

Cardiac Catheterization

Cardiac catheterization is also called heart cath or cardiac cath. The procedure involves inserting a long, thin, flexible tube (catheter) into the heart. The catheter enters the body through a blood vessel, usually in the leg or arm. A doctor guides the catheter through the blood vessel toward the heart. Cardiac cath uses special x-ray equipment so your doctor can look at the whole procedure. When the catheter is inside the heart, the doctor uses it to inject dye into the blood vessels and chambers of the heart. The dye allows the x-rays to show the pumping action of the heart and how the heart valves work. It also shows how blood flows through the vessels that bring blood and oxygen to the heart muscle. These blood vessels are called coronary arteries. Your cardiologist uses this information to choose the best treatment for you.

How to Prepare for Your Cardiac Catheterization

Sometimes your doctor decides to perform a cardiac cath when you are already hospitalized. But in other cases, you may go to the hospital specifically for the procedure. There are a number of things you can do to prepare for a cardiac cath.

- Do not eat or drink anything for 6 to 8 hours before the procedure. This helps reduce the chance of an upset stomach during the test. If you have to take medicine before the procedure, you may take small sips of water to swallow your drugs.
- Plan to have a family member or friend drive you to the hospital and take you home afterwards. This person may need to stay overnight at your home and check on you.
- Bring an “overnight bag” in case the doctor has you spend the night in the hospital. Bring a robe, slippers, pajamas or nightgown, toiletries, and a list of all medicines you are taking. Be sure to include the exact name and dosage of these drugs.
- Tell the doctor if there is a possibility that you are pregnant. You should tell your doctor this before scheduling the procedure.
- Several routine tests will be done before the cath. These include an EKG, blood tests, and urine tests. Some tests may be done a day or two before the heart cath.
- Empty your bladder as much as possible before the cardiac cath starts. A bedpan or urinal will be available during the cath if you need it. You may wear hearing aids and eyeglasses during the cath.
- If you are an outpatient, your family may wait for you in the waiting area lounge. If you are already hospitalized, your family may wait in your hospital room.

The doctor performing the procedure will talk to you about the cath. You will be asked to sign a consent form. Tell the doctor if you have any allergies. This is especially important if you are allergic to medicines, x-ray dyes, shellfish, or iodine.

A staff member will clean and shave the area where the catheter will be inserted. This makes it easier for the cardiologist to place the catheter into your blood vessel. It also reduces the risk of infection. The usual catheter insertion site is the groin. But sometimes the arm is used.

An IV (intravenous) line will be placed into a blood vessel in your arm. This allows the cardiac cath staff to inject medicine directly into the blood vessel. If needed, a sedative may be given to help you relax.

The Cardiac Catheterization Lab

A cardiac cath is done in a specially equipped x-ray room called a cardiac catheterization laboratory or cath lab. Once you are in the cath lab, staff will transfer you to a special x-ray table and drape you with sterile sheets.

The cath lab has a large x-ray camera above the table and a few television screens that show the x-ray pictures. The lab also has heart monitors and other special equipment. You may notice a cooler temperature in the cath lab. The room is kept cool because x-ray machines need lower temperatures.

The cath lab team usually includes a cardiologist, an assistant, a nurse, and one or two technicians. Cardiac cath is not surgery. Even so, the doctors and nurses will wear gloves, gowns, and masks to prevent infection. You will need to keep your legs and arms as still as possible during the cardiac cath procedure. So it is important that you are comfortable. Be sure to let the cath lab team know if you have any concerns.

Beginning the Procedure

Several small sticky patches called electrodes will be placed on your chest, arms, and legs. These electrodes will be connected to a heart monitor. The heart monitor tracks your heart rhythm during the cardiac cath. You may hear the beeping sound of the monitor as it records your heartbeat.

A staff member will carefully clean the area where the catheter will be inserted. Then a tiny needle will be used to inject local anesthetic into the skin. This numbs the area where the catheter will be inserted. The injection may cause a mild stinging sensation. But it will also reduce any discomfort at the catheter insertion site.

Once the insertion site is numb, a small tube called a sheath will be inserted into the blood vessel. The cardiologist puts the catheter into the sheath and then carefully guides it toward the heart. The x-ray camera takes pictures the whole time and the doctor can see these pictures on the television screens.

