

## CARDIAC CATHETERIZATION (ANGIOGRAM)

### **Procedure:**

**Why Is Catheterization Important?** Cardiac catheterization provides more accurate and detailed information about how well your heart is working than other diagnostic tests. It helps doctors diagnose your problem accurately, and it lets them choose the best treatment for you.

**What Is Cardiac Catheterization?** During cardiac catheterization, doctors insert a long, thin, flexible tube, called a **catheter**, into the body. The catheter is inserted into a blood vessel and is guided toward the heart. The procedure allows doctors to study how well your heart pumps blood and to examine the coronary arteries (the vessels that supply blood to the heart muscle) and the heart valves. Other terms used to describe cardiac catheterization include coronary angiography, angiogram, cardiac cath, and heart cath. **Why Perform Cardiac Catheterization?** This test provides the most accurate and detailed information about how your heart is working. In general, cardiac catheterization is done for one or more of the following reasons:

- to evaluate or confirm coronary heart disease (for example, in patients with chest pain and/or an abnormal stress test)
- to determine whether treatment (with balloon angioplasty or bypass surgery) can help a patient diagnosed with coronary heart disease
- to see how well blood flows through the coronary arteries after angioplasty or bypass surgery
- after a heart attack, to find out how severely the coronary arteries are narrowed or blocked
- to evaluate the cause of heart failure
- to determine if there is significant heart valve disease that might require surgery
- to determine whether there is a congenital heart defect and evaluate how severe it is

### **Preparing For Catheterization:**

Unless you are already in the hospital, you will most likely be asked to arrive in the morning on the day of your catheterization. You may have several routine tests, such as an ECG, x-rays, and blood tests. (These tests may be done a few days before the procedure.) The doctor will review your medical history and examine you. (You may see the doctor at the office several days before the procedure.) The doctor or nurse will talk with you about the procedure and its purpose, benefits, and risks. This is a good time to ask questions and, most important, to share any concerns you may have. You will then be asked to sign a consent form. A nurse will shave and cleanse the area where the catheters will be inserted. This is usually at the groin (the fold between the thigh and abdomen). In some cases it may be at the wrist or arm. Shaving and cleansing make it easier to insert the catheters and help to prevent infection. An intravenous (IV) line will be inserted into a vein in your arm. This line allows drugs to be injected directly into the vein, if they are needed. To help you relax, you will be given a sedative. If you wear dentures, hearing aids, or glasses, you will most likely be allowed to keep them on.

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### **Before Your Catheterization:**

Generally, **you'll be asked not to eat or drink anything** for 6 to 8 hours before the procedure. This helps prevent nausea. You may have small sips of water to take your medications. Check with your doctor several days before the procedure. **You may be asked to stop some medications** (such as aspirin or anticoagulants) for a few days before your catheterization. **Make arrangements** with a friend or family member to drive you to and from the hospital. You will not be permitted to drive home after the procedure, since you may be sedated. **Pack a small bag** in case your doctor decides to keep you in the hospital overnight. You may want to include a robe, slippers, pajamas or nightgown, and toiletries. **Bring a list of the names and dosages of all the medications** you are taking. **Tell the doctor or nurse** if you have had any allergic reactions to medications or x-ray dye (contrast), iodine or seafood, or if you have a history of bleeding problems. For your comfort, **empty your bladder** as much as possible before the procedure begins. There will also be a bedpan or a urinal, should you need it during the procedure.

### **During Cardiac Catheterization:**

Cardiac catheterization is performed in a specially equipped x-ray room called a cardiac catheterization laboratory, or simply, **cath lab**. You will be helped onto an x-ray table. The table has a large x-ray camera above it and television screens close by. There also are heart monitors and other instruments. The cath lab team generally includes a cardiologist, an assistant, nurses, and technologists. Once you are positioned on the x-ray table, you will be connected to several monitors and then covered with sterile sheets. The staff will be wearing sterile gowns, gloves, and possibly masks.

### **What Happens During The Procedure:**

The site where the catheters will be inserted is usually in the groin. Sometimes it is in the wrist or arm. The site is cleansed thoroughly. A local anesthetic is injected into the skin with a tiny needle to numb the area. This may cause a stinging sensation. A small incision is made in the skin, and a needle is used to puncture the blood vessel (usually an artery). A guide-wire (a soft and flexible wire) is threaded into the artery. A short plastic tube, called a sheath, is then slipped over the guide-wire and into the artery. The guide-wire is then removed.

Once the sheath is in place, doctors can insert and remove several different catheters without having to use a needle each time. The catheter is inserted into the artery and guided toward the heart, while the staff watches its progress on a television screen. The catheter may be removed and replaced several times. This is done to reach each of the heart chambers or coronary arteries. Once the catheter is inside the heart, the doctors can measure the pressures in the left ventricle (the main pumping chamber) and take pictures of the coronary arteries and left ventricle. If you are also having a **right-heart catheterization**, a special catheter is inserted into a vein and is guided to the right side of the heart. This is usually done to measure the pressures inside the right heart chambers and in the lungs, especially in people who have a weakened heart.

**What You Can Expect:** You will be given medication to help you relax and make you drowsy. You may be awake, or you may sleep through part or all of the procedure. The staff will be monitoring you at all times. You may be asked to take a deep breath and hold it, to keep the pictures from blurring. You may also be asked to cough forcefully several times, to help move the dye through the heart. The procedure generally is not painful, although you may feel some pressure as the catheters are inserted. You will not feel the catheters as they move through the blood vessels and into your heart. For many, the most difficult part of the procedure is having to lie still for a long time on a hard table. As x-ray contrast is injected into the heart, you may feel a warm sensation ("hot flash") through your body, lasting for 20 to 30 seconds. You may also feel nausea, chest discomfort, or a mild headache. A complete cardiac catheterization procedure usually takes from one to two hours. If you feel pain or discomfort at any time during the procedure, let the staff know.

**What Does Heart Catheterization Show?** Cardiac catheterization allows doctors to measure the pressures inside the heart, study how well the heart is pumping blood, and take pictures of the coronary arteries and the heart chambers.

If you have any questions, please feel free to call our staff at **(760) 323-2174**.

Thank you for choosing Cure Cardiology Consultants!