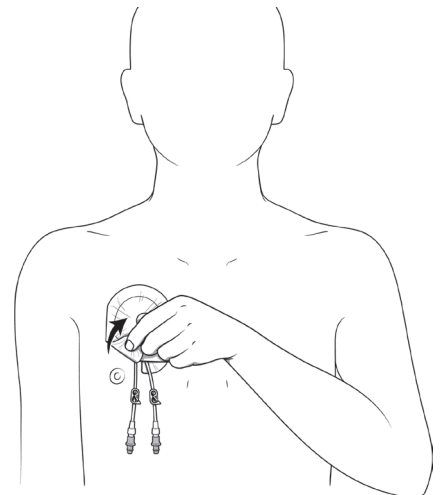
3. Wash your hands with soap and water for 30 seconds. Dry your hands with a paper towel. You can also use an alcohol-based hand sanitizer.

4. Gently remove the old dressing from the bottom up toward the catheter site. Be careful not to pull on the catheter. (See the image to the right).

5. Drop the old dressing into an open trash can.

6. Look at the skin around the catheter for any:

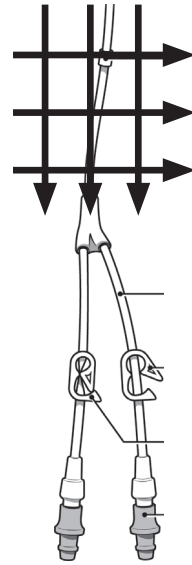
- redness
- rash
- discharge (pus, bleeding or fluid)
- swelling



Tell your doctor or nurse as soon as you can if you have any of the above symptoms.

7. Wash your hands again with soap and water.

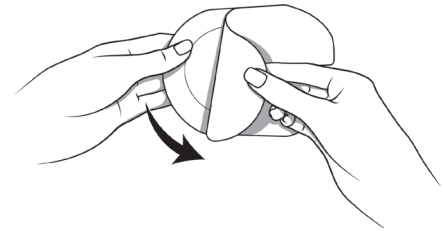
8. Hold the catheter lumens up. Use the chlorhexidine swab to clean the exit site from top to bottom for 15 seconds (follow the arrows on the image pointing down). Flip the chlorhexidine swab and clean the area again from left to right for another 15 seconds (follow the arrow on the image pointing to the right). Make sure to clean the area that will be covered by the dressing.



9. Make sure the exit site is properly dry (no longer “shiny”) before you put the clean dressing on. This will prevent your skin from getting inflamed (swollen), dry or itchy.

To prevent infections, do not use your breath or anything else to blow the site dry. Do not touch the clean exit site with your bare hand or anything else like a cotton swab (Q-tip) or a tissue.

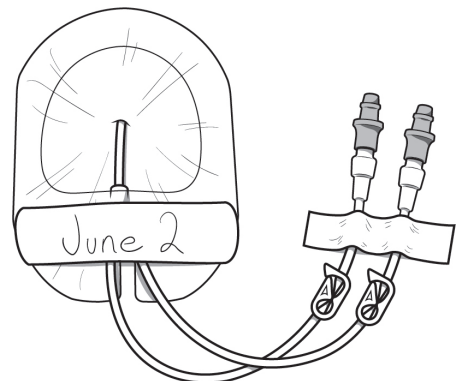
10. Peel the backing paper from the new dressing (see image to the right). Put the new dressing on the exit site. Do not stretch the dressing as this may cause the skin to tear. Cover the exit site fully.



11. Use another chlorhexidine swab to clean each of the lumen from top to bottom.

12. Tape the catheter lumen in a “U-loop shape” onto your skin to prevent pulling the catheter. Use tape that will not bother your skin like paper tape or plastic tape (see the image to the right).

Write the date of the dressing change on the tape. This will help you remember when you have to change the dressing again.



What is a heparin lock?

Your tunnelled CVC must be flushed (or cleaned out). Flushing it will keep the catheter lumen clear of blood and medicine.

Heparin is a medicine that keeps blood clots from building up inside the lumen. Heparin is put into each lumen of your tunnelled CVC to prevent it from blocking. This process is called a heparin lock. In most cases, your nurse will do the heparin lock.

If you are allergic to heparin or know you have Heparin Induced Thrombocytopenia condition, let your doctor or nurse know. They will use different medicine to flush your catheter.

