UW Medicine

Interventional Radiology: Percutaneous Drain

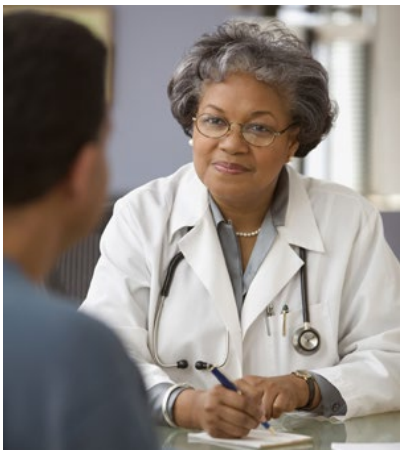
Including percutaneous nephrostomy and percutaneous biliary catheter

This handout explains what a percutaneous drain is, why it is used, and what to expect when you have one.

What is a percutaneous drain?

In healthcare, a *drain* is a small plastic tube that carries fluid or gas out of the body. *Percutaneous* means "through the skin."

Your doctor has asked us to place a percutaneous drain into the skin of your belly or pelvis area.



Talk with your provider if you have questions about drains.

Why do I need a drain?

There are many reasons a person might need a drain. Here are some of the more common ones:

- *Abscesses*: Pockets of fluid that need to be drained because they are infected or may become infected. If you have an abscess, you may also need antibiotics.
- *Biliary obstructions*: Blocks in the *biliary system*. This system includes the gallbladder and bile ducts. These blocks can cause liver problems, infections, or both.
- *Infected hematomas*: Infected buildup of blood under the skin.
- *Leaks*: Fluid from the bowel, pancreas, bile ducts, or the urinary tract needs to be drained to allow the leaks to heal.
- *Urinary obstructions:* Blocks in the urinary system. These can cause kidney problems, infections, or both.

How it is placed?

An *interventional radiologist* will place your drain. This doctor has special training doing procedures that use live X-rays, *computed tomography* (CT) scans, or *ultrasound* (sound waves) to see inside the

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body. Placing the drain using live images is safer and involves less recovery time than regular surgery.

Are there any risks in having the drain placed?

Most times, the procedure to place a percutaneous drain is very safe. The benefits usually far outweigh the risks.

But, unexpected events can occur. The most common problems are:

- Bleeding, if a blood vessel is damaged
- Blood infection, if bacteria get into the blood stream
- Skin infection, if the catheter stays in a long time
- Injury to a nerve or vital organ such as the bowel

Your doctor will talk with you about your risks. Please be sure to ask any questions you have.

How long will I need the drain?

How long the drain must stay in place depends on where it is placed and what problem it is treating. Sometimes, drains must stay in for weeks or months. We will remove the drain as soon as it is safe to do so.

Over time, drains can get clogged. If your drain needs to stay in place for a long time, it will need to be replaced about every 2 to 3 months.

Before Your Procedure

Arrival Time

If you are an *outpatient* (not already 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

Interpreter Services

If you do not understand English well enough to understand these instructions or the details of the procedure, tell us **right away**. We will arrange for a hospital interpreter to help you. This service is free. **A family member or friend may not interpret for you.**

Allergies

If you have ever had an allergy or bad reaction to *contrast* (X-ray dye), please call our Interventional Radiology Nurse Coordinator (see

numbers on the last page of this handout). You may need to take a medicine for this allergy before the procedure.

Blood Test

You most likely will need a blood test done within the 14 days before your procedure. Sometimes, we can do this when you arrive for your procedure. We will tell you if we need to draw blood before that day.

Blood-thinning Medicines

If you take a blood thinner such as Lovenox (enoxaparin), Coumadin (warfarin), or Plavix (clopidogrel), you may need to stop taking it for 1 to 10 days before the procedure. The length of time depends on which medicine you are taking.

If you have not been told what to do, talk with your provider or the clinic that prescribes the medicine. Tell them you are having a drain placed and ask when to stop taking this medicine.

