

Tunneled (Hickman™) Catheter

Important phone numbers

If you are a cancer or hematology patient, you can call:

Nova Scotia Cancer Centre, QE II

- › Phone: 902-473-6000
- › Hours: Monday to Friday, 8:30 a.m. to 3:30 p.m.

Cape Breton Cancer Centre

- › Phone: 902-567-7771
- › Hours: Monday to Friday, 8 a.m. to 4 p.m.

Hematology Clinic, QE II

- › Phone: 902-473-6605
- › Hours: Monday to Thursday, 8:30 a.m. to 3:30 p.m.
Friday: 8 a.m. to 3 p.m.

Sydney Hematology Clinic

- › Phone: 902-567-7876
- › Hours: Monday to Friday, 8 a.m. to 4 p.m.

To talk with your hematologist or specialist after hours:

- Call the QE II switchboard and ask for the hematologist or specialist on call.
 - › QE II switchboard: 902-473-2700
- If you cannot reach your hematologist or specialist, **call the nearest infusion clinic right away.**

Contents

What is a tunneled (Hickman™) catheter?	1
Why is a tunneled catheter used?.....	1
Infection.....	3
Signs of infection.....	3
Preventing infection.....	3
Supplies	4
Storing your supplies	4
Getting your supplies	4
Checking for blood	5
Positive pressure	6
Changing your dressing	6
Caring for your tunneled catheter	12
Problems, possible causes, and what to do	14

Tunneled (Hickman™) Catheter

What is a tunneled (Hickman™) catheter?

