Heart Disease

A guide for patients with heart disease and their families

Read this guide to learn about:

• Different kinds of heart disease
• What may happen during your hospital stay
• What to do after you go home
• Where to find other helpful resources

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Introduction

This guide was written by members of your health care team. It provides you and your family with general information about heart disease.

This guide should not replace the information you get from your health care team. It provides you with more information that can help. Always talk to a member of your health care team if you have questions.

This guide has 9 chapters. The first 6 chapters have information for all of our heart patients. The last 3 chapters are for patients with certain heart conditions. These may not apply to you. Please ask a member of your health care team which parts are important to read.
chapter 1  How Your Heart Works

Where is my heart?

Your heart is in the middle of your chest, slightly to the left. It is protected by your sternum (breastbone) and rib cage.

What does it do?

Your heart is a powerful muscle. It keeps blood moving around your body, like a pump.

The blood pumped by your heart carries oxygen and nutrients (food) to body cells and tissues. It also removes waste.

What does my heart look like on the inside?

Chambers

Inside your heart, there are 4 separate spaces called chambers. Blood moves in and out of these chambers when your heart pumps.

There are 2 chambers on the right side of your heart. They are called the right atrium and the right ventricle.

The 2 chambers on the left side are called the left atrium and the left ventricle.
What are coronary arteries?

Like any muscle, the heart needs oxygen and nutrients. Coronary arteries start from the aorta and bring fresh blood to your heart.

2 main coronary arteries lie on the surface of the heart:

**Left coronary artery**
The **left coronary artery** starts with a short part called the **left main branch**. It divides into two parts. One part is called the **left anterior descending** (LAD) branch. The second part is called the **circumflex branch**.

The LAD feeds the left side and the front of the heart. The circumflex takes blood to the back of the heart on the left side.

**Right coronary artery**
The **right coronary artery** feeds the right side of the heart. It also feeds the back and underside of the left side of the heart.

The coronary arteries divide into smaller branches. This is so each part of the heart muscle receives oxygen and nutrients.
Valves

Inside your heart, there are 4 valves. Each valve is like a set of doors. They make sure blood moves through your heart in only one direction.

The **tricuspid valve** and **pulmonic valve** are on the right side of your heart. They control the blood flowing into your heart.

The **mitral valve** and **aortic valve** are on the left side of your heart. They control the blood flowing out of your heart.

How does my heart work?

1. Blood needs nutrients and oxygen. It gets this by flowing through your heart. Blood enters through the right side of your heart.

2. It flows into your right atrium, then into your right ventricle. Here it is pumped from your heart to your lungs. The the tricuspid and pulmonic valves keep it moving in the same direction.

3. Your blood picks up a fresh supply of oxygen from your lungs. It then returns to the left side of your heart.

4. It flows into your left atrium, then into your left ventricle. Here it is pumped from your heart to the rest of your body. The mitral and aortic valves keep it moving in the same direction.

5. The blood moves out of your heart through the **aorta**. The aorta is a large **artery**. An artery is a tube that carries blood away from your heart.

6. Your blood then travels to smaller arteries and to all parts of your body.
Write any notes or questions here
chapter 2  Coronary Artery Disease

What is coronary artery disease?

Coronary artery disease happens when coronary arteries become narrowed. Sometimes layers of fat, also known as plaque, build up on artery walls. This is called atherosclerosis. When this happens, less blood flows through the arteries.

Coronary arteries bring oxygen and nutrients to your heart muscle. If 75% of your coronary artery is blocked, your heart muscle may not get enough. This is called angina. This is a problem when your heart needs to work harder (for example, when you exercise).
How will I find out if I have coronary artery disease?

Doctors use different tests to help find out if you have coronary artery disease. These tests usually take place in a hospital.

Learn about all the tests by reading Chapter 3: Testing for coronary artery disease.

What increases my risk of having coronary artery disease?

These factors will increase your chances of having coronary artery disease:

- Smoking
- High blood pressure
- High blood cholesterol (a type of fat in your blood)
- Diabetes (high blood sugar)
- Obesity (being overweight)
- Stress
- Family history

These are also called risk factors for coronary artery disease.

Why are risk factors important to know?

You can lower your chance of getting heart disease if you remove a risk factor. For example, if you quit smoking, you can lower your risk of getting heart disease.

If you already have heart disease, removing a risk factor will help slow it down.

Read Chapter 5: Daily life guidelines. There you will learn how to lower your risk.
What are the symptoms (warning signs) of angina?

You may have angina if you feel:

- Pressure, a tightening, squeezing or cramping feeling in:
  - your chest or arms
  - your neck, jaw or throat
  - your shoulders or back
- A burning feeling in your chest that may feel like heartburn
- Out of breath or shortness of breath

When might these symptoms happen?

These symptoms might happen when:

- your heart is working harder than usual (for example, when you exercise)
- after eating
- when you do an activity such as walking in cold or windy weather
- when you are resting

Call your family doctor or cardiologist right away if you feel angina symptoms:

- more often
- even when you are less active than usual
- even when you are resting
What should I do if I feel the symptoms of angina?

1. Stop what you are doing.
2. Find your Nitroglycerine® (NTG) pills or spray.
3. Sit down.
4. Take your Nitroglycerine® (NTG) pill or spray. Follow the instructions on the bottle.
5. If your pain is still there 5 minutes later, take a 2nd pill/spray.
6. If your pain is still there after another 5 minutes, take a 3rd pill/spray.

Call 911 right away if:

- Your pain does not go away within 5 minutes after taking the third nitro pill or spray.

After you call, unlock your front door. Sit or lie down and rest. Do not drive yourself.

If you are with someone, have them drive you to the nearest emergency department.
What is a heart attack?

A heart attack happens when arteries that deliver blood and oxygen to the heart muscle become blocked. No blood can get to the heart muscle. A heart attack is also called myocardial infarction, or MI.

During a heart attack, plaque built up in the artery breaks open. A blood clot forms on top of this piece of plaque. This stops blood from flowing through the artery. When this happens, the heart muscle is damaged.

What are the symptoms of a heart attack?

Symptoms of a heart attack are like the symptoms of angina. For a heart attack, the symptoms last longer and are usually more severe.

You might be having a heart attack if you have any of these kinds of feelings or pain in your chest:

- Pressure
- Tightness
- Burning
- Heaviness
- Squeezing in the upper body lasting longer than 15 minutes
Sometimes the symptoms listed above may feel mild. If you have some of these other symptoms as well, you may be having a heart attack:

- Sweating
- Nausea
- Palpitations (your heart beating very fast)
- Dizziness
- Weakness
- Trouble breathing (shortness of breath)
- Vomiting

Call 911 right away if you think you are having a heart attack:

After you call, unlock your front door. Sit or lie down and rest.

Do not drive yourself to the hospital.

If you are with someone, have them drive you to the nearest emergency department.

What is the difference between a heart attack and angina?

A heart attack and angina are different.

When you have angina, there is no damage to the heart muscle.

When you have a heart attack and you do not have timely interventions, part of the heart muscle dies. A scar forms on the muscle if a heart attack is not treated right away.
How is coronary artery disease treated?

There is no cure for coronary artery disease. But, you can help slow the narrowing of your arteries. You can do this by changing your risk factors like smoking or being overweight.

Other treatments may include:

- Medicines
- Angioplasty
- Aortocoronary Bypass (ACB) Surgery

Each of these treatments is explained in detail below.

**Medicines**

Medicines are a common treatment for coronary artery disease.

*Some medicines control the symptoms of angina by relaxing the arteries.* This helps to improve blood flow. More blood flow means more oxygen gets to the heart muscle.

*Other medicines slow your heart rate.* When your heart beats slower, it is working less hard. If your heart is working less, it does not need as much oxygen.

