

**ALDERFER & TRAVIS CARDIOLOGY, PC**  
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**Cardiac Catheterization**

**What is cardiac catheterization?**

A cardiac catheterization or "heart cath" is an examination that is done in the cardiac catheterization laboratory to detect heart disease and evaluate the condition of your heart. During the test, x-ray movies and pressure recordings of the arteries and chambers of the heart are made. The status of your heart's main pumping chamber is assessed as is the function of the valves within the heart. This information will help your doctor decide which form of therapy, if any, is best for you.

Following the diagnostic portion of the test, your doctor may decide to treat one or more blockages found within your heart arteries. This entire procedure can take one to three hours to complete.

**What happens during the procedure?**

After you arrive in the cardiac catheterization laboratory (cath lab), the cath lab staff will review the proposed procedure with you. They will ask you about the medications you are currently taking and when you last took your medications. You will be asked when you last ate. A small intravenous line (IV) will be placed in a vein in your arm to enable the administration of medications. You will be moved to a special table in the cath lab. Adhesive patches will be attached to your arms and legs so your electrocardiogram (ECG) can be monitored. You may be given a sedative to help you relax. Your groin or arm will be scrubbed with a special antiseptic solution and you will be covered with sterile drapes. This is done to prevent any infection at the puncture site.

To perform the catheterization study, a catheter (small hollow plastic tube) will be inserted into an artery and/or vein in either the groin or arm. Before the procedure begins, your doctor will numb your groin or arm with an anesthetic. This will cause a slight sting or burning sensation which only lasts a few moments. As the catheter is inserted, you may feel some discomfort, although most people feel only pressure. If you have pain, please let your doctor know.

Using a special x-ray unit (fluoroscopy), the catheter will be directed to the heart. You will not feel the catheter as it moves through the blood vessels or heart chambers. As the catheter enters your heart, you may feel some extra heart beats. Pressures within the heart chambers will be measured, blood samples may be taken and x-ray dye (which makes the arteries and chambers of your heart visible on x-ray) will be injected to study the size and contraction of the different chambers. When the dye is injected, a warm flushing sensation may be felt over most of your body. This sensation will last for about thirty seconds. X-ray dye will also be injected into each of your coronary arteries to look for blockages within these vessels. While these x-ray pictures are being taken, you may be asked to take a deep breath and hold it for about five seconds. You may be occasionally asked to cough, as coughing helps clear the dye from your coronary

arteries. If the study does not show significant blockages or if proceeding with intervention is not elected at this time, the catheter(s) will be removed (see Post Procedure Care below).

If the diagnostic portion of the study shows blockages(s) within your coronary artery(ies), your cardiologist may choose one or a combination of methods to open the blockage(s). A description of the method that your doctor may use to open the blockage(s) can be found on the following page. In general, all of the methods involve placing small devices into your coronary arteries. A hollow tube or catheter is positioned at the opening of your coronary artery or bypass graft and through this a small wire can be steered across the blockage. This wire acts as a rail over which various devices can be placed. At times these devices may temporarily interrupt the flow of blood through the artery being worked upon and chest pain can result. If you experience any chest pain or other discomforts during the procedure, please tell your cardiologist or the cath lab staff. We will make every effort to minimize your discomfort.

#### **POST PROCEDURE CARE**

At the end of the procedure, the catheters are removed from the body but the sheaths through which the catheters are introduced into the body are often left in place. This is because blood thinners are used during the procedure to minimize the risk that clots will form. Until the blood thinners have worn off, the sheaths cannot be safely removed. The sheath(s) may be removed in the cath lab or later in your room depending upon the status of the blood thinners. Alternatively, special blood vessel closure devices can be used to enable the sheaths(s) to be removed immediately. If the catheterization was done from your arm, your doctor may close the artery and the skin with several stitches and a pressure dressing will be applied. Stitches are not usually needed when the groin is used. Pressure will be held for a variable amount of time depending on the dose of blood thinners used and whether or not a coronary intervention occurred.

After sheath removal, you will be required to lie flat in bed with your leg straight for a variable amount of time. If an artery closure device is used, this may require minimal bed rest. If pressure is used, you will remain at bed rest for about six hours. You may have your head raised about fifteen degrees and you may roll from side to side. Your blood pressure and dressing will be checked frequently for the first three to six hours. If you feel a warm wet sensation in the groin area, apply pressure and call your nurse. The skin around the puncture site or incision may look bruised or slightly swollen. If you notice coldness or discoloration of your leg or arm, notify your nurse. It is common to feel some numbness along the inside of your thigh due to the local anesthetic that is used. You may have pain medication to relieve any discomfort that you may have.