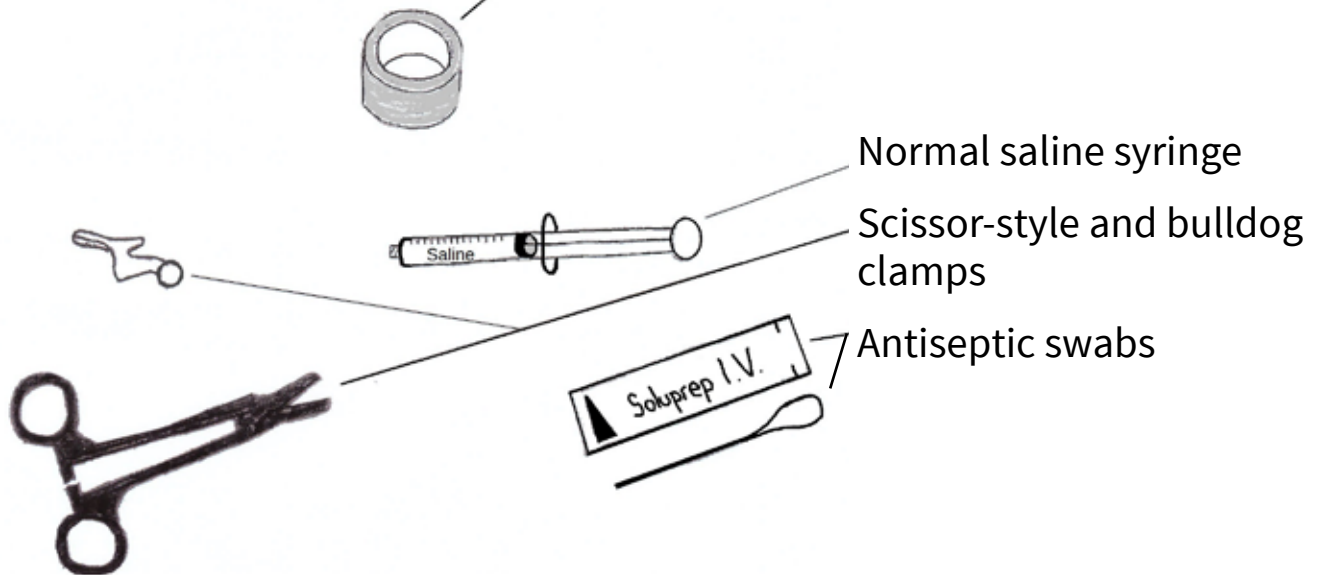
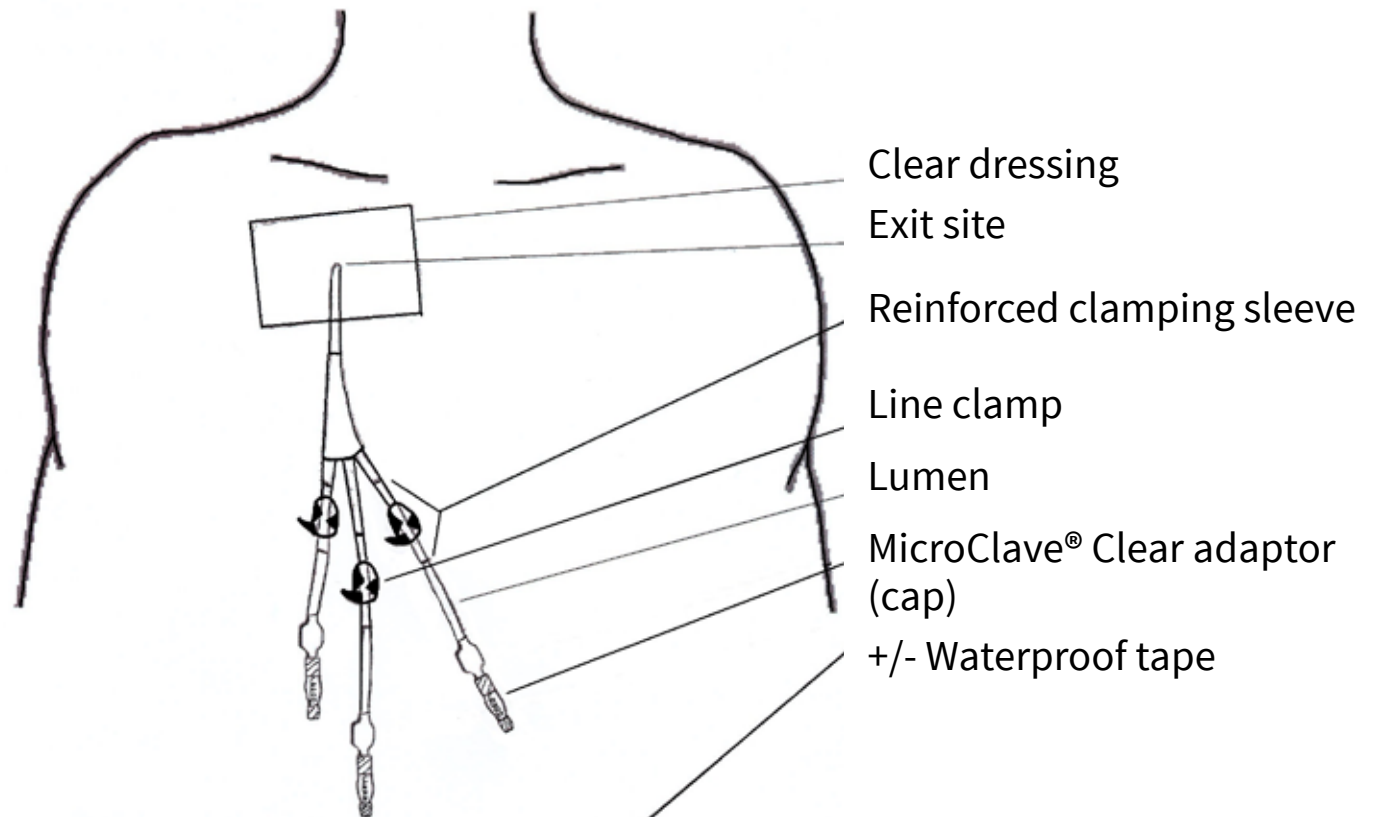
- A tunneled catheter is a type of catheter (thin, hollow tube) made of silicone. It is an intravenous (I.V.) catheter that is inserted (put in) in a large vein near your heart.
- “Tunneled” means that part of the catheter is put under the skin on your chest.
- A tunneled catheter may also be called a Hickman™ catheter.
- The part of the catheter that sits just under your skin is called the cuff. The cuff helps to keep the catheter in place. It may feel like a small bump under your skin.
- The end of the tunneled catheter leaves your body from a small incision (cut) on your chest. This incision is called the **exit site**.
- **Handle your tunneled catheter gently. Even with the cuff, you can still pull the catheter out by mistake.**
- Your tunneled catheter may have 1, 2, or 3 lumens (tubes) at the end.
- **If your tunneled catheter has 3 lumens, each one will be a different colour: red, blue, and white.** Each lumen has a different purpose:
 - › The red lumen is used to take blood samples and to give blood products (red blood cells, plasma, platelets), medications, and I.V. fluids, if needed.
 - › The white and blue lumens are mostly used to give medications and I.V. fluids.

