



# HeartSmart™ Women

A guide to living with and preventing  
heart disease and stroke



HEART &  
STROKE  
FOUNDATION

# What is the Heart and Stroke Foundation doing about women and heart disease?



## About The Heart Truth™ campaign

The face of heart disease is changing. Once considered “a man’s disease,” the number of deaths from heart disease and stroke are now virtually the same for men and women in Canada.

The Heart Truth campaign, developed by the Heart and Stroke Foundation, aims to raise awareness among women of how to reduce their risk of heart disease and stroke, and give them the tools they need to protect themselves.

The Heart Truth website gives you the information you need to evaluate your risks, adopt a healthier lifestyle, understand how to access the care you need and find out how to become a Heart Truth champion in your community. You’ll also find stories of the courageous women living with heart disease and stroke, and a caring online community to inspire your own heart-healthy efforts. We invite you to explore, learn and get involved!

Visit [thehearttruth.ca](http://thehearttruth.ca) for more information.

# Introduction

Women today are living longer, and have greater expectations for living an active, healthy lifestyle. Yet modern women still face major health challenges. The biggest health problem facing women is heart disease and stroke. Heart disease and stroke kills more than seven times as many Canadian women as breast cancer. Unfortunately, many women are still unaware they are at risk for heart disease and stroke.

Most Canadian women have at least one risk factor for heart disease. Some groups of Canadian women have several risk factors. Heart disease is greatly increased in women who have diabetes, a family history of heart disease, or are menopausal. Some women from certain ethnic groups also have higher-than-average risk. While some risk factors like ethnicity can't be changed, others can. Smoking, physical inactivity, high blood cholesterol, high blood pressure, and obesity greatly increase your chances of developing heart disease. These risk factors are things that you can change or control to reduce your risk of heart disease and improve your quality of life.

This booklet was written specifically for women because symptoms, response to diagnostic tests, treatments and outcomes of heart disease may differ for women and men. It is especially for those women who already have heart disease or who are at high risk for developing heart disease. This booklet will help you to understand heart disease, identify its symptoms, manage your risk factors, and make informed decisions about treatment options. As you read, you will come across some basic medical terms in bold letters (**like this**). If you don't know these terms, just take a look at the glossary in the back of this booklet for a simple explanation.

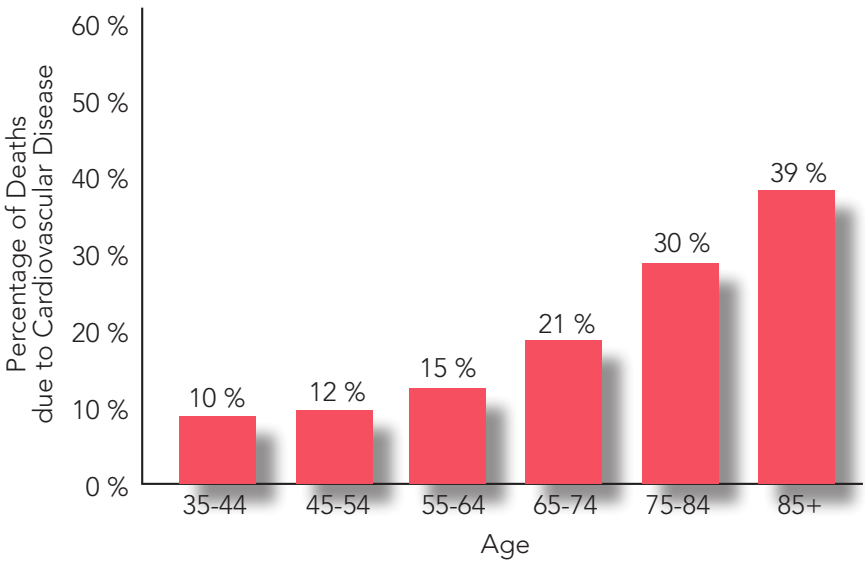
## So read on, and take charge of your heart health



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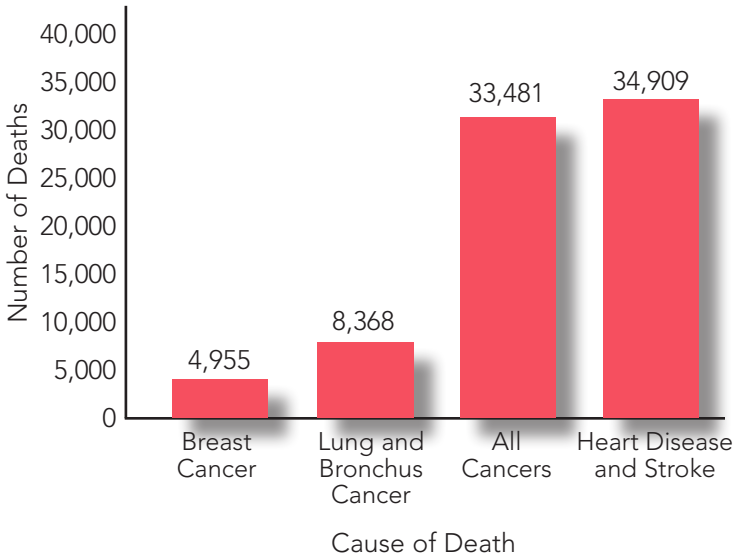
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## Percentage of Total Deaths due to Cardiovascular Disease in Women (2008)



Source: Statistics Canada, 2011

## Deaths Among Canadian Women (all ages), 2008



Source: Statistics Canada, 2011

# Some Facts About Women and Heart Disease

The facts about heart disease in women aren't as well known as they should be. To understand heart disease in women and how to avoid or manage it, you need to know your heart facts. Here are some common myths about women and heart disease — and the facts behind them.

## What you may have heard ...

Breast cancer is the most important health issue for Canadian women.

## *In fact ...*

Heart disease and stroke kills more than seven times as many Canadian women as breast cancer.

## What you may have heard ...

Women in their 20s and 30s don't need to worry about heart disease. Only women close to **menopause** should be concerned.

## *In fact ...*

Health habits and lifestyle choices made while you are in your 20s and 30s may have a significant effect on your risk for heart disease. For example, the risk of developing coronary heart disease for women that smoke is 40% for those under the age of 65. Studies have also confirmed the relationship between oral birth control use combined with smoking resulting in an increased risk of coronary heart disease.

## What you may have heard ...

For women, nurturing and caring for the family comes first. A woman's own needs, including health, must wait.

## *In fact ...*

The fact is, unless you take care of yourself, you put yourself at risk for developing heart disease or stroke — or delaying your recovery from them. Women often report they are too busy caring for their families to take time out for themselves for

diagnosis, tests and treatments — until they suffer a major heart attack. They also tend to ignore their symptoms of heart disease, and do not get medical help as quickly as they should. As a result, they delay life saving treatment like clot-dissolving medications that can reduce the damage done during a heart attack. These medications need to be given early in order to be more effective. These factors contribute to women being at higher risk than men of dying after their first heart attack.

### What you may have heard ...

If you take hormone replacements after **menopause** you won't have to worry about heart disease.

### *In fact ...*

As women enter menopause their risk of heart disease increases. However, there are a number of other factors that may explain why someone develops heart disease, and being post-menopausal is only one of them. **Hormone replacement therapy** (HRT) should not be used for the purpose of preventing heart disease. The decision of whether to use HRT for the management of symptoms associated with menopause or other conditions is a decision you should make in consultation with your physician. It is important to discuss the benefits and risks as well as personal preferences.

