



Patient Education

# Getting ready for an Arterial Angiogram

## Contents

<b>Topic</b>	<b>Page</b>
What is atherosclerosis?.....	1
Progress of hardening of the arteries (atherosclerosis) .....	2
Why do I need to have an arterial angiogram? .....	3
What is an arterial angiogram? .....	4
What are the risks? .....	6
Where will I have my test? .....	7
How do I get ready for my arterial angiogram?.....	7
What do I bring to the hospital? .....	8
Where do I go when I arrive at the hospital?.....	9
How is an arterial angiogram done? .....	10
What will the results of the arterial angiogram tell me? .....	12
After your arterial angiogram .....	12
What activities can I do when I go home?.....	14
What is an arterial angioplasty? .....	14
What are the risks? .....	14
How is an arterial angioplasty done?.....	15
What is a stent?.....	16
After your arterial angioplasty.....	17
What activities can I do when I go home?.....	18

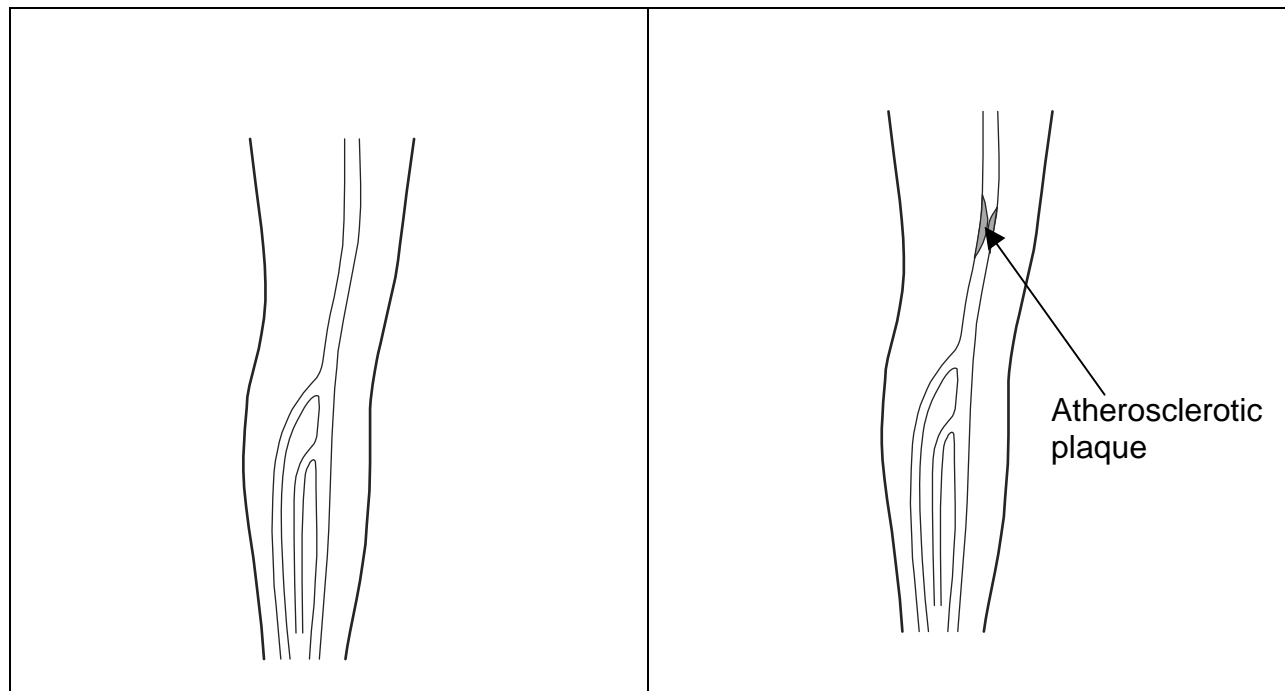
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## What is atherosclerosis?

Atherosclerosis is a build up of fat and other materials including cholesterol and calcium inside the arteries or blood vessels. This build up is called atherosclerotic plaque.

