

# Cardiac Health System: Cardiac Catheterization Lab

### Coronary Angioplasty

What every patient needs to know





### **Acknowledgments**

The nursing staff from the Cardiac Catheterization Lab, Cardiac Short Stay Unit and Cardiac Triage Office at Trillium Health Centre produced this guide.

We hope this information helps you prepare for your Coronary Angioplasty. It can help you understand heart disease and how you can reduce your risk.



#### DISCLAIMER

This guide does not replace professional health care advice, medical diagnoses or treatment. It helps you understand your cardiac procedure. If you have any questions or concerns, ask a health care professional.

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### What is angioplasty?

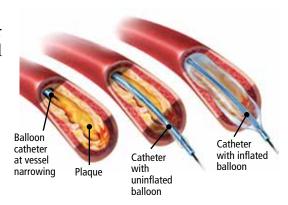
An angioplasty is a procedure to open up blocked arteries found during your angiogram.

During an angioplasty, a catheter with a special balloon goes into the blocked artery. The balloon is inflated (blown up). This pushes the material known as "plaque" against the walls of the artery and expands the artery. Another balloon, covered with a wire mesh (called a stent), is then put into the artery. The stent expands and locks into place. This holds the artery open.

### What is an elective or planned angioplasty?

Your angiogram shows blockages in your heart arteries. Your doctor is now referring you for a planned angioplasty to have the blockages opened up.

Planned angioplasties are for patients who are stable. Stable means the patient's pain goes away with rest or medication (nitroglycerin).



### What is an urgent angioplasty?

An urgent angioplasty is booked immediately. It is reserved for unstable patients with chest pain not relieved with medications or nitroglycerin. (See Heart Attack section p. 24)

### For all inpatients:

Please refer to the "Be Good to your Heart" manual.



What is a primary angioplasty?

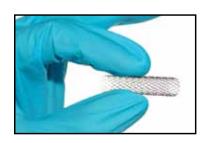
A doctor may do a primary angioplasty when you are having a heart attack. This opens the artery and restores blood flow to your heart muscle right away. It reduces heart muscle damage during a heart attack. For best results, you need to have this done within 90 minutes of your heart attack. (See Heart Attack section p. 24)

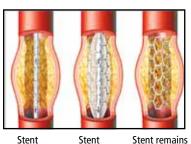


### What is a stent?

A stent is a small wire mesh tube that looks like a spring. A stent:

- stays permanently in the artery
- improves the blood flow through the arteries and to the heart muscle.



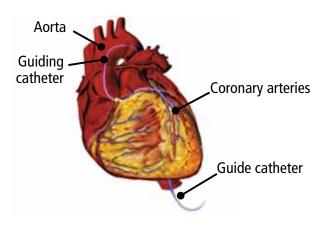


expansion

insertion

Stent remains

in coronary artery





### Are there different types of stents?

There are two types of stents:

- 1. bare metal stents made of metals such as cobalt chromium
- 2. drug eluting stents metal stents coated with a drug that is released over time, helping prevent blockages or re-stenosis by the overgrowth of normal tissue within the stent.

Your cardiologist will decide which stent will work best for you.

#### What kind of stent do I have?

Before you leave the hospital a nurse will give you a card that tells you what type of stent you have in your artery (bare metal stent or drug eluting stent).

### Will my stent affect airport security?

No, your stent will not trigger alarms at the security checkpoints. Metal detectors will not harm your stent.

### Can I have an MRI (magnetic resonance imaging) with a stent?

If possible, you should wait 6 weeks after your stent is in before having an MRI. In case of an emergency, the emergency doctor will decide what to do.

### How long does a stent stay in my artery?

Coronary stents are permanent. They cannot be removed.

### Can the stent get blocked?

Yes, your stent can get blocked. This is called "in-stent re-stenosis".

- Some blockages are located in areas that are more prone to blocking up.
- Smoking puts you at a greater risk of having problems with your stent.
- Do not stop taking your antiplatelet medication unless your doctor tells you to stop. If you stop this medication before your doctor tells you to, it can result in the formation of clots in your stent.