On the following page is a chart that gives some examples of medicines that can treat coronary artery disease.
<table>
<thead>
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<th>Name of medicine</th>
<th>How the medicine works</th>
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| Nitrates         | • opens up your blood vessels  
|                  | • increases the amount of blood flow to your heart  
|                  | • prevents or treats chest pain |
| Aspirin          | • prevents platelets (clotting material in your blood) from sticking together  
| Clopidogrel (plavix®) | • reduces your risk of having a heart attack |
| Ticlopidine (ticlid®) |                          |
| Prasugrel (effient®) |                          |
| Beta Blockers    | • slows your heart rate  
|                  | • decreases the amount of oxygen needed by your heart  
|                  | • decreases your blood pressure |
| Calcium Channel Blockers | • opens up blood vessels to increase blood flow to the heart  
|                  | • may also slow your heart rate  
|                  | • decreases your blood pressure |
| Cholesterol Lowering Agents | • lowers your cholesterol when diet and exercise are not enough |
| Angiotension converting Enzyme (ACE) inhibitors | • slows or prevents damage to the heart muscle following a heart attack  
| Angiotension receptor blockers (ARB) | • may also reverse some damage  
|                  | • decreases blood pressure |

Read **Chapter 4: Cardiac (heart) medicines** to learn more about your medicines.
What is Nitroglycerin®?

Nitroglycerin® is a medicine that relaxes your arteries. It helps to improve blood flow to your heart muscle.

It comes in 2 forms – pill and spray. Each form of Nitroglycerin® works in the same way.

How to take Nitroglycerin® pills:

1. Place the pill under your tongue.
2. Let it dissolve or melt under your tongue.

Do not swallow this pill! The pill is absorbed and works best when it dissolves (or melts) under your tongue.

How should I store my pills?

- Throw out the cotton packing when you open a new bottle of pills.
- Store your Nitroglycerin® tablets at room temperature.
- Keep the lid tightly closed.
- Keep the pills in the brown bottle that they came in.
- **Throw out the pills 3 months after the bottle has been opened.** It is a good idea to write the date to throw them out on the bottle.

For example, if you opened the bottle on January 15, the date that you would write on the bottle is April 15.

Always carry your Nitroglycerin® pills with you.
How to use the Nitroglycerin® Spray:

1. Hold the spray upright. Do not shake the spray.
2. Remove the cover from your spray.
3. Place your finger on the top of the button.
4. Open your mouth. Bring the spray close to your mouth.
5. Press the button firmly to release the spray. Aim for under your tongue or in the side of your cheek.

Always carry your Nitroglycerin® spray with you.

How should I store my spray?

Store your spray at room temperature.
Surgery

Sometimes medicines may not work well for you. If this happens, your doctor may suggest 1 of these surgeries:

1. Angioplasty
2. Aortocoronary Bypass surgery (also called coronary artery bypass surgery)

Angioplasty

Angioplasty is a procedure that opens up the narrow or blocked arteries in your heart. It is a treatment that can work well for people who have this problem.

Angioplasty is a procedure for people with 1 or 2 blocked arteries. You do not need to go to an operating room for an angioplasty. Instead you go to a hospital department that is set up just for angioplasty.

Read Chapter 7: Angioplasty to learn more about this procedure.

Aortocoronary Bypass (ACB) surgery

Your doctor may suggest aortocoronary bypass (ACB) surgery if:

• medicines are working to control your symptoms
• your doctor is worried about the place where your artery or arteries are narrowed
ACB surgery increases blood flow to the heart muscle. This will relieve your symptoms and improve how your heart works.

What happens during ACB surgery?

1. During ACB surgery, your surgeon will bypass the narrow parts or blockages in your coronary arteries. Your surgeon will do this by using a piece of vein or artery from your own body.

2. Your surgeon will use a piece of vein from your leg and/or an artery from your chest or wrist.

3. If a leg vein is used, one end is sewn to the aorta. The other end is sewn to the coronary artery beyond the blockage.

4. If a chest artery is used, one end is left attached to a branch of the aorta. The other end is sewn to the coronary artery below the blockage.

5. Oxygen-rich blood can then flow through this new path called a “bypass graft” to the heart muscle.
How many bypasses will I have?

- The number of bypasses you have will depend on:
  - the number of arteries affected
  - the size of the artery or arteries beyond the blockage
  - the condition of the artery or arteries beyond the blockage

- Some arteries cannot be bypassed. Your surgeon will talk to you about this.

Please note that the narrowed or blocked arteries are not removed during ACB surgery.

What will happen if I need open-heart surgery?

Open-heart surgery usually takes from 3 to 4 hours to complete. After the surgery, you go to an intensive care unit for 1 to 2 days. You will then return to your hospital room. Most patients are in hospital for 5 to 8 days recovering from the operation.

What are the risks of having heart surgery?

The risks of heart surgery are not the same for everyone. Your risk will depend on many factors, including:

- Your age
- How severe your angina or other symptoms are
- If you have had a heart attack recently
- Other health problems (such as kidney disease) that you have
- How healthy your heart muscle is
- Whether your heart valves need to be repaired or replaced

Your surgeon will explain all the risks you will have. Your surgeon will help you compare the risks of surgery with the risks of not having surgery.
What are some possible complications (problems)?

Heart surgery is major surgery. Complications (problems) may happen. These complications may be small or large. Some complications that could happen are:

- Problems with your heart rate. This means you might need a pacemaker. A pacemaker is a little machine that keeps your heart beating at a regular pace. It will be placed in your body and will stay there for the rest of your life.
- Irregular heartbeat
- Bleeding (internal or external)
- Wound infection
- Breathing problems
- Heart attack, stroke or death

Your surgeon will explain all possible complications to you.

Write any notes or questions here
What tests can I expect when I am in the hospital?

If you have heart problems, you may have to be admitted to a hospital. During your stay in hospital, you may have a number of tests.

The tests explained below help your health care team understand your heart problem better.

Electrocardiogram (ECG)

Your heart gives off electrical currents when it beats. An electrocardiogram (ECG) records how these currents move through your heart muscle. This test is painless.

This is what happens during the test:

1. You lie quietly for about 3 minutes.
2. Wires are attached to your chest, arms and legs.
3. Electrical currents from your heart go through the ECG machine.
4. These currents are recorded on special graph paper.
The ECG can give your doctor different information about your heart. It can show if your heart:

- has an abnormal heartbeat
- has some damage
- is enlarged (bigger than usual)
- is not getting enough oxygen

**Echocardiogram**

An **echocardiogram (echo)** or ultrasound helps doctors see the size of your heart. It can also check how the chambers and valves are working. This test takes about 30 minutes. This test is painless.

This is what happens during the test:

1. You are asked to lie quietly on a bed.
2. You remove the clothes from your upper body. A technician moves a probe across your chest.
3. You may feel some pressure as the probe is held against your chest.
4. You may feel cold from the gel used.
5. The technician begins taking pictures of your heart.
6. You may be asked to turn on your side and hold your breath.
Sometimes, your doctor needs to see parts of your heart more closely. If this is the case, you may need a transesophageal echo. For this test, you swallow a probe for about 30 minutes.

You are given a mild sedative. A sedative is a medicine that helps you feel relaxed. You are also given medicine (local anesthetic) to numb your throat. This helps you feel more comfortable during the procedure.

**Exercise Stress Test**

An exercise stress test measures how your heart deals with the stress of physical activity. You are connected by wires to an ECG monitor. It checks your heart’s electrical activity and your blood pressure.

**How to prepare for the test:**

For 48 hours (2 days) before the test:

1. Do not drink caffeinated beverages such as coffee, tea or Coca-Cola. Caffeinated beverages can affect the results of the test and make them inaccurate.

On the day you have your test:

2. Wear comfortable walking shoes and loose clothing.
3. Do not eat heavy foods.
4. Do not drink a lot of liquid.

Ask you doctor if you should take your medicines on the day of your test.
This is what happens during the test:

1. You walk on a treadmill.
2. Every 2 to 3 minutes the treadmill moves faster.
3. The test is stopped if:
   - your chest feels uncomfortable
   - you get short of breath
   - the ECG shows that your heart is not getting enough oxygen
4. You return to a bed or table for another ECG after the test is over.

Tell the doctor or technician if you are short of breath or feel light-headed at any time during the test.
Nuclear Scans

A nuclear scan checks the blood flow to the heart muscle. It looks for a damaged heart muscle and checks how well your heart pumps blood to your body.

In a nuclear scan, a small amount of radioactive material is injected into a vein. Radioactive material gives off energy. This material is not harmful to you.

There are 3 types of nuclear scans:

1. Exercise thallium scan/cardiolite
2. Persantine thallium scan/cardiolite
3. Multiple Gated Acquisition scan (MUGA)

Read the section below to learn about each scan.