Why is a tunneled catheter used?

A tunneled catheter:

- › lowers the number of needles you may need for blood tests or I.V. medications. You can have blood taken and get medications through the tunneled catheter instead of having to use a new needle and I.V. line each time.
- › can be used for a longer time than other types of I.V. lines.
- › lets you move around more easily than other types of tunneled catheters.

Tunneled catheter with 3 lumens



Infection

- When you are caring for your tunneled catheter at home, it is important to keep your line and your supplies as clean as you can. This will lower your risk of infection.
- **If you get an infection, you will need medical treatment.** Your tunneled catheter may need to be changed or removed.
- **Check the skin around your catheter every day for signs of infection.**

Signs of infection

- › Skin around the exit site is hot or warm
- › Redness, swelling, drainage (leaking fluid), or pain around the exit site, or along the area where the line is tunneled (goes under your skin)
- › Fever (temperature above 38 °C or 100.4 °F)
- › Chills
- › Shaking
- › Fast heart beat when you are not active
- › Feeling sick for no reason

Preventing infection

- **Always wash your hands well** before caring for your tunneled catheter.
- Follow all instructions when caring for or storing your tunneled catheter.
- Use sterile (germ-free) supplies **only**.
 - › Follow all instructions to keep your supplies clean and germ-free. The instructions will tell you what parts you can or cannot touch.
 - › **Use sterile items (like syringes) only once. Do not reuse any single-use supplies.**
- Change your dressing if it gets dirty, loose, or wet.
- You or your support person should wear a mask when changing dressings, especially if you or your support person is sick.

If you think you have an infection, see page 14.

Supplies

Storing your supplies

- Most of your supplies will be in paper or plastic packages to keep them sterile.
- **Store your supplies in a clean, dry place where the packages will not be opened or damaged** (like a cupboard or a closet where children and pets cannot reach them).
- Check the packages on your supplies before you use them. **If they are soiled (wet, ripped, or have a dried water stain), do not use them.** Put any soiled supplies in the garbage.
- **Do not use solutions (liquids) if they are cloudy.** Return them to the pharmacy for replacements.
- Check the expiry date on your flushing solutions. If they are expired, return them to the pharmacy for replacements.

Do not use expired supplies.

Getting your supplies

- If you need supplies, call your local pharmacy or home health centre. Most will carry the supplies you need.
- If you have private insurance, check with your insurance provider if you need a prescription.
- Your health care provider will give you a list of supplies you will need. Each week you will need:
 - › Masks
 - › Pre-filled normal saline syringes
 - › Adaptors
 - › Clear dressings
 - › 3M™SoluPrep™ Swabs
 - › Alcohol swabs
 - › Clamps are sold separately. **You should always have an extra clamp.** Clamps should have smooth edges, so they do not cut into the catheter.

