



**CARDIAC SERVICES**

Patient Information

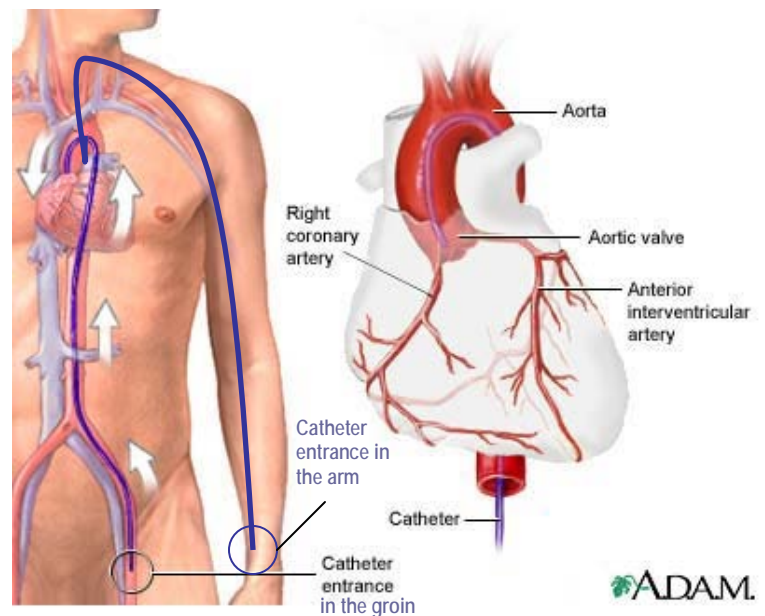
# **CARDIAC CATHETERIZATION AND ANGIOPLASTY**

## Table of Contents

What is a Cardiac Catheterization? .....	2
What is a PCI and Angioplasty? .....	3
Advantages of Angioplasty .....	4
Disadvantages of Angioplasty .....	5
Risks During Cardiac Catheterization and Angioplasty.....	5
About Your Procedure.....	6
Before the Procedure .....	6
In the Cardiac Catheterization Lab .....	6
After the Procedure .....	7
Medications after Your Angioplasty .....	9
Going Home after Your Cardiac Catheterization or Angioplasty .....	10
Call Your Doctor Right Away if You Develop .....	10
Call 911 or Have Someone Drive You to the Emergency .....	10
Caring for Your Puncture Site.....	11
Activity at Home .....	11
Driving Your Car.....	12
Getting Ready for Your Procedure Checklist .....	13

## WHAT IS A CARDIAC CATHETERIZATION?

Cardiac catheterization (also called an Angiogram) is a test that produces detailed pictures of the heart. While you are awake, a thin, flexible tube (catheter) is put inside an artery or vein in your groin or your arm. The catheter is guided up through a large blood vessel until it reaches the heart and its blood supply (coronary arteries). The Cardiologist will inject dye through this catheter so that X-ray pictures can be taken. The X-ray pictures will show if there are any blockages inside your coronary arteries; where they are located in the artery and how much narrowing is caused by the blockage. The test can also show how well your heart valves and heart muscle is working. This procedure is not painful, however, you may feel a bit uncomfortable afterwards if and when we put pressure on your puncture site.



There are a number of reasons why your doctor may want you to have this test. The information from this test will help the doctor to make a diagnosis and recommend the best treatment for your heart condition.

After the procedure, the doctor will talk to you about your results and treatment options. There are three treatment options for coronary artery disease:

- 1) medical therapy – treatment with medications
- 2) Angioplasty
- 3) Coronary artery bypass surgery.

You and your doctor will decide upon the best treatment for you.

## WHAT IS A PCI AND ANGIOPLASTY?

**P**ercutaneous – means through the skin

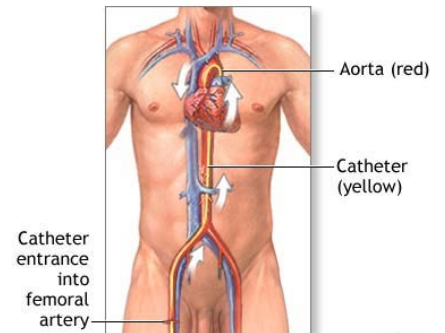
**C**oronary – having to do with the heart

**I**ntervention – the type of procedure used to open a narrowed artery

Angioplasty is a type of PCI but the two terms are often used to talk about the same procedure.

