Heart Catheterization

What is a heart catheterization?
It is a procedure that gives us details about your heart function and blood flow. It can help your doctor make a diagnosis and choose proper treatment. It is used to:

- Look for blockages in the arteries of your heart (called coronary artery disease).
- Check the pumping function of the heart.
- Check the structure and function of heart valves.
- Measure the pressures and oxygen level in the top and bottom chambers of the heart.

How Is It Done?
A thin flexible tube (catheter) is passed to your heart and arteries through an artery or vein in your groin or wrist. To see the heart's chambers and vessels on x-ray, dye is pushed through the tube into the heart. An x-ray films the heart and its vessels as they pump blood. These x-rays can be viewed right away.

NOTE: Be sure to tell your doctor or nurse if you are allergic to x-ray dye (contrast).

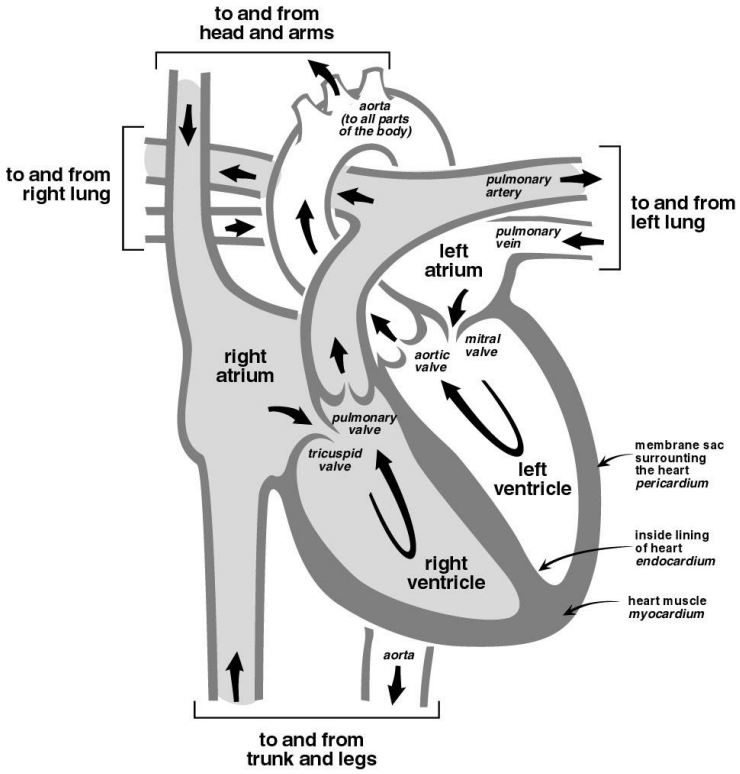
How Your Heart Works
Your heart is made up of strong muscle tissue. Your heart has four chambers, two on the right side (venous) and two on the left side (arterial). The upper chambers are called the right and left atrium. The lower chambers on each side are called left and right ventricles. All four chambers work together to pump the blood and send nutrients and oxygen to your body.

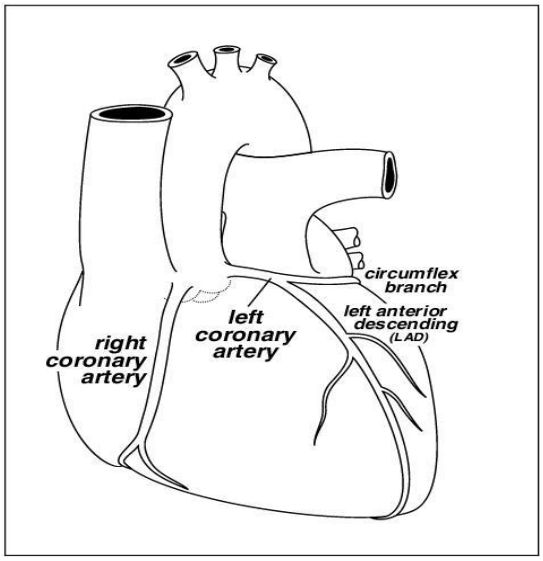
The main pumping chamber is the left ventricle. This chamber pumps blood with oxygen to all parts of your body. The right ventricle pumps blood to your lungs where it picks up fresh oxygen.

There are 4 valves in your heart. They are between the chambers and make your blood move in only one direction.

- Mitral valve is between the left atrium and the left ventricle.
- Tricuspid valve is between the right atrium and the right ventricle.
- Pulmonary valve is between the right ventricle and the pulmonary artery (goes to lungs).
- Aortic valve is between the left ventricle and the aorta (main artery in the body)

The Heart and How it Works





The coronary angiogram looks at each artery in your heart for blockages.

Before the Procedure
A nurse will call you a few days before to give you instructions and information.

Some medicine you receive during the procedure will make you sleepy. You will need someone to drive you home. You should not drive or make important decisions for 24 hours.

The Night Before
Do not eat or drink anything after midnight or earlier if so told. If your procedure is scheduled for late morning or later, you will be told if you can have a liquid breakfast. Bring a list of your medicines including inhalers, over the counter medicines and supplements.