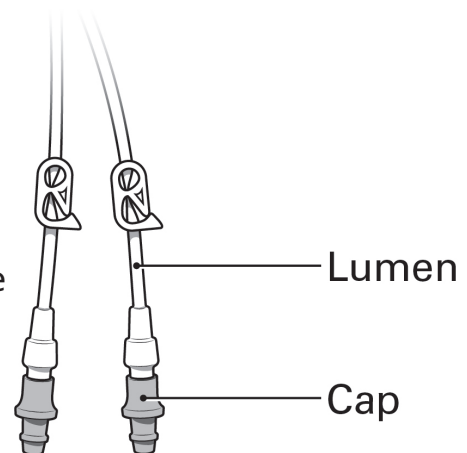
A heparin lock of your catheter (or flushing heparin lock) must be done:

- Once a week when the catheter is not in use.
- After an IV therapy is done.

Some catheters do not need a heparin lock. Your nurse will let you know if your catheter does not need a heparin lock.

What is a lumen cap change?

Your catheter must always have a cap attached at the end of each lumen. The cap should be changed once a week. The cap should also be changed whenever the cap is removed from the catheter lumen. In most cases, your nurse will change the lumen cap.



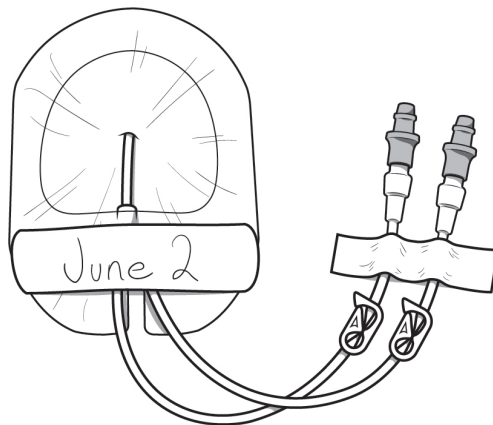
If you want to do your own care, your nurse will teach you and your caregiver how to change the lumen cap, flush the catheter, and do a heparin lock.

Can I shower, bathe or swim while the tunnelled CVC is in place?

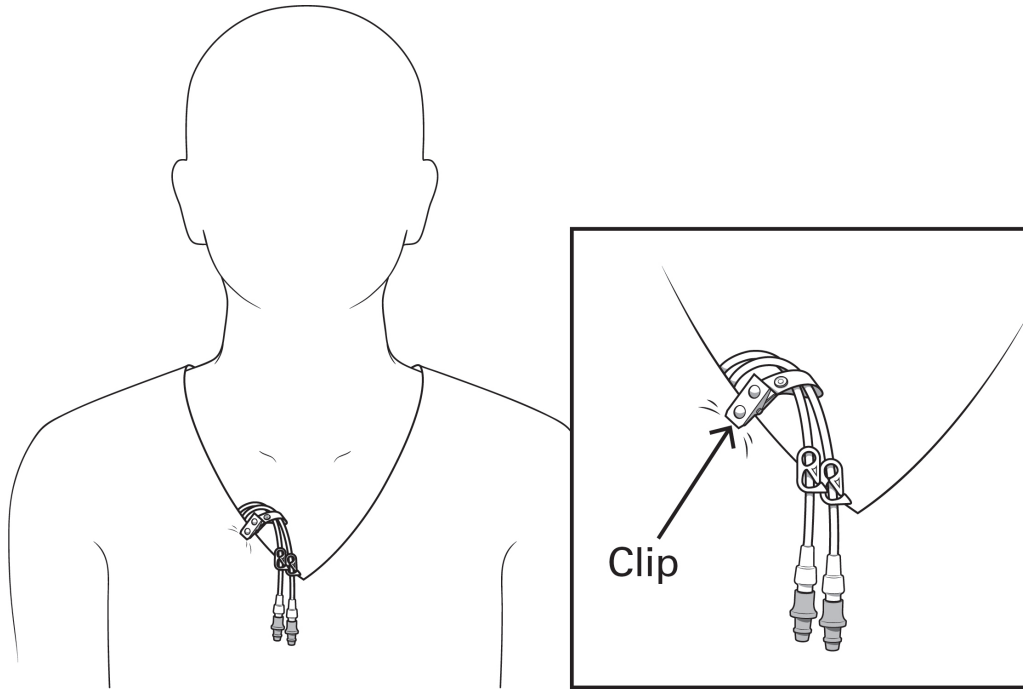
- You can shower after your dressing has been changed for the first time. Your first dressing is usually changed 24 to 48 hours after the catheter is put in.
- You need to cover the dressing with plastic wrap before you take a shower. Cover the dressing with plastic wrap. Tape all sides of the plastic wrap to seal the dressing from water.
- After you shower, make sure your dressing is dry and sticks well to the skin. Change the dressing right away if it is wet or damp, or no longer sticks well to the skin.
- If the dressing is no longer needed on the exit site, you can shower as usual. Use mild soap to clean the site and pat it dry with a clean towel.
- Do not swim or take a tub bath while you have a catheter. This increases your risk of getting an infection.