### What you have heard...

Symptoms of a heart attack are different for both men and women.

### *In fact ...*

In the past, it was believed that women had different warning signals than men. This may not be the case. Both women and men may experience typical or non-typical symptoms such as nausea, sweating, pain in the arm, throat, jaw or pain that is unusual. However, women may describe their pain differently than men. Nevertheless, the most common symptom in women is still chest pain. Heart disease is the leading cause of death in women. Women tend to be safeguarded from heart disease prior to menopause because of the protective effect of estrogen, but not always. For example, pre-menopausal women with diabetes have similar risk to men of the same age because diabetes cancels out the protective effect that estrogen provides to pre-menopausal women.



## What you may have heard ...

There's just not enough time left over to fit in family, work and personal needs and still pay proper attention to your heart health.

## In fact ...

Heart health can easily be incorporated into your busiest day. Often, it's not a question of doing more things but of doing things differently. For example, try taking the stairs instead of an elevator, or choosing a fruit or vegetable as a snack instead of a cookie. For more tips, log on to the Healthy Living section of the Heart and Stroke Foundation's website: [heartandstroke.ca](http://heartandstroke.ca) or call us toll free at **1-888-HSF-INFO (473-4636)**.

## Heart attack warning signals



**Chest discomfort** Uncomfortable chest pressure, squeezing, fullness or pain, burning or heaviness



**Discomfort in other areas of the upper body**  
Neck, jaw, shoulder, arms, back



**Shortness of breath**



**Sweating**



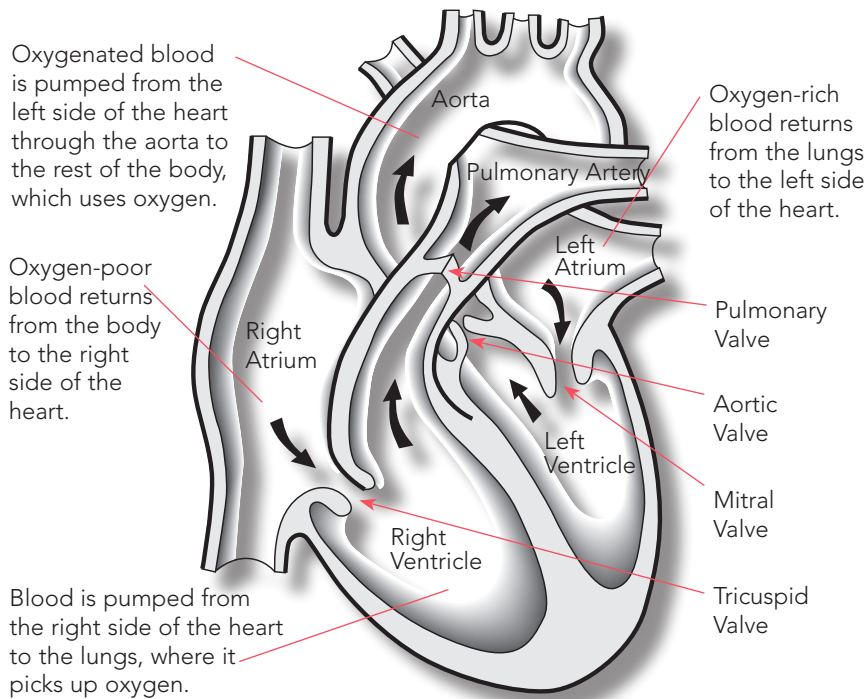
**Nausea**



**Light-headedness**

# The Female Heart and Heart Disease

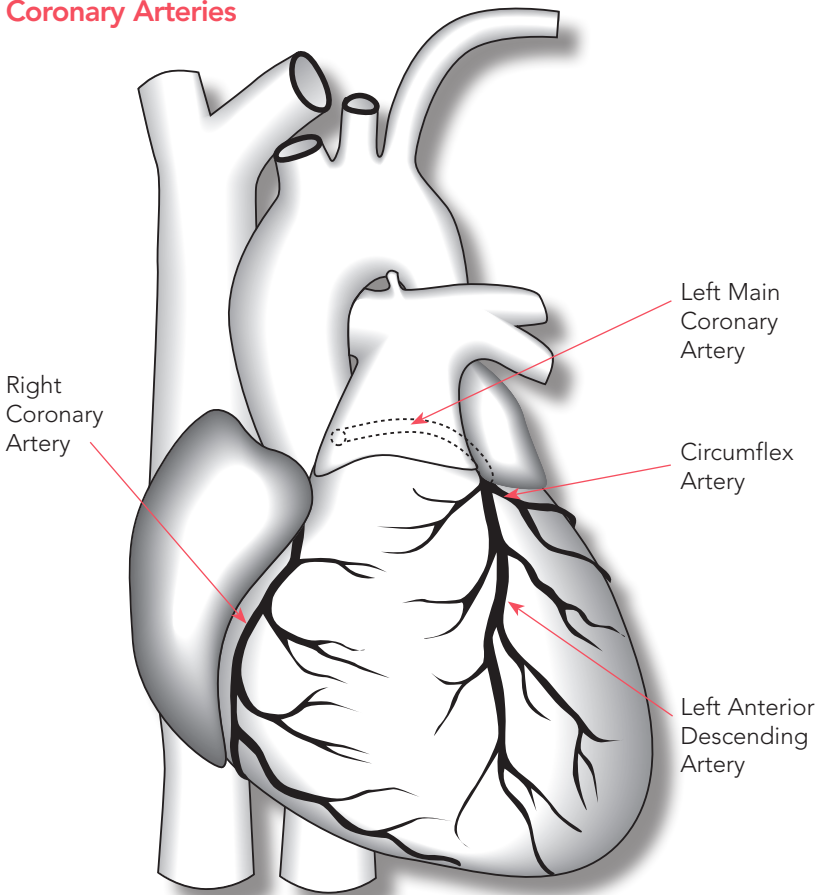
## The Heart and How it Works



(Original source: Heart Attack Recovery and Prevention)

The heart is a powerful muscle which lies in the middle of the chest, slightly to the left of the breastbone (sternum) below the rib cage. It is about the size of your closed fist. As a pump, the heart works to keep blood circulating around the body. It beats about 100,000 times a day. The blood pumped by the heart carries oxygen and nutrients (food) that the cells of the body and tissues need to function properly. It also removes waste from cells and tissues. The heart is divided into the right and left sides. The right side of the heart receives oxygen poor blood from all parts of the body through the veins, and pumps it to the lungs. The left side of the heart receives oxygen-rich blood from the lungs and pumps it to all parts of the body through arteries.