1. Exercise thallium scan/cardiolite

The exercise thallium scan shows your cardiologist the areas of your heart that do not get enough oxygen during exercise.

This is what happens during the test:

1. A small amount of a radioactive material called thallium (or cardiolite) is injected into your bloodstream. This travels through your coronary arteries into your heart muscle.
2. You walk on a treadmill.
3. A special camera measures the amount of radioactive material that reaches the heart muscle while you exercise.
4. After walking on the treadmill, you lie on a table or bed.
5. You will get another scan. This is done while you are resting, about 4 hours after the treadmill.
2. Persantine thallium scan/cardiolite

This test shows your cardiologist the areas of your heart that do not get enough oxygen during exercise. If you are not able to walk on a treadmill, your doctor may choose this test instead of an exercise thallium scan.

Instead of walking on a treadmill, the doctor injects a medicine called persantine. This medicine has the same effect on your heart as exercise.

This test helps your cardiologist to see:

- the size of your heart
- where there is poor blood flow
- if or where your heart muscle is damaged

3. Multiple Gated Acquisition scan (MUGA)

This test shows how well your heart is pumping. It can tell your cardiologist if there are any problems with your heart muscle by showing how much blood the heart pumps with every heartbeat.

It uses a radioactive material to see how well your heart pumps. Radioactive material gives off energy. This material is not harmful to you.

A special camera takes pictures of your heart while you are in different positions.
Heart angiogram (heart catheterization)

A heart angiogram (sometimes called a coronary angiogram) is a test to see if there are problems in different parts of your heart. This test can help the doctor see if there are problems:

- with any valves in your heart
- in any chambers in your heart
- with the main blood vessels of the heart (aorta or pulmonary)
- with the blood flow in your coronary arteries (if there is fatty buildup)

During a heart angiogram, dye is put through a catheter (a small tube) into the different parts of your heart. Then x-rays are taken. This helps to find any problems.

This test takes about 30 minutes to 1 hour. It takes place in a cardiac catheterization laboratory or “cath lab” for short.

How to prepare for the test:

If your heart angiogram is in the morning:

- Do not eat or drink anything after midnight the night before.

If your heart angiogram is in the afternoon:

- You may be able to eat a light breakfast.
  Please ask your nurse or doctor whether you should eat breakfast.
This is what happens during the test:

1. You are asked to lie on a table under an x-ray camera.

2. Your doctor puts a small amount of freezing in your groin or arm. Your skin may burn or sting as the freezing is injected.

3. Once the skin is numb, your doctor puts a needle into your artery. A small tube (also called an introducer sheath) is then put over the artery.

4. Another longer tube is moved along the artery until it reaches the heart. This tube helps the doctor to put smaller tubes and wires into your heart.

5. Once the tube is in your heart, your doctor injects x-ray dye into the tube. You do not feel the tube as it travels to your heart. You may feel a brief warm or hot feeling in your chest when the dye is injected.

6. A technician takes pictures with an x-ray camera. This camera records the flow of dye in your coronary arteries. Pictures may also be taken of the pumping chamber (left ventricle) of your heart.

7. When the doctor has enough pictures, the tube and needle are removed.

8. You are then moved to a recovery area. The longer tube is removed. A clamp is put on the needle site. This prevents bleeding and allows the needle site to form a seal.

9. When the clamp is taken off, a bandage is placed over the needle site.

10. You are brought back to your room on the Cardiology ward. You will rest in bed for about 4 hours if your groin was injected (also called femoral approach). You will rest for 2 hours if your arm was injected (also called radial approach).

11. You are asked not to bend the affected leg for 4 hours. The head of your bed is raised to 30 degrees.
Places where the catheter might enter your body:

A heart angiogram is a safe procedure, but there is a small risk of problems. These include bleeding, heart attack or stroke. Your doctor will talk to you about these risks. Your doctor will ask for your written permission to perform the heart angiogram.
Write any notes or questions here
chapter 4  Cardiac (heart) Medicines

Medicines are a common treatment for heart disease.

Your medicine information sheets are attached to this chapter. These sheets have information about the cardiac medicines your doctor has prescribed for you. Read the medicine information sheets to learn:

- The name of your medicine
- Why you need to take it
- How to take it
- Side effects that you should watch out for
- When you need to call your doctor

How will my hospital pharmacist help me?

The pharmacist is part of your health care team in the hospital. The pharmacist will make sure that you get the medicines that are right for you.

Before you go home from the hospital, your pharmacist will:

1. Meet with you to talk about the medicine charts in this booklet.
2. Explain the medicines you will be taking when you go home, including:
   - The reason you are taking each medicine
   - The best times to take your medicines
   - Whether you should take your medicines with or without food
3. Give you more written information about taking your medicines at home.
4. Give you any other information you might need.

Show your medicine chart to your family doctor and your community pharmacist. They can explain if there were any changes to your medicines while you were in the hospital.
10 rules to remember about your medicines

1. Follow the instructions for taking your medicine. Take your medicine exactly as your doctor asked you to.

2. Take your medicine the same time every day.
   
   If you miss a dose, take it as soon as you remember. If you remember when it is near the time for your next dose, take only 1 dose. Do not take more than 1 dose at the same time.

3. Keep your medicines in the bottle they came in.

4. Store your medicines in a cool, dry place, away from heat or light.

5. Store your medicine in a safe place away from children and pets.

6. Contact your pharmacy at least 24 hours before you run out of your medicine. If there are no more repeats on your prescription, you or your pharmacist will need to call your doctor.

7. Always tell your doctor, pharmacist and dentist which medicines you are taking.

8. Always tell your doctor and pharmacist if you are taking any non-prescription medicines. This includes vitamins and/or herbal products.

9. Do not share your medicines with other people.

10. Talk to your pharmacist if you have any questions about your medicines.
I have just returned from the hospital. What kinds of activities can I do safely?

Once you get home, you may do all the things you did while in the hospital. Balance rest and activity. This is very important.

At first, it's better to take many short breaks instead of a few long ones. Don't do activities that cause you to strain or tense all your muscles at the same time.

**Don't do these activities:**

- carry heavy grocery bags
- lift anything over 20 lbs (10 kilograms)
- push or pulling anything heavy
- strain during a bowel movement
- try to open a stuck window
- try to open a stuck jar lid

While you are doing activities such as driving, cleaning, vacuuming, playing sports or lifting weights, **watch for symptoms like:**

- chest pain
- nausea (sick to your stomach)
- fatigue (feeling very tired)
- dizziness
- shortness of breath

When these symptoms happen, stop what you are doing. Tell your doctor about these symptoms right away.
Add more challenging activities slowly. For example, you should not lift anything over 20 lbs (10 kilograms) for 8 weeks. Try not to go up and down the stairs too often. Have someone else help you with these kinds of tasks for the first few weeks.

**Read the charts below to learn what types of activities you can do as you heal.**

Check with your doctor if you are unsure when to start an activity.

### You can do these activities during week 1 at home:

- Light hobbies. Some examples are reading, board games, knitting or playing the piano
- Light housework such as dusting
- Helping with only one thing at mealtime. For example, you can wash dishes for 1 meal and set the table for another.
- Watch a relaxing movie
- Ride in a car for less than 15 minutes
- Visit or have dinner with friends
- Simple chores with the help of a friend. For example you can buy milk at the store.
- Wash yourself, shave, dress
- Walking at a slow pace around the block.

Slowly build up your activity level. You will be able to do more activities after you have been home for a while.
### You can do these activities during week 2 at home:

- If you need to climb stairs, do so very slowly.
- Do light housework. Some examples are folding laundry, sweeping the floor, and making your bed.
- Prepare a light meal. For example, you can make a sandwich and soup.
- Slowly ride a stationary bike at the easiest setting.
- Walk at a slow to medium pace (about 1 km in 10 to 11 minutes).