IMPORTANT: If you have ever had a heart stent, a prosthetic heart valve, or a pulmonary embolism, or if you have atrial fibrillation with a history of a stroke, you **must** contact the provider who prescribes your blood-thinning medicine. Tell them that you are having a medical procedure and ask what to do about your dose before your procedure.

Diabetes Medicines

If you have diabetes and take insulin or metformin (Glucophage), we will give you instructions about holding or adjusting your dose for the day of your procedure.

Medicine to Protect Your Kidneys

If we need to give you contrast for the procedure and your kidneys are not working normally, we may prescribe a medicine for you to take before and after your procedure. This medicine will help protect your kidneys.

Sedation

Before your procedure, you will be given a *sedative* (medicine to make you relax) through an *intravenous line* (IV) in one of your arm veins. This is called *moderate sedation*. You will stay awake for the procedure, but feel sleepy. You will still feel sleepy for a while afterward.

For some people, using moderate sedation is not safe. If this is true for you, you will need general *anesthesia* (medicine to make you sleep during the procedure).

Let us know **right away** if you:

- Have needed anesthesia for basic procedures in the past
- Have *sleep apnea* or chronic breathing problems (you might use a CPAP or BiPAP device while sleeping)
- Use high doses of opioid pain medicine
- Have severe heart, lung, or kidney disease
- Cannot lie flat 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.
- A local anesthetic **and** a single pain or anxiety medicine. This is called *minimal sedation*.
- *General anesthesia* (medicine to make you sleep). This medicine is given by an anesthesia provider.

Day Before Your Procedure

- Drink lots of fluids. You may eat as usual.
- If you are an *outpatient* (not staying in the hospital), plan ahead:
  - Expect to spend most of the day in the hospital.
  - Ask a responsible adult to drive you home after your procedure. **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, the responsible adult **must** ride with you.
  - Ask a responsible adult to stay with you overnight after the procedure.

IMPORTANT: If you do not have a responsible adult to drive you home or ride with you on a bus, taxi, or shuttle, we will need to reschedule your procedure.

Procedure Day

- Take your usual medicines on the day of the procedure, unless the doctor or a nurse tells you to hold them. (Some patients may need to stop taking their blood-thinning medicines.)

- Do **not** take vitamins or other supplements. They can upset an empty stomach.
- Starting **6 hours** before your procedure, **stop eating solid foods.** You may have only *clear liquids* (liquid you can see through), such as water, broth, 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

- You may have been told to go to Outpatient Lab for a blood draw. Do this before you check in. The lab is on the 3rd floor of the hospital, next to Outpatient Pharmacy, near the Cascade elevators.
- Unless you are told otherwise, check in at Admitting on the 2nd floor, next to Radiology. Take the Pacific elevator to the 2nd floor. Admitting is on the right side of Radiology Department.
- After checking in, go to the Radiology Reception Desk.
- If there is a delay in starting your procedure, it is usually because we need to treat other people with unexpected and urgent problems. Thank you for your patience if this occurs.
- When we are ready to start your procedure, a staff member will:
  - 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:
  - Your family 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 *intravenous* (IV) tube in your arm, and go over what to expect.
  - A radiologist or physician assistant will talk with you about the risk and benefits of the procedure. They will ask you to sign a consent form, if you have not already signed one.
  - If you are scheduled to have general anesthesia, the anesthesia care provider will meet you and go over your health history.
  - You will be able to ask any questions you have.
  - The nurse will take you to the procedure room. This nurse will give you medicine to make you sleep.

- The nurse will take you to the Radiology suite or CT scanning room. This nurse will be with you for the entire procedure.

What happens during the procedure?