Checking for blood

When you flush your tunneled catheter, the first thing you will do is check for blood. This makes sure the line is still in the right place in your vein.

How to check for blood

1. Wash your hands.
2. Scrub the clear adaptor with a 3M™SoluPrep™ swab for 30 seconds and let it dry fully.
3. Connect your pre-filled normal saline syringe to the clear adaptor.
4. When you are flushing the **last one (1) ml** of saline, close the clamp on the lumen.
5. Remove the syringe from the needleless connector and throw the syringe in the garbage.

If you do not see blood when you pull the plunger back:

- Move your body (like raising your arms above your head, turning your head, taking deep breaths, or coughing). Then, pull back the plunger again.

If there is still no blood:

- Flush the line with **one (1) ml** of saline. Pull back the plunger again. Close the clamp on the lumen and remove the syringe from the needleless connector.
- **Do not push down hard on the syringe or try to inject the saline very fast.**

- **If you can inject the saline easily, but you did not see blood when you pulled back the plunger, call the Medical Day Unit or your primary health care provider (family doctor or nurse practitioner) right away.** Your tunneled catheter may be partly blocked and should be checked.
- **If you cannot draw blood back from your tunneled catheter, or you cannot inject the saline, call your local infusion clinic or Medical Day Unit.**

Positive pressure

- Positive pressure is a way of closing the clamps on your tunneled catheter. Keeping the clamps closed prevents blood from backing up into the lumens. If blood backs up into the lumens, it can stop them from working.
- **To keep positive pressure when you are flushing your tunneled catheter, always close the clamp on the lumen as you are flushing the last one (1) ml of saline and then remove the syringe.**
- Always close the clamp over the reinforced clamping sleeve. Your nurse will show you how to do this.

Changing your dressing

- To prevent infection, change your dressing **once a week (every 7 days)** or more often if your dressing becomes loose or soiled.
- You or your support person should wear a mask when changing dressings, especially if you or your support person is sick.
- Use chlorhexidine gluconate 2% with isopropyl alcohol 70% (3M™SoluPrep™) to clean your skin and catheter. **Do not use 3M™SoluPrep™ on broken skin.**
- If you have questions about changing your dressing, talk to your nurse.

How to change your dressing

1. Wash and dry your work area.
2. Wash your hands with soap and water or an alcohol-based hand rub. Dry them with a clean paper towel.
3. Gather your supplies:
 - › 3M™SoluPrep™ Swabs
 - › One (1) 4 inch by 4 inch clear dressing
 - › Mask
 - › Plastic bag for garbage
4. Loosen the edges of your old dressing on all sides. Remove the old dressing by gently pulling up towards the exit site. **Do not pull on the catheter. Do not touch the exit site with your hands.** Place the old dressing in the garbage bag.
5. Wash your hands again. Dry them with a clean paper towel.

6. Look for these signs of infection at the exit site, and in the area where the line is tunneled:

- › Redness
- › Drainage
- › Pain
- › Swelling

If you see any of these signs, place a dressing over the exit site and call the Medical Day Unit or your primary health care provider.

7. Open the 3 swab packages, so each swab is easy to get when you need it.
8. Use one hand to hold the end of your tunneled catheter and lift the catheter away from your skin. Keep holding the catheter away from your skin until you have finished cleaning it and your skin.
9. Use the first swab to clean your skin. Use one side of the swab to gently wipe from **side to side** about 4 inches around the exit site.
10. Use the other side of the swab to gently wipe **up and down** across the **same** area. Then put the swab in the garbage.
11. Using the second swab, start at the exit site and gently wipe **up** about 4 inches. Always starting at the exit site and wiping out 4 inches in the same direction, repeat until you have made a **full circle** around the exit site.
12. Use the other side of the swab to gently wipe **down** from the exit site across the **same** area. Then put the swab in the garbage.
13. Use the third swab to clean your catheter. Starting at the exit site, clean the **top** of the catheter. Use one side of the swab to wipe **up**, cleaning about 4 inches of the catheter.
14. Use the other side of the swab to clean the **bottom** side of the catheter in the same way. Then put the swab in the garbage.
15. Let the catheter air dry.
16. Let go of the catheter and let your skin air dry fully.
17. Open the dressing package and take out the dressing.
18. Take the backing off the dressing. **Touch only the outer edges of the dressing.** If you touch another part of the dressing, you may get germs on it. The germs could cause an infection.