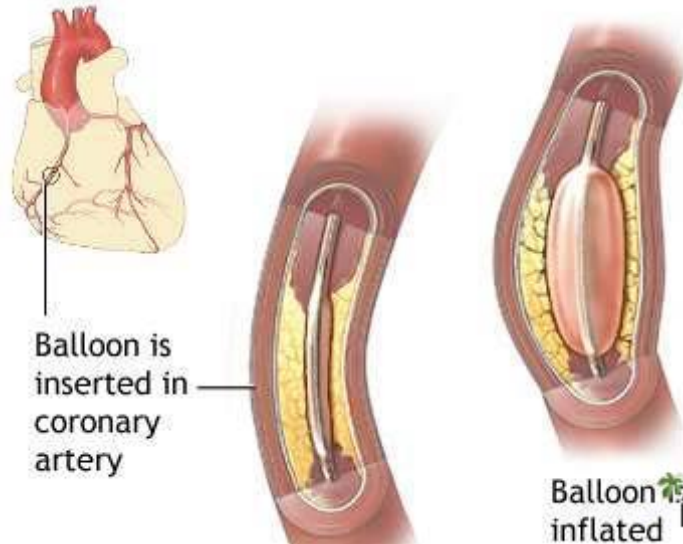
Angioplasty is much like an angiogram procedure.

It is also done in the catheterization lab or “cath lab”. It is not surgery. It is a procedure used to widen the narrowing in the arteries of your heart without surgery.

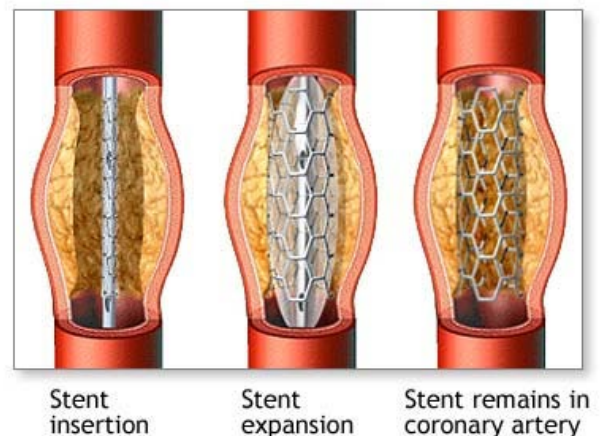


ADAM.

In an angioplasty a catheter with a small inflatable balloon attached is positioned within the narrowed section of the artery. When the balloon is inflated it pushes outward against the narrowing and the walls of the artery. This opens up the artery so that your blood flows freely through the artery. The balloon is then deflated and removed from the artery. In some patients a stent is placed within the artery once it is opened.



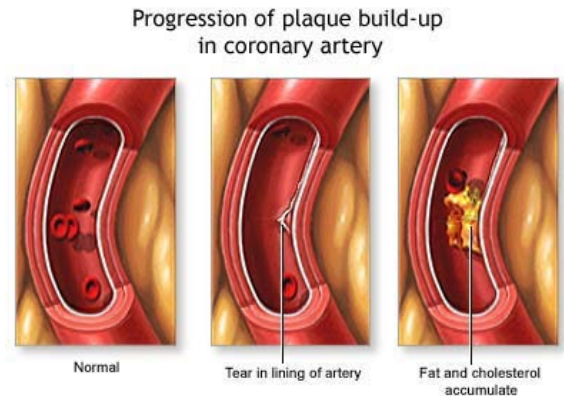
A stent is a small metal mesh tube that is put inside your blood vessel on a balloon catheter. When the balloon is inflated, the stent opens up against the wall of your blood vessel. After the balloon catheter is taken out, the stent stays in place permanently, holding the walls of the vessel open for better blood



flow. Stents lower the risk of this area narrowing again. There are several types of stents available. There are several types of stents available. Your physician will select the best type of stent for your medical condition.

In some cases, an angioplasty may be performed on you at the same time or during the same day as your angiogram. You might also be asked to return for a second time to have your angioplasty performed. This decision is made by your doctor.

Angioplasty is not a cure for coronary artery disease. It needs lifelong management. You can control your condition with a healthy lifestyle. Read more about this in our “For Heart’s Sake” education book. In some cases, your doctor may prescribe medications to help you.