- If you need an interpreter, they will be in the room or will be able to talk with you and hear you through an intercom.
- You will lie flat on your back on an X-ray table.
- We will place wires on your body to monitor your heart rate.
- You will have a cuff around your arm. It will inflate from time to time to check your blood pressure.
- Prongs in your nose will give you oxygen. A probe on one of your fingers will show us how well you are breathing the oxygen.
- We will take ultrasound or X-ray images of the area where the drain will be placed.
- For your safety, the entire medical team will ask you to confirm your name, go over your allergies, and explain what we plan to do. We do this for every procedure and every patient.
- A radiology technologist will use a special soap to clean your skin around the puncture site. The technologist may need to shave some hair in the area where the doctor will be working.
- Tell the technologist if you have any allergies.
- Your doctor will apply a local anesthetic to your skin where the tube will be. You will feel a sting for about 10 to 15 seconds. After that, the area will be numb and you should feel pressure, but no sharp pain.
- Please tell us right away if you can feel pain. If needed, we can give you more anesthetic.
- Your doctor will insert a long needle into the area where the drain or catheter will be placed. A small, flexible guide wire will be inserted through the needle. This wire is used to guide the catheter into place. This process may take some time if it is hard to target the right spot. The needle will then be removed.
- A plastic drain about ¼ inch wide (about as wide as a pencil) will be inserted and the wire will be removed. The tube will be secured on your skin with stitches and then covered with a dressing. A bag is usually added to the end of the tube to catch any fluid.
- The entire procedure usually takes about 1 to 2 hours.

What happens after the procedure?

- **If you had general anesthesia:** You will be watched for a short time in the Radiology department or recovery room. If you are:
  - Going home the same day as the procedure, you will then be moved to a room on a short-stay unit in the hospital.
  - Staying overnight in the hospital, you will be moved to a room on an inpatient unit.
- **If you did not have general anesthesia:** You will go directly to the short-stay unit.
- Once you are settled in to your room:
  - Your family member or friend will be able to be with you.
  - For 2 to 4 hours, you will need to rest on a stretcher with your head elevated 30 to 45°.
  - You will be able to eat and drink.
- We will make sure you can move safely before you get up to walk. A nurse or patient care technician (PCT) will help you get out of bed. Most times, we will place a gait belt around your waist for extra safety.
- You will be able to go home when:
  - You are fully awake
  - You can eat, drink, and use the restroom
  - Your nausea and pain are controlled
  - Your vital signs are stable
  - You can move around safely
  - You have a responsible driver to take you home
  - You have a responsible person to stay with you at home overnight

Safety and Self-care at Home

The sedation medicine will stay in your body for several hours. It could affect your judgment. You may also be lightheaded or feel dizzy.

For 24 Hours

- Do **not** drive a car.
- Do **not** use machinery or power tools.
- Do **not** drink alcohol.
- Do **not** make important decisions or sign legal documents.

- Do **not** be responsible for children, pets, or an adult who needs care.
- Do **not** take medicines such as tranquilizers or sleeping pills, unless your doctor prescribed them.
- Have a responsible adult stay with you overnight.

To Help Speed Your Recovery

- Do only light activities and get plenty of rest.
- Eat as usual. Drink lots of fluids.
- Resume taking your medicines as soon as you start to eat. Take **only** the medicines that your doctors prescribed or approved.

For 48 to 72 Hours

- Do only moderate activities. It is good to walk as soon as you can.
- Do **not** lift anything that weighs more than 10 pounds (a gallon of milk weighs almost 9 pounds).
- Avoid hard work and any activity that makes you breathe harder or makes your heart beat faster.

Pain Control

Most patients have only minor pain after having a drain placed. If your doctor says it is OK for you to have acetaminophen (Tylenol), this should ease the discomfort. If your doctor expects you to have more pain, you will receive a prescription for a stronger pain medicine.

Drain Care

You may be told to flush your drain. When and how much to flush depends on the kind of tube you have and what your doctor advises. Your doctor or nurse will check your specific instructions here:

❑ **You need to flush your drain.**

Flush forward into your body with 10 cc sterile saline:

❑ Every _____ hours.

❑ Every _____ hours. Do this for: ❑ 24 hours ❑ 48 hours

Replace the cap after flushing.