The artery walls become thick, narrow and rough inside. Blocked or narrowed arteries can cause:

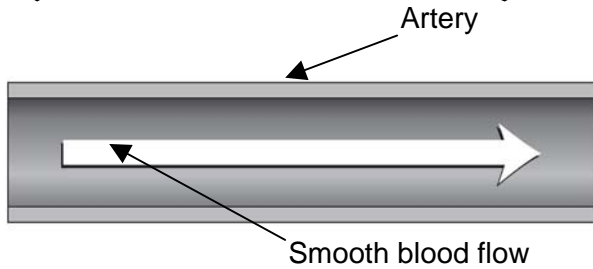
- pain when walking
- red or blue painful toes
- sometimes pain in the feet during rest



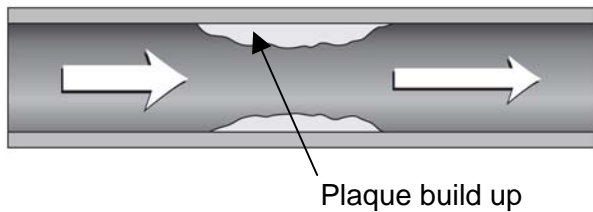
**Normal artery**

**Blocked artery**

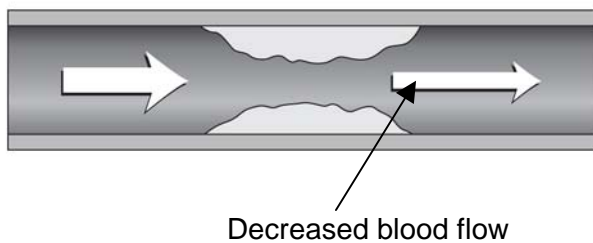
## Progress of hardening of the arteries (atherosclerosis)



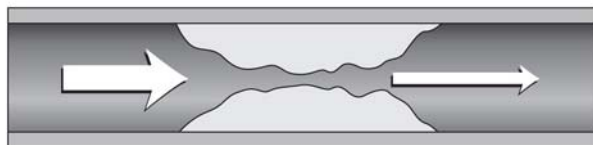
**Normal Artery** – The blood flows through easily.



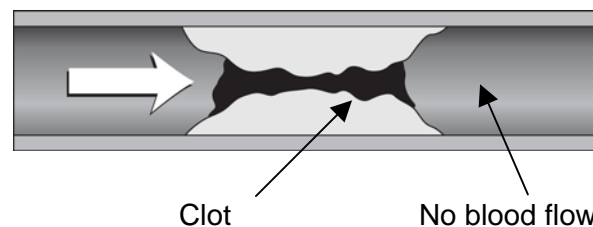
**Damaged Artery** – Plaque starts to build up and narrow artery.



**Narrowed Artery** – Blood flow becomes partially blocked because of build up of plaque.



**Worsening Narrowed Artery** – The build up of plaque continues to slow the blood flow even more.



**Blocked Artery** – Over time, the flow of blood becomes sluggish and causes blood clots to form which block the artery.

Atherosclerosis can occur in any part of the body, including the arteries of the arms and legs, the heart, the neck, the brain and the abdomen.

Your arteries change over time for many reasons.

The main reasons are:

- smoking
- having high blood pressure
- having diabetes or high blood sugar
- being overweight
- having high cholesterol or high triglycerides
- not doing enough exercise
- having a family history of heart disease
- age

Most of these reasons you can control but some you cannot.

