

Angiography: Inferior Vena Cava (IVC) Filter

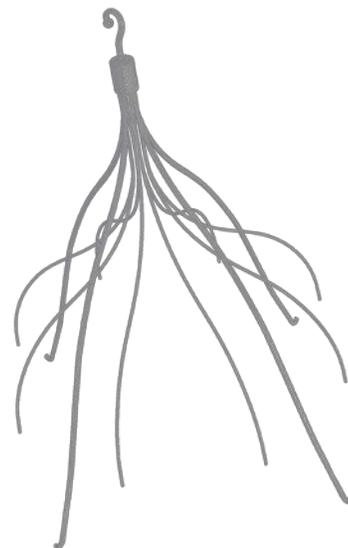
How to prepare and what to expect

This handout explains what an inferior vena cava filter is and what to expect when you have one placed or removed.

What is an IVC filter?

The *inferior vena cava* (IVC) is a large vein in the middle of the abdomen. The IVC returns blood from your lower body to your heart.

IVC filters are like baskets that are made of many wires. The filter can be inserted into the IVC through a small hole in a vein in the neck or the groin. Filter placement can be done as an outpatient procedure. This means you will not need to stay overnight in the hospital.



An IVC filter

Why do I need an IVC filter?

An IVC filter traps blood clots that break loose from veins in your leg or pelvis. It prevents a large blood clot from reaching your lungs. A blood clot in the lung (a *pulmonary embolism*) can be life-threatening.

You are at greater risk of having a pulmonary embolism if you:

- Already have blood clots in the veins in your legs or pelvis.
- Recently had a pulmonary embolism.
- Have a health issue that makes you more likely to get blood clots in your leg veins. These issues include a family history of clotting, a recent surgery, having leg vein clots before, or if you need to be in bed for long periods and cannot exercise.

Usually, people with these health issues are treated with a blood-thinning medicine. This medicine is given either given *intravenously* (directly into a tube in your vein), as an injection under the skin, or as a pill. Some blood thinners that are often used are Heparin, Lovenox, Coumadin, and Plavix.

Your doctors may have advised an IVC filter for you because:

- They believe that blood-thinning medicines will not be safe for you, or will not work.
- You may be preparing for a procedure and need to stop taking blood thinners for days or weeks.

Your doctors will talk with you about the specific reasons they believe an IVC filter is a good option for you. Be sure to ask any questions that you have about IVC filters, why one might work for you, or how the procedure is done.

Is the filter safe?

The procedure to place an IVC filter is very safe. The most common problem is minor bleeding where the device is inserted.

It is very rare to have major problems after the filter is placed. These problems occur less than 1% of the time (for less than 1 person in 100). These problems can occur if the filter:

- Fills with blood clots
- Moves (*migrates*) or breaks

Most people do not have any symptoms if the filter becomes filled with clots. But some people have leg swelling and discomfort that can become serious.

If the filter moves a little, it is usually not a problem. **Very rarely**, the filter *migrates* (moves) to a place where it could cause problems, such as the heart.

One of your doctors will talk with you about these risks. Please make sure to talk about all of your questions and concerns with your doctor.

Can the filter be removed if I no longer need it?

Most times, the IVC filter can be removed if this is done within several months after it is placed. Removal is possible 80% of the time (for 80 out of 100 people).

Before the filter is removed, you may need to start taking blood thinners to prevent pulmonary embolism. It is very important to take these medicines exactly as prescribed.

Removing the filter is usually simple and can be done as an *outpatient procedure*, which means you do not have to stay overnight in the hospital. But the longer the filter stays in place, the harder it can be to remove.

The most common reasons that the filter cannot be removed are:

- It gets stuck to the wall of the IVC.

- It becomes filled with large blood clots.
- You are not getting the right dose of blood thinner.

If the filter cannot be removed, it will stay in your body for the rest of your life. This rarely causes any problems.

Before Your Procedure

- **Arrival time.** If you are an outpatient, a Radiology 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
 - Give you reminders about 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 ask a hospital interpreter to help. **A family member or friend may not interpret for you.**
- **Blood tests.** You most likely will need to have blood tests done within 14 days of your procedure. Sometimes, we do this when you arrive for your appointment. We will let you know if we need a blood sample before that day.
- **Contrast allergy.** If you have a history of allergy or bad reaction to *contrast* (X-ray dye), call our nurse coordinator at one of the phone numbers on the last page of this handout. You may need medicine for this allergy before the procedure.
- **Kidney problems.** If your kidney function is not normal and we need to inject contrast into your blood vessels, we may prescribe a medicine for you to take before and after your procedure to help protect your kidneys.
- **Blood-thinning medicines.** Do **not** stop taking any prescribed blood-thinning medicines, including Coumadin, Lovenox, Fragmin, or Plavix. We will do a blood test on the day of the procedure to make sure your blood is not too thin to safely insert the IVC filter.
- **Changes to diabetes medicines.** If you have diabetes and take insulin or metformin (Glucophage), you will receive instructions about holding or adjusting your dose for the day your IVC filter is placed.