❑ **You do not need to flush your drain.**

❑ **Other:** _____

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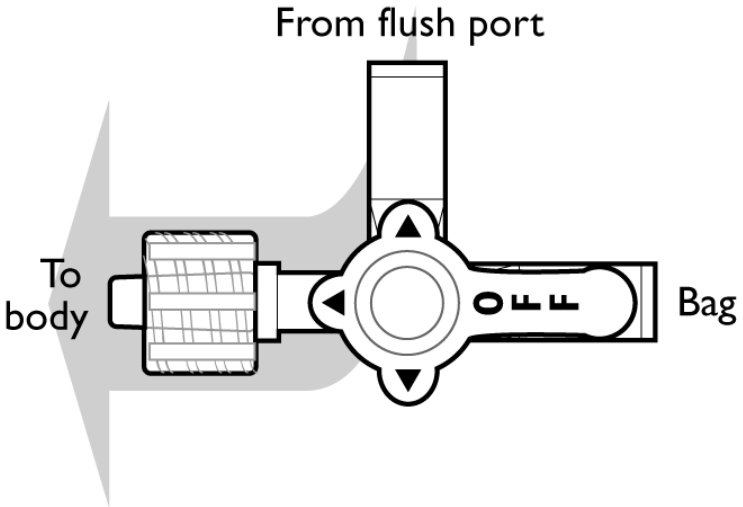
If You Were Told to Flush Your Drain

- We will give you a starter supply of sterile saline flushes. We will also give you a prescription to fill for extra flushes.
- If your drain has a 3-way *stopcock* (valve), you can flush the drain without removing the bag. See "Flushing the Drain" below.
- We may ask you to record the output of the drainage. This is important if the drain is draining a fluid collection or an abscess. Your doctor or nurse will check your specific instructions here:
  - ❑ **Record the amount of drainage output each 24 hours.**
    - ❑ Call the Interventional Radiology nurse at 206.598.6209 when your drainage output is less than 10 cc a day for 2 days in a row.
    - ❑ **If there is a sudden decrease in output,** call the Interventional Radiology nurse at 206.598.6209.
  - ❑ **You do not need to record the drainage output.**

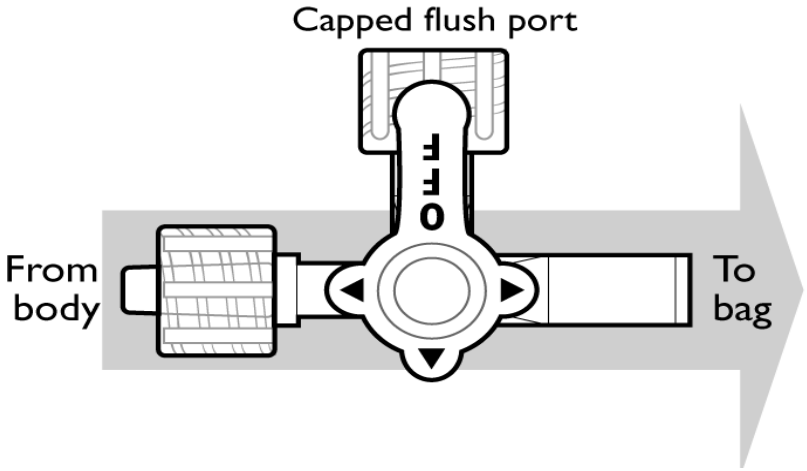
Flushing the Drain

1. Turn the switch so it points to the drainage bag (*see drawing below*). The word "OFF" (which is on the longest part of the stopcock) will be closest to the drainage bag. This position allows you to inject fluid into the tube from the flush port.
2. Inject the amount of fluid your doctor told you to use. Most times, this is about 10 cc.



In this drawing, the stopcock switch points to the drainage bag. (The word "OFF" is closest to the drainage bag.) This position allows you to inject fluid into the tube from the flush port.

3. Turn the switch so it points to the flush port again (*see drawing on next page*). The word "OFF" (which is on the longest part of the stopcock) will be closest to the flush port. Your drain will now drain into the bag.
4. If your instructions include "clamping" the tube or allowing it to drain internally, turn the switch so it is pointed at your body. This means the word "OFF" (which is on the longest part of the stopcock) is closest to your body. This position closes the channel that drains from your body. **Use this position ONLY to change or empty the bag.** This position stops your tube from draining.
5. Keep your dressing clean and dry.