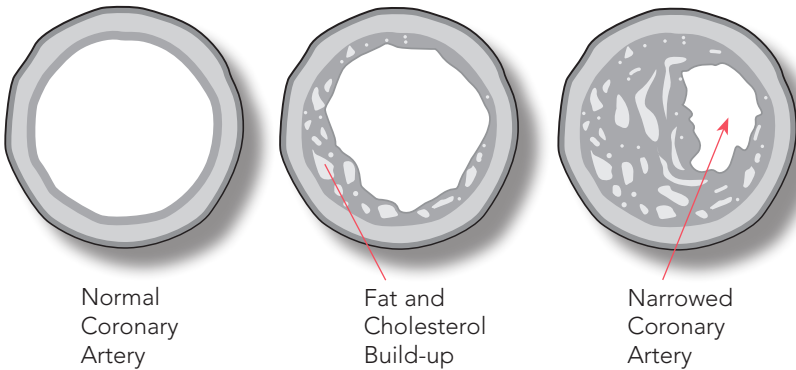
## Coronary Arteries



(Original source: Patient Information Network)

Like any muscle, the heart muscle needs oxygen and nutrients in order to work properly. The heart muscle has its own blood delivery system called the **coronary arteries**. There are two main coronary arteries: the left main coronary artery and the right coronary artery. The left main coronary artery branches off into the left anterior descending coronary artery which lies on the front of the heart, and the circumflex artery which takes blood to the back of the heart. Both main coronary arteries divide into many smaller branches to reach all parts of the heart muscle.

## Coronary Artery Disease



(Original source: A Guide to Coronary Artery Disease : CIBA)

Over time, the coronary arteries may become narrow and stiff. In some people, there is an additional build-up of **cholesterol** (a soft waxy substance manufactured by human and animal bodies) and other fat products along the inside walls of the coronary arteries. This is even more common in women with diabetes. These deposits are called **plaques**. The build-up of these fatty products may lead to a partial or complete blockage of the artery.

When the inner layer of the arterial wall becomes thick and irregular due to the buildup of plaque and scar tissue, resulting in the progressive narrowing of blood vessels, (a condition called atherosclerosis) blood carrying oxygen and nutrients cannot get to the heart muscle. When the heart muscle does not get enough oxygen and nutrients it cannot work properly. This is called **coronary artery disease** (CAD).

**Angina** is often a sign of coronary artery disease because the heart does not have enough oxygen. It can also lead to a heart attack if the heart muscle does not get any oxygen at all. During heart attacks, some of the heart muscle can die from lack of oxygen. CAD may also develop in the smaller branches of the coronary arteries in women.

# Making Heart Healthy Changes in Your Life

## Risk factors you can't control

While there are some risk factors for heart disease and stroke that you can do something about, there are others that you can't control. The five major risk factors that you cannot change are:

### Age

- As you get older, your risk of heart disease increases.
- Although strokes can occur at any age, most strokes occur in people over 65.

### Gender

- Men, over the age of 55 years, and women after menopause are at greater risk of heart disease.
- Until women reach menopause they have a lower risk of stroke than men.

### Family history

- Your risk of heart disease is increased if close family members – a parent brother or sister – developed heart disease before age 55 or, in the case of female relatives, before menopause.
- Your risk of stroke is increased if close family members – a parent, brother or sister – had a stroke before age 65.

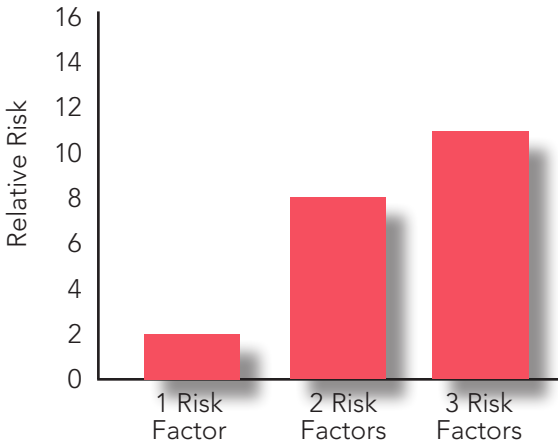
### Ethnicity

- First Nations people and those of African or South Asian descent are more likely to have high blood pressure and diabetes and therefore, are at greater risk of heart disease and stroke than the general population.

## Risk Factors that you can do something about

- High blood pressure (hypertension)
- Diabetes
- Excessive alcohol consumption
- Smoking
- High blood cholesterol
- Being overweight
- Physical inactivity
- Stress

## Cumulative effect of 1 vs. 2 vs. 3 risk factors



(Source: Women, Heart Disease and Stroke: The Facts, HSFO)

## Making Lifestyle Changes

The media, doctors, friends and family have all become experts at telling us what parts of our lifestyle we should change to live in a more “heart healthy” way. This advice can be informative and well appreciated, but as many of us know, actually changing behaviours is a lot more difficult than talking about change.

### More about change ...

Change does not have to be dramatic and does not have to happen overnight. A series of small steps are often more likely to produce long-term behaviour changes. We each have our own approach towards change. However, research has shown that there are also stages we all go through in making change:

### **Stage One - Precontemplation (thinking about change)**

- Think positive - thinking something is possible means you may try harder.
- Imagine a positive result - making a successful change.

### **Stage Two - Contemplation (deciding to change)**

- Be sure you WANT to change!
- Emphasize all the good reasons to change, and how to overcome the reasons not to change.

### **Stage Three - Preparation (getting ready to change)**

- Set goals for yourself. Be specific and realistic about the time, place and circumstances.
- Have the right tools or skills to carry out your plan. Get as much information as needed, and use a self-monitoring record, or report card, to monitor your progress. Set rewards for yourself to keep motivated.
- Know how to use the tools and skills you have.
- Remember to start slowly.

### **Stage Four - Action (making the change)**

- Take notice of the progress you are making in your health because of the change. Seeing positive results is great motivation to keep on track.
- Do not let lapses set you back. Change doesn't happen all at once and relapses are common. Stay confident and use the relapse as a learning experience. Change your strategy as necessary to try again.

### **Stage Five - Maintenance (making sure the change is permanent)**

- Maintain the change for at least six months.
- Gain confidence as you realize you can stick with the change.
- Manage the odd setback (if one occurs) without difficulty.

Following are some suggestions to help you take the smaller steps that can realistically fit into your busy lifestyle.

Many of these actions are recommended for more than one risk factor. Therefore, by trying some of these actions, your heart will benefit in many ways! Here's a chance to start your plan for change — please fill in your goals.

### SMOKING



- is the biggest risk factor for heart attack for women of all ages
- puts added strain on the heart as it causes the blood vessels to tighten and become narrow
- increases risk of heart attack 2-5 times in women
- increases risk even further in women over 35 using birth control pills

### HIGH BLOOD PRESSURE



- high blood pressure is the leading cause of stroke and increases the risk of heart disease up to 4 times
- women are at even greater risk after menopause



## Ways to manage this risk factor

- ask yourself what it will take to stop smoking
- think about reasons to quit every day
- choose a date to stop smoking
- work up to that date by reducing the number of cigarettes you smoke each day by just 1 or 2
- make a plan to deal with “urges” to smoke when they happen (they WILL happen)
- let family/friends know what you are doing and ask for support
- ask health care providers for information on smoking cessation programs you can join
- learn from relapses. If you smoke after quitting, regain control, learn from what happened and try again (relapses are normal)

## My goals to improve this risk factor

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- know what your blood pressure is and discuss an acceptable range for you with your doctor
- lower your salt intake - do not add salt to food, and do not put any on the dinner table
- take your blood pressure medication regularly, and exactly as prescribed
- find out if you are within a healthy body weight
- increase physical activity
- follow a low-fat diet

## My blood pressure is

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### HIGH CHOLESTEROL



- a low HDL cholesterol as apposed to a high LDL cholesterol is a more predictive risk for women
- high total cholesterol appears to be associated with coronary heart disease in premenopausal women or women who have very high levels
- total cholesterol: HDL ratio is highly predictive of cardiovascular events in women
- some studies show that high blood triglycerides is a more important risk factor in older women