19. Put the dressing on over your catheter. Make sure the exit site is in the centre of the dressing. **Do not put the dressing over your nipple area.** This area can be sensitive when you remove the dressing.
20. Peel the frame off the dressing.
21. Gently press the edges of the dressing to your skin so that they stick well.
22. Clip the catheter to your clothing using the bulldog clamp so it is secure.
23. Put any used dressings and swabs in the garbage.
24. Wash your hands.

If your skin gets irritated by the dressing:

- › Use a 4 inch by 4 inch gauze dressing instead.

If there is no drainage from the exit site:

- › Change the dressing every 7 days.

If there is drainage from the exit site:

- › Make sure the dressing is always clean and dry. Change the dressing every day or more often if there is a lot of drainage from the site. Call your local infusion clinic or Medical Day Unit.

If your tunneled catheter has been in place for more than 6 weeks and the exit site has healed:

- › You may be able to stop using a dressing.
- › If you have a weak immune system, it may be safer for you to keep using a dressing. **Talk about this with your primary health care provider, or call the infusion clinic at your local hospital.**

My dressing change day will be: _____

Can I shower with a tunneled catheter?

- Yes. If you have a gauze dressing, change the dressing after you shower.
- After the exit site has healed, you can shower as usual. Gently pat the area around your tunneled catheter dry.

Flushing your tunneled catheter

- You must flush your tunneled catheter to keep it working well. Flushing clears any blood or medications from the line and keeps it clean.
- If the line is not being used regularly, **flush each lumen with 20 ml of saline once a week.**
- **Change the adaptors and flush your line at the same time on the same day each week.** Change the adaptors before doing the flush.
- Each syringe is filled with 10 ml of saline. You will use 2 syringes for each lumen flush.
- **You must also change the adaptor attached to the end of each lumen once a week.**

Changing your adaptor and flushing your tunneled catheter

These are the steps for changing the adaptor and flushing **one (1) lumen** of your tunneled catheter. If your line has more than one lumen, **repeat the steps for each lumen.**

1. Getting ready

- a. Wash and dry your work area.
- b. Wash your hands well with soap and water or an alcohol-based hand rub. Dry your hands with a clean paper towel.
- c. Gather your supplies:
 - › Mask
 - › 2 pre-filled saline syringes **for each lumen**
 - › 1 MicroClave[®] Clear adaptor **for each lumen**
 - › Alcohol swabs
 - › Waterproof tape, if needed
- d. Check the sterile packages. **They should not be torn or soiled.**
- e. Check the saline syringes. **Do not use if:**
 - › they are expired.
 - › the saline looks cloudy.
 - › there are particles (small pieces) in the saline.
 - › the saline has any colour or tint. It should be clear.