### You can do these activities during weeks 3 and 4 at home:

- Play more active games like bowling or billiards.
- Carry out light garbage 1 bag at a time.
- Do light loads of laundry and ironing.
- Light gardening. For example, you can pick small weeds.
- Wash the car
- Walk at a medium to quick pace (about 1 km in 8 to 9 minutes)
You can do these activities during weeks 5 and 6 at home:

- Hobbies or sports like fishing, leisure skating, slow dancing, or golfing with a cart
- Housework like changing bed sheets or minor house repairs
- Driving your car for short distances (about 20 to 30 minutes)
- Riding in car for up to 1 hour
- Walking at your regular speed (about 1 km in 7 minutes)
- Climbing stairs at your regular speed

You can do these activities from week 8 onwards:

- Hobbies or sports like cycling, jogging, swimming and tennis.
- Walking for 9 holes of golf or playing 18 holes using a cart
- Grocery shopping
- Taking care of your lawn. For example: power mowing, raking, pruning
- Heavier house work like vacuuming, washing windows and cleaning the floor (using long handled tools)
- Lifting objects up to 20 lbs. Talk to your doctor before lifting heavier objects
- Doing farm work after getting your doctor’s permission

Check your heart rate when doing new tasks. See page 46. If your heart rate is beating fast, stop your activity and rest before continuing.
When can I return to work?

When you can return will depend on a few things. It will depend on the type of job you have. It will also depend on the reason you were in hospital.

Most cardiologists recommend that patients return to work within one month after discharge. Everyone’s situation is different. Discuss your situation with your cardiologist.

When can I have sex again?

You can usually have sex within 7 to 10 days after returning home. If you feel comfortable climbing 2 flights of stairs, it is safe to have sex.

If you still feel tired or weak, remember: sex is not just intercourse. Touching, hugging and kissing are also ways of expressing caring.

Some drugs can affect your desire for sex. They can also affect your performance. Talk to your doctor or pharmacist if this is the case. Other things that can affect your desire or performance are:

- if you have just eaten a large meal
- if you have had some alcohol
- if you exercised a lot
- if you are feeling tired
- if you are feeling stress
When can I drive my car?

Talk to your cardiologist about this question. When you can drive may depend on your illness.

Check with your doctor if you had an **irregular heartbeat** when in hospital. This can affect when you can drive.

If you were admitted for **angina** or for a **heart attack**:
You may start driving again in 4 weeks.

If you were admitted for **angioplasty**:
You may start driving again in 2 days.

If you were admitted for **bypass or valve**:
You may start driving again in 6 weeks.

When you start driving again, try to avoid things that might cause you stress.

For example, avoid things like:

- driving in rush hour traffic
- driving in bad weather
- driving at night
- driving at high speeds

When is it safe to travel by plane?

Usually, you can travel on a plane within 2 weeks after coming home from hospital. It is important for you to discuss this with your doctor. When you can travel by plane may depend on your illness.
Exercise

What kinds of exercise can I do when I get home from the hospital?

Adding exercise to your daily life can be hard at first. Be patient and get support from your family or friends. After a while, exercise will be a healthy and enjoyable part of your lifestyle.

There are 2 types of exercises you should do. One type of exercise is stretching. The other type is called cardiovascular exercise.

Read the sections below to learn about each type.

**Stretching exercises**

These exercises move your body in ways so that certain muscles are pulled or stretched. Stretching exercises warm up your muscles. You should stretch before you do any other type of exercise. This will help to prevent injuries.

It is important to stretch all your major muscle groups. You will need to stretch your:

- neck
- shoulders
- arms
- legs
- back
Cardiovascular exercises

Cardiovascular exercises are exercises that raise your heart rate. Some examples of cardiovascular exercise are:

- walking
- cycling
- dancing
- swimming
- jogging

For most people, walking is the best exercise to do at first. In a few weeks, you can enjoy some of the other heart-healthy exercises. Check with your doctor about when to start these.

10 rules when you exercise or start a new activity:

1. **Listen to your body.**

2. **When you walk, use the walk/talk test.**
   You should be able to walk and talk at the same time without feeling short of breath.

3. **Check your pulse (how fast your heart is beating).**
   Your pulse will tell you how hard your heart is working. Someone on your health care team can teach you how to take your pulse. You can also follow the instructions on page 46.

   Slow down or rest if your heart is beating at 120 beats per minute.
4. **Wait 1 hour before you exercise:**
   - after a meal (this allows your food to be digested)
   - after drinking alcohol
   - after drinking coffee, tea, or cola (things with caffeine)

5. **Wear loose, comfortable clothing and proper walking shoes.**

6. **Avoid outside activities in very hot or very cold weather.**
   
   Very hot or very cold weather can be hard on your heart. Do not exercise outside when the temperature is lower than -8 °C or higher than 27 °C. Also, do not exercise if the humidity makes it feel higher than 39 °C.

7. **Do not hold your breath during exercise.**
   
   Remember to breathe in and out. If you are doing something that takes effort, remember to breathe out while you do the task.

8. **Do not take very hot baths or showers.**
   
   Taking a hot bath can affect the blood flow to different parts of your body.

9. **Set some daily or weekly exercise or activity goals.**
   
   For example, decide to walk 3 times per day for 10 minutes each time. Setting goals can help you keep on track with your exercise. Feel proud and reward yourself when you reach your goals!

10. **Take rests often and have fun!**

    Check with your doctor or cardiologist before beginning any exercise program.

    Talk to them if you have any questions or concerns about your progress.
Checking your pulse

How do I check my own pulse?

While you recover at home, you need to increase your activities gradually. Checking your pulse is a good way to tell how hard your heart is working.

Follow these three steps to check your pulse.
A member of your health care team can help you learn if this is new to you.

1. Use these two fingers to feel your pulse. Do not use your thumb.

2. Lightly place your two fingers just above the skin creases on the thumb side of your wrist.

3. Count the number of beats you feel in 10 seconds. The number of beats you count is your pulse rate. To find out what your pulse is per minute, multiply your number by 6.

You should check your pulse before, during and after you exercise. This will help you know how much harder your heart is working during exercise.
Your resting pulse:

When you are resting, your pulse can range from 10 to 16 beats per 10 seconds. This is equal to 60 to 100 beats per minute.

If your resting pulse is more than 20 beats per 10 seconds, exercise very slowly.

Your exercise pulse:

Your pulse should not be more than 4 beats per 10 seconds above your resting heart rate. Exercise slowly for the first couple of weeks after surgery.

Check to make sure your exercise pulse does not beat faster than 20 beats per 10 seconds (120 beats per minute). If you find it hard to find your pulse, you can buy special monitors to take your heart rate.
How to save your energy

How can I change the way I do things to save my energy?

Right now, you might not be able to do the activities you usually do. You might feel tired or weak. You might find it hard to breathe or feel pain. Even if you do not feel any of these symptoms, your heart should not work too hard.

While you recover, you can do things that will help you save your energy. This is also called energy conservation. Energy conservation tips help you do things without feeling too tired. They also keep your heart from working too hard.

Saving energy does not mean doing less. It means using the energy that you have wisely. With practice, these tips can become habits. These new habits will help you do the things you enjoy safely.

Here are some energy saving tips:

- Do things at a slow and steady pace. This uses less energy.
  - Divide an activity into steps and rest in between steps.
  - Focus on one task at a time.
  - Space activities out during your day.
• **Plan your activities. Planning helps keep you from getting too tired.**
  - Space out tasks evenly over a week.
  - Schedule rest periods into your day.
  - Alternate heavy and light tasks during the day
  - Plan ahead. Gather all of your supplies together before you do a task.
  - Understand that there might be some unexpected events. You can not plan for everything.

• **At first, you might not be able to do everything. Do only what you think is most important for you to do.**
  - Write a list of tasks. Decide which tasks are important and which can wait.
  - Leave time for leisure activities. Doing things you enjoy will help you feel better.

• **Change your body position to save energy. Your body position can affect how hard your heart has to work.**
  - Work at tables that are at the right height. Try to keep your back straight.
  - Use your knees to lift. Do not use your back.
  - Avoid reaching and bending at the waist.
  - Change your position from time to time. This will help your circulation (blood flow). It will also help to keep your muscles from feeling stiff.

• **Breathe deeply and try to relax. Stress causes your heart to work harder.**
  - Try deep breathing exercises.
  - Avoid stress as much as possible.
  - Try to get at least 7 to 8 hours of sleep every night.
How does stress affect heart disease?

People feel stress when they have challenging problems. You cannot avoid stress. But the way you cope with stress will change how it affects you.

Too much stress can negatively affect your heart disease. It can also negatively affect your recovery after being in hospital for treatment.

