About Your Nephrostomy Catheter

This information will help you prepare to have your nephrostomy catheter placed at Memorial Sloan Kettering (MSK) and teach you how to care for it at home.

About Your Urinary System

Your urinary system consists of your kidneys, ureters, bladder, and urethra. Your kidneys produce urine which collects in the renal pelvis at the top of your ureters (see Figure 1). Your ureters carry urine from the kidneys to the bladder.
The urine collects in your bladder until you need to urinate. The urine then passes out of your body through the urethra. In women, the urethra is a very short structure located in front of the vagina (see Figure 2). In men, the urethra is much longer and passes through the prostate gland and the penis (see Figure 3).
About Your Nephrostomy Catheter

You will have a nephrostomy catheter to relieve a blockage in your urinary system. The catheter will be inserted through your skin into your kidneys. It will allow urine to drain into a bag outside your body. In some cases, it may also drain into your bladder.

**Types of drainage catheters**

Your urinary system can be drained with a catheter in 2 ways. Your doctor will discuss this with you before your procedure.
Nephrostomy catheter
A nephrostomy catheter is placed if your doctor cannot bypass (go around) the blockage or if your ureter has been injured. It passes through your skin and into your renal pelvis. One end of the catheter forms a loop in this area. The other end of the catheter will extend from your body (see Figure 4). It will be attached to an external drainage bag strapped to your leg.

Nephro-ureterostomy catheter
A nephro-ureterostomy catheter is placed if the blockage in your urinary system can be bypassed. It passes through your skin and into the renal pelvis. It is guided across the area of blockage down to your bladder.

One end of the catheter will be in the bladder. The other end of the catheter will extend from your body (see Figure 5). It will be attached to an external drainage bag strapped to your leg. This catheter lets urine flow in 2 directions. It can go out to the drainage bag or into the bladder.

Having Your Nephrostomy Catheter Placed
Your nephrostomy catheter will be inserted by an
interventional radiologist. An interventional radiologist is a doctor who specializes in image-guided procedures.

The procedure usually takes less than 1 hour. Your interventional radiologist will explain the procedure to you and give you time to ask any questions before you sign a consent form.

After the procedure, your catheter will be attached to a bag to collect the drainage.

Sometimes, nephrostomy catheters are placed urgently when you are sick. In other cases, though, you will be scheduled to come into the hospital for the procedure. If this is the case, follow the guidelines below.

**Before Your Procedure**

**Ask about your medications**

You may need to stop taking some of your medications before your procedure. Talk with your doctor about which medications are safe for you to stop. We have included some common examples below.

If you take medication that affects the way your blood clots, ask the doctor performing your procedure what to do. The doctor’s contact information is listed at the end of this resource. Some examples of these medications are:

<table>
<thead>
<tr>
<th>apixaban (Eliquis®)</th>
<th>dalteparin (Fragmin®)</th>
<th>meloxicam (Mobic®)</th>
<th>ticagrelor (Brilinta®)</th>
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About Your Nephrostomy Catheter
Your doctor may or may not tell you to stop taking the medication, depending on the reason you are taking it. **Do not stop taking any of these medications without talking with your doctor.**

Please review the information in the resource *Common Medications Containing Aspirin and Other Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)*. It includes important information about medications you’ll need to avoid before your procedure and what medications you can take instead.

If you take insulin or other medications for diabetes, you may need to change the dose before your procedure. Ask the doctor who prescribes your diabetes medication what you should do
the morning of your procedure.

If you take any diuretics (medications that make you urinate more often), you may need to stop taking them the day of your procedure. Some examples are furosemide (Lasix®) or hydrochlorothiazide. Speak with your doctor.

You will be having a computer tomography (CT) scan with IV (intravenous) contrast. If you’ve had an allergic reaction to IV contrast in the past, tell your doctor.

**Arrange for someone to take you home**
You must have a responsible care partner take you home after your procedure. Make sure to plan this before the day of your procedure.

If you don’t have someone to take you home, call one of the agencies below. They will send someone to go home with you. There’s usually a charge for this service, and you will need to provide transportation.