2. Changing the adaptor

- a. Remove tape (if there is any) from the lumen.
- b. Open one (1) adaptor package. Open 3 swab packages.
- c. Open one (1) syringe package. Remove the cap from the tip of the syringe. **Do not touch the syringe tip.** Hold the syringe with the tip pointing up and push the air out of the syringe.
- d. While holding the syringe in one hand, remove a swab and an adaptor from their packages.
- e. Clean the end of the new adaptor with the swab for **15 seconds**. **Let the adaptor air dry.** Throw the swab in the garbage.
- f. Attach the tip of the syringe to the end of the adaptor. Flush the adaptor with a small amount of saline.
- g. While still holding the syringe, take a **new swab** from its package. Clean the area where the old adaptor and lumen joined for **15 seconds**.
- h. Check that the clamp on the lumen is closed.
- i. While still holding the lumen, remove the old adaptor by turning it counter-clockwise. Put the old adaptor in the garbage.
- j. You will now see the open end of the lumen. **Do not touch the end of the lumen or the part of the new adaptor that connects to the lumen.**
- k. Remove the cap from the tip of the new adaptor and attach the adaptor to the lumen. Turn the adaptor clockwise until it is snug. Clean the connection with a swab for **15 seconds**. Use tape, if needed.

3. Flushing your lumen with a syringe

- a. Open the clamp on the lumen. Pull back the plunger of the syringe and check for blood.
- b. Inject the saline using the **start and stop method**.

Start and stop method for flushing your lumen:

1. **Start** by flushing your lumen with about **3 ml** of saline, then **stop flushing**.
 2. Flush with another **3 ml** of saline, then **stop again**.
 3. Flush the rest of the saline. As you are flushing the last **one (1) ml** of saline, close the clamp on the lumen.
- This method is also called **turbulent flushing**. It helps your tunneled catheter work better.

- c. Remove the syringe from the adaptor by turning the syringe counter-clockwise. **Do not touch the adaptor or set the lumen down**.
- d. Repeat the flush with a second syringe. **If you touched the adaptor or set the lumen down, clean the adaptor with a new swab before flushing**.
- e. Put any used supplies in the garbage.

If you cannot inject the saline:

- The lumen may be blocked. Call the Vascular Clinic or the Medical Day Unit at your local hospital for help.
- If it is after hours, you may need to leave a voice mail.
- **Do not push down hard on the syringe or try to inject the saline very fast.**

Important things to remember

- Never flush your tunneled catheter with a syringe that is **smaller than 10 ml**.
- Change your adaptor **once a week**.
- Always flush your new adaptor with a small amount of saline before changing it.
- Always clean connections with an alcohol swab for **30 seconds** before changing the adaptor or attaching a syringe to flush the lumen.
- Always flush your lumen after changing the adaptor.
- Always close the clamp on the lumen **as you are flushing the last one (1) ml of saline**, then remove the syringe.
- When you are flushing your lumens with saline, always use the **start and stop method (see page 11)**.

Caring for your tunneled catheter

- Check your tunneled catheter **every day** for signs of infection.
- Do your tunneled catheter care during hours when help is most available, if possible.

Once a week:

- › Change all your adaptors.
- › Flush all your lumens with saline (after changing the adaptors).
- › Change your dressing.

Try to do these all on the same day.

My adaptor change, flush, and dressing change day is: _____

The day after caring for your tunneled catheter, use this chart to track the exit site. Watch for signs of problems every day.

Date:							
Time:							
The exit site is:							
Red							
Swollen							
Painful							
OK							
Other:							
Swelling of your hand, arm, or neck on the side of your tunneled catheter							

Problems, possible causes, and what to do

Redness, swelling, heat, pain, or drainage at the exit site

Possible cause

- Infection

What to do

- If there is discharge, clean the exit site with 3M™ SoluPrep™ swabs and put on a gauze dressing.
- Check your temperature.
- **Go to the nearest Emergency Department right away.**

Fever, fast heart rate, chills, shaking, feeling sick

Possible cause

- Infection in your blood

What to do

- **Go to the nearest Emergency Department, right away.**
 - › If you are a hematology patient, bring your yellow fever card with you.

Not able to see blood when flushing with saline

Possible cause

- Catheter is kinked (bent) or resting against the wall of a vein
- There is blood at the tip of the catheter
- Clamp on lumen is closed

What to do

- Make sure the clamp is open.
- Change the position of the clamp.
- Change your position. Try bending over from side to side and forward, raising your arms, and taking a deep breath.
- Cough.