Stress affects people in many ways. Here are some examples of the ways that stress can affect your thoughts, emotions and body.

**Stress and your thoughts:**
- You worry a lot
- You become forgetful
- You think about the same problem over and over

**Stress and your emotions:**
- You feel fear and anxiety
- You feel depressed
- You have less patience
- You feel angry more easily
- You feel helpless
Stress and your body:

- Your heart rate increases
- You breathe more heavily
- You have an upset stomach
- You have headaches
- You often feel tired or have problems sleeping
- You want to eat a lot more than usual or a lot less than usual
- You feel body aches and pains

Remember: there are ways you can cope with your stress.

How can I cope with stress?

Being in the hospital and getting ready to go home from the hospital are both stressful experiences. Some of the things that can help you to cope are:

- Remembering to breathe slowly and steadily
- Relaxation techniques
- Thinking about a good memory or about being in a peaceful place
- Thinking positively
- Finding the right balance between activity and rest
- Having fun. We all need positives in life to help cope with challenges. When you return home, make time to have fun.

Your family and friends can support you and help you to recover. Support from others has been shown to help patients with heart problems get better.

While you are recovering, you may not be as active as you used to be. Your family and friends will need to help for a number of weeks. Talking with your partner, children and friends will make this easier.
How can I manage my heart disease risk factors?

You can do a lot of improve your health. You may have already changed some of your risk factors for heart disease.

Read the chart below to learn more what the risk factors are. You will also learn what you can do to reduce your own risk. Ask your health care team for help in changing these risk factors.

Your Cardiac Dietitian will give you information about food that is healthy for your heart. They can also give you tips to help you change your diet.

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>What you can do to help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>Stop smoking. Your doctor can help you with a plan to stop smoking.</td>
</tr>
<tr>
<td>Eating a lot of fatty foods</td>
<td>Eat more vegetables and fruits. Eat fewer foods that are high in fat.</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>Try to control your blood pressure.</td>
</tr>
<tr>
<td>Not getting enough exercise</td>
<td>Take a brisk walk (15 to 30 minutes). Do this 3 to 4 times per week.</td>
</tr>
<tr>
<td>Being overweight</td>
<td>Try to stay at a good body weight for your height and age.</td>
</tr>
<tr>
<td>Stress</td>
<td>Find healthy ways to cope with your stress. For example, try relaxation and breathing exercises.</td>
</tr>
<tr>
<td>High blood stress</td>
<td>Talk to your doctor or endocrinologist (hormone specialist). They can give you advice on how to control your blood sugar.</td>
</tr>
</tbody>
</table>
Where can I find some helpful community resources?

There are many different kinds of community resources that you might find helpful. You might find these resources helpful during your recovery. They can even help you after your recovery.

Community resources can be things like:

- clinics in hospitals
- community centres
- education programs
- websites or books

Below is a list of community resources that can help. These resources can support you during your recovery. They can also help you adjust to living with your heart disease.

If you do not find what you need in the list, contact:

**Community Resources Helpline**

The Community Resources Helpline can help you find other community resources or support. To find more information call them or visit their website.

Phone: dial 211
Website: www.211.ca
Cardiac Care and Heart Health Clinic
Toronto Western Hospital, University Health Network

Contact
Phone: 416-603-5268

The Cardiac Care and Heart Health clinic can help you control your heart disease risk factors. The health care team is trained to:

• help you to quit smoking
• teach you how to eat a healthier diet
• help you get started on a regular exercise program
• help you to learn how to manage your stress better
• make sure you are on the best medicines for your heart

The health care team will work with you, your family doctor and/or your cardiologist. This is a 6-month program to help you manage your heart condition.

Please talk to a member of your health care team or call the number above for more information.

You will need a doctor’s referral to access the Cardiac Care and Heart Health program.
Heart-healthy eating

Cardiac and Outpatient Dietitians
University Health Network, Toronto Western Hospital
Phone: 416-603-5800 extension 6478

Cardiac Inpatient Dietitian
University Health Network, Toronto General Hospital
Phone: 416-340-4800 extension 3139

Dietitians of Canada

Contact
Website: www.dietitians.ca
On the Dietitians of Canada website, you can find:
• a dietitian in your area
• heart-healthy recipies
• answers to frequently asked questions
• contact information

Cardiac rehabilitation

GTA Rehab Network

Contact
Website: www.gtarehabnetwork.ca

There are a number of cardiac rehabilitation programs in the greater Toronto area. To join one of these programs, you will need a referral from your doctor. Talk to your doctor if you are interested.

For more information, visit the website for GTA Rehab Network.
Identification bracelets

Canadian Medic-Alert Foundation

Contact
2005 Sheppard Ave. East, Suite 800
Toronto, ON M2J 5B4
Phone: 416-696-0267

Stop smoking programs

The Ontario Lung Association Foundation
Contact
Phone: 1-888-344-5864
Website: www.on.lung.ca

The Heart and Stroke (Ontario)
Phone: 1-888-473-4636
Website: www.heartandstroke.ca

Smoke Enders
Contact
Phone: 1-800-828-4357
Website: www.smokenders.com

Canadian Cancer Society
Contact
Phone: 1-888-939-3333
Website: www.cancer.ca
Health and social services

Home Care Services/Community Care Access Centre (CCAC)

Contact
Website: www.healthcareathome.ca/central/en

The Community Care Access Centre (CCAC) provides health and personal support services to people in their homes. These services include:

• nursing
• physiotherapy
• occupational therapy
• social work
• nutritional counselling
• personal care assistance
• speech therapy

A CCAC coordinator will meet with you while in the hospital. They will find out what services you will need when you return home. They will also let you know what home care services you are eligible for.

Their website can help you find the CCAC that is nearest to you.
Counselling and stress management

Your health care team or family doctor can refer you to a psychiatrist, psychologist or social worker. They can let you know if this would be a useful resource for you.

Ontario Psychological Association Referral Service

Contact
Phone: 416-961-5552

Psychotherapy Referral Service Help Line

Contact
Phone: 416-920-0655
Website: www.prstoronto.com

Contact
Phone: 1-800-268-1154

Coronary artery disease resources

Heart and Stroke Foundation (Ontario)

Contact
2300 Yonge Street, Suite 1300
Toronto, ON M4P 1E4
Phone: 416-489-7111
Website: www.heartandstroke.ca
chapter 7  Angioplasty

What is angioplasty?

Angioplasty is a procedure that opens up the narrow or blocked arteries in your heart. It is a treatment that can work well for people who have this problem.

Angioplasty is done in a hospital, but it is not surgery. You will not have any incisions (cuts) in your chest or heart.

Angioplasty is a treatment, but not a cure for coronary disease. Coronary disease needs lifelong management. Other ways to control your disease is by:

- taking medicines prescribed by your doctor to help if you have:
  - high blood pressure
  - high cholesterol (a fat in your blood)
  - high blood sugar
- leading a healthy lifestyle

Your doctor can perform an angioplasty using different methods. Your doctor will first give you an angiogram, which is a heart x-ray. Then he or she will talk to you about whether angioplasty is a treatment for you.

Technical names for angioplasty are PTCA or PCI. These letters stand for:

**PTCA:**
- Percutaneous – through the skin
- Transluminal – inside the blood vessel
- Coronary – having to do with the heart
- Angioplasty – opening the artery

**PCI:**
- Percutaneous – through the skin
- Coronary – having to do with the heart
- Intervention – the type of procedure used to open a narrowed artery
What are the benefits of angioplasty?

Over 90% of angioplasties are successful. This means that out of 10 people who get this procedure, 9 do very well. Blood flow through the artery returns to normal or near normal. Most people get complete relief from angina.

People with severe coronary artery disease may still have symptoms, but they feel much better. This allows people to be more active and comfortable.

People recover much quicker from angioplasty than from heart surgery. During angioplasty, there is no incision (cut) or general anesthesia (being put to sleep). Most people are up walking on the same day. Most people go home the next morning. Some may be discharged the same day.

People can usually do their normal activities within a few weeks after angioplasty.

How will I know if angioplasty is a treatment for me?