### **Booking your angioplasty:**

If you are an outpatient, the Regional Cardiac Care Coordinator will call you within a week to give you your booking date and time. She will tell you about your angioplasty and how to prepare for it.

If you are an inpatient, the Regional Cardiac Care Coordinator will arrange your booking with the nurses at your hospital.

### Will my angioplasty be on time?

Expect delays to your procedure time on the day of your angioplsty as unplanned emergencies will go first.

Be prepared to wait.

### Preparing for your angioplasty:

- Get your ECG (electrocardiogram) or any blood tests your doctor ordered done before the angioplasty. Your doctor will tell you whether or not you need these tests.
- ♥ If you have had a reaction to x-ray dye before, tell your doctor.
- Read your Angioplasty procedure package.
- Talk to your cardiologist about all your medications:
  - Tell your cardiologist about any herbal medications or vitamin supplements you are taking.
  - Continue taking your medications, including Aspirin and anitiplatelet medication.
  - If you are diabetic or take Coumadin, talk to your cardiologist (to find out if and when you need to stop taking this medication).
- Fill out the Patient Admission Questionnaire found inside your Angioplasty envelope.
- If you have trouble understanding or speaking English, ask someone to come with you to translate.

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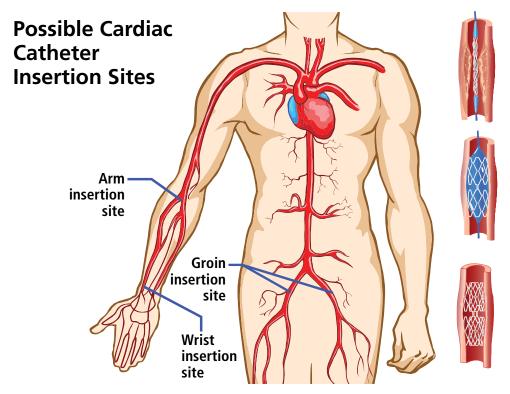
### On the day of your angioplasty

- Have a shower.
- Stop eating and drinking 4 hours before your angioplasty.
  - If your angioplasty starts at 10 in the morning, you will have to stop eating and drinking at 6 a.m. that morning. You can still have sips of water during this time.
- Take your pills with a small sip of water.
- Follow your doctor's advice about taking your diabetic pills or Coumadin.
- Leave your valuable items at home. Take off your rings, earrings, watch or other items that can get lost.
- Arrive at Trillium Health Centre 2 hours before the start time for your angioplasty.
- When you get to Trillium Health Centre:
  - 1. Go to the Surgery Check-in desk on the 2nd floor. This is where you go to sign in.
  - 2. After you sign in, go to the Cardiac Catheterization Lab. This is where you will have your angioplasty.

### Procedures are often delayed because of daily emergencies in the lab. Your nurse will inform you of such delays.

- Wear loose, comfortable clothing.
- Bring these items to the hospital with you:
  - your prescription medication in their original containers
  - your health card
  - your Angioplasty Procedure Package
  - your reading glasses or contact lenses and case
  - a book or something to do while you wait
  - the name and phone number of the person who is driving you home



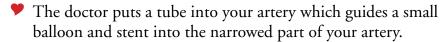


### When you get to the Cardiac Catheterization Lab

- A nurse will start an intravenous in your arm. An intravenous is a needle. It is attached to a tube that brings fluids into your body.
- A nurse will clip the hair at the insertion site. This could be your groin or arm.
- The cardiologist doing the angioplasty will explain what is about to happen, and tell you about its risks and benefits.
- You will need to sign a consent form. This is the form that lets the doctor do this procedure. Make sure you understand the information before you sign the form.
- The nurse will give you a mild sedative. This will help you relax or sleep during the procedure.

# What happens during your angioplasty?

- Staff will watch your heart rhythm and blood pressure.
- A nurse will wash your groin or arm and cover the area with sterile sheets.
- The doctor will freeze your groin or arm.