## Ways to manage this risk factor

- know your actual cholesterol levels (HDL, LDL, triglycerides)
- discuss with your doctor where your levels should be
- daily fat intake should be 40 - 75 g
- eat white meat or lean cuts of red meat
- remove skin and fat from chicken
- use "low fat" or "no fat" dairy products, dressings, mayonnaise
- eat regular well-balanced meals to avoid the urge to snack
- increase servings of fresh fruit, vegetables and grains (increase fibre)
- consult a dietitian
- if you smoke, follow the plan to reduce and quit smoking
- plan to increase your physical activity
- reduce the amount of saturated and transfat in your diet from all sources
- reduce the amount of sweet baked goods, chocolate, and other high-sugar foods
- discuss your level of alcohol intake with your doctor and reduce it if necessary
- achieve and maintain a healthy weight
- visit the Heart and Stroke Foundation website: [heartandstroke.ca](http://heartandstroke.ca) or call your local Heart and Stroke Foundation office for more information on heart healthy nutrition

## My goals to improve this risk factor

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### STRESS

- stress and depression over many years may be a predictor of heart disease



### PHYSICAL INACTIVITY

- heart disease is more than 2 times as likely to develop in inactive people
- inactive people are more likely to have low levels of HDL cholesterol and weight control difficulties



## Ways to manage this risk factor

## My goals to improve this risk factor

- identify the areas of your life that cause stress
- decide how important each of these areas is to you and your life
- prioritize activities - distinguish what is personally important and what is time sensitive
- learn to say "NO"
- learn to build pleasure into each day - it need not cost anything, and can be renewing even if it is a few minutes
- have brain-storming and problem-solving sessions with friends and share techniques that work
- do not feel embarrassed about seeking assistance from others when needed
- ask you doctor about treatment for depression

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- start slowly, and build up your endurance for exercise gradually
- you do not need to go to an aerobics class to be physically active - WALK
- start by walking 10 minutes every other day at a brisk pace
- increase the length of your walk by 5 minutes a week, until you reach 30 minutes a walk
- increase the frequency of your walks
- start to pick up the pace as tolerated
- find a friend to walk with
- walk indoors during cold winter days
- take the stairs instead of the elevator whenever possible

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### BEING OVERWEIGHT



- being overweight can lead to other problems affecting your heart such as high blood pressure, high blood cholesterol and triglycerides and diabetes

### DIABETES



- women with diabetes are 3-7 times more likely to get heart disease than women who do not have diabetes

### FAMILY HISTORY



- if a first degree relative (mother, father, brother or sister) aged 55 or younger has or has had heart disease, this increases your risk

## Ways to manage this risk factor

## My goals to improve this risk factor

- focus on dietary changes to reduce fat intake (see sections on high blood cholesterol and high triglycerides)
- calculate your Body Mass Index (BMI) by dividing your weight in kilograms by the square of your height in metres (weight(kg)/ height(m)<sup>2</sup>). A BMI between 18.5 and 24.9 kg/m<sup>2</sup> is considered a healthy weight (NOTE: BMI should only be used for women aged 18-60 years, and is not to be used for pregnant or breastfeeding women). To calculate your BMI online, visit [heartandstroke.ca/yourhealthtools](http://heartandstroke.ca/yourhealthtools)
- if you're a woman and your waist measures more than 88 centimetres (35 inches), you are at increased risk of developing health problems such as heart disease, high blood pressure and diabetes. For persons of Chinese or South Asian descent you are at increased risk if you are more than 80 centimetres (32 inches) for women
- increase physical activity to increase tone and improve cholesterol
- consult a dietitian for guidance

- control your blood sugar well and follow the advice of your doctor
- eat a balanced diet with less fat and more high-fibre foods and complex carbohydrates
- achieve and maintain a healthy weight
- be physically active

- you cannot change your family background, so be aware of possible increased risks to your health
- pay close attention to the risk factors you can change

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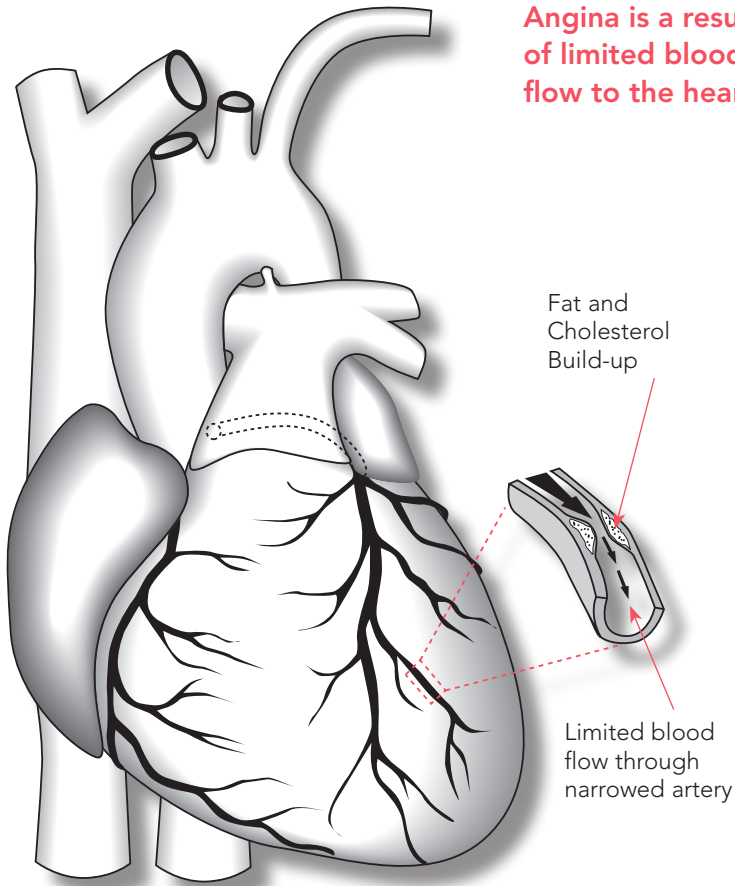
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# Signs and Symptoms of Heart Disease in Women



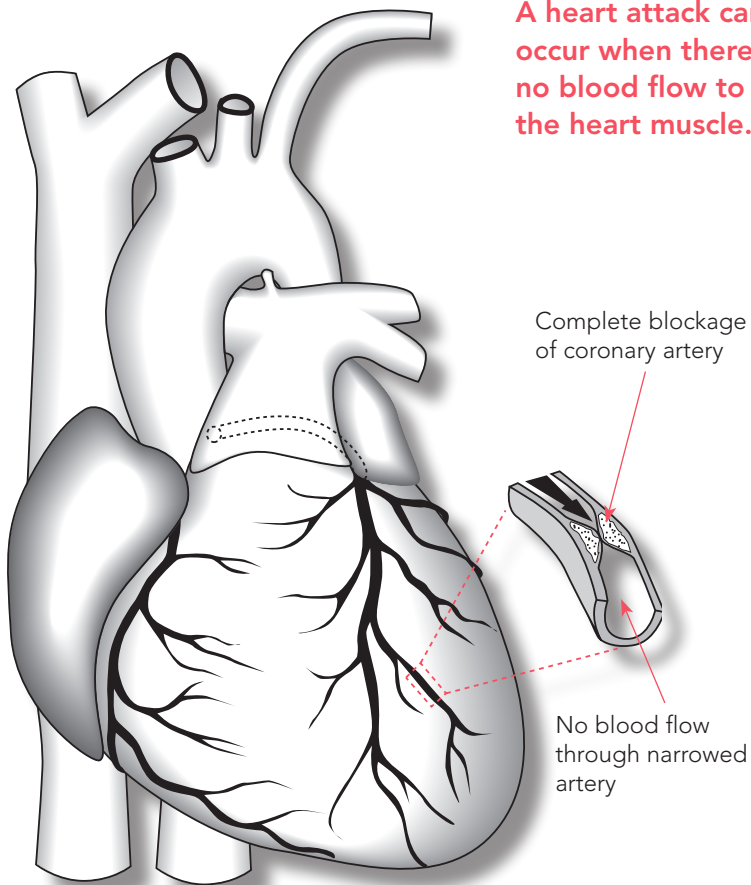
(Original source: A Guide to Coronary Artery Disease : CIBA)

What is the difference between **angina** and a **heart attack**?

