

# Coronary Angiogram, Angioplasty and Stent Placement

## *A Patient's Guide*

You are having a procedure with University of Minnesota Heart Care.  
It is scheduled at:

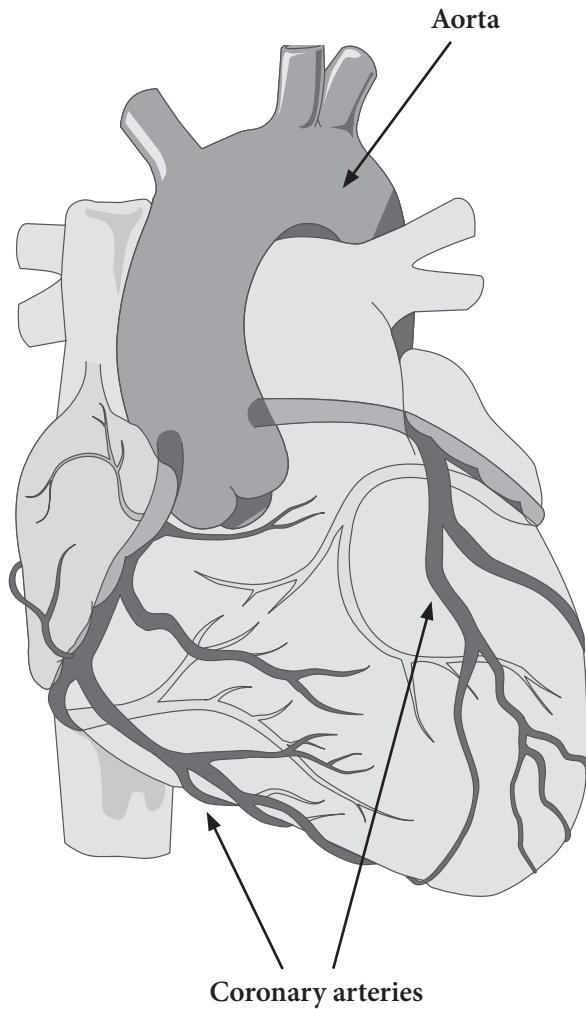
- University of Minnesota Medical Center**  
500 Harvard St.  
Minneapolis, MN 55455  
on \_\_\_\_ / \_\_\_\_ / \_\_\_\_ (date) at \_\_\_\_\_ (time).  
Go to the Gold Waiting Room in the main lobby.  
Check in at the main desk.
  
- Fairview Southdale Hospital**  
6401 France Ave. S.  
Edina, MN 55435  
on \_\_\_\_ / \_\_\_\_ / \_\_\_\_ (date) at \_\_\_\_\_ (time).  
Check in at the main desk in the Skyway Lobby.
  
- Fairview Ridges Hospital**  
201 E. Nicollet Blvd.  
Burnsville, MN 55337  
on \_\_\_\_ / \_\_\_\_ / \_\_\_\_ (date) at \_\_\_\_\_ (time).  
Check in at the main desk in the lobby.

**University of Minnesota Heart Care: 612-635-5000**

## What is coronary artery disease?

Coronary artery disease is a disease of the blood vessels of the heart. Two major blood vessels (called coronary arteries) carry blood and oxygen to the heart. Over many years, plaque (fatty material) may build up in the arteries.

If plaque or a clot blocks or stops the blood flow to the heart, it can cause a heart attack (the death of heart muscle cells). When heart muscle cells die, the heart loses some of its ability to pump blood through the body.



## What is a coronary angiogram?

An angiogram is a test to find out if you have artery disease. Contrast dye is injected into the arteries through a catheter (thin, plastic tube). This allows the doctor to see on an X-ray screen where an artery is narrowed or blocked.

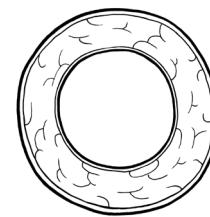
You may be having this test to get ready for surgery or because you have signs of a blocked artery.