Living a healthy lifestyle means:

- ✓ Quitting smoking (talk to your nurse if you want to quit)
- ✓ Controlling high blood pressure
- ✓ Lowering your cholesterol
- ✓ Getting enough exercise
- ✓ Keeping a healthy weight

Our Cardiac Rehabilitation program can help you with all of these! We recommend this program to all of our cardiac patients. The program features a supervised exercise program and education sessions. Your family is welcome to join you at our education session hosted by our healthcare professionals. If you would like information about our Cardiac Rehabilitation program, please call 684-6780.

## ADVANTAGES OF ANGIOPLASTY

Over 90% of angioplasties are successful immediately. Blood flow through the artery returns to normal or near normal and patients get complete relief from angina. People with severe coronary artery disease may not have complete relief but their symptoms are improved, allowing them to be more active and comfortable.

Unlike surgery, you do not need stitches and you are not put to sleep (general anesthesia). People recover more quickly from angioplasty than from heart surgery. Most people are up walking on the same day. Some people go home the next morning.

### **DISADVANTAGES OF ANGIOPLASTY**

Angioplasty is not for everyone. It does not work well when there are many narrowings in many arteries or in certain locations. Your doctor will decide if angioplasty is suitable for you.

An artery may become narrow again after angioplasty. This is called restenosis. If the artery narrows enough you may feel angina again. The use of stents has reduced the restenosis rate to 0-15% of cases. Restenosis is usually treated with a second angioplasty but occasionally bypass surgery is needed or medical therapy is used.

### **RISKS DURING CATHETERIZATION AND/OR ANGIOPLASTY**

Cardiac catheterization and angioplasty (with or without the use of a stent) are common procedures. Your physician has carefully considered your condition and believes that the benefits of the procedure outweigh the risks. However, since these procedures are invasive there are risks associated with them.

<b>What could possibly happen</b>	<b>Risk</b>
Bruising and bleeding at the site of arterial puncture due to blood thinning medication	Common and more likely with PCI
Allergy/reaction to the dye used in the procedure	Uncommon
Need for surgical repair of the artery that held the sheath	Rare – less than 1%
Dislodged plaques and clots from your coronary artery – causing stroke, paralysis, heart attack, permanent kidney failure, the need for urgent heart failure, death	Rare – less than one in 1,000 cases.
After Angioplasty, the artery becomes blocked again in the days to weeks after the procedure.	1 – 2 %
After Angioplasty, scarring of the artery happens and the procedure needs to be repeated	10%

In rare angioplasty cases, the artery collapses or is damaged by the wire or balloon. A stent(s) can often fix this, but sometimes patients need emergency coronary artery bypass surgery. If you need bypass surgery, you will be flown immediately to the closest hospital. **Talk to your doctor about your risks and the benefits of this procedure for you.**

## **ABOUT YOUR PROCEDURE (CARDIAC CATHETERIZATION AND/OR ANGIOPLASTY)**

### **Before the Procedure**

- You may eat a light meal up to 4 hours before your procedure
- You may have clear fluids to drink.
- You will be asked to change into a hospital gown and to remove your undergarments.
- A small area on each side of your groin will be shaved and a medication patch put there.
- If you haven't already watched our video about the procedure, you and your family can view this program from your stretcher in the recovery area.
- An intravenous catheter will be started on a vein in your hand or arm.

### **In the Cardiac Catheterization Lab**

You will be escorted to the Catheterization Lab either walking, by wheelchair, stretcher or bed. You might find the temperature in the room is cold. You will lie on a narrow x-ray table and you will be attached to a heart monitor.

Your groin will be washed with a cold solution and sterile sheets will be placed over you. It is important that you lie still and do not touch the top of the sheets once they are in place. You may be asked to put your arms above your head for a period of time. A nurse is available to help you.

You will be given medication to help you relax during the procedure. The procedure is not painful. You will be awake so that you can talk

with the doctor and nurses and you will be asked to follow instructions. The doctor will put freezing in your groin to make it numb. A small catheter will be threaded into a blood vessel and floated up to the heart. Dye is injected through this catheter to highlight the coronary arteries. Many people feel warmth throughout their body from the dye – this is normal.

X-ray pictures will be taken throughout the procedure. You do not have to move, the x-ray machine will move very close to your body.

