

# Cardiac Catheterization

What every patient  
needs to know





## Acknowledgments

This booklet was prepared by the nursing staff from the Cardiac Catheterization Lab, Cardiac Short Stay Unit and Cardiac Triage office at Trillium Health Centre. We hope this information helps you prepare for your Cardiac catheterization and provides you with an understanding of heart disease and how you can reduce your risk.



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The information provided in this guide is for information purposes only. It is not intended nor implied to be considered, or used as a substitute, for professional health care advice, medical diagnoses or treatment. It is meant to be a general guide to your cardiac procedure at Trillium Health Centre.

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### Part II - Angina and Heart Attacks

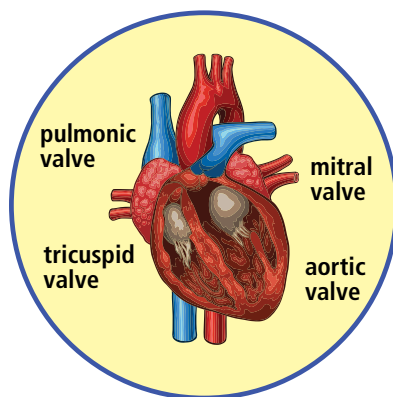
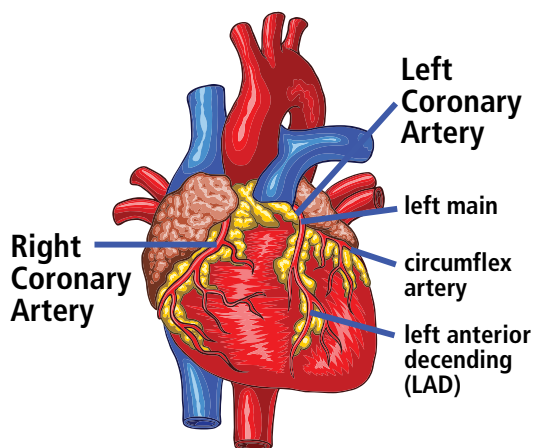
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## What is a Cardiac Catheterization?

A Cardiac Catheterization is a medical test. We use it to find out if you have a heart condition. It is sometimes called a Coronary Angiogram.

During this test, the heart doctor (cardiologist) puts a tube (called a catheter) into an artery in your upper thigh or arm. The doctor then guides the tube through one of your blood vessels, to your heart. Dye goes through the tube and into your arteries. The doctor can see if any of your arteries are blocked. This also helps the doctor to look at how well your heart and heart valves work.



## Preparing for a Catheterization

- ♥ Have your blood work and EKG (electrocardiogram) done the same day you visit your cardiologist.
- ♥ Let your cardiologist know if you have ever had a reaction to x-ray dye.
- ♥ Read the Cardiac Procedure package from Trillium Health Centre.
- ♥ Fill out the Patient Admission questionnaire.



- ♥ 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 Plavix.
  - If you are diabetic or take Coumadin, talk to your cardiologist (to find out if and when you need to stop taking this medication).
- ♥ Arrange for an interpreter to come with you if you do not speak English.
- ♥ Arrange to have someone drive you home after your test.
- ♥ When you go home, have someone stay with you until the next morning.

## **Can I eat before getting my blood work done?**

Check with your cardiologist first. You may have to do other tests at the same time. For example, the doctor may want to check your cholesterol level. For Cholesterol tests you cannot eat for 12 hours before the test.

## **Do I take my pills the morning of my test?**

Please ask your cardiologist. Usually:

- ♥ If you take aspirin, take it the morning of your test.
- ♥ If you use a nitroglycerin patch, put it on your upper arm the morning of your test.
- ♥ If you are diabetic or on a blood thinner called Coumadin, call your cardiologist one week before your test for instructions.
- ♥ If you do have to take pills, please take them with a small sip of water only.



## What happens the day of your test?

- ♥ Take a shower and wash yourself thoroughly.
- ♥ Do not eat or drink for 4 hours before your test. For example, if your test starts at 10 am., you need to stop drinking and eating by 6 am.
- ♥ Take your pills with a small sip of water. Do not take your diabetic tablet(s) today and your Coumadin (blood thinner) as instructed by your cardiologist.
- ♥ Leave your valuables at home. For example, take off your rings, earrings, watch or other items that might get lost.
- ♥ Arrive at Trillium Health Centre 2 hours before your appointment time.
- ♥ When you get to the hospital
  - First go to the Surgery Check-in desk on the second floor to register.
  - Then go to the Cardiac Cath Lab. This is where you will have your test. There may be unexpected delays. Be prepared to wait.
- ♥ Wear loose, comfortable clothing.
- ♥ **Bring these items to the hospital with you:**
  - your prescription medications in their original containers
  - your Health Card
  - your Cardiac 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.