## What is an angioplasty?

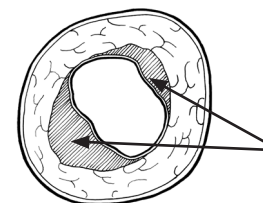
Angioplasty is done during an angiogram. It uses a small balloon to open narrowed arteries.

## What is a stent?

A stent is a small mesh tube that holds the wall of an artery open. It is placed during an angioplasty. Your doctor will decide if a stent is right for you.



Normal artery



Narrowed artery

## How do I prepare for my test or treatment?

We want you to be safe and to feel at ease.

**If you are a patient in the hospital**, please follow the instructions that your nurse gives you.

**If you are an outpatient (coming from home)**, please follow the instructions below.

Your nurse or doctor will check off the steps you must follow below. He or she may give you other instructions not on this list.

### **Arrange your ride home**

You may feel dizzy or forgetful for the first 24 hours after your test or treatment. For this reason, you must:

- Arrange for someone to drive you to and from the hospital.
- Plan for someone to stay with you the night after your test or treatment.

### **When to stop eating and drinking**

To make your test or treatment as safe as possible:

- You should not drink alcohol for **24 hours** before your test.
- 8 hours** before your test, stop all food, milk and chewing tobacco.
- Keep drinking clear liquids until **2 hours** before your test. Clear liquids include water, clear juice, black coffee or clear tea without milk, gatorade, clear soda.

## **Your medicines**

- Take aspirin each day.** Aspirin can prevent a blood clot. Start \_\_\_\_\_ (dose) aspirin on \_\_\_\_ / \_\_\_\_ / \_\_\_\_\_. Take one a day, even on the morning of your procedure.

- You need to stop these medicines:**

Stop taking \_\_\_\_\_  
on \_\_\_\_ / \_\_\_\_ / \_\_\_\_\_.

Stop taking \_\_\_\_\_  
on \_\_\_\_ / \_\_\_\_ / \_\_\_\_\_.

Stop taking \_\_\_\_\_  
on \_\_\_\_ / \_\_\_\_ / \_\_\_\_\_.

- You need to start taking these medicines:**

Start taking \_\_\_\_\_ on  
\_\_\_\_ / \_\_\_\_ / \_\_\_\_\_.

Take \_\_\_\_\_ (dose) \_\_\_\_\_ times per day.

Start taking \_\_\_\_\_ on  
\_\_\_\_ / \_\_\_\_ / \_\_\_\_\_.

Take \_\_\_\_\_ (dose) \_\_\_\_\_ times per day.

Start taking \_\_\_\_\_ on  
\_\_\_\_ / \_\_\_\_ / \_\_\_\_\_.

Take \_\_\_\_\_ (dose) \_\_\_\_\_ times per day.

- If you have diabetes and take insulin:** Call your diabetes care team. Ask if you should take ½ a dose the morning of your test.

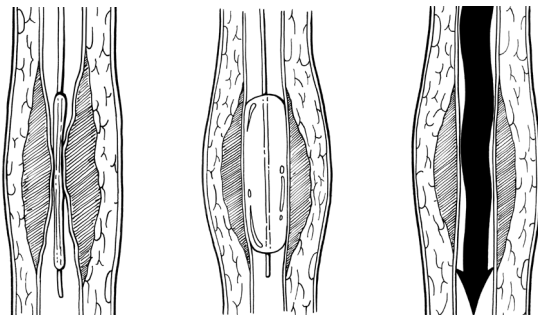
## What happens during the test or treatment?

After you arrive, you will sign some papers and then meet with a nurse.

You will change into a gown. The nurses will take your blood pressure, start an IV (intravenous line) and, if you have diabetes, check your blood sugar. You may also have a blood test and an electrocardiogram (ECG).