**Agencies in New York**
Partners in Care: 888-735-8913
Caring People: 877-227-4649

**Agencies in New Jersey**
Caring People: 877-227-4649

**Tell us if you’re sick**
If you develop any illness (fever, cold, sore throat, or flu) before your procedure, please call a nurse in Interventional Radiology®
at 212-639-2236. A nurse is available Monday through Friday from 9:00 AM to 5:00 PM. After 5:00 PM, during the weekend, and on holidays, call 212-639-2000 and ask for the Interventional Radiology fellow on call.

If you had a stroke or a heart attack, you may need to have another doctor’s visit before your procedure.

**Note the time and place of your appointment**
A staff member from Interventional Radiology will call you 2 business days before your procedure. They will tell you what time you should arrive at the hospital for your procedure. If your procedure is scheduled on a Monday, you will be called on the Thursday before. If you don’t receive a call by 12:00 PM on the business day before your procedure, please call 212-639-5051.

**Use this area to write down the date, time, and location of your procedure:**

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If you need to cancel your procedure for any reason, please call the doctor who scheduled it for you.
Instructions for eating and drinking before your procedure

- Do not eat anything after midnight the night before your procedure. This includes hard candy and gum.
- Between midnight and up until 2 hours before your scheduled arrival time, you may drink a total of 12 ounces of water (see figure).
- Starting 2 hours before your scheduled arrival time, do not eat or drink anything. This includes water.

The Day of Your Procedure

Things to remember

- Take only the medications your doctor told you to take the morning of your procedure. Take them with a few sips of water.
- Do not apply cream or petroleum jelly (Vaseline®). You can use deodorant and light moisturizers. Do not wear eye makeup.
- Remove any jewelry, including body piercings.
- Leave all valuables, such as credit cards and jewelry, at home.
- If you wear contact lenses, wear your glasses instead, if
possible. If you don’t have glasses, please bring a case for your contacts.

What to bring with you

- A list of the medications you take at home
- Medications for breathing problems (such as inhalers), medications for chest pain, or both
- A case for your glasses or contacts
- Your Health Care Proxy form, if you have completed one

What to expect

Once you arrive at the hospital, doctors, nurses, and other staff members will ask you to state and spell your name and date of birth many times. This is for your safety. People with the same or similar names may be having procedures on the same day.

Your nurse will put in an intravenous (IV) line in your hand or arm. You will be brought into the procedure room. You will receive medication through your IV to make you feel drowsy.

The area where the catheter is inserted will be numbed with an injection of anesthetic. Your doctor will use fluoroscopy (real time x-rays), a CT scan, or ultrasound to help place the

Figure 7. Silicone disk over catheter
catheter. They may also give you an injection of IV contrast. The contrast makes it easier to see the area. Your doctor will then know what type of drainage is possible and will place the catheter.

After your nephrostomy catheter is inserted, a silicone disk will be placed on the catheter (see Figure 7) to secure it to your skin. This disk is attached to your skin with an adhesive dressing. You may also have a suture (stitch) holding the catheter in place.

**After Your Procedure**

After your procedure, you will be brought to the recovery room. You will need to stay in bed until the sedation has worn off. You will then return to your hospital room or go home with your caregiver.

Tell your nurse if you have:

- Increasing pain or discomfort
- Any nausea
- Any symptoms that concern you

**About your catheter**

You will have a black mark on the catheter above the disk (see Figure 7). Your nurse will show it to you. This mark should always be the same distance from the top of the disk. If it changes, this means that the catheter has moved. You must call Interventional Radiology so someone there can check it.
The end of the catheter that is outside your body will be attached to a leg drainage bag (see Figure 8). Urine will begin flowing into the bag right after your catheter placement procedure. It is possible that the urine will appear bloody at first. Your nurse will check the drainage to make sure it improves.

CathGrip® is a device that helps to make sure your catheter does not come out of your body, if you accidentally pull on it.

It is important that you keep the bag strapped to your leg. That prevents the catheter from accidentally pulling out. The bag can fill up with urine and become heavy. If the bag falls, it can pull the catheter out.