The doctor moves the small balloon to the narrowed part of your artery. It is inflated (blown up) for about 20 seconds.

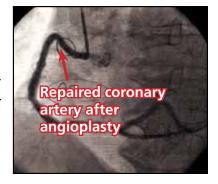
• You might feel chest pressure or chest pain when the balloon is blown up. This is normal. The feeling will go away once the

balloon is deflated and removed.

Staff may give you Nitroglycerin during the procedure. This may give you a headache.

- The stent is placed over a balloon and is directed into the blocked area in your artery.
- When the balloon is inflated, the stent expands into the artery. The stent stays in place permanently, holding the artery open.
- The doctor will give you a blood thinner to stop blood clots from forming in your stent. The doctor will tell you how long you will be on this medication.







### Radiation facts<sup>6</sup>

Those who have either a cardiac catheterization or angioplasty are exposed to radiation.

Even though you are exposed to radiation, the benefit outweighs the risk.

Speak with your doctor if you have any concerns.



### What happens after the angioplasty?

- You will be taken to recover in one of the following areas:
  - Cardiac Short Stay Unit (CSSU)
  - Coronary Care Intensive Care Unit (CCU)
  - Cath Lab patient area
  - If you are an inpatient, you may go back to your unit.
- The cardiologist will decide how long you will be in hospital. This can vary between 8 to 12 hours for outpatients and a few days for inpatients.
- You can have someone visit you while you are resting after the procedure.
- You may have blood work and an EKG done during your hospital stay.
- If the tube is in your leg, it will stay there for about 2 to 4 hours. After that time, the nurse will remove the tube, applying pressure to the site for about 20 minutes
- If the tube is in your wrist, it will be removed at the end of the procedure.
- You will need to remain in bed for about 2 to 8 hours after your procedure, depending on the access site used. (See page 7.)

- If you are uncomfortable or need to move, call the nurse for help.
- While you are resting:
  - do not lift your head from the pillow or lie with your hands under your head. This can cause bleeding from the access site used.
  - do not bend the arm or leg of the access site. Bending your arm or leg can make it start bleeding. You can move your other arm or leg.
  - do not cross your arms or legs. This can cause bleeding and blocks the circulation to your feet.
  - if you have to cough, sneeze or laugh, place your hand on your puncture site and apply pressure.
  - staff will bring you a snack and a drink. You need to drink fluids. This will help remove the dye from your body.
- The nurse will help you stand and ask you to walk around, when you are ready to move.
- The nurse will check your arm or groin often while you are in the hospital.

### How long will I be in the hospital?

Your doctor will decide if you can go home the same day or stay in hospital overnight. If you stay overnight, you will go home at 7:00 a.m. the next morning.

### Can I eat after the angioplasty?

Yes. The nurse will give you a snack after the procedure.



### Will someone call my family when the angioplasty is over?

We ask you to bring the name and telephone number of the person you would like us to contact in an emergency.

After your angioplasty, you can ask the nurse to call your family member. The nurse will let them know when they can pick you up.

### Discharge time

You doctor will decide whether you go home the day of your angioplasty or the next day.

- Same day discharge:
  - 1. If you go home on the day you have your angioplasty, you need to have someone take you home and stay with you for 24 hours.
  - 2. If you are an inpatient from another hospital, you may go back there.
- Next day discharge:

1. You will go home at 7:00 a.m. the following morning.

2. You need someone to take you home and stay with you for 24 hours.



### Going home after your angioplasty

- Please take your medications and eat as you do any other day.
- Check your groin or arm every few hours for bruising, bleeding or swelling.

### What happens after the angioplasty?

You need to book a follow up visit with your family doctor and cardiologist.

You can talk to the doctor about your angioplasty results and set up a treatment plan.

### Why does someone have to pick me up after the angioplasty?

Since you have been sedated, you have to have someone take you home.

### Why does someone have to stay with me for 24 hours after I leave the hospital?

During your angioplasty, the doctor places a tube in your artery. This area can start bleeding after you leave the hospital. If this happens, you need someone with you who can:

- y call "911"
- help stop the bleeding by putting pressure on the area.