## **Why do I need to have an arterial angiogram?**

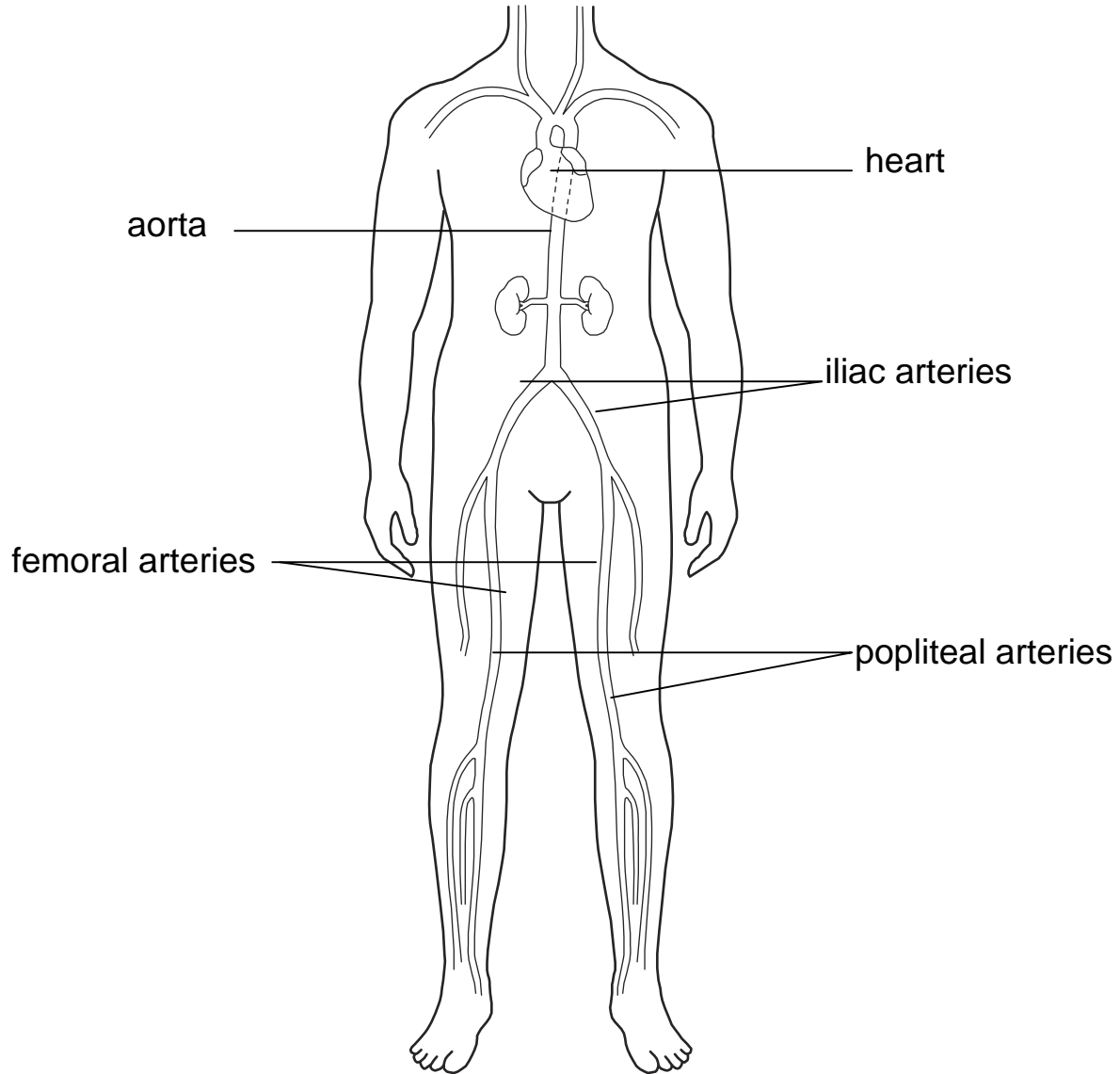
An arterial angiogram is usually done when your doctor thinks there may be a blockage in one or more areas of your arteries.

An arterial angiogram can help your doctor see if you need treatment such as:

- medications,
- angioplasty, also called ballooning with or without stenting of your blood vessels, or
- surgery

## What is an arterial angiogram?

An arterial angiogram is a test that uses an x-ray and dye to view your body's arteries.



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## Getting ready for an Arterial Angiogram