Inspect the urine in the leg bag frequently. It should be flowing freely into the bag. Call your doctor if your urine is bloody, foul-smelling, or cloudy.

**Showering**

You may take showers but you will need to keep your dressing dry. A hand-held shower can help direct the water away from the dressing. You will also need to cover your dressing. If the
dressing gets wet, you will need to change it. Wet dressings are a common cause of skin problems.

Before you shower, remove the belt and empty the drainage bag. Tape the drainage bag to your body near the catheter or use a strap to attach it to your waist. Tape plastic wrap or a gallon sized bag over the dressing to keep it dry.

You can also use AquaGuard, which is a one-time use waterproof cover to protect your dressing. When you shower, make sure that your catheter is covered to prevent it from getting wet.

**Applying the AquaGuard**

1. The edges of the AquaGuard have peelable tape. Fold over a corner of each side of the tape (see Figure 9).

2. Hold the AquaGuard with the arrows pointing towards your head. Peel off the top strip and place the top edge of the
AquaGuard above the dressing. Smooth it down.

3. Then grab a folded corner and peel down one side, smoothing as you go.

4. Apply the bottom and remaining side the same way.

Don’t let the tape on the AquaGuard touch the dressing. It can lift your dressing when you remove the AquaGuard after showering.

Caring For Your Nephrostomy Catheter

Your nurse will teach you how to care for the catheter. Use this resource at home to remind you of what you learned. At first, a visiting nurse will come to your home to help you care for the catheter. It won’t be long before you feel confident doing it yourself.

Every day you will:

- Inspect the catheter
- Empty the urine from the bag

Your dressing and your drainage bag will need to be changed once a week. You will also need to change the dressing if it becomes loose, wet, or soiled. If a wet dressing is left against your skin, it may cause your skin to become irritated and sore. This makes skin breakdown more likely.

You will need help changing the dressing and drainage equipment. You will need a mirror to be able to inspect the
Inspecting your nephrostomy catheter
You must inspect your catheter at least once a day. You can use a hand-held or a full length mirror to do this.

1. Find the black mark to make sure it is in the correct position.

2. Check the dressing to make sure that it is secure. If the dressing is wet, soiled, has come loose or started to pull away from the skin, it needs to be changed.

3. Examine your skin around the catheter when you are changing the dressing to see that it is in good condition. There should be no redness, areas of broken skin, or rash. Urine should not leak around the catheter.

4. Look at the drainage bag. Urine should be flowing freely into the bag. It should not have changed color or consistency. There should not be a large decrease in the amount of urine in the bag.

5. Inspect the catheter and the drainage bag for kinks in the tubing.

If you see a problem, call your nurse or doctor. The contact information is at the end of this resource.

Emptying the urine from the bag
Empty the urine bag in the bathroom when it’s half-full. That can be every 2 to 3 hours during the day for some people.
1. Wash your hands with warm water and soap or use an alcohol based hand sanitizer.

2. Put your foot on the toilet bowl.

3. Aim the tubing at the bottom of the leg bag into the toilet or container.

4. Open the outlet valve at the bottom of leg bag.

5. Empty the bag completely.

6. Close the valve of the leg bag. You should hear a snap when it closes.

7. Dry the end of the tubing with toilet paper.

8. Wash your hands with warm water and soap or use an alcohol based hand sanitizer.

**Changing your Uresil dressing**

The Uresil dressing system is designed to help keep your catheter from moving out of your kidney. The disk is attached to your catheter. The dressing covers the disk, which keeps the catheter in place.

The dressing, the ureteral connecting tube, and the leg bag will need to be changed once a week. The dressing may need to be changed more often if it gets wet, soiled, pulls away from the skin, or loosens. Although you will need the assistance of your helper to do the dressing and equipment changes, you can assemble the equipment yourself.

