



## FACULTY OF NURSING SCIENCES

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**CORONARY ANGIOGRAM**

# Definition

- Coronary angiograms are part of a general group of procedures known as heart (cardiac) catheterization.
- Heart catheterization procedures can both diagnose and treat heart and blood vessel conditions. A coronary angiogram, which can help diagnose heart conditions, is the most common type of heart catheterization procedure

- During a coronary angiogram, a type of dye that's visible by an X-ray machine is injected into the blood vessels of heart. The X-ray machine rapidly takes a series of images (angiograms), offering a detailed look at the inside of the blood vessels. If necessary, doctor can perform procedures such as an angioplasty during coronary angiogram.

# Indications

- Symptoms of coronary artery disease, such as chest pain (angina)
- Pain in chest, jaw, neck or arm that can't be explained by other tests
- New or increasing chest pain (unstable angina)
- A heart defect were born with (congenital heart disease)
- Heart failure
- Other blood vessel problems or a chest injury
- A heart valve problem that requires surgery

# complications

- ✓ Heart attack
- ✓ Stroke
- ✓ Injury to the catheterized artery
- ✓ Irregular heart rhythms (arrhythmias)
- ✓ Allergic reactions to the dye or medications used during the procedure
- ✓ A tear in heart or artery
- ✓ Kidney damage
- ✓ Excessive bleeding
- ✓ Infection
- ✓ Radiation exposure from the X-rays

## Patient preparations

- Angiograms are performed in the catheterization (cath) lab of a hospital. Usually go to the hospital the morning of the procedure.

General **guidelines include:**

- ❖ Don't eat or drink anything after midnight the day before angiogram.
- ❖ Angiograms are often scheduled during the morning hours.
- ❖ Take all medications to the hospital with in their original bottles.
- ❖ Ask doctor about whether or not to take usual morning medications.
- ❖ If patient have diabetes, ask doctor if should take insulin or other oral medications before angiogram.
- ❖ Before your angiogram procedure starts, your health care team will review your medical history, including allergies and medications you take. The team may perform a physical exam and check your vital signs — blood pressure and pulse. You empty your bladder and change into a hospital gown. You may have to remove contact lenses, eyeglasses, jewelry and hairpins.

## ➤ DURING THE PROCEDURE

- For the procedure, you lie on your back on an X-ray table. Because the table may be tilted during the procedure, safety straps may be fastened across your chest and legs. X-ray cameras may move over and around your head and chest to take pictures from many angles.
- An intravenous (IV) line is inserted into a vein in your arm. You may be given a sedative through the IV to help you relax, as well as other medications and fluids. You'll be awake during the procedure so that you can follow instructions. Throughout the procedure, you may be asked to take deep breaths, hold your breath, cough or place your arms in various positions.



- Electrodes on your chest monitor your heart throughout the procedure. A blood pressure cuff tracks your blood pressure and another device, a pulse oximeter, measures the amount of oxygen in your blood. You may receive medication (anticoagulants) to help prevent your blood from clotting on the catheter and in your coronary arteries.

✓ A small amount of hair may be shaved from your groin or arm where the catheter is to be inserted. The area is washed and disinfected and then numbed with an injection of local anesthetic. A small incision is made at the entry site, and a short plastic tube (sheath) is inserted into your artery. The catheter is inserted through the sheath into your blood vessel and carefully threaded to your heart or coronary arteries.

✓ Threading the catheter shouldn't cause pain, and you shouldn't feel it moving through your body. Tell your health

- ❑ Dye (contrast material) is injected through the catheter. When this happens, you may have a brief sensation of flushing or warmth. But again, tell your health care team if you feel pain or discomfort.
  
- ❑ The dye is easy to see on X-ray images, and as it moves through your blood vessels, your doctor can observe its flow and identify any blockages or constricted areas. Depending on what your doctor discovers during your angiogram, you may have additional catheter procedures at the same time, such as a balloon angioplasty or a stent placement to open up a narrowed artery.
  
- ❑ Having an angiogram takes about one hour, although it may be longer, especially if combined with other heart catheter procedures. Preparation and post-procedure care can add more time.

- After the procedure
- When the angiogram is over, the catheter is removed from your arm or groin and the incision is closed with manual pressure, a clamp or a small plug.
- You'll be taken to a recovery area for observation and monitoring. When your condition is stable, you return to your own room, where you're monitored regularly. You'll need to lie flat for several hours to avoid bleeding. During this time, pressure may be applied to the incision to prevent bleeding and promote healing.

- You may be able to go home the same day, or you may have to remain in the hospital for a day or longer. Drink plenty of fluids to help flush the dye from your body. If you're feeling up to it, have something to eat. Ask your health care team when you should resume taking your medications, bathe or shower, return to work, and resume other normal activities. Avoid strenuous activities and heavy lifting for several days. Your puncture site is likely to remain tender for a while. It may be slightly bruised and have a small bump.

- Call your doctor's office if:
- You notice bleeding, new bruising or swelling at the catheter site
- You develop increasing pain or discomfort at the catheter site
- You have signs of infection, such as redness, drainage or fever
- There's a change in temperature or color of the leg or arm that was used for the procedure
- You feel faint or weak
- You develop chest pain or shortness of breath
- If the catheter site is actively bleeding or begins swelling, apply pressure to the site and contact emergency medical services.

## results

- An angiogram can show doctors what's wrong with your blood vessels. It can:
- Show how many of your coronary arteries are blocked or narrowed by fatty plaques (atherosclerosis)
- Pinpoint where blockages are located in your blood vessels
- Show how much blood flow is blocked through your blood vessels
- Check the results of previous coronary bypass surgery
- Check the blood flow through your heart and blood vessels

□ Knowing this information can help your doctor determine what treatment is best for you and how much danger your heart condition poses to your health. Based on your results, your doctor may decide, for instance, that you would benefit from having coronary angioplasty to help unblock clogged arteries. It's also possible that angioplasty or stenting could be done during your angiogram to avoid needing another procedure.