- Angina is chest pain or discomfort that occurs when the heart muscle does not get enough blood and oxygen as a result of a blocked or narrowed artery.
- Angina is a warning to you to stop what you are doing and rest.



- Angina is the most common signal of heart disease experienced by women. More women will have angina as their first sign of heart disease than an actual heart attack. (Heart attack is more common as the first sign of heart disease in men.)
- A heart attack, or myocardial infarction (MI), occurs when a complete blockage in the coronary artery cuts off the blood supply to the heart muscle. This results in the heart muscle being damaged. If part of the heart muscle dies, the heart does not pump as efficiently.
- When women have a heart attack as their first symptom of heart disease, it is more likely to be severe, or even fatal.



(Original source: A Guide to Coronary Artery Disease : CIBA)

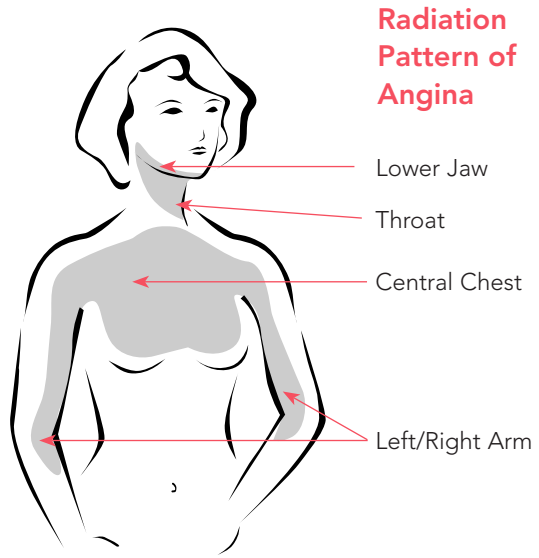
## Other causes of chest pain:

- Sometimes people can have chest pain that is a result of other health conditions, such as lung problems, gastro-intestinal problems (heart burn, ulcer) or bone problems.

## Types of Angina

### Typical angina (chest pain):

- causes pressure/squeezing sensation behind the breast bone/left side of the chest;
- may spread to the neck, jaw, arms;
- is predictable, often comes on with exertion or emotional stress;
- is relieved with rest or medication.



(Original source: Women's Heart Health News, HSFO)

### Unstable angina (chest pain):

- occurs when the blockages in your coronary arteries suddenly get worse;
- is often unpredictable, more severe, and may last longer;
- comes on with less exertion, less emotional stress, or for no apparent reason;
- may wake you up at night;
- may not be relieved with rest or your usual angina medication.

### Associated symptoms in Atypical and Typical Angina:

- vague chest discomfort;
- shortness of breath;
- fatigue;
- nausea;
- back, neck pain;
- burning, indigestion.

## Warning signs of heart attack:



**Chest discomfort** Uncomfortable chest pressure, squeezing, fullness or pain, burning or heaviness



**Discomfort in other areas of the upper body**  
Neck, jaw, shoulder, arms, back



**Shortness of breath**



**Sweating**



**Nausea**



**Light-headedness**

Signs may be mild or severe. If you or someone you know is having any of these signs **CALL 9-1-1** or your local emergency number immediately.

### Women can differ

- Women are more likely to experience “atypical” symptoms such as vague chest discomfort.
- Some factors, such as hormones and diabetes, significantly increase the risk of heart attack among women.

## Take Action!

If your pattern of angina changes, call your doctor as soon as possible.

If you are experiencing chest pain or pressure that is not relieved with rest and nitroglycerin after 15 minutes, you may be having a heart attack. Don't delay! Seek immediate medical help. Remember, the sooner you get to a hospital, the better your chances of surviving a heart attack. Call 9-1-1 or the emergency response number in your area.

# Tests You Might Have to Diagnose Heart Disease

In order to determine if the symptoms you are experiencing are due to CAD, your doctor may ask you to take certain tests. These tests will help find out whether you have CAD and how far it has progressed. If CAD is found, these results will help you and your doctor to identify the best treatment options for you. For detailed information about diagnostic tests, visit the Heart and Stroke Foundation's website at [heartandstroke.ca](http://heartandstroke.ca).

## Electrocardiogram

This test is also known as an EKG or ECG. An **electrocardiogram** uses electrodes (small pieces of metal) placed on your chest, arms and legs to get an "electrical" picture of your heart. It gives information about your heart rate (how fast or slow your heart beats), heart rhythm (the timing of the beats) and if your heart has been damaged from a heart attack.

## Echocardiogram

In an **echocardiogram**, a special probe is placed on your chest that provides an "ultrasound" image of your heart. This test gives information about your heart sounds, the movement of the heart muscle and the heart valves.

## Exercise Stress Test

This exercise test is done by hooking you up to a blood pressure monitor and an EKG, then asking you to walk on a treadmill at increasing speed and incline (it will seem like you are walking up a hill). Changes in your heart rate, blood pressure and EKG will help your doctor determine if your symptoms are related to a heart problem. Although this test may be less reliable in some women, it can provide important information.

## Exercise Thallium Scan (or Exercise Cardiolite Scan, or MIBI Exercise Test)

In order to get more information about your heart during exercise, you may be given an intravenous injection of a radioactive substance at peak exercise, then have several x-ray pictures taken of your heart. The test can give information about how blood is flowing through the heart muscle, previous damage to the heart and areas of your heart which are receiving less blood flow than they need.

## Stress Imaging

If you cannot exercise, then you may be given a medication which will change blood flow to the heart muscle. Pictures of the heart will then be taken with a camera, as with the Exercise Thallium Scan, or with an ultrasound of the heart. This will help doctors identify areas where there may be disease present.

## Angiogram

This test has to be done in the hospital, but can be done as an outpatient (where you come to the hospital and go home on the same day). After you have received medication to help you relax and some freezing medication in your groin, a small tube is passed through a needle puncture in your groin through to your heart. A special dye is injected through this tube into the arteries of your heart. The doctor will be able to see areas of narrowing or blockage in your coronary arteries, and will take pictures during the test. This test is considered the gold standard to see if your arteries are blocked or not.

## Which tests do you need?

Your doctor will discuss which of these tests seems best for you. The list of questions at the back of this booklet will help you prepare to discuss these tests with your doctor. Remember — it's your health, so don't hesitate to ask questions!