Below is a video demonstrating how to change your Uresil
1. Gather your supplies:
   - 1 Uresil adhesive dressing
   - 3M™ No Sting Barrier Film
   - Adhesive remover wipe
   - Alcohol wipes
   - Gauze
   - Mild soap and a cup of water
   - Non-sterile gloves
   - 1 (2 inch x 2 inch) Telfa
   - Scissors
   - CathGrip kit, if changing the CathGrip
   - Waste basket

2. Wash your hands with warm water and soap or use an alcohol based hand sanitizer.

3. Clean your scissors with an alcohol pad. If your Telfa is larger than 2 inches by 2 inches, you will need to cut it to that size. Cut a slit in that piece (see Figure 10) and set it to the side.
4. Sit or lie comfortably. At this point, you will need someone to help you. The person doing the dressing change should follow the instructions below.

5. Wash their hands and put on nonsterile gloves.

6. Release the catheter from the straps on the CathGrip. Make sure the drainage bag is somewhere that it can’t fall. If you will be changing the CathGrip, use adhesive remover to release it from your skin and throw it away.

7. Hold the silicone disk in place using 2 fingers to prevent tension or pulling on the catheter. Locate the slit in the Uresil dressing. From this spot, slowly and gently peel the adhesive away from the skin while holding the disk (see Figure 11). If the skin around the catheter is sensitive, wipe adhesive remover around the edge of the dressing to minimize discomfort.
8. Throw out the old Uresil dressing.

9. Use a gauze pad moistened with soap and water to clean the skin around and under the silicone disk. Using the same gauze, clean the top and bottom sides of the silicone disk itself. Always hold one side of the disk firmly on the skin while cleaning under the other side.

10. Rinse and dry the skin and the silicone disk with fresh gauze.

11. Wipe the top side of the silicone disk with an alcohol wipe. This removes any soap residue.

12. Look at the disk nipple. The black ink mark should be just above the disk nipple. If it moved, finish changing the dressing, and then call your doctor’s office.

13. Inspect the insertion site under the silicone disk. Always hold one side of the disk firmly on the skin while tilting up the other side. If you see any of the following, finish changing the dressing and call your doctor’s office:
   - Redness
   - Swelling
   - Foul-smelling drainage
   - Leakage of fluid
   - You may notice new tissue growing around the insertion site. This is harmless, but it can be removed by your doctor if it is painful.

14. Apply the 3M™ No Sting Barrier Film to the skin around
and under the silicone disk. Then apply more to the top of the disk where the dressing will be placed. This protects your skin and helps the adhesive stick better.

15. Slide the Telfa under the disk, around the catheter (see Figure 12). The slit should point towards the patient’s feet. The Telfa will prevent moisture from building up under the disk.

16. Pick up the Uresil dressing. Open the slit and place it around the catheter. Line the slit up with the slit in the Telfa. Make sure the dressing is adhesive side down, shiny side up. Place the dressing over the flat part of the disk, but under the disk’s nipple. The slit in the dressing should point towards the patient’s feet.

17. The Uresil dressing has 3 pieces of backing. Start at the corner of the biggest piece and slowly peel the backing away. As you peel away the paper, press the adhesive to the skin. This will get easier with practice. If the dressing does not stick properly, remove the Uresil dressing and Telfa and restart at step 15.
18. Remove the other 2 pieces of backing paper 1 at a time. Press the adhesive to the skin. Overlap the slit edges of the dressing to make the dressing more secure (see Figure 13).

![Figure 13. Overlapping edges of the Uresil dressing](image)

19. If you’re changing the leg drainage bag or the CathGrip, follow the instructions in the sections below. If you are only changing the dressing right now, reattach the catheter to the CathGrip.

- To do this, place your catheter on the device straps.
- There are 2 straps, one with holes and one with jagged edges. The strap with the holes has 2 openings. Insert the strap with the jagged edges end into the lower opening of the other strap.
- Pull to secure (see Figure 14).
20. Remove your gloves and discard them in the waste container. Wash your hands.