Sedation

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

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

- Have needed *anesthesia* (medicine to make you sleep) 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 narcotic painkiller
- 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)

Talk with the providers in Radiology about the type of sedation that will be used for your procedure. You may 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), given by an *anesthesiologist*

Day Before Your Procedure

- The day before your procedure, you may eat as usual.
- Make plans for a responsible adult to drive you home after your procedure and stay with you the rest of the day. **You may NOT drive yourself home or take a bus, taxi, or shuttle by yourself.**

Procedure Day

At Home

- Take all of your usual medicines (except diabetes and blood-thinning medicines, as directed) on the day of the procedure. Do **not** skip them unless your doctor or nurse tells you to.
- Starting **6 hours** before your procedure, **stop eating solid foods.**

You may only have *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.
 - Do not take vitamins or other supplements. They can upset an empty stomach.
- Bring with you a list of all the medicines you take.
- Plan to spend most of the day in the hospital. If there is a delay in getting your procedure started, it is usually because we need to treat other people with unexpected and urgent problems. Thank you for your patience if this occurs.

At the Hospital

- Check in at Admitting on the 3rd floor (main level) of the hospital. Admitting is just off the lobby, to the right and behind the Information Desk.
- You may have also been given instructions to go to **outpatient lab** for a blood draw. The outpatient lab is behind the Cascade elevators, next to Outpatient pharmacy. You can go to the lab either before or after you check in at Admitting.
- After checking in and having your blood drawn, take the Pacific elevators to the 2nd floor. Check in at the Radiology reception desk.
- 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 procedure. They will ask you to sign a consent form, if you have not already done that.
 - You will be able to ask any questions you have.

- You may want to use the bathroom at this time.

Your Procedure

- The nurse will take you to the radiology suite. This nurse will be with you for the entire procedure.
- You will lie on a flat exam table.
- We will use monitoring devices to help us watch your vital signs during the procedure. These will include:
 - Wires on your chest to monitor your heart
 - A cuff around your arm to check your blood pressure
 - Oxygen prongs in your nose and a probe on one of your fingers to show us how well you are breathing the oxygen
- The entire medical team will ask you to confirm your name and your allergies. They will then talk about the procedure that will be done. This review is done for your safety. It is done before every procedure.
- Next, a radiology technologist will use a special soap to clean the skin around your neck or groin. **Tell this person if you have any allergies.** The technologist may need to shave some hair in the area where the doctor will be working.
- If you are able to receive conscious sedation, the nurse will begin giving you the sedative. This will make you feel drowsy and relaxed.
- If needed, an interpreter will be in the room or will be able to talk with you and hear you through an intercom.
- The doctor will inject local anesthetic at the base of your neck or near your groin. 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. We can give you more anesthetic, if needed.
- A *catheter* (small plastic tube) will be inserted into your vein. Your doctor will use X-rays to see inside the vein and guide the tube to your IVC.
- Contrast is then injected into your vein. You **may** feel a warm or hot flush spread over your body when the contrast goes in.
- X-rays are taken of your abdomen while the contrast moves through your vein. These will show your doctor where to safely place the filter.
- A special catheter with the filter inside will then be used to place the filter. After this is done, the catheter will be removed. Pressure will be applied at the site for about 5 to 10 minutes.

- The entire procedure takes about 45 minutes.

Removing the IVC Filter

If you are having your IVC filter removed:

- A “snare” device is used to hook the top of the filter.
- A special catheter slides over the filter to close it.
- The filter is then removed from the vein.

After Your Procedure

- You will be observed for a short time in Radiology. Then you will go to a recovery floor for about 1 to 2 hours until the sedation wears off.
- Most times, you will be able to eat and drink, and your family may visit you. You may need to limit movement for a short time.
- When you are fully awake and are able to eat, use the restroom, and walk, you will be able to go home.
- It is rare to have problems with this procedure. If problems do occur, we may need to keep you in the hospital overnight so that we can keep watching you or treat you.
- Before you leave the hospital, your nurse will tell you what activities you can do, how to take care of your incision, and other important instructions.

When You Get Home

- Relax at home for the rest of the day. Make sure you have a family member, friend, or caregiver to help you.
- You may feel sleepy or have some short-term memory loss. This can last up to 24 hours.
- For 24 hours, do **not**:
 - Drive a car or use machinery
 - Drink alcohol
 - Make important decisions or sign legal documents
 - Be responsible for the care of another person
- After 24 hours, you may shower or bathe and resume all of your usual activities.
- There is usually only minor pain after this procedure. If your doctor says it is OK for you to take acetaminophen (Tylenol) or ibuprofen (Advil, Motrin), this should ease any discomfort you have.
- Resume taking your medicines as soon as you start to eat. Take **only**

the medicines that your doctors prescribed or approved.

When to Call

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

- Severe bleeding
- Fever higher than 101°F (38.3°C) or chills
- Worsening shortness of breath
- New chest pain
- Dizziness
- Vomiting

Who to Call

Patient Care Coordinator.....206.598.6209

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

Ask for the Interventional Radiology Fellow on call 206.598.6190

Urgent Care Needs

If you have urgent care needs, go to the nearest Emergency Room or call 911 right away. Do not wait to contact one of our staff.

Questions?

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

UWMC Imaging Services:
206.598.6200