



Carolina Cardiology Consultants

Understanding Catheterization, Angioplasty and Stents

The arteries that supply your heart with blood are called coronary arteries. Coronary artery disease occurs when these arteries become narrowed because of the buildup of fatty deposits called plaque. If the coronary arteries narrow enough, blood flow to a part of the heart is reduced. When your heart does not get all the blood it needs, a heart attack can occur.

Cardiac catheterization is a test that shows if there are problems within your heart or if any of the arteries that supply your heart with blood are blocked.

Coronary angioplasty is a non-surgical procedure that helps open one or more coronary arteries that are blocked with plaque. A stent is a flexible mesh device that is placed in a blocked artery to help keep it open.

Before the Procedure

Before the procedure, an EKG and blood tests will be done. You will be asked not to eat or drink anything after midnight (or for at least eight hours before the procedure).

Tell your doctor if you have ever had an allergic reaction to iodine (found in shellfish or certain dyes used in medical tests). Also tell your doctor if you are taking aspirin or blood thinners or if you are pregnant.

During the Procedure

The catheter insertion area will be cleaned and numbed. You will be awake during the procedure, but medications may be given through an IV to help you relax. Angioplasty and stenting procedures are performed in a special area called a cardiac catheterization lab. In this area, you will see monitors, which look like TV screens. These monitors let your doctor see your arteries as the procedure is done. ECG pads will be placed on your body to monitor your heart.

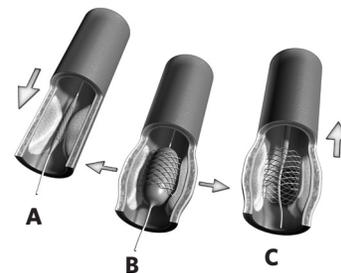
A tube called an introducer sheath is inserted into an artery in your groin, arm or wrist. A thin, flexible tube called a catheter is inserted through the sheath and advanced to the heart.

A special dye (which is visible by X-ray) is injected through the catheter. Cardiac catheterization can show how well the heart is pumping, if any of the coronary arteries are blocked, if the heart valves are working properly, if you were born with a

heart defect or if the heart has been damaged by disease. A peripheral angiogram is a similar procedure to evaluate the "peripheral" artery or arterial outside the heart.

If a significant blockage is found, it often will be fixed with a stent during the same procedure. Sometimes, bypass surgery is better than stents to treat certain blockages. This procedure typically is done on a different day from your catheterization.

During an angioplasty, a balloon-tipped catheter is placed in the artery. The balloon is inflated and deflated to compress the plaque against the artery wall. You may feel some chest discomfort when the balloon is inflated. Tell your doctor if you do. This discomfort often goes away when the balloon is deflated.



- A.** Blocked coronary artery, a catheter advanced
- B.** Balloon inflated opens to artery
- C.** Balloon catheter is removed, stent remains in place to keep blocked artery open

If a stent is needed to help keep the artery open, it will be inserted with another balloon catheter. The balloon is inflated, causing the stent to expand. The stent stays in place, but the catheters are removed when your artery has been opened enough to improve blood flow.

Scar tissue may form in the artery after angioplasty or stenting is performed. The formation of scar tissue may cause some narrowing in the artery. In some cases, a medicine-coated stent may be used to keep the artery open. The special stent releases medicine that helps reduce the amount of scar tissue that forms in the artery.

After the Procedure

You will stay connected to the heart monitor for a while. Your pulse and blood pressure will be checked. You will be given fluids through an IV. The catheter and sheath may be removed at the same time, or the sheath may stay in place for a while.

Groin (leg) insertion site: If the catheter and sheath are removed at the same time, the insertion site may be sealed with stitches or a plug. If the sheath is left in place for a while, you must lie flat (keeping your leg straight) for a few hours. When the sheath is removed, pressure will be used to seal the area. A bandage will be applied.

Arm or wrist insertion site: The catheter and sheath will be removed at the same time. A bandage will be placed over the insertion site, and you will need to avoid moving your arm for a short time.

Your doctor or nurse will tell you when you can get up and move about. You may be asked to drink extra fluids to help flush out the dye that was injected into your artery. Tell your doctor or nurse if you have ...

- Chest pain or discomfort in your neck, jaw, arms or upper back
- Shortness of breath
- Weakness or dizziness
- Discomfort or bleeding at the insertion site

Before you go home, the amount of improvement in blood flow will be discussed with you. Most people can return to their usual activities within a few days. Ask your doctor when you can participate in sports, exercise and other activities. Do not lift more than 10 pounds or participate in strenuous activities for the first few days after the procedure.

Medication

It is very important to start medication the day after discharge. If a stent was placed in your artery, you will need to take an antiplatelet medication for a while to prevent blood clots from forming on your stent. Check with your doctor before you take any other prescription or non-prescription medications. Tell any healthcare professional you see that you are taking an antiplatelet medication. Do not stop your antiplatelet medication for any reason without talking to your cardiologist.

Incision Care

You will have a small incision where the catheter was inserted. This area may look bruised or slightly swollen. There may be a small, soft-to-firm lump under the skin. These effects are normal and will heal in a few days.

Call your doctor if you have any of these symptoms in the incision area:

- A large amount of bruising or swelling
- Severe pain, coldness or bluish skin
- Bright red bleeding
- Warmth, redness or tenderness
- A temperature of 101.5° F or more

Follow Up With Your Doctor

In the following months, your doctor may do some tests to check for signs of narrowing in your artery. The procedure(s) you have had help improve blood flow, but it is possible for a newly opened artery to close shortly after the procedure. If this does occur, it usually happens within six months. If the artery narrows again, your doctor may suggest another type of procedure or bypass surgery.

Angina may be a sign that your newly opened artery is closing or another artery is blocked. Tell your doctor if you have any of the symptoms you had before the procedure.

Treated But Not Cured

In the weeks to come you are likely to have more energy and fewer symptoms, but you still have coronary artery disease. You may be able to keep it from getting worse by making some lifestyle changes. Health habits that put you at risk for heart problems are called risk factors. You can reduce your risk factors by ...

- Giving up tobacco
- Controlling high blood pressure (with a low-sodium diet, exercise and medication—if prescribed)
- Controlling abnormal blood lipids (with a low-fat diet, exercise and medication—if prescribed)
- Exercising regularly (four to six times a week)
- Maintaining a healthy weight
- Learning to manage stress
- Controlling diabetes (keeping your blood sugar within the recommended range)

Being committed to making healthy lifestyle changes is your best defense against coronary artery disease.

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A practice of Partners in Health, Inc. and affiliated with Greenville Health System

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