Your angiogram will show the blockages in your coronary arteries. Your doctor will explain the different treatments you might have. These treatments include:

- managing your symptoms with medicines
- angioplasty
- bypass surgery

The treatment that is best for you depends on:

- how bad your coronary disease and symptoms are
- any other medical conditions that you may have
- your lifestyle
- what treatments you would prefer to have

You and your doctor will talk about whether angioplasty is a treatment option for you.
When is angioplasty not a good treatment option?

Angioplasty is not a good treatment option if:

- there are many narrow parts in many arteries
- if arteries are calcified (have a lot of calcium build up) or hardened
- the balloon cannot get through a very tight blockage
- the catheter cannot reach a blockage because of a tight corner

What happens during an angioplasty?

Angioplasty is done in a catheterization laboratory, also called a cath lab. A cath lab is a room in the hospital that has a heart x-ray and other equipment. This equipment helps doctors perform an angioplasty.

Your doctor will insert a catheter (small tube) into your body. To do this, they use an introducer sheath (a slightly larger tube).

- The catheter is inserted in either your groin or your wrist. The catheter has a small balloon on the tip.
- The catheter is moved through one artery into the narrowed heart artery.
- The balloon on the catheter is then inflated. This opens the artery so that more blood can flow to the heart.
- The balloon is then deflated and removed from the artery.
The plaque (fatty layers that cause the narrowing) is not removed from the artery.
It is pushed against the wall of the artery. This allows more blood and oxygen to flow through the artery to the heart.

**Places where the catheter might enter your body:**
Angioplasty using a stent

The doctor usually puts a **stent** into the inside of the artery during an angioplasty. A stent is a small tube made of stainless steel mesh. It holds the artery open after angioplasty.

When a stent is used, your doctor will place it over a balloon. When the balloon is inflated the stent expands. It is pressed into the wall of the artery. The balloon is then deflated and removed.

After the stent is put in, the inner lining of the artery will grow over it. This usually takes about 2 weeks. This keeps the stent securely in place. The stent is kept in permanently to keep the artery open. Stents lower the risk of this area narrowing again.

Will my arteries get narrow again?

Yes, an artery may become narrow again after angioplasty. This is called **restenosis**.

If the artery narrows enough, you may feel angina again. Stents may help reduce restenosis. If 20 people get a stent, it would work for about 5 people.

Restenosis can happen as the wall of your artery heals after angioplasty. A new layer of tissue grows over the site of the angioplasty. This is the normal healing process. In most cases this normal healing process slows down and stops within a few weeks.
Restenosis happens if the new lining does not stop growing. This can narrow your artery. Most cases of restenosis happen in the first 3 to 6 months after angioplasty.

Restenosis is usually easily treated with a second angioplasty.

What are the risks during an angioplasty?

Angioplasty is a common procedure. However, like any procedure done in the body, there are some risks. Common risks include:

- bleeding
- artery collapse
- heart attack
- stroke

In rare cases, an artery collapses or is damaged by the guide wire or balloon. This may happen to 1 or 2 people out of 100 people who get an angioplasty. A stent can often fix this, but sometimes patients need emergency bypass surgery. At University Health Network, our operating rooms are close by if a patient needs surgery.

Ask your doctor about the risks and benefits of angioplasty for you.

How do I prepare for angioplasty?

First, you will have an appointment at the Preadmission Clinic. This appointment will happen about 1 to 2 weeks before your angioplasty. During this appointment, you will meet with your health care team.

The members of your health care team that will come see you are:

- your angioplasty fellow (cardiologist training for angioplasty)
- your nurse from the unit where you will be cared for
- your cardiologist
During this appointment:

• **Your nurse and angioplasty fellow will examine you.** They will ask questions about your health. It is important that you tell them about:
  ◦ the medicines you are taking
  ◦ your medical condition
  ◦ any allergies you have

• **You will have blood tests and an electrocardiogram.**

• **Your nurse will show you a video about angioplasty.** Your nurse will talk to you about the before and after care for angioplasty.

• **You will learn how to prepare for it.**
  You will need to:
  ◦ Not to eat or drink after midnight the night before your angioplasty.
  ◦ Take some medicines before the procedure.

• **Your cardiologist will talk you about the angioplasty procedure.**
  You will learn about:
  ◦ The benefits of angioplasty
  ◦ The risks of angioplasty
  ◦ Medicines you need before the angioplasty and how to take them.
  Your cardiologist may prescribe the medicines Plavix® (clopidogrel) or Effient® (prasugrel). He or she will prescribe one of them if they think you will need a stent. This medicine stops blood clots from forming in your arteries and inside the stent. The cardiologist will order this medicine for a few days before the angioplasty.

  Your cardiologist will also ask you to sign a consent form for the procedure.
What will happen before the procedure?

When you arrive at the hospital, you will be admitted to an inpatient unit. Here, a nurse will:

- help you change into a hospital gown
- help you to shave your groin, wrist, or both
- place an intravenous (IV) in a vein in your arm

The IV helps the doctors and nurses give you fluids and medicines, for example, blood thinners and pain medicine. The IV helps them give you fluids and medicine before, during and after the angioplasty.

When they are ready, you will be moved to the Cardiac Catheterization lab. The angioplasty will be done here. This is also called the “cath lab”.

The cath lab is usually cool. Ask for an extra blanket if you are cold. The lights in the cath lab will be dim during the procedure. This is so the doctor can see the x-ray images more clearly.

What can I expect during the procedure?

Your angioplasty will take about 1 hour to complete. If your condition is more complex, your procedure will be longer. You will be awake but your nurse will give you medicine to help you relax.

For the angiogram, you will lie on an x-ray table. You will be covered with a sterile sheet. You will be able to breathe and talk.

An x-ray camera will move across your chest. You will be on a heart monitor. During the procedure, your cardiologist and nurses will explain what is happening. They will also ask how you are feeling.
1. You will get comfortable on the x-ray table.

2. The area where the catheter will be inserted (your leg or wrist) will be washed. This will help prevent infection.

3. Your doctor will freeze the area the catheter will go in using a small needle. It may sting a little. Once the medicine starts to work, you may still feel some pressure in that area. Tell the doctor if you feel pain.

4. When the area is frozen, your doctor will make a tiny incision (cut). This allows a short tube (introducer sheath) to be inserted. This tube will protect your artery during your angioplasty.

5. Then, your doctor will insert a long flexible tube (guiding catheter) into the introducer sheath. It will move through the main artery in your chest (aorta). Your doctor will guide it to where the coronary arteries branch off to the heart.

6. Then, your doctor will inject a small amount of x-ray dye through the guiding catheter. This dye will go into the coronary arteries. You may feel a warm flushing sensation when the dye is injected. This is normal and passes quickly.

7. Your doctor will watch the movement of the x-ray dye on a screen. The dye lets your doctor see the places where your arteries are narrowed. You may be able to see the screen as well.

   Your doctor may ask you to take a deep breath and hold it for a few seconds. Your doctor may also ask you to cough after the x-ray is finished. This helps remove the dye from the arteries.

8. Your doctor will look for the narrowing on the x-ray screen. When one is found, a balloon catheter is passed through the guiding catheter.
9. A guide wire inside the balloon catheter is then moved through the artery. The guide wire will stop when the tip is past the narrowing.

10. The balloon catheter is then moved over the guide wire. It will stop in the narrowed part of the artery.

11. When the balloon is in place, your doctor will slowly inflate it. It may be inflated several times to push the plaque against the artery walls and open the artery enough.

The balloon is inflated for about 30 seconds each time. When the balloon is inflated, the blood stops flowing through your artery for a short time. This time is not long enough to damage your heart. However, you may have some chest pain. Tell your doctor and nurses if you have chest pain or any discomfort. Pain usually goes away quickly when the balloon is deflated.

12. The balloon catheter is deflated and removed once your doctor is satisfied with the result.

**What should I expect after the procedure?**

After your surgery, you will go through 4 steps before you are ready to go home.

The stages are:

1. Wrapping up in the procedure room
   ↓
2. Resting in the recovery room
   ↓
3. Resting in your hospital room
   ↓
4. Preparing to go back home the morning after
1. Wrapping up in the procedure room

When the angioplasty is finished, your doctor will talk to you about the procedure. Your doctor will tell you the results. They may even show you your artery on the x-ray screen.

If your procedure was done through your wrist, the introducer sheath will be removed. It will be removed in the cath lab at the end of the procedure. Your doctor or nurse will put a clamp on your wrist. The clamp will stay for about 2 hours to prevent bleeding.