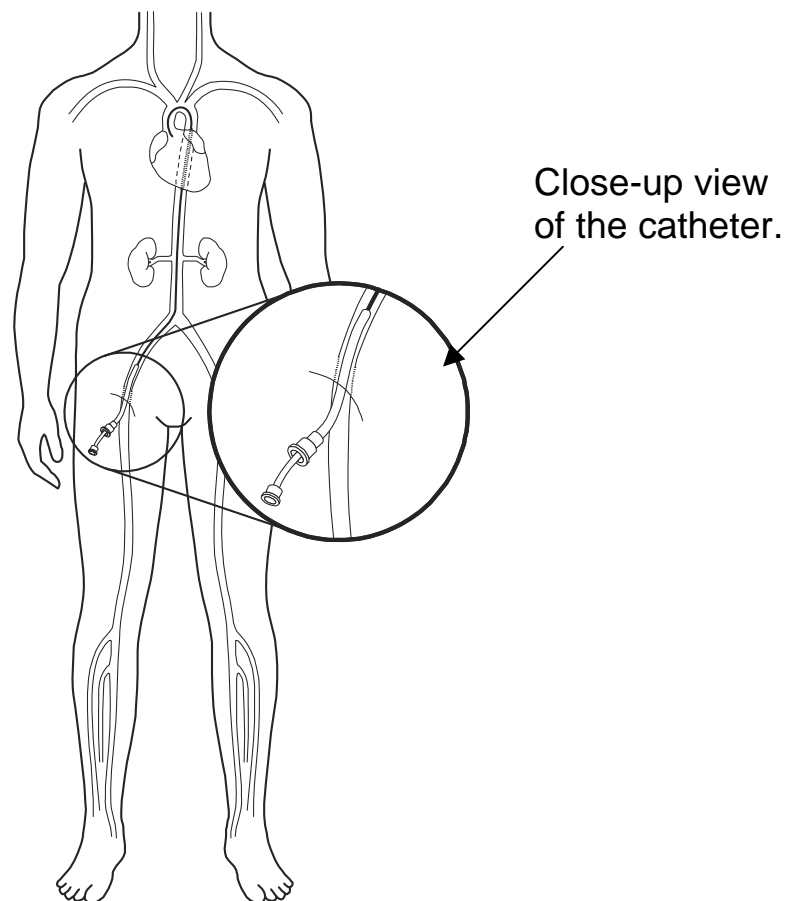
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This test will be done by a qualified doctor called an interventional radiologist. The doctor will inject a special dye into your arteries through a small tube called a catheter. An x-ray camera will take pictures of your arteries. This will allow the doctor to see blood vessels in the part of your body being examined. This includes your brain, heart, abdomen, arms and legs. The doctor will study these pictures to look for abnormalities.

An arterial angiogram is able to show:

- narrowed or blocked arteries
- enlarged arteries called aneurysms
- abnormal arteries

This test can also be called an arteriogram. If the veins are studied, it is called a venogram.



## **What are the risks?**

The risks vary with each person and are related to your health condition.

Your doctor will explain your risks to you before the test.

### **Possible risks for arterial angiogram include:**

- bleeding from the artery or the vein at the puncture site
- blockage of the artery
- 1 in 200 chance of having a stroke or death with an angiogram of your neck or brain
- very rarely infection at the puncture site
- worsening kidney function, which is a concern mainly for people who already have kidney disease and/or diabetes
- in very rare cases, allergic reaction to dye – this is usually treated successfully

**These risks are the same for angioplasty and stenting procedures.**



## Where will I have my test?

Your test will be done in the Diagnostic Imaging Department, also called X-ray, at the Hamilton General Hospital.

It will be done by a specially trained doctor, called an interventional radiologist.



## How do I get ready for my arterial angiogram?

- You will be given special instructions regarding your medications including diabetic medications, blood thinners and water pills.
- If you are taking warfarin, also called Coumadin®, your referring doctor will discontinue this medication several days prior to your test. During this time, you may be switched to another medication. If you have not heard from your referring doctor one week before your test, please call his/her office.
- If you are taking metformin, also called Glucophage®, your referring doctor will discontinue this medication the morning of the test and for 48 hours after the test.

### **The night before your test:**

- Continue with your regular diet.
- Drink 8 to 10, 8-ounce glasses of water. This will help to flush out your kidneys.
- Do not eat or drink anything after midnight.

### **The morning of your test:**

- Continue to not eat or drink anything.
- You may take all of your prescription medications with a sip of water. Do not take aspirin (ASA).
- Follow the specific instructions given to you by your doctor on how to take your medication for diabetes, blood thinners and water pills.

## **What do I bring to the hospital?**

- Bring all of your medications in their original containers from your pharmacy.
- Bring your Ontario Health Card.
- Wear your glasses, dentures and/or hearing aid(s).
- Bring medical alert/allergy bracelets.
- Leave all other valuables such as money, jewellery and credit cards at home.

## **Where do I go when I arrive at the hospital?**

Go to the reception desk in the Diagnostic Imaging Department on the Main Level.

The Diagnostic Imaging Department is a Regional Trauma Centre for Central South Ontario. It responds to emergency cases on a daily basis. Please be aware that this may delay or change the time of your test.

We encourage you to bring 1 to 2 family members or friends to be with you before and after the test.

### **Before your test:**

- You will meet the doctor who will do the test. The doctor will explain the test, answer your questions and ask you to sign a consent form.
- If there is a language barrier, please bring a family member or friend who speaks English and can interpret.
- You will change into a hospital gown.
- An intravenous (IV) line will be started in your arm.
- You will be shaved at the access site of your test.
- You will be asked to empty your bladder in the bathroom just before the test.
- You may wear your glasses, hearing aid(s) and dentures.
- Please make sure you have someone who can drive you home after the test, and there is someone available to stay overnight with you or you can arrange to stay with them.