- Turn your head.
- Try to pull back the plunger. If there is still no blood, flush with a small amount of saline, then pull back the plunger and try again. If there is still no blood or you cannot flush the saline, the lumen is partly or fully blocked.
- Call your primary health care provider, or call the Vascular Clinic or the Medical Day Unit at your local hospital.

To prevent this from happening again:

- Flush your lumens regularly, as shown on pages 9 to 11.

Blood or drainage leaking from your catheter

Possible cause

- A tear or a hole in the catheter

What to do

- Hold your breath and bear down, like you are having a bowel movement (pooping). Then clamp the catheter with a scissor-style clamp between the exit site and the tear or hole.
- **Do not flush the catheter.**
- Wrap a gauze dressing around the tear or hole and tape it in place, if possible.
- **Call the Medical Day Unit at your local hospital or go to the nearest Emergency Department.**

To prevent this from happening again:

- Avoid activities and sports that could damage your catheter.
- Tape your tunneled catheter to your skin, so it is not hanging loose.
- **Do not** use anything sharp (like scissors, pins, or needles) near your catheter.

Tingling or pain at the exit site

- Your catheter has moved further outside the exit site

Possible cause

- Pulling on the catheter.

What to do

- **Do not use the catheter.**
- **Call the Medical Day Unit at your local hospital or go to the nearest Emergency Department.**

To prevent this from happening again:

- **Do not pull on your catheter.**
- Avoid activities and sports that could cause your catheter to be pulled out.

Blood leaking from an adaptor

Possible cause

- A loose adaptor

What to do

- Make sure the clamp on the lumen is closed.
- Change the adaptor.
- Flush the adaptor with 20 ml of saline.

To prevent this from happening again:

- Make sure the adaptor is screwed on tightly.

Cough, shortness of breath, chest pain

Possible cause

- Air in your blood (this may happen if the lumen is not clamped while you change the adaptor).

What to do

- Make sure the clamp on the lumen is closed.
- **Go to the nearest Emergency Department right away.**

To prevent this from happening again:

- Always make sure that the lumen is clamped when changing the adaptor.
- Avoid getting a tear or a hole in your catheter.

Swelling in your hand, arm, or neck on the side of your tunneled catheter, pain, or redness at the insertion site (where the catheter goes into your body)

Possible cause

- A blood clot (clump of blood) at the catheter tip or inside the catheter

What to do

- **Call the Medical Day Unit at your local hospital or go to the nearest Emergency Department.**

Catheter falls out

Possible cause

- Pulling on catheter by mistake

What to do

- Hold your breath and bear down, like you are having a bowel movement.
- Use your hand to apply pressure to the site for 5 to 10 minutes.
- Put a gauze dressing over the site and tape it in place.
- **Call the Medical Day Unit at your local hospital or go to the nearest Emergency Department right away.**
 - › **Bring your catheter with you.**

To prevent this from happening again:

- **Do not** pull on the catheter.
- Avoid activities and sports that could cause your catheter to be pulled out.

Questions or concerns about caring for your tunneled catheter

- Practice so you feel ready to care for your tunneled catheter on your own.
- Talk about your concerns with your health care provider before you leave the hospital.

This pamphlet is for educational purposes only. It is not intended to replace the advice or professional judgment of a health care provider. The information may not apply to all situations. If you have any questions, please ask your health care provider.

Find this pamphlet and all our patient resources here:
<https://library.nshealth.ca/Patients-Guides>

Connect with a registered nurse in Nova Scotia any time:
Call 811 or visit: <https://811.novascotia.ca>

Prepared by: Hematology Patient Education Working Group
Designed by: Nova Scotia Health Library Services

QV85-0214 © July 2023 Nova Scotia Health Authority
To be reviewed July 2026 or sooner, if needed.