# Medical Management of Heart Disease in Women

For women with coronary artery disease, treatment options include medications, non-surgical procedures and surgical procedures. The option that is best for an individual depends on her heart symptoms, the extent of her heart disease, and the risk of a future heart problem. None of the treatments listed will “cure” CAD, but they will help to control symptoms and reduce the risk of further complications. The management option that is best for you will be discussed by you, your primary doctor, and usually a doctor who specializes in heart disease called a cardiologist.

In addition to these options, you can help manage your heart disease. By taking control and managing your individual risk factors for heart disease, you can help slow the progression of your heart disease. For more information, see the Risk Factor section on pages 10-17, visit the Heart and Stroke Foundation’s website: [heartandstroke.ca](http://heartandstroke.ca) or call us toll free at **1-888-HSF-INFO (473-4636)**.

## Medication Options

There are many medications that can be used to treat the symptoms of heart disease. These medications may work to:

- 1) control the symptoms of angina (chest pain) by relaxing the arteries to help improve blood flow;
- 2) slow the heart rate so that the heart does not need as much oxygen to work;
- 3) reduce clots or “thin” the blood. The most commonly used heart medications fall into the following categories:

### **Angiotensin-2-Receptor Blockers (ARBs)**

- Work by blocking the receptor that causes the blood vessels to narrow.
- Used to treat high blood pressure and congestive heart failure.

### **Angiotensin-Converting Enzyme (ACE) Inhibitors**

- Work by blocking the enzyme and reducing a hormone that causes the blood vessels to narrow.
- Used after a heart attack if there is concern that the heart may be further weakened, and to treat high blood pressure and congestive heart failure.

### **Anticoagulants**

- Work to prevent harmful clots from forming in the blood vessels.
- Will not dissolve clots that have already formed, but may prevent them from getting larger.
- Used to prevent heart attacks or strokes.

### **Beta-Adrenergic Blocking Agents (Beta Blockers)**

- Work by affecting the response to some nerve impulses and by reducing the heart rate.
- Help the heart to beat more regularly.
- Used to treat high blood pressure, angina, congestive heart failure, prevent further heart attacks in patients who have already had a heart attack and to correct irregular heartbeat.

### **Calcium Channel Blocking Agents**

- Work to relax blood vessels and increase the supply of blood and oxygen to the heart while reducing its workload.
- Used to treat high blood pressure, angina and irregular heart rates.

### **Digitalis medicines**

- Work to improve the strength and contraction of the heart or to control the rate rhythm of the heart.
- Used to correct an irregular heartbeat and to treat congestive heart failure.

## **Diuretics**

- Work to help reduce the amount of water in the body by increasing urine output.
- Used to treat high blood pressure and congestive heart failure.

## **Nitrates**

- Work by relaxing blood vessels and increasing the supply of blood and oxygen to the heart while reducing its workload.
- Used to treat angina and sometimes congestive heart failure.

## **Platelet aggregation Inhibitors (antiplatelet drugs like ASA)**

- Work to prevent dangerous blood clots from forming in the blood vessels.
- Used to prevent heart attacks or strokes.

## **Statins**

- Work to lower blood cholesterol levels.
- Used to prevent heart attacks or strokes.

## **Non-surgical Options**

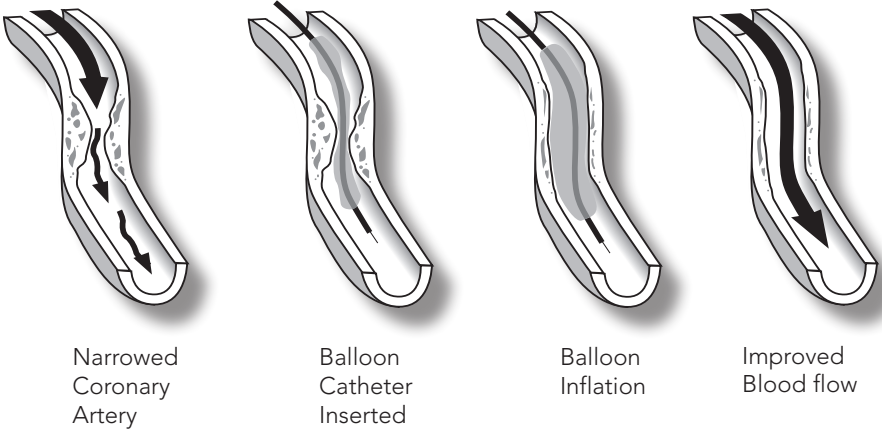
### **Percutaneous Transluminal Coronary Angioplasty (PTCA, Balloon Angioplasty)**

#### **What is PTCA?**

This is a non-surgical method of managing coronary artery disease. It is used in some patients to open a coronary artery that is blocked in only one or two places. (Note: not all narrowings can be treated with PTCA.)



## Percutaneous Transluminal Coronary Angioplasty



(Original source: The Patient Guide to the Human Heart : CIBA)

### How is PTCA done?

In a PTCA, a heart specialist injects freezing medication into your groin and then places a thin plastic tube through a vessel in the groin or arm into the blocked coronary artery. Then, a second smaller tube, with a deflated balloon on its tip, is passed through the first tube. When the balloon tip reaches the narrowed part of the artery it is inflated (filled with air). The inflated balloon pushes the plaque against the artery walls. This allows blood to flow through the artery more easily. In some cases a small mesh tube, called a stent, is placed over the balloon. When the balloon is inflated, the stent attaches to the artery wall and remains inside the artery to reduce the chances of the artery becoming narrowed again. At the end of the procedure, the tubes are removed.

### How long is the recovery?

Most patients go home from the hospital in one or two days, and are able to resume normal activities shortly after that. After having a PTCA it is very important for you to look at your lifestyle, check your risk factors for heart disease, and make changes to reduce the chances of having further problems with CAD.