**Changing the leg drainage bag and ureteral connecting tube**

1. Gather your supplies:
   - Leg drainage bag with Velcro straps
   - Ureteral connecting tube
   - Micropore® Paper tape (2 inches wide)
   - Scissors to cut tape and bag
   - Alcohol wipes
   - Non-sterile gloves

2. Wash your hands with warm water and soap or use an alcohol based hand sanitizer.

3. Cut a 4-inch piece of Micropore paper tape and fold down
the short sides a half an inch. Set aside (see Figure 15).

![Figure 15. Folding down sides of Micropore paper tape](image)

4. Open the packages containing the ureteral connecting tube and the leg bag. Close the outlet valve at the bottom of the leg bag. You will hear a snap (see Figure 16).

![Figure 16. Closing bottom of leg bag](image)

5. Clean the scissors with an alcohol wipe.

6. Pick up the leg bag by the corrugated tubing, but do not touch the connector, which is attached to the bottom of the tubing. Notice the ripples in the tubing are interrupted by smooth areas. Count 2 to 4 smooth areas up from the bag and cut the tubing at the outer edge of the smooth area (see...
Figure 17). While cutting, hold both the tubing and the bag.

Figure 17. Cutting the tubing

7. Attach the connector to the tubing on the leg bag (see Figure 18).

Figure 18. Attaching the connector to the tubing on the leg bag

8. Remove the cap on the connector and insert the connector into the ureteral connecting tube’s wide end (see Figure 19). Wrap the area with the cut piece of tape to prevent disconnecting.
9. Remove the Velcro straps from the packaging. Place the wider strap through the top button holes. Place the narrow strap through the bottom button holes. Cut the straps to fit legs snugly, but they should not be tight (Figure 20).

10. Empty the drainage bag in the toilet. Disconnect it from your leg.

11. Wash your hands with warm water and soap or use an alcohol based hand sanitizer.

12. Put on a pair of non-sterile gloves.
13. Put a towel or gauze under the point of connection between the ureteral connecting tube and the catheter.

14. Pick up the new ureteral connecting tube attached to the bag. Twist off the small cap (see Figure 21).

![Figure 21. Removing cap from connecting tube](image)

15. While holding the new bag set in your hand, untwist the catheter from the old ureteral connecting tubing. Quickly attach the new bag with a twisting motion to minimize leaking. Throw away the old bag.

16. If you are not changing your CathGrip at this time, secure the new tubing to the side of your abdomen with the CathGrip. Place your catheter on the device strap of the CathGrip and pull. If you are changing your CathGrip at this time, see section the “Changing your CathGrip.”

17. Attach the leg bag to either the calf or the thigh. Check to make sure all connections are tight and the leg bag is closed.

18. When you have finished, remove your gloves and wash your hands.
Changing your CathGrip

The CathGrip will prevent pulling, tension, or kinking of the drainage catheter and tubing. You will need your CathGrip kit for this part.

1. Select a position for the CathGrip. The CathGrip and drainage bag tubing should be lower than the catheter insertion site in order for it to drain. Make sure it’s lower both when you are standing and laying down. When the catheter is attached there should be no pull or tension on the catheter. There should be a gentle bowing of the catheter.

2. Rest the tubing on the side of your abdomen on the selected site.

3. Inspect the site where the CathGrip will be placed. Make sure you select an area that’s not red or irritated. Trim any long hairs at the site with scissors or hair trimmer. Avoid using a razor.

4. Open CathGrip package.

5. Clean the site with the alcohol wipe from the kit. This will remove oils and products, such as lotion or soap, from your skin. Allow alcohol to dry completely.

6. Wipe the site with the BioPlus+ Skin Prep, which is included in the kit.

7. Allow area to dry to touch. This takes about 15 seconds.

8. Remove the paper on the back of the CathGrip one side at a
time (see Figure 22). Apply to skin in the desired location. Repeat with the other side.

Figure 22. Placing the catheter and removing the paper back of the CathGrip

9. Gently press the CathGrip to the skin for 5 seconds to seal it to the skin.

10. Place your catheter on the device straps. There are 2 straps, one with holes and one with jagged edges. The strap with the holes has 2 openings. Insert the strap with the jagged edges end into the lower opening of the other strap. Pull to secure (see Figure 14).

11. Make sure that there is no pull or tension on the catheter. If you notice any tension or pull, change the position of the catheter in the CathGrip.