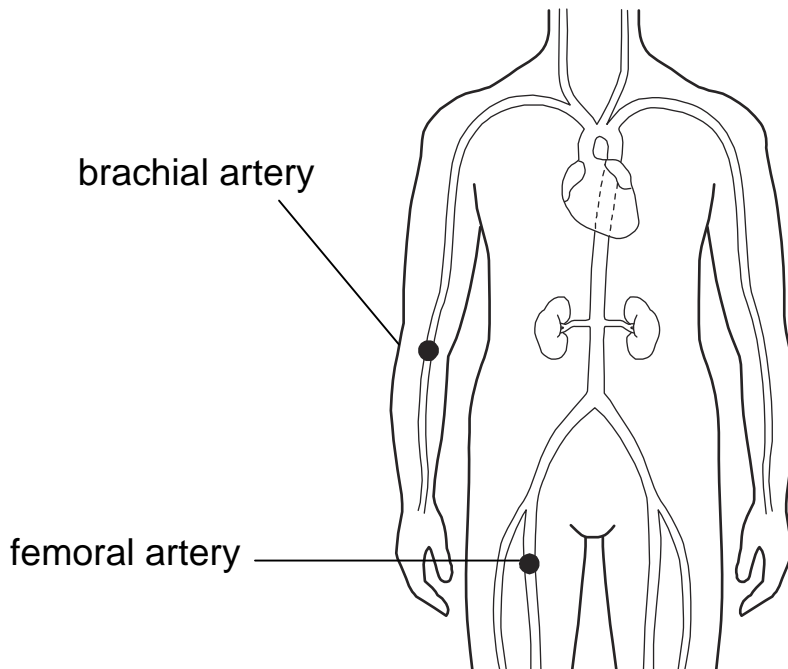
## Angio Suite

Your test will be done in the Angio Suite. A team consisting of a doctor, nurse and technologist will greet you. They will be wearing operating room clothes.

This room is cool to protect the computers and special equipment. You may be given medication to relax you through your IV line. A nurse will be with you the whole time and will take you to Endoscopy Day Surgery on a stretcher once the test is completed.

## How is an arterial angiogram done?

- During the test you will be awake, but you may receive medication to relax you.
- You will lie on a narrow table.
- The shaved area will be cleaned with antiseptic.
- Sterile sheets will be placed over you. The staff will provide you with as much privacy as they can.
- The site will be injected with a local anesthetic or “freezing”. This will sting for a few moments and then the area will become numb. You will feel pressure and movement at the site during the test, but should not feel pain.
- A small thin hollow tube called a sheath is inserted through the skin into an artery. Your doctor will decide before the test whether it will be done through the:
  - femoral artery in your groin. This is the most common site.
  - brachial artery in your elbow. This is a less common site.



- Guidewires and smaller catheters are then inserted through the sheath into your artery.
- A small amount of dye is injected into your artery. This dye makes the arteries easy to see on x-ray. When the dye is injected, you may:
  - have a metallic taste
  - feel a warm flush sensation like you have wet the bed

These are both normal and last only seconds.

- You can help with the test by staying very still when the x-rays are taken.

## **What will the results of the arterial angiogram tell me?**

The pictures from this test are saved. The radiologist will look at them closely and send a report to your referring doctor who will decide what treatment options are available. These include:

- nothing further needed at this time
- medication to control your symptoms
- arterial angioplasty with or without stent
- surgery

## **After your arterial angiogram**

Your sheath will be removed by the radiologist or nurse.

Firm pressure will be applied to the area for 10 to 15 minutes to ensure bleeding has stopped.

You will be transferred to Endoscopy Day Surgery.

You will be given something to eat and drink. You will be encouraged to drink lots of fluid to help flush the dye through your kidneys. This may cause you to pass more urine than usual.

You will need to rest in bed for at least 3 ½ hours. Your nurse will tell you how long you will have to rest in bed.

For your comfort, you may:

- turn from side-to-side with help
- wiggle your toes
- raise the head of the bed slightly – you may not sit up or bend the arm or leg used for the test
- have pain medication as you need it

Frequent checks will be made of your:

- blood pressure, heart rate and breathing
- arm or leg for bleeding, swelling, pain and blood flow

**Tell your nurse right away if you notice:**

- warmth, dampness or bleeding around the bandage
- coldness, numbness or pain in your leg, arm or hand
- lightheadedness
- changes in your vision

You may be able to go home 4 hours after your test.