If you cannot find someone to stay with you, tell your doctor. Your angioplasty booking can be changed to a time when someone can stay with you.

REMINDER: No driving for 48 hours after your angioplasty. VISITORS: Only 1 or 2 visitors per bedside.



### What to look for after your angioplasty

The following table tells you what to watch for after your procedure. It also tells you what to do if you have any of these signs:

Watch for:	How to get help:
Sudden bleeding that soaks through your clothes  Sudden swelling at the puncture site  Changes in your speech or eye sight	Call 911  If you are bleeding, have someone apply firm pressure over the puncture site.
Bad pain at your puncture site  Weakness or numbness or coolness in your arm or leg  Too much pain in your arm or leg	Call your doctor or go to the nearest Emergency Department.
<b>Redness, warmth</b> or other signs of infection at your puncture site	See your family doctor.
Chest pain	Follow the steps you normally do when you have angina:  • take 1 nitroglycerin every 5 minutes;  • if the pain does not go away after 3 dose of nitroglycerin, call 911 or go to nearest Emergency Department.
Skin rash	Call your doctor. Your rash might be caused by your medication or a dye reaction.

### Follow up after your angioplasty

- A nurse will call you the morning after your angioplasty to make sure you are okay.
- You can return to your normal activities slowly over the next week. You can go back to work when your cardiologist tells you.
- Remove your bandage the morning after your angioplasty. Keep the area clean and dry.
- Take showers instead of baths for 1 week after your angioplasty.
- Do not go swimming or get into a hot tub for 1 week after your angioplasty.
- You can restart sexual activities 2 days after your angioplasty.
- If you are driving for long periods, stop and stretch your legs often.
- If you drive a commercial vehicle, ask your doctor when you may go back to driving.
- Check with your cardiologist before travelling by airplane.

#### Do not:

- drive for 48 hours after the angioplasty or as instructed by your doctor.
- drive for 1 month if you have recently had a heart attack.
- do heavy lifting, physical effort and straining for 1 week.
- do more walking, bending or stair climbing than you have to do.



### Why did the doctor start me on an antiplatelet drug?

- An antiplatelet is a medication that slows down the clotting of blood.
- It can prevent blood clots in someone with heart disease, stents or angioplasty.
- If you have a drug eluting stent, you will have to stay on this drug for about one to two years.

### How to take this medication:

- Your doctor will tell you when to take this drug.
- Take with food so you do not upset your stomach. If you forget to take a dose, take it as soon as possible.

If you forget to take a dose, take it as soon as possible. However, if it is almost time for the next dose, just take that dose. Do not take the missing dose. You should not take 2 doses at one time.

### While taking your antiplatelet drug, you may have

an upset stomach, nausea, or diarrhea

### **Contact your doctor if you:**

- have a skin rash
- get diarrhea, nausea, or stomach upset that keeps happening
- keep bruising easily
- have nosebleeds
- have black or bloody stools
- have red urine
- notice a change in the colour of your skin, eyes, or stool.

### DO NOT STOP TAKING YOUR ANTIPLATELET DRUG BEFORE SPEAKING TO YOUR DOCTOR.

Stopping this medication can harm you by forming clots in your stent.





### Your cardiac rehabilitation program

- You will need to go to a Cardiac Wellness & Rehab Program. At this class you will look at:
  - the medications you take and why you take them
  - risk factors for heart disease
  - guidelines for diet and exercise.
- During this class, you will set up your rehabilitation program.

  The program includes detailed information and an exercise program designed just for you.
- You can take someone with you to these classes.

### **Healthy heart eating**

- Limit saturated fats: choose lower fat dairy products and lean cuts of meat.
- Limit hydrogenated fats: eat fewer foods made with shortening or hydrogenated oils and choose foods with the lowest amount of trans fats.



- Eat fish 2 to 3 times per week.
- Limit your salt intake.
- Increase fiber in your diet: enjoy whole grain breads and cereals, and have 7 or more servings of a variety of vegetables and fruits each day.