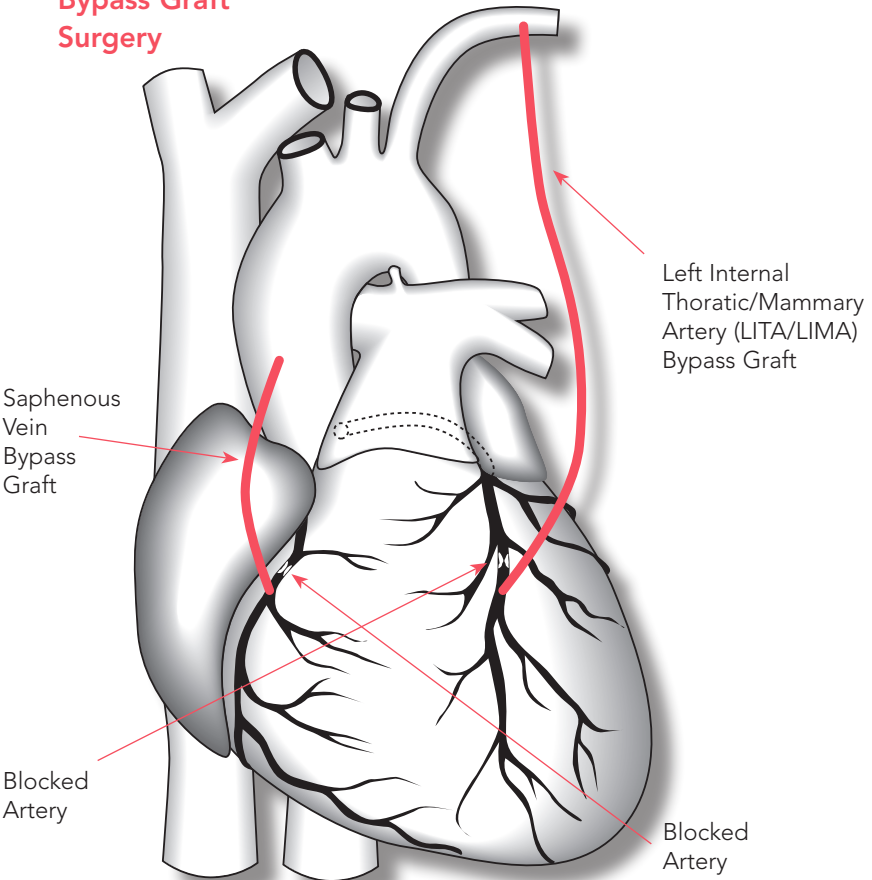
## Surgical Options

### Coronary Artery Bypass Graft Surgery (CABG, Bypass surgery)

#### What is CABG surgery?

CABG is a type of open-heart surgery. It is used to reroute blood around the blockage in a coronary artery, allowing blood to flow to the heart muscle past the blockage.

#### Coronary Artery Bypass Graft Surgery



(Original source: From the Heart : TTN)

### **How is CABG done?**

Doctors will first place you on a heart-lung machine, then artificially stop your heart. The heart-lung machine will do the work of both your heart and lungs during the operation. A piece of vein from your leg, or an artery from your chest is attached (grafted) to the blocked coronary artery. Blood is diverted into the graft, "bypassing" the blocked area. Your heart is then restarted and the incision closed.

### **How long is the recovery?**

Most patients are in hospital for 5 to 10 days (the first 24 to 48 hours are spent in an intensive care unit). You will experience discomfort around your chest incision and the area where the graft was taken. This can be controlled with pain medications.

Following CABG surgery it usually takes three to six months for people to feel completely recovered. After having CABG surgery you must look at your lifestyle and review your risk factors for heart disease. You may need to make changes to reduce the chances of having further problems with CAD.

# Female Hormones and Heart Disease

## Before Menopause (pre-menopause)

Female hormones, estrogen and progesterone, are produced by the ovaries in women before menopause. These hormones are responsible for the menstrual cycle, and for women's reproductive function. Estrogen helps protect women from heart disease before menopause. However, women with diabetes or abnormal **lipids** can still get heart disease before menopause.

## Do birth control pills increase the risk of heart disease?

There is no evidence that low dose birth control pills increase the risk of heart disease in healthy women under the age of 30 or in non-smoking women without other risk factors.

## Menopause

As women age, their ovaries gradually stop functioning. At menopause, the ovaries stop producing the female hormones estrogen and progesterone, causing menstrual periods to stop. Natural menopause is said to occur when a woman has not had any menstrual periods for one year. Surgical menopause occurs suddenly when the ovaries are removed for medical reasons. Early menopause (before the age of 40) increases a woman's risk of getting heart disease.

## After Menopause (post-menopause)

Women spend about one third of their life post-menopause. In the past, hormone replacement therapy (HRT) was regularly used by post-menopausal women. *HRT is no longer recommended for the prevention of heart disease.* You are also cautioned against long-term use of HRT for any reason.

Studies show that hormone replacement therapy increases your risk of endometrial and ovarian cancers (when estrogen is used without progestin in HRT), breast cancer, heart attacks (both fatal and non-fatal), stroke and blood clots. You should not, therefore, take HRT for the sole purpose of preventing heart attacks, as you may have been told in the past.

Some positive effects of HRT may include the prevention of thinning of bones, a disease called osteoporosis or (possibly) protection against colorectal cancer (cancer of the colon and rectum). But again, the health risks associated with HRT may well outweigh these potential benefits. Only you and your doctor can decide what is best for you.

### **Managing Menopause in the Future**

In the future, other medications may become available to treat menopause without the present risks of hormone replacement therapy. Currently, researchers are studying a class of drugs called selective estrogen receptor modulators (SERMS). These so-called “designer estrogens” may have fewer side effects than current hormone replacement therapy. In addition, researchers are investigating the role of alternative therapies – such as vitamin E, phytoestrogens (estrogen-like compounds found in plants such as soy and flax seeds), and other nutrients in reducing or preventing heart disease.

## Women, Roles and Heart Disease

Women are expected to play many roles in their lives, such as family member, spouse, mother, daughter, caregiver, co-worker or volunteer. The roles we play in life are a significant part of how we view ourselves and our relationships with others. Women may spend so much time trying to balance these roles they don't pay enough attention to their own needs. This can place their health at risk. Poor health can end up preventing women from fulfilling their roles and meeting the needs of those who rely on them.

Receiving a diagnosis of heart disease and adjusting to an altered health status brings with it a number of additional challenges. Women need to recognize these challenges and learn as much as they can about their specific situation so they can take control and make informed choices. *Remember, taking care of your own health means you will be able to enjoy life to the fullest. You will also be better able to take care of your loved ones.*

### Emotional Adjustment to Heart Disease

The challenges of coping with heart disease may sometimes be very great for women, especially if they don't have a family member who is able to look after them. A diagnosis of heart disease may trigger a wide range of emotional reactions. It is common for people to experience shock, disbelief, anger and depression during the course of their illness. Emotional adjustment to heart disease is an ongoing process and takes time. Some people may find themselves re-experiencing some of these emotions and dealing with uncertainty just when they thought they have adapted to the diagnosis and lifestyle changes.

Uncertainty and changing emotions can be unsettling for many women, and for their families and friends. Anxiety and depression are especially common emotions associated with the experience of having heart disease.

These emotional responses may be related to many factors including stress, fear of ongoing illness or even the side effects

of medications. Women who live alone or have limited social support may have an even harder time dealing with their emotions at this time.

It is important to recognize the emotions that accompany the experience of heart disease, and identify strategies that will help you live with it.

## Strategies for Dealing with Your Emotions

1. Allow yourself to experience and accept your emotions and feelings. Recognize these as common reactions to heart disease.
2. Learn to ask for and receive the help you need in coping with heart disease.
3. Look at your life goals and plans. Are there changes you can make? Distract yourself on days when you need a break. Plan special activities that give you pleasure.
4. Build social support networks for both emotional support and help with your other responsibilities.
5. Learn more about heart disease and emotions associated with heart disease by contacting your local Heart and Stroke Foundation office or your local Canadian Mental Health Association, by reading, or by using the Internet.
6. If you are concerned about your reactions, or are feeling overwhelmed, talk to your family doctor or cardiologist. If this is not helpful, get a referral to a mental health professional who works with people with medical illness (for example, a psychiatrist, psychologist, psychiatric nurse or social worker).
7. Review your treatment options and know that there are always choices.
8. Make choices and become actively involved when health decisions are made.
9. Remember, taking care of yourself or another doesn't have to be "all or nothing". The key is to find the right balance between roles and responsibilities, and recognize the balance may need to shift at times to accommodate specific situations.

# Your Heart Disease and the People Around You

## Family and Friends ...

Adjusting to heart disease can have an impact on your relationships with others. Your family and close friends may share some of your reactions or they may react in quite different ways. Communication is especially important at this time. Share your feelings with those close to you and encourage them to do the same. Accepting offers of help from your family and friends helps to make them feel involved.