If your procedure was done through your groin, the introducer sheath may be left in place for 4 hours. This will allow time for the blood thinners (medicines that thin your blood, such as heparin) to wear off.

2. Resting in the recovery area

After the angioplasty, you will be taken to the recovery area. You will stay here for 30 to 60 minutes.

Sometimes people experience chest pain or discomfort right after angioplasty. This is usually because you are having spasms in your artery. You may have some pain because your artery wall was stretched during the procedure. This usually goes away quickly. You may be given medicine to make you more comfortable until the pain goes away.

Your doctor and nurse will watch you closely. Tell them if you have any discomfort.

In the recovery area the nurses will check your:

- heart using a small heart monitor
- blood pressure
- groin or wrist depending on which area the doctor used to do the procedure
- blood circulation in your foot or hand
If the procedure was done through your groin:

You will be asked to lie flat in bed and keep your leg straight. You must not move this leg. This stops bleeding from the puncture site (small cut). Tell the nurses if you are uncomfortable. They will help you to get more comfortable.

If the procedure was done through your wrist:

You will wear a clamp and arm brace for about 90 to 120 minutes after the procedure. This holds your wrist in a position to stop bleeding from the puncture site. Do not lift or turn anything with this hand for a few days.

3. Resting in your hospital room

When you are ready, you will be taken back to your hospital room. There, your nurse will check:

- blood pressure and pulse
- the puncture site
- blood circulation to your foot or hand

You may have visitors once you are settled in your room.

If the procedure was done through your groin:

Your doctor will sometimes leave the introducer sheath in your leg for 4 hours after your procedure. If this happens:

- You will need to lie on your back with your leg straight for 4 hours.
- Your nurse will then remove this sheath. Using a clamp, your nurse will apply pressure to your groin for about 30 minutes. This will help to prevent bleeding.
• When the clamp is taken off, your nurse will put a pressure dressing, transparent dressing or a band aid on your puncture site.
• You will stay in bed with your leg straight for another 4 hours.
• When you are ready, your nurse will help you get out of bed and walk.
• You will be able to eat and drink once the introducer sheath is removed.

If the procedure was done through your wrist:

• You will be able to walk after a few hours of rest.
• Your nurse will let you know when you can eat and drink. This is usually a few hours after the procedure.

4. Preparing to go home the morning after

You will have to do these things before you can go home:

• You will have blood tests and an electrocardiogram. These tests will make sure that your heart muscle was not damaged during the procedure.
• Your nurse will remove the dressing from your wrist or groin. Your nurse will apply a small bandage in its place.
• Your nurse will talk to you about doing your activities again. Your nurse will also talk to you about your medicines.
• You will be given any follow-up appointments with your doctors.
• You will be able to go home when the results of your blood tests are OK or within the normal range.
What do I need to do after surgery?

If your cardiologist put a stent in your artery you may need to take Plavix® or prasugrel for a while. You will take the medicine for the prescribed time. You may have to take it for up to 1 year.

During that time, the lining on the inside of your artery will grow over the stent. Your doctor will tell you when to stop taking the Plavix® or prasugrel. Take your medicine exactly as your doctor teaches you to.

You will continue to take aspirin before and after your angioplasty.

What can I expect after I return home from angioplasty?

Activities

Do not do physically challenging activities during your first week at home. One example is heavy lifting. This will help your puncture site heal completely. Walk at a slow pace unless your doctor says you can walk faster.

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 may depend on a few things. It may depend on whether you have had a recent heart attack. It may also depend on what type of activities you do. Your doctor will talk to you about this.

Feelings and coping

It is normal to feel anxious (worried) about your health after having problems with your heart. At home you may start to think more about why you got coronary artery disease. You might start to think about how you can change your lifestyle to prevent more problems. This may feel overwhelming or depressing.
You may feel depressed after being diagnosed or treated for heart disease. **As you become more active, these feelings usually go away.** Tell your family doctor if you feel depressed for longer than 2 weeks. He or she can help you feel better.

**Lifestyle changes**

You can be an important part of your own treatment. You can make changes to prevent your heart disease from getting worse.

The risk factors that you can change are:

- High cholesterol
- Diabetes
- High blood pressure
- Smoking
- Obesity
- Sedentary lifestyle (not getting enough exercise)
- Stress

To make these important changes, you need the help and support of your friends, family and doctor. Your heart disease can affect the people closest to you.

Talk to your family and friends and get support. This will help you and your family cope with any changes in your lives.

Support groups and programs are available to help you and your family. They can help you all adjust to living with heart disease. Your health care team can help you find the resources that fit your needs.
**Remember:** Life can be fulfilling again. Modern treatments for heart disease work well. Patients live for many years after being diagnosed with heart disease.

For many people, finding out they have heart disease is a chance to make changes. These changes can lead to a healthier and happier life. You may feel better than you have in years!
chapter 8 Heart Valve Disease

What is heart valve disease?

Heart valve disease happens when your heart valves do not work well. Normal heart valves are thin and smooth structures. They direct blood through the heart's chambers. They also prevent the backflow of blood in the heart chambers.

Over time, heart valves can scar and thicken. Two heart problems can occur:

- **Stenosis** happens when the valves do not open as they should.
- **Insufficiency** happens when the valves cannot close all the way.

Heart valves can be changed or damaged by:

- birth defects
- infection
- rheumatic fever or scarlet fever
- aging
- a number of other causes

The **aortic** and **mitral** valves are the ones most often damaged. These valves control blood through the main pumping chamber, the left ventricle.

What happens when my heart valves do not work properly?

When your valves do not open properly, less blood travels through. When your valves do not close properly, your blood backs up. These problems cause your heart to work harder to pump blood to your body.
If your heart is not able to pump harder, you may suffer heart failure. Heart failure means your heart cannot pump well and blood is not emptied out of the heart. Your blood can back up into your lungs and other body parts.

If you have heart failure, you may feel these symptoms:

- shortness of breath
- swelling in your legs and feet
- a dry cough
- extreme tiredness

Over time, if your valves do not work properly, this can cause your heart:

- to not pump the way it should
- to become larger
- to have an irregular heartbeat
- to have blood clots inside

**What are the treatments for heart valve disease?**

There are 2 types of treatments for heart valve disease. They are:

1. Medicines
2. Valve surgery

### 1. Medicines

Your doctor may prescribe medicines to improve your heart’s pumping action. Medicines can also relieve the symptoms of heart failure.

If medicines no longer work to treat valve disease, surgery is often needed. Your doctor can perform surgery to repair or replace the damaged valve.
2. Valve Surgery

When possible, your doctor repairs your heart valve. If it cannot be repaired, it must be replaced. In either case, you will have open-heart surgery. If your heart valve must be replaced, your doctor will use either a tissue valve or a mechanical valve. Both types of valves have advantages and disadvantages:

<table>
<thead>
<tr>
<th>Valve</th>
<th>Material used</th>
<th>Benefits</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tissue</td>
<td>Specially treated animal or human valves</td>
<td>• They are silent. (no clicking sound)</td>
<td>• Does not last as long as a mechanical valve</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• You do not need to take “blood thinners” (anticoagulants) for a long time</td>
<td></td>
</tr>
<tr>
<td>Mechanical</td>
<td>Very strong metal, carbon or other man-made material</td>
<td>• Last for a long time</td>
<td>• Often hear “clicking” sound of the valve (may go away with time)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Patients must take “blood thinners” (anticoagulants) for the rest of their life</td>
</tr>
</tbody>
</table>

There are different types of valves. Your doctor will talk to you about which valve(s) is best for you.
Having your valve replaced increases your risk of infection when:

- you have dental work done
- you have an invasive medical procedure (for example: when a procedure involves needles or cuts to the area)

To protect against infection, you will need to take antibiotics before having these types of treatments.

What are some possible risks?

The risks of heart surgery are not the same for everyone. They depend on many factors, including:

- Your age
- How severe your angina or other symptoms are
- If you have had a heart attack recently
- The condition of your heart muscle
- How many of your heart valves need to be repaired or replaced
- If you have other health problems (for example, kidney disease)

Your surgeon will explain your surgical risks. Your surgeon will help you to compare the risks of surgery with the risks of not having surgery.
What are some possible complications?

