Inferior Vena Cava (IVC) Filter Placement or Removal

To prevent a pulmonary embolism

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

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 condition that makes you more likely to get blood clots in your leg veins. These 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 conditions are treated with a blood-thinning medicine. This medicine is either given *intravenously* (directly into a vein), injected under their skin, or taken as a pill.

But, blood-thinning medicines are not advised for some people. Your doctors believe that blood-thinning medicines will not be safe for you, or will not work. This is why they have recommended an IVC filter for you.

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 this, or about the procedure.

**Is the filter safe?**

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

Major complications after the filter is placed are very rare (less than 1%, or less than 1 person in 100). These 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 has migrated to a dangerous site such as the heart.

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

**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 for about 80% of people (80 out of 100).

Before it is removed, you may need to start taking blood thinners to prevent pulmonary embolism. It is very important to take this medicine exactly as prescribed.

Removing the filter is usually simple and can be done as an outpatient procedure. 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**

- A nurse coordinator 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 give you final instructions and answer any questions you have.

- If you do not understand English well enough to understand these instructions or the details of the procedure, tell us as soon as possible. We will arrange for a hospital interpreter to assist you. A family member or friend may not interpret for you.

- You most likely will need blood tests done within 14 days of your procedure. Sometimes, we do this when you arrive for your procedure. We will let you know if we need a blood sample before that day.

- 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.

- If your kidney function is not normal and we need to inject X-ray dye into your blood vessels, we may prescribe a medicine for you to take before and after your procedure to help protect your kidneys.

- Do not stop taking any prescribed blood-thinning medicines (such as 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.

- 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 (similar to Valium and morphine) through your IV. This medicine will make you sleepy, help you relax, and lessen your discomfort.
You will stay awake. This is called *conscious sedation*. You will still be sleepy for a while after the procedure.

- For some people, using conscious sedation is not safe. If this is true for you, you will need *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 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)

**Day Before Your Procedure**

To prepare for sedation, follow these instructions closely:

- The day before your procedure, you may eat as usual. Drink plenty of fluids.

- Starting **6 hours** before your procedure, you may only have *clear liquids* (liquid you can see through, such as water, Sprite, 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.

- You **must** have a responsible adult drive you home and stay with you the rest of the day. **You may NOT drive yourself home or take a bus, taxi, or shuttle.**

**On the Day of Your Procedure**

- Take all of your other usual medicines on the day of the procedure. Do **not** skip them unless your doctor or nurse tells you to.

- Bring a list of all the medicines you take with you.
• Please 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.

• Unless you are told otherwise:
  - **If you are a patient at University of Washington Medical Center** (UWMC), check in at Admitting on the 3rd (main) floor of the hospital. Admitting is to the right and behind the Information Desk in the lobby.
  - **If you are a patient at Harborview Medical Center** (HMC), check in at the Ambulatory Procedure Area (APA) on the 8th floor of the Maleng Building.

• A medical assistant will give you a hospital gown to put on and a bag for your belongings. You may use the restroom at that time.

• A staff member will take you to a pre-procedure area. There, a nurse will do a health assessment. Your family or friend can be with you there.

• An IV line will be started. You will be given fluids and medicines through the IV.

• An *interventional radiologist* (a doctor who has special training in this kind of procedure) will talk with you about the procedure and ask you to sign a consent form if that has not already been done. You will be able to ask questions at that 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 table that allows the doctor to see into your body with X-rays.

• Wires will be placed on your body to help us monitor your heart rate.

• You will have a cuff around your arm. It will inflate from time to time to check your blood pressure.

• A radiology technologist will clean your skin around your neck or groin area with a special soap. 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.

• The entire medical team will ask you to confirm your name and will tell you what we plan to do. This is for your safety.
- Then, your nurse will give you medicine to make you feel drowsy and relaxed before we begin.

- 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 some local *anesthetic* (numbing medicine) at the base of your neck or near your groin. It will sting for about 5 seconds, but then the area will be numb. You should have no more pain.

- 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 (X-ray dye) 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. The X-rays will show your doctor where to safely place the filter.

- For filter placement, a special catheter that holds the filter inside will then be used to place the filter. The catheter is then removed.

- For filter removal, a “snare” device is used to hook the top of the filter. Then a special catheter is slid over the filter to close it. The filter is then removed from the vein.

- Pressure will be applied to control bleeding where the catheter was inserted. Pressure is held at the site for about 5 to 10 minutes.

- The entire procedure takes about 45 minutes.

**After Your Procedure**

- We will watch you closely for a short time in the Radiology department.

- If you are an outpatient, you will then go to a short-stay unit in the hospital. There, a different nurse will watch you closely.

- 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.

- Problems after this procedure are rare. If they 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.

• For 24 hours, do not:
  - Drive a car or use machinery
  - Drink alcohol
  - Make important personal 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 interventional radiology procedures. If your doctor says it is OK for you to take acetaminophen (Tylenol), this should ease any discomfort you have. If your doctor expects you to have more severe pain, you will receive a prescription for a stronger pain medicine.

• 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

**University of Washington Medical Center (UWMC) Patients**

Interventional Radiology nurse coordinator.........................206-598-6897
Procedure Scheduling..........................................................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

**Harborview Medical Center (HMC) Patients**

Patient Care Coordinators ........................ 206-744-0112 or 206-744-0113
After hours (between 5 p.m. and 7 a.m.), and on weekends and holidays
*Ask for the Interventional Radiology Fellow on call* ...........206-744-0147

**If You Have an Emergency**

Go directly to the nearest Emergency Room or call 9-1-1. Do not wait to contact one of our staff.