

## Cardiac Catheterization

Cardiac catheterization is a medical procedure we perform to diagnose and treat certain heart conditions.

A long, thin, flexible tube called a catheter is put into a blood vessel in your arm, groin (upper thigh), or neck and threaded to your heart. Through the catheter, your doctor can perform diagnostic tests and treatments on your heart.

### How to prepare for a Cardiac Catheterization

Don't eat or drink anything for six to eight hours before the test. If you have diabetes, discuss this with your doctor. You should not take glucophage or metformin before or after the test as instructed. Not eating can affect your blood sugar and adjustments may need to be made to your insulin dosage.

Discuss any medicines you are taking with your doctor. He or she may want you to stop taking them before the test, especially if you are taking a blood-thinner such as Coumadin® (warfarin), Xarelto, Pradaxa and Eliquis. It is important helpful to bring a list of your allergies, medicines and dosages to the procedure, so the healthcare team knows exactly what you are taking and how much. Let us know any iodine, shellfish or shrimp allergy.

It may not be safe to drive after having cardiac catheterization, so you must arrange for a ride home.

### What to Expect During Cardiac Catheterization

We perform cardiac catheterizations in a hospital. During the procedure, you'll be kept on your back and awake. This allows you to follow your doctor's instructions during the procedure. You'll be given medicine to help you relax, which may make you sleepy.

Your doctor will numb the area on the arm, groin or neck, where the catheter will enter your blood vessel. A needle is used to make a small hole in the blood vessel. Through this hole your doctor will put a tapered tube called a sheath.

Next, your doctor will put a thin, flexible wire through the sheath and into your blood vessel. This guide wire is then threaded through your blood vessel to your heart. The wire helps your doctor position the catheter correctly. Your doctor then puts a catheter through the sheath and slides it over the guide wire and into the coronary arteries.

Special x-ray movies are taken of the guide wire and the catheter as they're moved into the heart. The movies help your doctor see where to position the tip of the catheter.

When the catheter reaches the right spot, your doctor will use it to do tests or treatments on your heart. For example, your doctor may do angioplasty and stenting.

During the procedure, your doctor may put a special dye in the catheter. This dye will flow through your bloodstream to your heart. Once the dye reaches your heart, it will make the inside of your heart's arteries show up on an x-ray called an angiogram. This test is called coronary angiography.

Coronary angiography can show how well blood is being pumped out of the heart's main pumping chambers, which are called ventricles. When the catheter is inside your heart, your doctor may use it to take blood samples from different parts of the heart or to do minor heart surgery.

To get a more detailed view of a blocked coronary artery, your doctor may do intracoronary ultrasound. For this test, your doctor will thread a tiny ultrasound device through the catheter and into the artery. This device gives off sound waves that bounce off the artery wall (and its blockage) to make an image of the inside of the artery.

If the angiogram or intracoronary ultrasound shows blockages or other possible problems in the heart's arteries, your doctor may use angioplasty to open the blocked arteries.

After your doctor does all of the needed tests or treatments, he or she will pull back the catheter and take it out along with the sheath. The opening left in the blood vessel will then be closed up and bandaged. A small weight may be put on top of the bandage for a few hours to apply more pressure. This will help prevent major bleeding from the site.

### **What to Expect After Cardiac Catheterization**

After cardiac catheterization, you will be moved to a special care area. You will rest there for several hours or overnight. During that time, your movement will be limited to avoid bleeding from the site where the catheter was inserted.

While you recover in this area, nurses will check your heart rate and blood pressure regularly. They also will check for bleeding from the catheter insertion site.

A small bruise may develop on your arm, groin or neck at the site where the catheter was inserted. That area may feel sore or tender for about a week. Let your doctor know if you develop problems such as:

- A constant or large amount of bleeding at the insertion site that can't be stopped with a small bandage
- Unusual pain, swelling, redness, or other signs of infection at or near the insertion site

Talk to your doctor about whether you should avoid certain activities, such as heavy lifting, for a short time after the procedure.

### **What Are the Risks of Cardiac Catheterization?**

Cardiac catheterization is a common medical procedure that rarely causes serious problems. However, complications can include:

- Bleeding, infection, and pain where the catheter was inserted.
- Damage to blood vessels. Rarely, the catheter may scrape or poke a hole in a blood vessel as it's threaded to the heart.
- An allergic reaction to the dye used.

Other, less common complications of the procedure include:

- Arrhythmias (irregular heartbeats). These often go away on their own, but may need treatment if they persist.

- Damage to the kidneys caused by the dye used.
- Blood clots that can trigger stroke, heart attack, or other serious problems.
- Low blood pressure.
- A buildup of blood or fluid in the sac that surrounds the heart. This fluid can prevent the heart from beating properly.

As with any procedure involving the heart, complications can sometimes be fatal. However, this is rare with cardiac catheterization

Please review the animation.