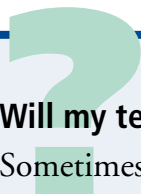


**Procedures are often delayed because of daily emergencies in the lab. Your nurse will inform you of such delays.**



## What happens during the test?

- ♥ A nurse will start an intravenous in your arm.
- ♥ A nurse will clip the hair from your groin.
- ♥ The cardiologist doing the test will explain it to you.
- ♥ You will have to sign a consent form.
- ♥ The doctor will ask the nurse to give you a mild sedative. This will help you relax during the test.
- ♥ Your heart rhythm and blood pressure will be checked during the test.
- ♥ A nurse will wash your groin or arm and cover the area with sterile sheets.
- ♥ The doctor will freeze your groin or arm. This makes the area feel numb.



### **Will my test be on time?**

Sometimes there are delays due to in-hospital emergencies.

### **How long will I be at Trillium Health Centre?**

You will be in the hospital for about 8 hours.

### **How long do I have to stay in the hospital after my test?**

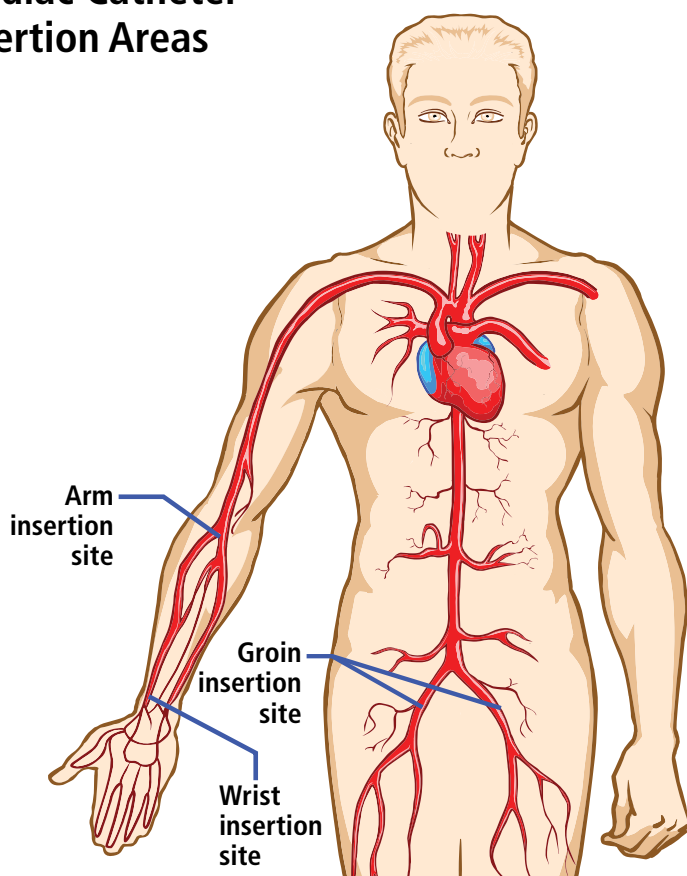
You will have to stay in hospital for about 4 hours after your test. During the last hour, the nurse will help you stand and ask you to walk around before sending you home.

### **Am I allowed to eat after my test is over?**

Yes. The nurse will give you a snack after your test.



## Cardiac Catheter Insertion Areas



- ♥ The doctor puts a tube in your artery or vein. This tube sends dye to your heart. You may feel a hot flush over your entire body when the dye goes in. This is normal. The feeling only lasts for about 30 seconds. You may also feel a fast or irregular heartbeat. This is also normal. The dye can be seen by the x-ray machines. You may be able to see it on the TV monitor.
- ♥ The doctor may ask you to take a deep breath and hold it for a few seconds while pictures are taken of your heart.





## What happens after the test?

- ♥ You will go to the recovery area and rest for about 3 hours. You can have a visitor with you while you are resting. If you are uncomfortable or need to move, call the nurse for help.
- ♥ A nurse will remove the tube. The nurse may use a clamp or hand to apply pressure to the puncture site for about 20 minutes. During this time, the nurse will watch your blood pressure, heart rate and pulses.
- ♥ 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 area where you had the test.
  - Do not bend the arm or leg that the test was done on – this may also cause bleeding.
  - Do not cross your legs – this may cause bleeding and blocks 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.
- ♥ After 3 hours, the nurse will help you stand and ask you to walk around. After that, you will be able to go home.

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

We ask you to bring the name and telephone number of the person you would like us to contact in case of emergency. After your test, you can ask the nurse to call your family member. The nurse will let them know when they can pick you up.



## Going home

- ♥ You can go home 3 to 4 hours after your test ends.
- ♥ You need to have someone stay with you until the next morning.
- ♥ Please take your medications and eat as you would normally.
- ♥ Check your groin or arm every few hours for bruising, bleeding or swelling.