### *During the angiogram*

- We will choose the site where we will insert a sheath (narrow tube). This will be in the groin (area between the leg and torso) or in the arm.
- We will clip any hair at the site. We will then wash the site and cover it with a 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.
- You will feel a dull pressure as we insert the sheath. Tell your doctor if you feel pain. We can give you more numbing medicine if you need it.
- A catheter (thin tube) is inserted through the sheath and guided up to an artery in your heart.
- You will not feel the thin tube moving through your blood vessels. This is because there are no nerve endings inside the blood vessels.



**Angioplasty:** The balloon helps open the artery so the blood can flow more easily.

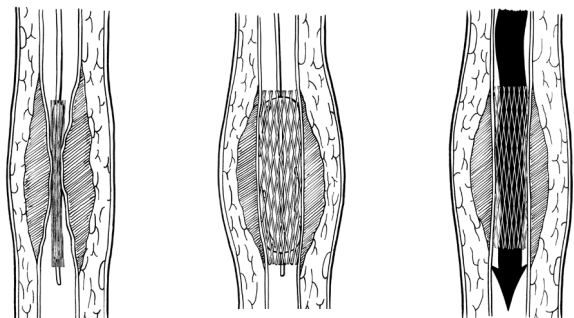
### *If you have an angioplasty*

- This is done during your angiogram. The catheter will have a small balloon on the end.
- The balloon is placed at the narrow part of the artery and inflated.
- The balloon helps open the artery for better blood flow. You may feel some chest discomfort or pressure.

### *If you have a stent*

- The catheter will have a small balloon with a stent on the end. Some stents are “coated” with medicine, some are not. Your doctor will choose the stent that is right for you.
- The balloon is placed at the site of the blockage.
- When the balloon is inflated, it opens the stent, pressing it into the wall of the artery.
- The balloon is then deflated and removed. The stent remains in place and holds 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 will need to take a special medicine (Plavix or Effient) until the covering has formed. Your doctor will tell you how long to take this medicine.



**Stent placement:** The balloon inflates the stent into the artery wall. After the balloon is removed, the stent helps to hold the artery wall open.

## What happens after the procedure?

After your test or treatment, we will take you to a recovery room or back to your room.

- You may need to lie flat in bed for up to four hours (after an angiogram) or up to eight hours (after an angioplasty or stent). Do not bend the leg or arm where the sheath was inserted.
- The nurse will check on you often. He or she will:
  - check your blood pressure.
  - check the site where the sheath was inserted.
  - take the pulse in your foot or wrist.
- Be sure to tell your nurse if you feel any pressure in your chest or shortness of breath.
- You will receive pain medicine, if needed. Tell your doctor or nurse if you have back pain.
- You will drink plenty of fluids. For the first three hours, try to drink 8 ounces of fluid each hour. This will help your kidneys flush out the contrast dye.
- 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.

## What are the risks of these procedures?

The level of risk depends on the health of the patient. You should ask your doctor about your specific risks.

The risk of death is very low, but it is higher for people with severe heart disease.

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).
- worsen existing kidney disease (in very rare cases, it can cause kidney failure).
- cause 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.

## When will I go home?

**If you had an angiogram:** You will most likely go home after your bed rest. Plan to have a friend or family member drive you home. You will not be able to drive due to the effects of the pain medicine.

**If you had an angioplasty or stent:** 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 two or three more days.

Before you go home:

- A nurse will answer your questions.
- We will tell you when to plan follow-up visits with your doctor.
- You will have the phone number of your doctor or nurse in case you have questions.

## How should I care for myself at home?

### ***After you go home:***

- Have an adult stay with you for 24 hours.
- Drink plenty of fluids.
- You may eat your normal diet, unless your doctor tells you otherwise.
- For 24 hours:
  - Relax and take it easy.
  - **Do NOT** smoke.
  - **Do NOT** make any important or legal decisions.
  - **Do NOT** drive or operate machines at home or at work.
  - **Do NOT** drink alcohol.
- Remove the Band-Aid after 24 hours. If there is minor oozing, apply another Band-aid and remove it after 12 hours.

- For 2 days, **do not** have sex or do any heavy exercise
- **Do not** take a bath, or use a hot tub or pool for at least 3 days. You may shower.