**Connecting to a night bag**

Your nurse will show you how to connect your leg bag to a night bag. The night bag holds a large volume so you will not
have to empty your bag while you sleep.

1. Gather your supplies:
   - Night bag
   - Alcohol wipes
   - Paper tape

2. Wash your hands or use an alcohol based hand sanitizer.

3. Clean the drainage end of the leg bag thoroughly with alcohol wipes on the outside and as much as possible on the inside. Holding the bag, allow the alcohol to dry for 2 minutes.

4. Pick up the night bag with your other hand. Remove the cap from the end of the tubing. Insert the drainage bag tubing into the leg bag (see Figure 23).

5. Open the outlet valve to allow urine to flow from the leg bag into the night bag. For extra safety, secure the connection between the 2 bags with paper tape.

*Never connect the night bag to the ureteral connecting tubing. The weight of the leg bag can pull the catheter out of your body if it falls.*

**Cleaning the Night Bag**

You may reuse the night drainage bag after cleaning it
properly. To clean the equipment:

1. Wash your hands with warm water and soap or use an alcohol based hand sanitizer.

2. Gather the following supplies:
   - Non-sterile gloves
   - Cold water and dish detergent
   - White vinegar
   - Large basin-sized container for soaking items

3. Put on the gloves.

4. Empty the urine from the night bag.

5. Rinse the bag with cool running water. Never use hot water because it can damage the bag.

6. Wash the bag with mild detergent.

7. Rinse the bag with cool water until no signs of the detergent remain.

8. In the basin-sized container, make a solution of 1 part white vinegar and 3 parts water.

9. Soak the bag for 15 minutes in the solution.

10. Allow the bag to air dry.

Activities While You Have Your Nephrostomy Catheter

- You can go to work and exercise with your catheter in place.
Avoid movements that involve stretching from side to side or continual bending. These could dislodge the catheter.

- Do not swim, take a bath, or submerge your catheter in water. Speak with your doctor in Interventional Radiology if you have a vacation planned so that we can teach you what to do in this situation.

- Keep the tubing secured to your body with a CathGrip at all times.

- When you are getting dressed, be sure not to tug on the catheter. Do not allow the tubing to become kinked by clothing such as a belt. Try not to lie on your catheter when you sleep. This will prevent kinking of the catheter.

**Call Your Nurse or Doctor in Interventional Radiology if:**

- The location of the black dot has changed.

- The clamp around disk is loose or opened. If your catheter is sutured in place, call Interventional Radiology if the suture is broken.

- Your skin looks red or irritated.

- There is no drainage from your catheter or if the amount of drainage is much less than usual.

- There is a kink in the catheter that is causing a blockage.

- You have pain, tenderness, or swelling at the catheter site.

- The drainage in your bag is bloody, cloudy, or foul-smelling
• The catheter has dislodged or pulled completely out.
• You have a temperature of 100.4°F (38°C) or higher.
• You have symptoms of blockage such as decreased amount or no urine, leakage of urine around the insertion site, or fever, chills, or both.
• You have any concerns about your catheter.

Contact Information

If you have any questions or concerns, please call Interventional Radiology at 212-639-2236. You can reach a staff member Monday through Friday from 9:00 AM to 5:00 PM. After 5:00 PM, during the weekend, and on holidays, please call 212-639-2000 and ask for the doctor on call for Interventional Radiology.

Ordering Information

Your nurse will give you enough supplies when you go home to last for 2 weeks. In most cases, the visiting nurse service will order your supplies after that.

If you want to order supplies yourself, call Interventional Radiology at 212-639-2236 to place your order using the supply order numbers below. You can pick up your order 2 business days later at the IR Clinic, located at 16 East 60th Street, between Fifth and Madison Avenues.

<table>
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<tr>
<th>Item</th>
<th>Supply number</th>
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About Your Nephrostomy Catheter
<table>
<thead>
<tr>
<th>Item</th>
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<td>Adhesive remover (1 box)</td>
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<td>Drainage Discharge Kit (1 kit, 4 weeks of supplies)</td>
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<td>CathGrip (each)</td>
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For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

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