What should I do to keep my tunnelled CVC safe?

- Always loop (U shape) the catheter and tape it to your skin or dressing.



- **Do not use a safety pin** to secure your catheter as it may poke a hole in the catheter. You can use a clip to hold the catheter onto your clothes. (See the image below).



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- **Do not** put tape on the catheter clamp. You need to access the clamp quickly if you have an emergency.
- **Never** use scissors or other sharp objects near the catheter.
- Avoid contact sports, such as hockey or football. Avoid any other activities that may tug or pull your catheter out.
- Make your own emergency kit and have it with you all the time. The kit should include:
 - sterile gauze
 - tape
 - alcohol swabs
 - hospital contact information

How to deal with problems

What if I forget to flush the catheter or change the dressing on time?

If you forget, flush your catheter or change the dressing as soon as you remember.

What if the cap falls off or there is leaking around the cap?

If there is any leaking along the catheter, clamp the catheter right away above the leak. If there is any leaking around the cap, make sure the cap is tightly screwed. If leaking continues, wrap an alcohol swab or tissue around the cap. Call your doctor or nurse for further instructions.

What if any part of the catheter is cut or breaks off?

Clamp the catheter right away between the exit site and where the cut or break is. If the catheter has no clamp, bend the catheter lumen that has the cut or break to make a U shape. Wrap a rubber band tightly around the lumen. Go to the nearest hospital emergency department.

What if the clamp breaks?

Make sure the cap is still attached to the lumen (do not over tighten the cap). Blood will not come out from the lumen as long as the cap is on. Bend the catheter lumen and wrap a rubber band tightly over the lumen. Call the contact numbers on the next page. If you cannot reach anyone, go to the nearest hospital emergency.

What if my catheter moves or falls out?

If the catheter moves out of its regular place, tape the catheter firmly onto the skin. **Do not push the catheter back into the skin as this can cause an infection.** Call your doctor or nurse to find out what you should do.

If the catheter falls out, cover the site with clean gauze or a clean towel right away. Apply firm pressure until the bleeding stops, then cover the site with transparent dressing. Go to the nearest hospital emergency room right away.

When will my tunnelled CVC be removed?

Your catheter will be removed once you no longer need it. The catheter will also be removed if you get an infection or the catheter is not working properly.

Removing the catheter is a simple procedure. The catheter can be removed either at the bedside or in a procedure room. You may feel tugging or pulling when the catheter is removed. Once the catheter is out, your nurse will apply pressure and a gauze to the site to stop the bleeding. Once the bleeding has stopped, a dressing will be put on to cover the site. Your doctor or nurse will tell you when to take off the dressing. They will also tell you when you can shower.

Who should I call about my tunnelled CVC after 2 weeks?

If you are a patient of Princess Margaret Cancer Centre:

- Monday to Friday 9:00 am to 4:30 pm – Call the Triage Line indicated on the contact information sheet provided by the clinic
- After-hours, weekends and holidays – Call **CarePath** at 1 877 681 3057

Toronto General, Toronto Western, or Toronto Rehab:

- Contact your home care coordinator at _____.



Go to the nearest emergency room if you have:

- a fever (38 °C or 100.4 °F), with or without chills
- shortness of breath
- dizziness
- chest pain
- excess pain, drainage (fluid) around the entrance or exit site
- swelling on your neck, face, or arm on the side where the catheter was inserted
- the catheter was pulled out
- any fresh (bright red) blood coming through your dressing
- any fresh (bright red) blood after you remove the dressing

These may be signs of an infection or other problems.

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