#### **PREPARATION FOR CARDIAC CATHETERIZATION WITH INTERVENTION**

Because it is possible that you may experience nausea during the procedure, you will be required to fast (have nothing to eat or drink) for several hours before the test. If your test is in the morning, you will begin your fast the evening before. If your test is in the afternoon, you may have a light (tea and toast) breakfast in the early morning on the day of the procedure and then have nothing further to eat or drink until your catheterization is completed. In either case, take your usual medications with a small amount of water the morning of the procedure.

If you smoke, do not smoke after your evening meal. This will help your coronary arteries to return to their normal state of relaxation. It is recommended that you empty your bladder before going to the catheterization laboratory.

Prior to entering the hospital, notify your cardiologist if you have ever had a reaction to x-ray dyes, antiseptics, anesthetics, or any drugs. It is also important to tell the doctor if you have any history of bleeding tendencies or if you have been on anticoagulant medication (coumadin, ticlid, persantine, aspirin, or arthritis medications).

#### **FOLLOW-UP INSTRUCTIONS**

A bruise or lump may develop at the puncture site and remain for a week or more. If there is extensive bruising, some discoloration and tenderness may last for several weeks. Notify your doctor if you notice new bleeding, increased tenderness, redness or drainage from the catheterization site, fever, or change in color, temperature, or sensation in the limb used for the catheterization.

There may be changes in your medications following this procedure, especially if an intervention was done. Your cardiologist or his associate will go over this with you before discharge. If you have any questions about medications, your post procedure visit or any instructions, please ASK! If you were provided medications at the time of discharge and will run out before your next office visit, please call the office.

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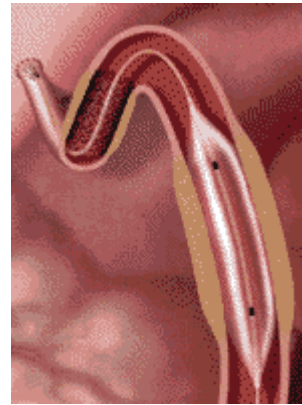
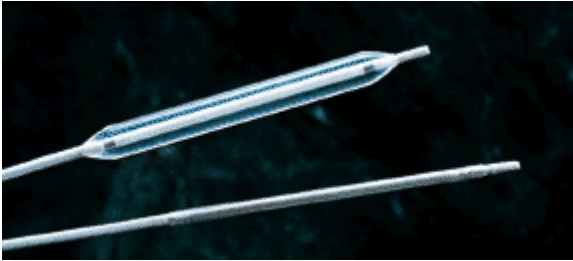
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### DESCRIPTIONS OF INTERVENTIONAL CARDIAC PROCEDURES

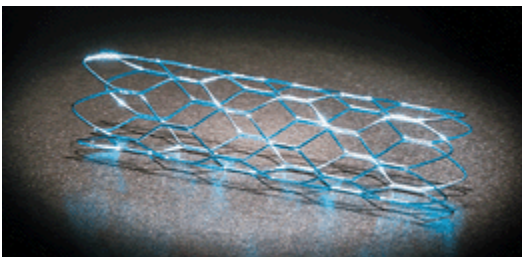
#### **BALLOON ANGIOPLASTY (PTCA or Percutaneous Transluminal Coronary Angioplasty)**

The method by which a small balloon tipped catheter is placed over a guide wire into the narrow segment of the coronary artery. The balloon is then inflated several times, compressing the fatty material (plaque) against the wall of the artery. This opens the narrowed section increasing blood flow to the heart muscle.



#### **STENT IMPLANTATION**

The method by which a small metal slotted or coil tube is placed against the artery wall to hold the artery open. Balloon angioplasty is done before and after the stent is placed. The stent is a permanent implant that stays in the artery.



#### **ATHERECTOMY**

The method by which a small mechanically driven cutter shaves the plaque from the artery wall. The catheter is placed over a guide wire to the narrowed segment. Balloon angioplasty may be done before and after the atherectomy. The different types of atherectomy catheters that may be used:

- Rotational Atherectomy uses an abrasive diamond coated burr at the tip of the catheter. The catheter is rotated rapidly (like a dental drill) to grind or sand the plaque into tiny particles that float away in the blood stream.

- Extraction Atherectomy uses a rotating blade inside the tip of the catheter to cut the plaque. The plaque is then vacuumed into the catheter and removed.
- Directional Coronary Atherectomy (DCA) uses a catheter with a windowed chamber over a rotating blade. The window is placed over the blockage. The rotating blade shaves the plaque and collects it in the catheter tip.

### **INTRAVASCULAR ULTRASOUND**

The method by which a sonogram (ultrasound) catheter is placed in the coronary artery. As the catheter is pulled back, sonogram pictures are taken. This is used to determine the level of blockage and the size of the artery.