Heart surgery is major surgery. Complications can be minor or serious.

These may include:
- Bleeding
- Irregular heart rhythm
- Wound infection
- Breathing problems
- Problems with your heart rate that may require a permanent pacemaker
- Heart attack or stroke
- In severe cases, death

Your surgeon will talk to you about any possible complications.

What can I expect after heart valve surgery?

After the surgery, you will go to an intensive care unit. You may be in this unit for 1 to 2 days. Afterward, you will return to your hospital room. Most patients recover in hospital for 5 to 10 days.

Some people feel their symptoms are relieved right after surgery. But for most people, it may take longer. It may be a few months before you feel the benefits of heart valve surgery. Be patient.

Your heart was working too hard before you had surgery. It will take time for it to recover. For this reason, your doctor may ask you to keep taking your medicines and follow a special diet.
Write any notes or questions here
What is congestive heart failure?

Congestive heart failure happens when your heart becomes weaker. **It does not mean that your heart has stopped working.** When your heart is weaker, it may not pump enough blood to meet the needs of your body.

Heart failure can range from mild to severe. Blood that should be pumped out of your heart backs up into your lungs and other parts of your body, causing shortness of breath or swelling in your feet and legs.

What causes it?

Congestive heart failure usually happens because of other heart problems such as:

- a heart attack (also called myocardial infarction)
- high blood pressure
- heart valve disease (when heart valves do not open and close properly)
- a birth defect

It can also be caused by a medical condition called **cardiomyopathy.** Cardiomyopathy happens when the heart muscle is weakened because of a viral infection. It can also be caused by drinking too much alcohol.
What are some possible symptoms?

Heart failure can range from mild to severe. If you have it, you may notice some or all of these symptoms:

☐ Trouble breathing while resting or while doing activities
☐ Feeling tired after doing something that is normally simple or easy
☐ Sudden weight gain (2 to 5 pounds or more in 1 to 2 days)
☐ Swelling of your lower limbs (your legs or ankles)
☐ Swelling or pain in your abdomen (stomach area)
☐ Trouble sleeping unless you are propped up on 2 or more pillows
☐ Frequent, dry, hacking cough (common when lying down)
☐ Loss of your appetite

What are some treatment options?

Usually, your symptoms can be controlled with medicines, rest and diet. It is good when symptoms of heart failure are found early. Then, treatments can be started right away. Starting treatments sooner can allow you to live a more normal life.

The most common treatments are:
1. Checking your weight daily
2. Eating less sodium (salt)
3. Stop drinking alcohol
4. Limiting the amount of fluids you drink
5. Regular exercise
6. Regular rest
7. Taking medicines

Read the next section to learn about each treatment.
1. Check your weight daily

A symptom of congestive heart failure is sudden weight gain. This may be because your kidneys are holding salt and water in your body. A sign of this could be if your shoes, belt or rings suddenly feel tight.

Here are some things you can do to keep track of your weight:

- Weigh yourself first thing every morning after urinating and before eating.
- Record your weight on a calendar or in a book. Check if you have had a weight gain of 2 to 5 pounds in 1 to 2 days of normal eating. If you have, it is probably from fluid (such as water) rather than real weight gain.
- Call your doctor if you have sudden weight gain because of fluid. He or she can give you directions on how to get rid of the extra fluid. This will keep your symptoms from becoming worse.

2. Eat less sodium

Limit your sodium to no more than 2000 mg a day. This is about 1 teaspoon of salt a day.

Everyone needs some sodium in their bodies. Sodium helps your body balance fluid levels inside and outside of your cells.

Eating salt is usually how we get sodium in our bodies. But too much sodium in your body makes your heart work harder. Sodium makes your body hold in fluid. Your heart has to work harder to pump the added fluid.
## Tips to help you eat less salt

- Instead of adding salt when cooking, try other herbs and spices.
- Do not add any more salt to your food after it is cooked.
- Read food labels carefully:
  - Buy products that do not have salt or sodium as one of the first three ingredients.
  - Check for ingredients that have the word *sodium* in them. For example, *sodium sulphite* or *monosodium glutamate*. Any ingredients with the word sodium in them mean added salt.
- Find restaurants that have low sodium meals on their menus. Fast food restaurants are not good choices. Most fast foods have a lot of sodium.
- Talk to a dietitian. A dietitian is a professional who has a lot of knowledge about food. Dietitians help people learn how to eat for good health. A dietitian can help you learn more about which foods have a lot of salt.

## 3. Stop drinking alcohol

Alcohol causes your heart to not pump as well. You must stop drinking completely if your congestive heart failure is caused by drinking too much alcohol.

Ask your health care team for information to help you with this.
4. Limit the amount of fluids you drink

Do not drink more than 1.5 litres or 6 cups of fluid per day. Fluids include drinks like water, coffee, tea, soup, and juice. This amount includes fluids you take with your medicines.

Many people with congestive heart failure hold too much fluid in their bodies. If you have too much fluid, your doctor may prescribe diuretic medicine (water pills). This medicine will help you get rid of this extra fluid.

But water pills (such as furosemide or Lasix) may make you feel thirsty. This does not mean that your body needs more fluid.

If you feel thirsty, try sucking on small amounts of hard candy. This will help if your mouth is dry. If you are diabetic, make sure these are sugar-free candies.

5. Exercise regularly

Regular physical activity can help to improve your level of energy. The amount of exercise that is best for you depends on your individual situation. Talk to your cardiologist. Together, you talk about how much exercise is best for your body.

Do not exercise right after eating.

6. Rest regularly

Plan rest times throughout your day. Your heart pumps more easily during rest times. You may find that it helps to take a nap after lunch. Putting your feet up for a few minutes every couple of hours can also help.
7. Take your medicines

Here is a list of medicines that help treat congestive heart failure. These medicines help to improve the way your heart works.

You may need more than 1 kind. Take the medicines that your doctor prescribes for you.

<table>
<thead>
<tr>
<th>Name of medicine</th>
<th>How it works</th>
</tr>
</thead>
</table>
| Vasodilators     | • Lowers blood pressure by relaxing the blood vessels (arteries and veins).  
|                  | • When the arteries are relaxed, there is less strain on the heart. It can pump out the blood more easily.  
| ACE inhibitors   | • When the veins are relaxed, less blood returns to the heart for pumping.  
|                  | • One type of ACE inhibitor slows down or reverses damage to the heart muscle. This helps to make the heart pump better. |
| Angiotension Receptor Blockers (ARB) | If you feel weak or dizzy when taking one of these medicines, talk with your doctor. |
| Digoxin (Lanoxin) | • Helps strengthen the heart muscle. More blood is pumped with each heartbeat. |
| Diuretic (water pill) | • Helps kidneys make more urine to get rid of excess fluid. |
| Potassium        | • Helps to control your heart rhythm. Diuretics cause you to lose potassium through your urine. Extra potassium is often needed.  
|                  | • Helps reduce leg cramps. Leg cramps are common when your potassium level is too low. |

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<table>
<thead>
<tr>
<th>Name of medicine</th>
<th>How it works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta Blocker</td>
<td>• Helps to slow down or reverse damage to the heart muscle. This helps the heart to pump better.</td>
</tr>
<tr>
<td>Spironolactone</td>
<td>• Helps to decrease symptoms of heart failure. It helps the heart to pump better. This medicine is a type of diuretic.</td>
</tr>
</tbody>
</table>

Please ask your health care team about booklet D-5151 "**Cardiac (heart) medicines**". It provides more information about the medicines you have been prescribed.
Call your doctor if you notice any of these signs

- Have increasing shortness of breath during your daily activities. For example, walking or climbing the stairs.
- Have trouble breathing lying flat in bed. For example, you need extra pillows or have to sleep in a chair.
- Are waking up at night having trouble breathing.
- Have weight gain of 5 pounds (2.3 kg) or more in 1 week.
- Have weight gain of 3 pounds (1.3 kg) or more for 2 weeks in a row.
- Have nausea, vomiting or diarrhea.
- Have a cough that does not go away.
- Feel very tired all the time.
- Feel dizzy after taking your medicines.
- Have increased swelling of your legs or ankles.
- Have pain or feeling of fullness in the abdomen (stomach area).

You can take some control over your congestive heart failure symptoms. The treatments above have helped people with heart failure feel better.