Cardiac Catheterization

What is cardiac catheterization?

Cardiac catheterization (cardiac cath or heart cath) is a procedure to examine how well your heart is working. A thin, hollow tube called a catheter is inserted into a large blood vessel that leads to your heart. View an illustration of cardiac catheterization (link opens in new window).

Quick facts

- ***Cardiac cath is performed to find out if you have disease of the heart muscle,*** valves or coronary (heart) arteries.
- During the procedure, the pressure and blood flow in your heart can be measured.
- Coronary angiography (PDF) is done during cardiac catheterization. A contrast dye visible in X-rays is injected through the catheter. X-ray images show the dye as it flows through the heart arteries. This shows where arteries are blocked.
- The chances that problems will develop during cardiac cath are low.

Why do people have cardiac catheterization?

A cardiac cath provides information on how well your heart works, identifies problems and allows for procedures to open blocked arteries. For example, during cardiac cath your doctor may:

- Take X-rays using contrast dye injected through the catheter to look for narrowed or blocked coronary arteries. This is called coronary angiography or coronary arteriography.
- Perform a percutaneous coronary intervention (PCI) such as coronary angioplasty with stenting to open up narrowed or blocked segments of a coronary artery.
- Check the pressure in the four chambers of your heart.
- Take samples of blood to measure the oxygen content in the four chambers of your heart.
- Evaluate the ability of the pumping chambers to contract.
- Look for defects in the valves or chambers of your heart.
- Remove a small piece of heart tissue to examine under a microscope (biopsy).

"It was amazing to be able to watch the entire procedure on a TV screen. I learned a lot about my heart." Roberta, 41

What are the risks of cardiac catheterization?

Cardiac cath is usually very safe. A small number of people have minor problems. Some develop bruises where the catheter had been inserted (puncture site). The contrast dye that makes the arteries show up on X-rays causes some people to feel sick to their stomachs, get itchy or develop hives.

How do I prepare for cardiac catheterization?

- You will be given instructions about what to eat and drink during the 24 hours before the test.
- Usually, you will be asked not to eat or drink anything for six to eight hours before the cath procedure.

- Tell your doctor about any medicines (including over-the-counter, herbs and vitamins) you take. The doctor may ask you not to take them before your cath procedure. Don't stop taking your medicine until your doctor tells you to.
- Tell your doctor or nurse if you are allergic to anything, especially iodine, shellfish, latex or rubber products, medicines like penicillin, or X-ray dye.
- Arrange to have someone drive you home after your procedure.
- If you usually wear a hearing aid, wear it during your procedure. If you wear glasses, bring them to your appointment.

What happens during cardiac catheterization?

A doctor with special training performs the procedure with a team of nurses and technicians. The procedure is done in a hospital cardiac catheterization (cath) lab.

- Before the cath procedure, a nurse will put an IV (intravenous) line into a vein in your arm so you can get medicine (sedative) to help you relax, but you'll be awake and able to follow instructions during the procedure.
- The nurse will clean and shave the area where the doctor will be working. This is usually in the groin area.
- A local anesthetic is usually given to numb the needle puncture site.
- The doctor will make a needle puncture through your skin and into a large blood vessel. A small straw-sized tube (called a sheath) will be inserted into the vessel. The doctor will gently guide a catheter (a long, thin tube) into your vessel through the sheath. A video screen will show the position of the catheter as it is threaded through the major blood vessels and to the heart. You may feel some pressure in your groin, but you shouldn't feel any pain.
- Various instruments may be placed at the tip of the catheter. They include instruments to measure the pressure of blood in each heart chamber and in blood vessels connected to the heart, view the interior of blood vessels, take blood samples from different parts of the heart, or remove a tissue sample (biopsy) from inside the heart.
- When a catheter is used to inject a dye that can be seen on X-rays, the procedure is called angiography.
- When a catheter is used to clear a narrowed or blocked artery, the procedure is called angioplasty or a percutaneous coronary intervention (PCI).
- When a catheter is used to widen a narrowed heart valve opening, the procedure is called valvuloplasty.
- The doctor will remove the catheters and the sheath. Your nurse will put pressure on the site to prevent bleeding. Sometimes a special closure device is used. The procedure lasts about an hour.

What happens after cardiac catheterization?

You will go to a recovery room for a few hours. During this time, you have to lie flat.

- Pressure will be applied to the puncture site to stop the bleeding.
- You will be asked to keep your leg straight and will not be able to get out of bed.
- Your heartbeat and other vital signs (pulse and blood pressure) will be checked during your recovery.
- Report any swelling, pain or bleeding at the puncture site, or if you have chest pain.
- Before you leave the hospital, you will receive written instructions about what to do at home.

What happens after I get home?

Be sure to carefully follow all instructions. It is important to take your medications as directed by your healthcare provider and to make follow up appointments before leaving the hospital. Most people can return to their normal activities the day after the procedure depending on whether any additional interventions were done during the cardiac cath.

A small bruise at the puncture site is normal. If the site starts to bleed, lie flat and press firmly on top of it for a few minutes. Then, recheck to see if the bleeding has stopped.

Call your doctor if:

- Your leg with the puncture becomes numb or tingles, or your foot feels cold or turns blue.
- The area around the puncture site looks more bruised.
- The puncture site swells or fluids drain from it.

Call 112 if:

- The puncture site swells up very fast.
- Bleeding from the puncture site does not slow down when you press on it firmly.

How can I learn more about cardiac catheterization?

Talk with your doctor. Here are some good questions to ask:

- What will you learn from the procedure?
- When will I get my results?
- When can I resume my normal activities?
- What medicines will I need to take?
- Will I need another treatment?