*In this drawing, the stopcock switch points to the flush port. (The word "OFF" is **not** pointing to your body or the drainage bag.) This position allows your drain to drain into the bag.*

Dressing Care

- We will give you a 3-day supply of dressings when you leave the hospital. You will need to get dressing supplies on your own after this. Your nurse in the clinic or post-procedure area can advise you on where to get more supplies.
- Keep your tube site covered with the dressing for 24 hours. Do not get it wet.
- After 24 hours, remove the dressing and check the tube site for any reaction to the tape or clear dressing (Tegaderm). If you have redness or skin irritation, use only the gauze and tape in place of Tegaderm.
- You may shower after 24 hours, but you will need to cover your dressing with plastic wrap or Aqua Guard patches to keep the

dressing dry and intact. Always cover your drain tube site when showering, until your first drain change. The Interventional Radiology staff will then tell you what to do when showering.

- Do **not** take a bath, sit in a hot tub, go swimming, or immerse your body in water while you have a drain in place.
- You may keep the dressing on for up to 3 days, but you will need to change it sooner if the dressing becomes loose, wet, or dirty.

Dressing Change

- Cover your drain site either with the AquaGuard patches or wrap your belly with plastic wrap.
- Shower, then remove the AquaGuard or the plastic wrap.
- If the dressing is not wet or dirty, you may not need to change it, unless it has been in place for 3 days or more.
- If the dressing is wet, or it has been in place for more than 3 days, you will need to change the dressing. See the steps below.

Steps to Change the Dressing

1. Carefully remove the dressing. Be careful not to dislodge the tube**. Do NOT use scissors to remove the dressing.**
2. Check the site. Look for any redness or drainage around the drain.
3. You may carefully clean around the drain with mild soap and water. Gently pat dry. Do **not** apply lotion, ointment, or powder.
4. Place a split gauze around the drain tube. Then place a solid gauze over the top of the split gauze.
5. You may cover the gauze with Tegaderm or use tape to secure the gauze to your skin.
6. Keep the Grip-Lock drain tube stabilizer in place until it no longer sticks to your skin. Change it earlier if your skin under the Grip-Lock wings becomes irritated. If you do not have extra Grip-Lock stabilizers, use tape to secure the drain to your skin.

Bag Change

We will place a drainage bag on your drain after your procedure. We will give you an extra bag and a prescription to buy more bags at a medical supply store.

Change the drainage bag if:

- It starts to smell
- The emptying valve at the bottom of the bag is not working

When to Call

Call one of the numbers listed below under "Who to Call" if you have:

- Bright red blood coming out of your drain
- New blood clots
- Fever higher than 101°F (38.3°C)
- Chills
- Ongoing vomiting
- Pain that is getting worse and is not eased by your current pain medicines
- Leaking around the drain
- Signs of infection around the drain: redness, tenderness, or discharge

Also call if:

- The drainage stops suddenly
- You cannot flush the drain

Cover your drain site with clean gauze and call 206.598.6209 **right away** if your drain:

- Moves so that you see more of it outside your body.
- Falls out or the drain is cut. If this happens, go to the nearest emergency department. Bring with you all parts of the drain.

Urgent Care

Call 911 and go to the nearest emergency room right away if:

- You have chest pain
- You have trouble breathing
- Your leg on the side where the puncture was done is cold or blue.
- You have slurred speech
- You have balance problems or trouble using your arms or legs

Who to Call

- Weekdays from 8 a.m. to 4:30 p.m., call the Interventional Radiology Nurse Coordinator at 206.598.6209.
- After hours and on weekends or holidays, call 206.598.6190 and ask to page the Interventional Radiology Fellow on call.

Questions?

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

UWMC - Montlake Imaging Services: 206.598.6200

UWMC - Northwest Imaging Services: 206.668.4240

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