Coronary Angiogram, Angioplasty and Stent Placement

A Patient’s Guide
What is coronary artery disease?

*Coronary artery disease* means that you have a narrowed or blocked artery. It is caused by the buildup of *plaque* (fatty material) inside the artery over many years. This buildup can stop blood from getting to the heart, causing a heart attack (the death of heart muscle cells). The heart can then lose some of its ability to pump blood through the body.

Coronary artery disease is the most common type of heart disease. It is also the leading cause of death for both men and women in the United States. For this reason, it is important to treat a blocked artery.

What is a coronary angiogram?

A *coronary angiogram* (AN-je-o-gram) is a test that uses contrast dye and X-rays to look at the blood vessels of the heart.

You may be having this test to get ready for surgery or because you have signs of narrowed or blocked coronary artery. The coronary arteries carry blood and oxygen to the heart.

What is angioplasty and a stent?

If your doctor finds a blocked artery during your angiogram, you may need an *angioplasty* (AN-je-o-plas-tee). This is a procedure that uses a small inflated balloon to open a blocked artery. It *can be done during your angiogram test.*

Your doctor may also place a *stent* at this time. A stent is a small mesh tube that is placed into an artery to help keep it open. Some stents are coated with medicine, some are not. Your doctor will choose the stent that is right for you.
What are the risks?

- Inserting and moving the catheter through the artery may cause:
  - Bleeding or bruising
  - Blood clots
  - Injury to the artery or vein
  - A small risk of stroke
  - A very small chance of a heart attack or a need for bypass surgery

- Contrast dye and other medicines may cause:
  - A drop in blood pressure or irregular heart rhythms (your doctor may ask you to cough during your test or treatment to prevent these problems)
  - Existing kidney disease to worsen (in very rare cases, it can cause kidney failure)
  - Hives, rash, nausea or more severe reactions. If you know you are allergic to contrast dye, tell your doctor or nurse. You may be able to take medicine to reduce the side effects.

The risk of death is very low, but it is higher for people with severe heart disease. Ask your doctor about your specific risks.

How do I get ready?

- We want you to be safe and to feel at ease. About 1 to 2 days before your procedure, we will send you instructions how to prepare. Or, we may call you.

- Plan to have a responsible adult drive you to and from the hospital and to stay with you for 24 hours afterward.

What will happen the day of my test?

When you arrive

- You will sign some papers, meet with a nurse, then change into a gown.

- If you have diabetes, we will check your blood sugar before we start.

- We will take your blood pressure.

- We will insert an IV into a vein in your hand or arm. This is a thin, soft tube that we use to give you fluid and medicine during your procedure.

- We may test your blood and do an electrocardiogram (ECG) to check your heart.

- We will choose a site in the groin (area between the leg and torso) or in the arm.

- We will clip any hair at the site and wash the area. Then we’ll cover the site with a sterile (clean) sheet.

- We will give you medicine to help you relax. Please tell the nurse if you need more medicine.

- We will inject a numbing medicine at the site. You may feel some burning.

Words you may hear

angiogram (AN-jee-o-gram): a test to find out if your arteries are blocked

angioplasty (AN-jee-o-plas-tee): a small balloon used to open a narrowed artery
catheter: thin, plastic tube

coronary arteries: major blood vessels that carry blood and oxygen to the heart
coronary artery disease: narrowing of the major arteries to the heart due to a build up of fatty material.

plaque: fatty material

stent: small mesh tube that holds an artery open
**During your procedure**

Your doctor will:

- Insert a sheath (narrow tube) into a blood vessel in your groin, wrist or arm.
- Guide the sheath through the blood vessel and up toward your heart. You will not feel this because there are no nerve endings inside the blood vessels.
- Insert a catheter (thinner tube) through the sheath and into the coronary artery.
- Inject contrast dye into a blood vessel.
- Look at your arteries on an X-ray screen.
- Do an angioplasty and place a stent, if needed.

- **If you need an angioplasty to open a blocked artery:** The catheter that was threaded through the sheath will have a small balloon on the end. The doctor will place the balloon at the narrow part of the artery and inflate it. The balloon will help open the artery for better blood flow.

- **If you need a stent to keep your artery open:** The balloon will be used to open the stent. The stent will press into the artery wall, holding the artery open. The balloon is then deflated and removed. The stent will remain in place to hold the artery open. Over the next few weeks, your body will begin to form a natural covering over the stent. This will hold the stent in place and help prevent a clot from forming.

- You may feel a dull pressure or chest discomfort during your procedure. Tell your doctor if you feel any pain. We can give you more numbing medicine if needed.

- Remove the catheter and sheath.

**In the recovery room**

We will take you to a recovery room or back to your hospital room.

- **If you had an angiogram only:** You will most likely go home after your bed rest.