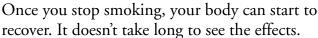


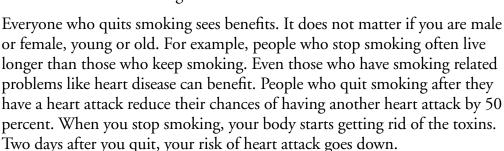
### **Smoking**<sup>5</sup>

Quitting smoking is the best thing you can do to improve your life. When you quit smoking, you reduce your chance of getting heart disease, cancer and breathing problems right away.

When you smoke or are exposed to second-hand smoke, you increase your risk of developing heart disease and stroke. Smoking can:

- build plaque in your arteries
- increase blood clots
- reduce the oxygen in your blood
- increase your blood pressure, and
- make your heart work harder.





### When you quit smoking:

- Within 20 minutes, your blood pressure may drop to a normal level
- ▶ In 8 hours, your oxygen levels increase in the blood
- ▼ In 24-48 hours, your chances of having a heart attack go down and your sense of smell and taste begin to improve
- ▼ In 1-3 months, your circulation improves, you may walk faster and your lung function may increase up to 20 percent.
- In 1 year, your risk of having a smoke-related heart attack is cut in half
- In 15 years, your risk of heart attack is the same as someone who never smoked at all.



### **Getting help**

- Find self-help materials from your doctor, pharmacy or Trillium's Health Information and Wellness Centre at the Mississauga site
- Smoker's Helpline (call 1-877-513-5333)
- Group or individual counseling through the Region of Peel Quit Smoking Program (call 905-799-7700)
- Pharmaceutical products such as:
  - 1. Nicotine Replacement Therapy (NRT) patch, gum, lozenges or inhaler
  - 2. Bupropion (Zyban)
  - 3. Varenicline (Champix)

### Who do I talk to if I want to quit smoking?

You can talk to your doctor or nurse. You can also ask for a copy of the brochure called "Thinking about Quitting Smoking?" You can get this brochure from the Trillium Health Information & Wellness Centre.

### If I quit smoking, will it affect my medication requirements?

Nicotine is the active agent absorbed into the body from tobacco products. It is known to affect many medications. Before you stop smoking you should speak to your doctor and pharmacist. They can adjust your medications.

### Can I get some help if I decide to quit smoking?

Yes. There are many community based programs and services. See "Getting Help" at the top of this page. For more information, see the inside of the back cover of this book for these resources.



### What you can do to decrease your risk of heart disease<sup>4</sup>

- Stop smoking
- Exercise regularly 3-5 times a week
- Eat foods low in fat and high in fiber
- Eat lots of fresh fruits & vegetables
- Have less sugar & salt in your diet
- Have your blood pressure checked regularly
- Have your cholesterol and triglycerides checked
- Try to keep the right weight for your height
- If you are diabetic, keep your blood sugar under control
- Balance work with rest and fun



### LEARN ABOUT ANGINA AND HEART ATTACKS

### What is angina?

Angina is chest pain. It occurs when your heart does not get enough blood or oxygen.

Angina is a "warning sign". It tells you that your heart is under stress and needs help.

### How do you know if you have angina?

### You can have any of these signs:1

- Pain in your chest which moves to your neck, jaw, back, shoulders and arms
- Chest pressure, tightness or heaviness
- Squeezing or burning in your chest
- Sharp pain or cramping

- Numbness in your arms
- Nausea or vomiting
- Trouble breathing
- Women may have less typical symptoms

### There are 2 types of angina

### A. Stable angina

This is the most common type. It happens when your heart works harder than normal. For example, it can happen when you exercise or increase your stress. If you rest or take medication, like nitroglycerin, the pain will go away.<sup>1,3</sup>

### B. Unstable angina

Unstable angina is an increase or change in your usual pattern of angina. This type of angina can happen when you are resting. The pain may be worse or more frequent than when you have stable angina. This type of pain does not go away when you take nitroglycerin.<sup>1,3</sup>



If this happens, you need to get help right away.