Once at home:

- Rest comfortably either in a lying position in a reclining chair or with pillows propped up behind your back.
- Watch for bleeding around your bandage. This is very rare. If there is any bleeding or swelling, your caregiver should call 911 right away and apply firm pressure over the area until help arrives.

## **What activities can I do when I go home?**

- It is important that you rest by:
  - lying down on your bed or couch, or
  - lying back in a recliner chair such as a lazy boy.

Do not sit upright for long periods of time.

- You may get up to go to the bathroom.
- Limit your use of stairs. You may go upstairs to go to bed.
- You may shower 24 hours after your procedure. Change the bandage after you shower. Do not soak in the tub for at least 7 days after your procedure to prevent an infection in your groin.
- Protect your groin site by avoiding lifting and bending for 48 hours.
- You may return to your normal activities, such as going back to work, after 48 hours.

## **What is an arterial angioplasty?**

An arterial angioplasty is a procedure used to open up a narrowing in your artery. You may have a narrowing in one or more arteries that supply blood and oxygen to major organs, arms and legs.

This procedure is also called:

- percutaneous transluminal angioplasty (PTA)
- balloon angioplasty

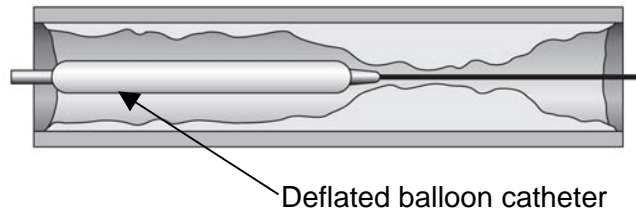
## **What are the risks?**

See page 6 to learn about the risks for this procedure.

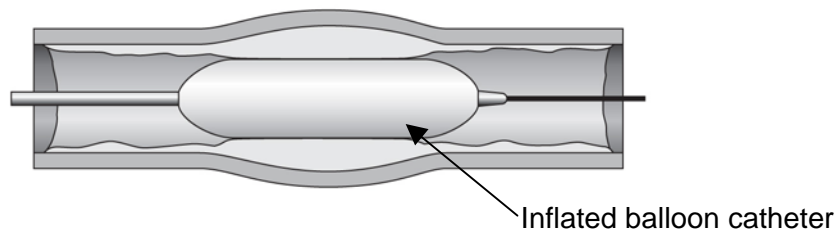


## How is an arterial angioplasty done?

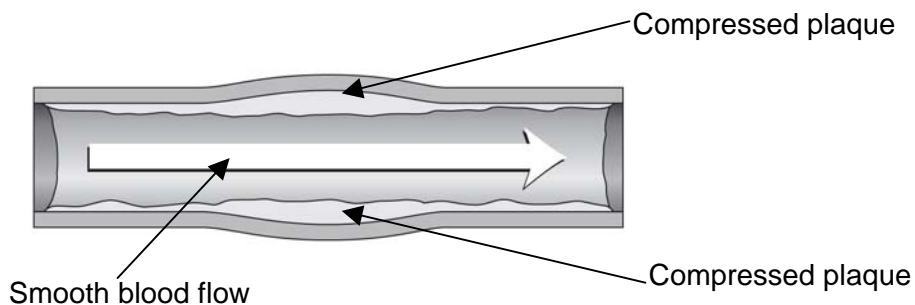
A small catheter with a tiny deflated balloon at its tip is inserted through the sheath. It is advanced into the narrowed part of an artery.



The balloon is then inflated for up to several seconds. This balloon presses the plaque against the artery walls so that blood will flow more easily through the centre of the artery.