During the procedure, you may be asked to take a deep breath and hold it for a few seconds, or to cough. If you have any discomfort or chest pain, please let one of the nurses know right away. It is not unusual to experience some chest pain but it is important to let us know if you have discomfort.

The usual time for the procedure inside the lab is between 30 minutes and 90 minutes. If your condition is complex, your procedure will take longer. In rare cases there may be a lengthy wait in the lab waiting area or you may be returned to your room without your procedure being done.

### **After your Cardiac Catheterization and/or Angioplasty**

You will be brought to the Recovery area of the Cardiac Catheterization Lab on your stretcher bed. Depending on the type of procedure that was performed, your sheath (the catheter that was put in your blood vessel through your skin) will be managed with one of these options:

- removed right after the procedure with a closure device put in. There are different types of closure devices. They are a seal or plug for the tiny hole in your artery.
- removed right after the procedure and a special band/brace will be put around your wrist.
- removed after you are transferred back to the Cath Recovery area
- in place for a few hours
- in place overnight

If you have a sheath in your groin, the nurses will place a special clamp over your groin to stop the bleeding after they remove it (unless you have had a closure device). This clamp will apply pressure for about 20 – 45 minutes. The nurses will check your pulse, blood pressure, pulses in your feet or wrist and the puncture site often.

You must rest in bed for a few hours after the procedure. **It is very important to keep your head on the pillow and your leg (the one that held the catheter/sheath) straight to prevent bleeding from the puncture site.** If your back becomes sore, please let your nurse know. You may be given some medication to help lessen your discomfort or your nurse may reposition you. During this time you may sleep, read, or rest. You will be given a snack.

If the doctor used your arm (radial artery) you will have a clamp applied to your arm after the procedure before you leave the lab to prevent bleeding. You will be on bed rest for approximately one hour after the procedure. It is important to keep your arm on the pillow. Do not twist or bend your wrist. You may move your fingers but please do not use your hand. Your nurse will be available to help you while the clamp is in place.

It is important to drink a lot of fluids for the dye to flush out through your kidneys. Ask your nurse for help as soon as you feel the need to empty your bladder because you will not be able to sit up. Once your bed rest is complete, your nurse will help you to stand. You will be encouraged to walk.

After an angioplasty, you will stay overnight in a recovery area of the hospital. You are welcome to have visitors, however, due to our limited space, only two family members may visit at a time.

After your procedure, you need to have someone pick you up at the hospital and drive you home. An adult needs to stay with you overnight on your first night at home. If this is a problem, please let your nurse know. If you live more than 60 miles (or approximately 100 kilometers) outside the city of Thunder Bay, please make arrangements to spend the night in the city after your procedure.

## Medications After Your Angioplasty

If your cardiologist places a stent in your artery, you need to take **Aspirin** and a medication called **Plavix**.



***IT IS VERY IMPORTANT FOR YOU  
TO TAKE THESE TWO MEDICATIONS EVERY DAY!***

Please do not miss a dose. This medication will help prevent your stent from blocking while the lining on the inside of your artery grows over it. Your doctor will let you know how long you need to take this medication and when to stop taking it. For some people, it may be a year or more after their angioplasty.

**Do not stop taking your Plavix and Aspirin  
unless you have been told by your Cardiologist.**

## Going Home After Your Cardiac Catheterization or Angioplasty

Make sure you have someone to drive you home and to stay with you for the first day and the first night after your procedure.

**IF YOU DEVELOP ANY OF THE FOLLOWING, CALL YOUR DOCTOR RIGHT AWAY (OR GO TO A WALK-IN CLINIC OR HAVE SOMEONE DRIVE YOU TO THE EMERGENCY DEPARTMENT):**

- sudden or severe pain at your puncture site
- swelling in your site that is bigger than the size of a golf ball or wider than a hockey puck
- more than usual tenderness or soreness
- bruising that has spread to your knee or past your hip (toward your buttock)
- pulsing at the site
- tingling or numbness or sudden coolness in your leg (or your hand, if your arm was used for the procedure)
- redness, warmth or drainage at your puncture site or you have an unexplained fever.