## 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 to look for after your test

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:
<p><b>Sudden bleeding</b> that soaks through your clothes</p> <p><b>Sudden swelling</b> at the puncture site</p> <p><b>Changes in your speech</b> or <b>eye sight</b></p>	<p><b><u>Call 911</u></b></p> <p>If you are bleeding, have someone apply firm pressure over the puncture site.</p> 
<p><b>Bad pain</b> at your puncture site</p> <p><b>Weakness</b> or <b>numbness</b> or <b>coolness</b> in your arm or leg</p> <p><b>Too much pain</b> in your arm or leg</p>	<p>Call your doctor or go to the nearest Emergency Department.</p>
<p><b>Redness, warmth</b> or other signs of infection at your puncture site</p>	<p>See your family doctor.</p>
<p><b>Chest pain</b></p> 	<p>Follow the steps you normally do when you have angina:</p> <ul style="list-style-type: none"> <li>• take 1 nitroglycerin every 5 minutes;</li> <li>• if the pain does not go away after 3 dose of nitroglycerin, <b>call 911</b> or go to nearest Emergency Department.</li> </ul>
<p><b>Skin rash</b></p>	<p>Call your doctor. Your rash might be caused by your medication or a dye reaction.</p>



## **What happens after the test?**

You need to book a follow up visit with your family doctor and cardiologist. You can talk to the doctor about your test results and set up a treatment plan.

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

Since you have been sedated, you need to have someone take you home from Trillium Health Centre.

## **Why does someone have to stay with me until the next day?**

During your test, the cardiologist places a tube in your artery. This area can start bleeding after you leave the hospital.

If this happens, you need someone to call “911”. You also need someone to help stop the bleeding by putting pressure on the area.

If you cannot find someone to stay with you, tell your cardiologist. Your test can be changed to a time when someone can help you.

## **Can I go out the day after my test?**

We would like you to stay quiet the day after your test. Avoid walking, climbing stairs, lifting, straining and exercising for one week. You also should not drive for 24 hours after your test.



## Over the next few days

- ♥ One of our nurses will call you the morning after your test.
- ♥ Go back to doing your normal activities.
- ♥ Remove your bandage the morning after your test. Keep the area clean and dry.
- ♥ Take showers instead of baths for 3 days after your test.
- ♥ You can restart sexual activities 2 days after your test.
- ♥ 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 traveling by airplane.
- ♥ Book a follow up meeting with both your family doctor and cardiologist. Your cardiologist will discuss the results of the test and your treatment plan.

### **Do not:**

- ♥ drive for 24 hours after your test or as instructed by your doctor.
- ♥ do heavy lifting, physical effort and straining for 1 week.
- ♥ do needless walking, bending or stair climbing.



## 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.





Once you stop smoking, your body can start to recover. It doesn't take long to see the effects.

Everyone who quits smoking sees benefits. It does not matter if you are male or female, young or old. For example, people who stop smoking often live longer than those who keep smoking. Even those who have smoking related problems like heart disease can benefit. People who quit smoking after they have a heart attack reduce their chances of having another heart attack by 50 percent. When you stop smoking, your body starts getting rid of the toxins. Two days after you quit, your risk of heart attack goes down.

### **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:<sup>1</sup>**

- ♥ 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

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.

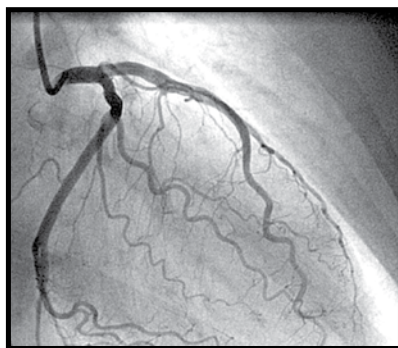
### What causes angina?

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

## How do you test for angina?

Your doctor can send you for these tests:

- ♥ **EKG:** measures the electrical activity of your heart
- ♥ **Stress Test:** exercise or medication will stress your heart. Your EKG, 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>
- ♥ **Anti-platelets:** stop platelets from clumping together. They reduce the risk of heart attack and stroke by preventing clots from forming.<sup>1</sup>
- ♥ **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.<sup>4</sup>





## 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.

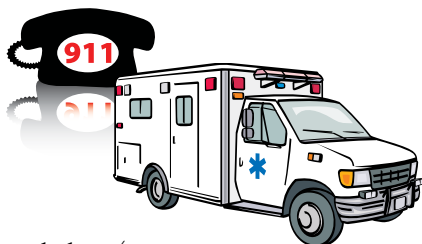
## What are the signs of a heart attack?

- ♥ 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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[www.trilliumhealthcentre.org](http://www.trilliumhealthcentre.org)

**Cardiac Short Stay Unit (CSSU)**  
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