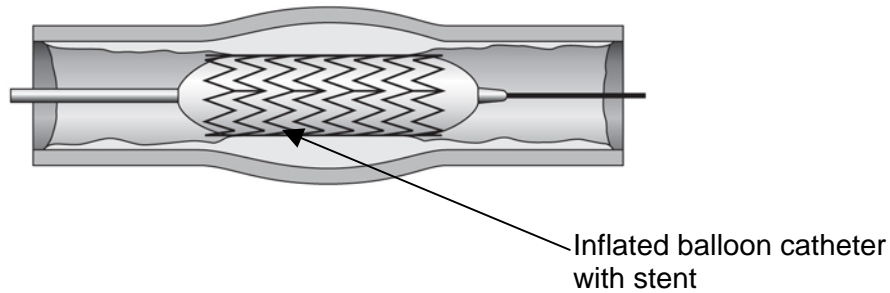
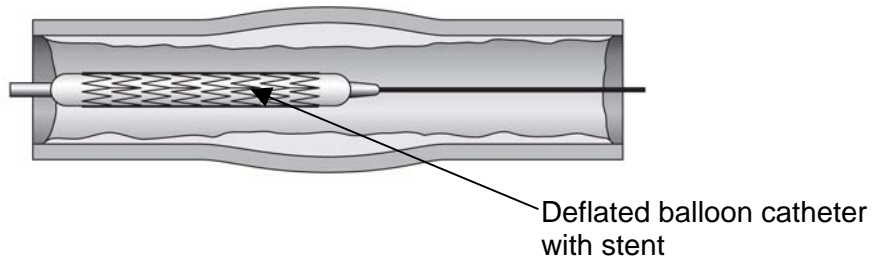
Once the artery is opened, the balloon is deflated and removed.



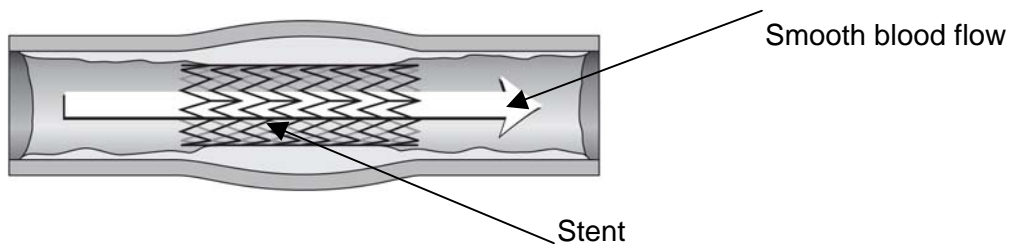
If you have pain or discomfort tell your doctor or nurse. Sometimes a balloon angioplasty is followed by the placement of a stent. See the next section.

## What is a stent?

A stent is a wire mesh tube used to help support the open artery after angioplasty.



The stent remains in the artery after the balloon is deflated and the catheter is removed.



The stent acts to help keep the artery open and prevent re-narrowing, also called a stenosis, in the artery.

## After your arterial angioplasty

After the sheath is removed from your artery, pressure will be applied for 10 to 15 minutes to stop the bleeding. A dressing will be applied and you will need to keep your arm or leg straight and still for 3 ½ hours. You will be transferred to Endoscopy Day Surgery.

For your comfort, you may:

- turn from side-to-side with help
- wiggle your toes
- raise the head of the bed slightly – you may not sit up or bend the arm or leg used for the test
- have pain medication as you need it

Frequent checks will be made of your:

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- arm or leg for bleeding, swelling, pain and blood flow

**Tell your nurse right away if you notice:**

- warmth, dampness or bleeding around the bandage
- coldness, numbness or pain in your leg, arm or hand
- lightheadedness
- change in your vision

Please ensure you have someone to drive you home, and you have someone to stay overnight with you or arrange to stay with someone.

Once you go home, watch for bleeding around your bandage. This is very rare. If there is any bleeding or swelling, your caregiver should call 911 right away and apply firm pressure over the area until help arrives.

## **What activities can I do when I go home?**

- It is important that you rest by:
  - lying down on your bed or couch, or
  - lying back in a recliner chair such as a lazy boy.

Do not sit upright for long periods of time.

- You may get up to go to the bathroom.
- Limit your use of stairs. You may go upstairs to go to bed.
- You may shower 24 hours after your procedure. Change the bandage after you shower. Do not soak in the tub for at least 7 days after your procedure to prevent an infection in your groin.
- Protect your groin site by avoiding lifting and bending for 48 hours.
- Ask your doctor when you can return to work.

## **Medications**

- Continue your medication as directed.
- If you were taking warfarin, also called Coumadin®, the radiologist or referring doctor will give you instructions when to restart your medication.
- If you were taking metformin, also called Glucophage®, you will be given written information about when to start your medication again.

**Call your family doctor if you notice:**

- unusual swelling, bleeding or pain that increases from when you left the hospital
- signs of infection such as redness or warmth to touch from the puncture site
- numbness, pain or coldness in your arm or leg
- fever or chills

It is not unusual to have some bruising to appear the next day.