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IF YOU HAVE ANY OF THE FOLLOWING,  
**CALL 911 OR HAVE**  
**SOMEONE DRIVE YOU TO THE EMERGENCY DEPARTMENT**  
**DO NOT DRIVE YOURSELF**

- **bleeding at the site**. If it starts to bleed, lie down and put firm pressure over top of the site with your fingers or your fist (or have someone else do this). If the bleeding continues after ten minutes of holding pressure, have someone drive you to the hospital right away. Keep holding pressure.
- **any chest discomfort** (sharp pain, pressure, burning, heaviness, squeezing feeling in your chest, neck, down your arm(s) or in your upper back). Sit down and rest. Take your Nitroglycerine spray or tablet once. If you do not feel relief of your symptoms within five minutes, **call 911 for an ambulance**.

**Caring for Your Puncture Site:**

- Check your groin site for bleeding every half hour for two hours; then every couple of hours over the next day.
- Remember to hold your fist over your groin site (apply pressure) when you have to sneeze or cough.
- It is normal to have some bruising over your puncture site. It might take a week or more for it to disappear.
- It is normal to feel a hard pea sized lump at the site. It is scar tissue that will gradually go away.
- You may shower today but no tub baths for three days.
- No swimming or going into whirlpools or hot tubs for two weeks.
- If your dressing comes off, pat the area dry (do not rub). You can put a bandaid over your puncture site and put a new one on every day for the next three days. After three days, you do not need to have a bandaid or a dressing on your site.
- Do not put any creams or lotions on the site.

**Activity for the Next 7 Days:**

- You may have sex after two days of healing.
- Avoid strenuous activities to allow the puncture site to heal completely, for example: no jogging, bicycling or curling.
- No heavy lifting (nothing heavier than ten pounds). This includes children, groceries, etc. It takes approximately 7 days for your puncture site to heal.
- If you have had a radial site puncture (in your wrist), do not bend or strain your wrist for the first few days. This includes computer work, gardening, bowling, knitting, etc.

**On your first day at Home:**

- If you have a puncture site in your groin:
  - You can climb a flight of stairs once but try to limit this as much as possible. Try to do the stairs with one leg straight legged (do not bend your knee on the same side as your procedure).

- Avoid squatting, deep knee bends, or sitting in low chairs. A recliner or lounge chair is better because it will not bend your groin as much.
- Walk at a slow pace as much as is comfortable for you.
- Most people have no problems after a successful angioplasty. They can do their usual activities within a few weeks. How quickly you return to your usual activities will depend on whether you have had a recent heart attack and the type of activities you do. Ask your doctor about this.

### **Driving Your Car:**

Ask your cardiologist when you can begin driving again. The timing will depend on the reason you were admitted to hospital. In general:

- Wait one month if you were admitted with a heart attack. Wait three months if you drive a commercial vehicle, a school bus or use your private car for your job.
- You can begin driving after two days if you have had a cardiac catheterization or an angioplasty. Wait one week if you drive a vehicle for your job.

Avoid stressful driving situations such as rush hour traffic, poor weather conditions, night driving and high speed.

If you have questions about your condition, you are welcome to call Telehealth Ontario 24 hours a day, 7 days a week. Telehealth Ontario is a free, confidential telephone service you can call to get health advice or general health information from a Registered Nurse. They can help you decide whether to care for yourself, make an appointment with your doctor, go to a clinic, contact a community service or go to a hospital emergency room.

**Telehealth Ontario - 1-866-797-0000**

*Thank you to the University of Ottawa Heart Institute for serving as our Mentor site and for sharing their teaching resources.*

## Getting Ready for Your Procedure Checklist

The following checklist will help you get ready for your procedure:

- Make arrangements for someone to pick you up after your procedure. If you are having an angioplasty, you will likely be discharged the morning after your procedure and you cannot drive yourself.
- Make arrangements for someone to stay with you on your first day and overnight after you go home from the hospital.
- Bring your health card.
- Bring photo identification (driver's license or health card).
- Bring all your medications in their original containers.
- Bring a pair of pajamas, slippers and housecoat.
- Bring any items you need for an overnight stay (toothbrush, etc). If you use a special breathing machine at night (CPAP, BiPAP), remember to bring in your mask.
- Bring something to pass the time, such as reading materials, etc. There are no television sets in the Cardiac Catheterization recovery area.
- Please leave your valuables at home.
- If you have any questions about your procedure, please call our Cardiac Catheterization office at 684-6675.