If you use a CPAP or BiPAP machine, bring it with you. Bring the hoses and your mask.

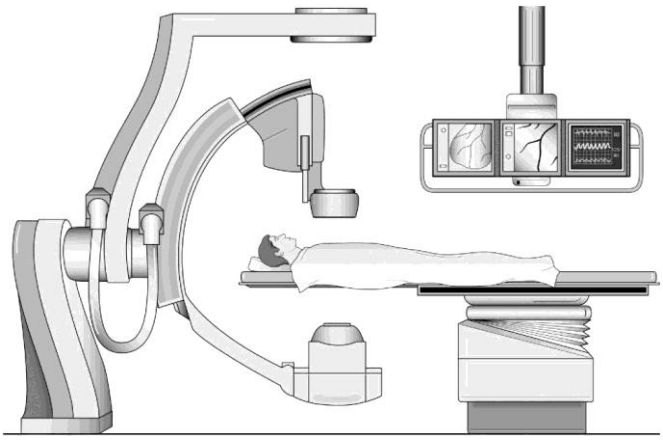
The Day of the Procedure
Take your medicine as instructed. You may have been asked not to take some medicines before the procedure.
Please arrive to the Procedure Center at the time you were instructed. Let us know if you do not want family or friends to be present when the nurse or doctor meets with you.

You will change into a gown (without snaps). You may want to wear anti-slip socks, the room is kept very cool. Remove watches, earrings, necklaces or medic alert bracelets. Glasses and hearing aids can be worn. Remove contact lenses. Bring your solution and case for storage.

Before Going to the Cath Lab
A doctor or nurse will explain the procedure, its purpose, benefits and risks. You will be asked to sign a consent form. Be sure to ask any questions before signing the form.
An IV (intravenous) line will be started. You will be asked to empty your bladder.

Staff will take you to the lab on a cart. Family members and friends will be told where they can wait.

In the Cath Lab
It will be cool in the lab. You will be helped onto the table. You will lie flat so that the x-ray machine can rotate around the upper part of your body. If you have back problems, tell the staff so that they can help you find a more comfortable position. Patches will be placed on your upper body. These patches are hooked to machines that show your heartbeat.



Procedure Site
Your groin or wrist will be used for the procedure. The area will be shaved and cleaned.

You will be covered from your chest to feet with a sterile sheet. Once the sheet is placed over you, keep your arms at your side. If you need to move your arms, ask the nurse to guide you.

The Procedure

1. Your doctor will inject a small amount of medicine into your wrist or groin. It will burn a little, it will quickly numb the area. This will prevent you from feeling pain at this site. Your leg or hand may feel numb as well. You will feel pressure, pulling, and tugging at the site where the tube is inserted.

2. You will be given medicine for pain and to make you sleepy. You will be sleepy but able to talk with your doctor and nurse.

3. After numbing the site, the doctor will insert a small needle and small tube (called a sheath) into the artery in your leg or wrist. A catheter is passed through the tube up to your heart. A left heart cath is when the doctor looks at each artery in the heart to see if they are blocked and/or measures pressure.

Breathing
During the cath, your doctor may ask you to take a deep breath, hold your breath, or breathe normally.

For deep breaths, breathe in slowly, as if sucking through a straw. No short, jerky breaths. Hold the breath until we tell you to breathe normally. A deep breath helps us see your heart better. When asked to breathe normally again, **gently** let your breath out so that the catheters remain in place.

After the Procedure
The doctor will remove the catheters and tubes. They will hold pressure on the site or use a device to stop any bleeding.. You will return to a room to recover. Your nurse will tell you when it is safe to get out of bed.

The nurse will keep you comfortable. They will check your vital signs and site for bleeding. You should tell your nurse if you have any pain in your body or at the site. Some patients are discharged the same day, and some stay overnight.

Any treatment for your heart depends on the type of heart problem that you have. If you have blockages in the arteries, treatment options may include:

- Medicine to help reduce symptoms of chest pain (angina).
- Bypass surgery to go around the blocked areas.
- Balloon (angioplasty) and stents. In angioplasty, a special catheter with a small balloon at the tip is passed into a narrow portion of the artery and inflated. This squeezes the blocked area against the walls of the artery. A wire coil or stent is put in place. The stent will remain in the artery. Within weeks, new tissue will grow and cover the stent.

If a stent is placed, you will start taking a medicine to block your platelets and prevent blood clots on your stent. These medicines include:

- clopidogrel (Plavix®)
- prasugrel (Effient®)
- ticagrelor (Brilinta®)

You will take this medicine for many months. You will also take one aspirin every

day. **Do not** stop your heart medicines without first talking with your heart doctor (cardiologist).

Blockage can develop within the stent over time. This blockage occurs slowly, and you may have a return of heart symptoms.

When to Call

Call your doctor right away if you have any of these heart symptoms:

- Chest, arm, neck jaw, back and belly pain
- Shortness of breath
- Nausea or vomiting
- Excessive sweating

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 6/2020 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#4381