### ***Care of groin site***

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

- **Do not** scrub the site.
- For the first 2 days: **Do not** stoop or squat. When you cough, sneeze or move your bowels, hold your hand over the puncture site and press gently.
- **Do not** lift more than 10 pounds for at least 3 to 5 days.
- **Do not** use lotion or powder near the puncture site for 3 days.

**If you start bleeding from the site in your groin,** lie down flat and press firmly on the site. Call your doctor as soon as you can.

### ***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.

- For 2 days, **do not** use your hand or arm to support your weight (such as rising from a chair) or bend your wrist (such as lifting a garage door).
- For 2 days, **do not** lift more than 5 pounds or exercise your arm (tennis, golf or bowling).

### **If you start bleeding from the site in your arm:**

- Sit down and press firmly on the site with your fingers for 10 minutes. Call your doctor as soon as you can.
- If the bleeding stops, sit still and keep your wrist straight for 2 hours.

## Medicines

- If you have started taking Plavix or Effient, **do not stop taking it** until you talk to your heart doctor (cardiologist).
- If you are on metformin (Glucophage), **do not restart it** 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

You should see your family doctor one week after your test or treatment. He or she will check your site and review any new medicines.

You may also need to see your heart doctor. If so, we will schedule this before you leave the hospital.

## What can I do to reduce my risk from artery disease?

There are a number of things you can do.

### Stop smoking

Smokers are twice as likely to have a heart attack than non-smokers.

Smoking:

- reduces oxygen to the heart muscle.
- may cause heart-rhythm problems.
- harms the artery walls.
- reduces “good” cholesterol (HDL).
- increases heart rate and blood pressure.

When you stop smoking, the benefits begin right away. If you need help stopping, ask your doctor or nurse.

## When to call for help

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

**Call your doctor 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).
- A leg or arm that feels numb or cool.
- Hives, a rash or unusual itching.

**University of Minnesota Heart Care:**  
612-635-5000 (7 days a week)

## Lower your cholesterol

Most of the plaque in arteries is made from cholesterol. If you lower your cholesterol, you will reduce your risk of heart attack.

- Take your cholesterol medicine regularly.
- Eat low-fat protein such as cooked dried beans and peas, fish, poultry and lean red meats.
- Eat low-fat dairy foods (milk, cheese and yogurt).
- Eat a lot of fruits and vegetables.
- Avoid organ meats, fatty red meats, baked goods and whole-milk dairy foods.
- Avoid foods with high levels of saturated fats or trans fats. Be sure to read package labels.

### ***Increase your activity level***

An overweight person who gets regular exercise has less risk of heart disease than a thin, inactive person.

The American Heart Association advises exercise (getting and keeping your heart rate up) for at least 30 minutes, five times a week.

### ***Lose weight if you need to***

If you are very overweight, you have a higher risk for heart disease. Reducing your weight will:

- lower your cholesterol
- lower your triglycerides
- raise your “good” cholesterol (HDL)
- help control or get rid of high blood pressure
- help control or prevent diabetes
- reduce the risk of heart attack and stroke.

If you would like to meet with a dietitian, your nurse or doctor can refer you.

### ***Control your blood sugar if you have diabetes***

People with diabetes who control their blood sugar (keep their A1c level below 7.0 percent) can decrease the risk of heart disease, stroke, high cholesterol and high triglycerides.

### ***Treat high blood pressure***

High blood pressure increases the risk of heart failure, stroke and kidney disease. It also makes the blood vessel walls harden and form scars, which causes the heart to work harder.

Track your blood pressure at home and bring a list of your readings to the clinic. If you take blood pressure medicine, be sure to take it on time each day, even if you feel fine.

### ***Reduce stress***

Long periods of stress can be a factor in high blood pressure, high cholesterol and heart disease.

Plan time to relax. Learn methods for relaxing. Set goals to relieve your stress, and then meet them one at a time. Ask for help from your family doctor, if you need to.