## If you have angina see your family doctor

Your doctor will:

- Give you a check up
- Ask you about your pain
- Find out if anyone in your family has had angina or chest pain
- Send you for tests.

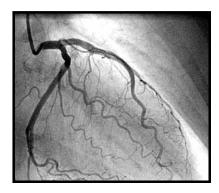
### What causes angina?

Your arteries can get plugged with plaque, cholesterol or fatty build up. When this happens less blood can flow to your heart.

### How do you test for angina?

Your doctor can send you for these tests:

- FCG: measures the electrical activity of your heart
- Stress Test: exercise or medication will stress your heart. Your ECG, heart rate and blood pressure will be monitored for changes.
- Chest X-ray: shows your lungs, heart and larger blood vessels
- Nuclear Scanning: shows areas of heart that are unhealthy
- Echocardiogram: creates sound waves to create a picture of your heart. It tells us how well your heart pumps and can also check your heart valves.
- Cardiac Catheterization: checks for blockages in the arteries and also measures how the heart and valves work.
- Blood Work: checks for elevated cholesterol and diabetes.



### How to treat angina:

Based on these tests your doctor can:

1. Treat you with medication such as:

- ➤ Nitroglycerin: relaxes and widens your blood vessels allowing more blood to flow to your heart. This is the most common way to treat angina.<sup>4</sup>
- Beta Blockers: reduce blood pressure, slow your heart rate and reduce the workload of the heart. This stops angina before it starts.<sup>4</sup>
- Calcium Channel Blockers: lower blood pressure and relax the blood vessels. Also may slow your heart rate.<sup>4</sup>
- Ace Inhibitors: help relax blood vessels, lower blood pressure and reduce the workload on the heart.<sup>4</sup>
- ➡ Antiplatelets: medication to stop platelets from clumping together.

  They reduce the risk of heart attack and stroke by preventing clots from forming.¹
- Diuretics: remove excess fluid from your body and decrease blood pressure.<sup>2</sup>
- Statins: lower blood cholesterol which may over time decrease the blockage in your arteries. It may also stabilize existing cholesterol plaques.



### 2. Recommend lifestyle changes

These will reduce your risk factors for heart disease and control chest pain. Your heart health depends on the lifestyle changes you make.

### Risk factors you cannot change:

- Your age and sex
- Your family history
- Your race
- Past heart disease problems

### Risk factors you can change:

- Stop smoking
- Lower your blood pressure
- Watch your cholesterol levels
- Control your weight
- Manage your diabetes
- Begin exercising
- Limit your stress



### 3. Treat you with angioplasty or heart bypass surgery

### How can angina be treated?

Angina can sometimes be treated with medication, along with lifestyle changes. In some cases, angioplasty or bypass surgery will be recommended.

#### What is a heart attack?

A heart attack occurs when your blood doesn't get to an area of your heart. When this happens, you will have chest pain. If the blood flow is not re-started in time, the heart can be damaged forever.

### What are the signs of a heart attack?

- Chest pain:
  - that does not go away with rest<sup>4</sup>
  - reaches your neck, jaw, back and arms<sup>4</sup>
  - feels like pressure, burning, squeezing, heaviness or tightness<sup>4</sup>
- Trouble breathing
- Nausea or vomiting
- Sweating, or feeling cool and clammy
- Feeling anxious

### If you have these signs:

- Call 911
- Stop what you are doing and rest
- If you take nitroglycerin, take your normal dose<sup>4</sup>
- Chew one adult 325 mg ASA tablet or two baby tablets as recommended by the Heart & Stroke Foundation of Ontario. (ASA is Acetylsalicylic acid, commonly referred to as Aspirin®)<sup>4</sup>
- ♥ Wait for emergency medical services (EMS) to arrive<sup>4</sup>





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# Cardiac Short Stay Unit (CSSU) Trillium Health Centre – Mississauga 100 Queensway West Mississauga Ontario

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### Regional Cardiac Care Coordinator Office Trillium Health Centre – Mississauga

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