What the Cardiac Catheterization Shows

Once the catheter is in place inside the heart, the cardiologist can check on cardiac function in several ways.

X-ray pictures show how the blood flows through the coronary arteries. If there are any blockages, the cardiologist can pinpoint them and see the effect on blood flow.

The procedure also produces x-rays of the heart's main pumping chamber (the left ventricle). To get these pictures, the doctor places a special catheter in the left ventricle. An x-ray dye is injected through this catheter. The x-ray pictures that are taken show the left ventricle during its pumping action. It also shows how well the heart valves are working.

What to Expect During the Cardiac Catheterization

You may be mildly sedated during the procedure, but you will be awake. Cardiac cath usually is not painful. However, you will experience some unusual feelings or sensations.

You will feel a stinging or burning sensation when the catheter insertion site (usually the groin area) is anesthetized. You may feel some pressure in the area where the sheath is placed. But you will not feel the catheters moving through the blood vessels and into your heart.

When the x-ray dye is injected into the coronary arteries, you may feel some tingling or discomfort. This sensation goes away in seconds. When the dye is injected into the left ventricle, you may feel a warm sensation all over your body (“hot flash”) that lasts from 10 to 20 seconds.

If you experience anything unusual during the test, tell the doctor or nurse so they can make you more comfortable. These symptoms include:

- Chest discomfort
- Dizziness
- Shortness of breath
- Nausea
- Itchiness
- Back pain

A complete cardiac cath usually lasts about 1 hour. It may be uncomfortable for you to lie still on the x-ray table for this period of time. The staff will do their best to help you stay comfortable throughout the cardiac cath.

Care After the Cardiac Cath

Whether you are having this procedure while you are a patient in the hospital or having it done as an outpatient, the care following a cardiac cath is the same.

Once the procedure is completed, the catheters are removed while you are still in the cath lab. In some cases, the doctor removes the catheters once you return to your hospital room.

Firm pressure is applied over the catheter insertion site for 10 to 20 minutes. This is to keep the area from bleeding.

You will be taken back to your room or to the recovery area. You must lie flat in bed for a period of time, usually 4 to 6 hours. This allows the hole in the blood vessel to heal. There will be no stitches at the site where the catheter was inserted. To prevent bleeding at the insertion site, a sandbag or a special pressure dressing will be temporarily placed over the area where the catheter was inserted. During this period of bed rest, do not bend the arm or leg where the catheters were inserted.

If your leg gets stiff, you may move your foot or wiggle your toes. You may bend your other leg at the knee to ease the stress on your back.

If you have to cough, laugh, sneeze, or strain when lifting your head off your pillow, place your hand over the insertion site and apply pressure. This will help to keep the area from bleeding.

Your nurse will assist you in using a bedpan or urinal during this time of bed rest.

The nurse will check your pulse and blood pressure frequently. He or she also will keep checking the site where the catheters were inserted. If you feel sudden pain at the insertion site, or if you notice a warm, sticky, and wet sensation, tell the nurse immediately.

You will be able to eat shortly after returning to your room. You might be given fluid through an IV. Or your nurse will ask you to drink plenty of liquids. This flushes the x-ray dye out of the body through your urine.

The doctor who performed the cardiac cath may be able to tell you some of the results shortly after the procedure.

If You Go Home After the Cardiac Catheterization

If you are not kept in the hospital overnight, reduce your activity during the first 24 hours after the cardiac cath. Once you return home, you can move about. But do not strain or lift heavy objects for a few days.

If you notice new blood on the dressing that covers the catheter insertion site, place your fingers over the area and press firmly. If bleeding continues, call your doctor or go to the nearest hospital emergency department. You must continue to apply pressure to keep the bleeding under control.

Leave the dressing over the insertion site in place until the day after the procedure. You will be given instructions about how to take the dressing off. You will be told when it's safe to take a shower.

You may notice a bruise or swelling under the skin at the insertion site. This is common after cardiac cath. The bruising or swelling generally disappears in 3 to 4 weeks. But if the insertion site becomes painful or warm to the touch, call your doctor.

Your doctor will give you instructions about when you can return to your normal activities. He or she also will tell you if you need to limit or change any activities.

You may need special medicines after the procedure. Sometimes, the drugs you were taking before the heart cath may need to be adjusted. Your doctor will talk with you about this. Be sure to follow his or her instructions.