- **If you had an angiogram and angioplasty (with or without a stent):** You may need to lie flat in bed for up to 6 hours. You may go home the next morning or, sometimes, the same day. If there are problems or if we learn that you had a heart attack before you arrived, you will stay in the hospital for 1 or 2 more days.

- Do **not** bend the leg or arm where the sheath was inserted.

- **For the first 3 hours:** Try to drink 8 ounces of fluid each hour. This will help your kidneys flush out the contrast dye.

- We will check on you often, take your blood pressure, check the pulse in your foot or wrist and inspect the site where the sheath was inserted. Tell us if you feel any pressure in your chest, shortness of breath or back pain.

- We will give you pain medicine, if needed.

- You may have a tube in your bladder (urinary catheter). If not, your doctor will decide if you should use the bedpan or get up to use the toilet.

Before you go home, a nurse will answer your questions and tell you when to plan follow-up visits with your doctor.

**How should I care for myself at home?**

- Have a responsible adult stay with you the first 24 hours.

- Relax and take it easy.

- Drink plenty of fluids.
• Eat your normal diet, unless your doctor tells you otherwise.

• **Don’t** drink alcohol or smoke.

• **Don’t** drive or operate any machinery for 24 hours.

• **Don’t** make important legal decisions.

**Care of groin site**

• It is normal to have a small bruise or lump at the puncture site.

• Remove the bandage after 24 hours.
  - If you have minor oozing or the bandage is wet, it is okay to take the bandage off early and apply a new one. Remove the new bandage after 12 hours.

• **No tub baths**, hot tubs or swimming pools for at least 3 days.

• You may shower.
  - **Don’t** scrub the puncture site(s).
  - **Don’t** use lotion or powder near the puncture site for 3 days.

• For the first 2 days:
  - When you cough, sneeze or move your bowels, hold your hand over the puncture site and press gently.
  - **Don’t** stoop or squat.
  - **Don’t** exercise heavily or have sex (intercourse).

• **Don’t** lift more than 10 pounds for at least 3 days.

• If your groin starts to bleed or begins to swell suddenly after leaving the hospital: Lie flat. Apply firm pressure just above the puncture site for 15 minutes. If bleeding continues, **call 911**.

**Care of wrist or arm site**

• It is normal to have soreness at the puncture site and mild tingling in your hand for up to 3 days.

• Remove the bandage after 24 hours.
  - If you have minor oozing or the bandage is wet, it is okay to take the bandage off early and apply a new one. (Remove the new bandage after 12 hours.)

• **Don’t** soak your wrist with the puncture site in water for 3 days to prevent infection. (This includes **not** washing dishes, taking a tub bath or using a swimming pool or hot tub.)

• You may shower the **day after** your procedure.
  - **Don’t** scrub the puncture site.
  - **Don’t** use lotion or powder near the puncture site for 3 days.

• For 2 days:
  - **Don’t** use your hand or arm to support your weight, such as when rising from a chair.
  - **Don’t** bend your wrist (lifting a garage door, for example).
  - **Don’t** lift more than 5 pounds.
  - **Don’t** exercise your arm (tennis, golf or bowling) for 2 days

• If you start bleeding from the site in your arm: Sit down. Apply firm pressure for 10 minutes. Your thumb should be against the puncture site and fingers against back of wrist (or arm).
  - If the bleeding stops, continue to rest. Keep your arm still for 2 hours. Notify your doctor as soon as possible.
  - If bleeding does **not** stop after 10 minutes or if there is a large amount of bleeding or spurting, **call 911 right away**. Don't drive yourself to the hospital.
Medicines

- If you had angioplasty or a stent placed:
  - You will be started on aspirin.
  - You will be started on an anti-platelet medication such as clopidogrel (Plavix), ticagrelor (Brilinta) or prasugrel (Effient). Most patients need to take this medicine for at least one year. Don't stop taking it until you talk to your heart doctor (cardiologist).
  - No dental work for 6 weeks after having a stent.

- If you are on metformin (Glucophage), don't restart the metformin until you have had blood tests (within 2 to 3 days after discharge). When your doctor tells you it is safe, you may restart your metformin.

- If you have stopped any other medicines, check with your nurse or provider about when to restart them.

Follow-up visits

You will need to see a cardiology nurse practitioner or physician assistant 1 to 2 weeks after your test. They will check your procedure site and review any new medicines.

When to call for help

Call 911 right away if you have bleeding that is heavy or does not stop.

Call your heart clinic if you have:

- A large or growing hard lump at the site.
- Red, swollen, hot or tender site.
- Blood or fluid draining from the site.
- Chills or a fever greater than 101°F (38°C).
- Leg or arm that feels numb or cool.
- Hives, a rash or unusual itching.

M Health Heart Care Clinics
Minneapolis: 612-365-5000 (7 days a week)
St. Paul: 651-326-4327