## Children ...

Children are always aware of what is going on in the family. Overhearing conversations and experiencing changes in routines can be difficult for children. Adults are sometimes so caught up in their own concerns they may not have enough energy left to deal with a child's fears. Remember, children may show their fears differently than adults. Children may go back to earlier behaviours, fight with siblings or other children, or have problems at school.

You may wish to consider the following:

- Provide reassurance, and offer love and support.
- Be honest with your children and encourage questions and communication.
- Provide clear information according to their age and understanding.
- Contact day care providers, teachers, relatives and friends who can provide additional support.
- Keep the child's routine as close to normal as possible.
- Understand any change in usual behaviour and give extra reassurance.
- Encourage children (and other family members) to help whenever possible.



## If You Live Alone ...

Women who live alone may feel more anxious when adjusting to heart disease. Once you learn to live with CAD you will gain confidence in your body again. The following actions may help reduce anxiety.

- Establish daily contact with a friend or relative.
- Give a key to your apartment or house to a trusted friend or neighbor.
- Keep a list of important numbers by the phone (for example, friends and emergency services).
- Consider using a homecare service.

## Social Support

Whether you live alone or with others, social support (emotional support and help with practical things) can help you adjust to changes and improve your quality of life. This support can come from family, friends, neighbours, professional health care providers, or members of a group in which you participate. Plan to be involved with others as much as your energy allows. It's important to have some fun!

## Resuming Your Roles ....

Pace yourself, there is no need to do all the housework. Be sure to plan time in your day for activities which will improve your health and bring you pleasure.

If you work outside the home, your physician or cardiologist will discuss when you can return to work. Some people may need to consider changing jobs, working part-time or even stopping work if their jobs are physically demanding or very stressful. This may affect the family income and may require a change in lifestyle.

## You can do it!

If you do have heart disease, make sure you understand your health problem as well as possible. Then, learn what you can do to manage it. You may need to make lifestyle changes, and some of those changes may be hard at first. Take heart. There are many resources in your community, including your doctor, the local library and the Heart and Stroke Foundation to help you with these changes. Enlist your family and friends to help you whenever possible.

Finally, remember that many people with heart disease — both women and men — live long, happy and productive lives. So can you!

# Glossary

## Angina

Chest pain or discomfort due to coronary artery disease. Pain occurs when the heart muscle doesn't receive enough blood because of clogged coronary arteries.

## Cholesterol

A soft waxy substance found among the fats (lipids) in the blood. There are several different kinds of cholesterol, some of which contribute to the build-up of plaque in the blood vessels. Low density lipoprotein (LDL, sometimes referred to as the "bad" cholesterol) builds up on the inside of artery walls when cholesterol levels are too high. The result can be clogged blood vessels and increased risk of heart attack or stroke. High density lipoprotein (HDL, sometimes referred to as the "good" cholesterol) helps carry away deposits from artery walls, thus reducing the risk of heart problems.

## Coronary arteries

Blood vessels which supply the heart muscle with blood.

## Coronary artery bypass graft surgery (CABG)

A type of heart surgery in which blood vessels from another part of the body are used to bypass blocked vessels and improve the blood flow in the heart muscle.

## Coronary artery disease (CAD)

A disease which occurs gradually and leads to poor blood flow through the vessels in the heart.

## Echocardiogram

A type of diagnostic ultrasound test which uses echoes of high frequency sound waves to build up a visual image of the heart.

## Electrocardiogram (ECG)

A test that records the rate and rhythm of the heart.

### Heart attack

Damage to or death of part of the heart muscle due to a poor blood supply to that area.

### Heart disease

Diseases that involve the coronary arteries such as coronary artery disease (CAD), heart attack, angina, congestive heart failure, valve disease or disease involving the cardiac muscle (cardiomyopathies).

### Hormone replacement therapy

Any natural or synthetic replacement of estrogen and/or progesterone. Can be in the form of pills, patches, creams, injections or obtained from diet.

### Lipids

An umbrella name for the many different fats found in the body. Cholesterol and triglycerides are both lipids.

### Menopause

A time when a woman stops having menstrual cycles due to the lack of estrogen and progesterone.

### Percutaneous transluminal coronary angioplasty

A procedure where the coronary artery is widened by inserting a catheter and balloon. The balloon is inflated inside of the artery and widens the narrowed section.

### Plaque

The sticky, fatty deposits which build-up on the inner lining of the blood vessels.

### Stroke

Damage to or death of part of the brain due to a poor blood supply to that area of the brain.

### Triglycerides

The most common form of fat found in food and within our bodies. This substance seems to have some affect on heart disease, especially in women, although the exact relationship is not clear at the present.

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## Heart and Stroke Foundation

# Offices Across Canada

Heart and Stroke Foundation of  
Alberta, N.W.T. & Nunavut  
100 - 119 14 Street NW  
Calgary, AB T2N 1Z6  
(403) 264-5549

Heart and Stroke Foundation of  
B.C. & Yukon  
1212 West Broadway  
Vancouver, British Columbia V6H 3V2  
(604) 736-4404

Heart and Stroke  
Foundation of Canada  
222 Queen Street, Suite 1402  
Ottawa, Ontario K1P 5V9  
(613) 569-4361

Heart and Stroke  
Foundation of Manitoba  
200 - 6 Donald Street  
Winnipeg, Manitoba R3L 0K6  
(204) 949-2000

Heart and Stroke Foundation of  
Newfoundland and Labrador  
P.O. Box 670  
Mount Pearl, Newfoundland A1C 2X1  
(709) 753-8521

Heart and Stroke Foundation of  
New Brunswick  
133 Prince William Street, 5th floor  
Saint John, New Brunswick E2L 2B5  
(506) 634-1620

Heart and Stroke Foundation of  
Nova Scotia  
Park Lane Mall, Level 3  
5657 Spring Garden Road  
PO Box 245  
Halifax, Nova Scotia B3J 3R4  
(902) 423-7682

Heart and Stroke  
Foundation of Ontario  
2300 Yonge Street, Suite 1300  
P.O. Box 2414  
Toronto, Ontario M4P 1E4  
(416) 489-7111

Heart and Stroke Foundation of P.E.I.  
Maritime Electric Building  
180 Kent Street  
P.O. Box 279  
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(902) 892-7441

Heart and Stroke  
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1434 Sainte-Catherine St. W., Suite 500  
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Heart and Stroke Foundation  
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279 - 3rd Avenue North  
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(306) 244-6822

**1-888-HSF-INFO**

**(473-4636)**

Disease and Lifestyle  
Information Resources  
website:

[heartandstroke.ca](http://heartandstroke.ca)

Millions of Canadians will develop some form of heart disease or stroke over their lifetime - and some at a much too early age. As a leading funder of heart and stroke research in Canada, the Heart and Stroke Foundation continues to find the answers that lead to earlier diagnoses, better treatments and new insights into how to prevent and manage these diseases. To protect your health and the health of those you love, the Foundation also provides the most up-to-date healthy living information to Canadians, based on the most current, evidence-based research.



To find out more about Heart and Stroke Foundation prevention or disease-related information, and to learn how you can offer much-needed support in your community, visit

**[heartandstroke.ca](http://heartandstroke.ca)**  
or call  
**1-888-HSF-INFO (473-4636)**

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