

# Take it to Heart

*Your Healthy Heart Guide*



Allina Health



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## *Your Healthy Heart Guide*

*Fourth edition*

**Developed by Allina Health.**

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For specific information about your health condition, please contact your health care provider.





# Table of Contents

- Introduction ..... 5
- How Your Heart Works ..... 5
- Heart Disease ..... 7
- Heart Disease and Your Risks .....13
- Nutrition .....22
- Exercise .....27
- Resources .....32



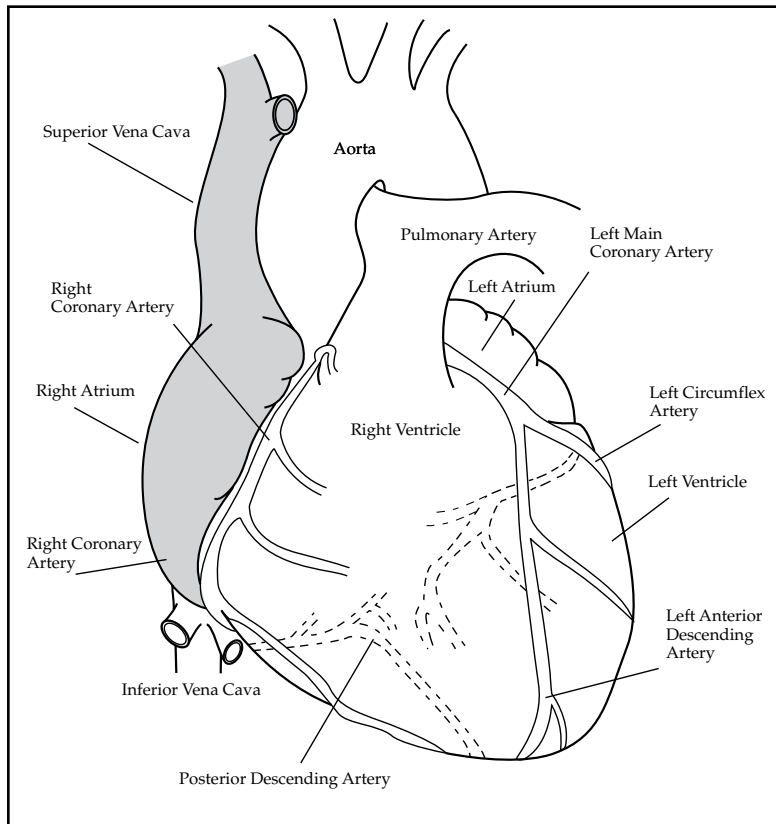
# Introduction

Heart disease is the No. 1 killer in the U.S. That's why it is so important to know the risk factors and early warning signs of heart disease and strive to live a heart healthy lifestyle.

This manual will help provide you with important information about heart disease, tips on how to reduce risk factors, and information on heart healthy nutrition and exercise.

You can help your heart and your health by managing your risk factors and living a healthy lifestyle.

## How Your Heart Works



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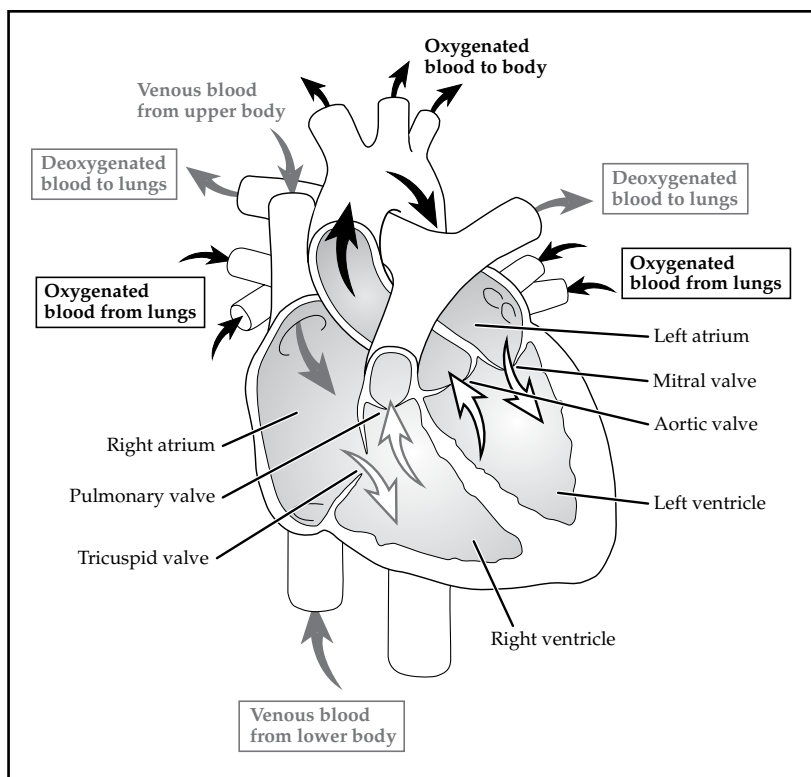
Your heart is a muscle that pumps oxygen-rich blood to your body and brings oxygen-poor blood back to your heart and lungs. Your blood travels through several miles of blood vessels.

The cells in your body need the oxygen to survive. Your heart is located near the middle of your chest, slightly to the left. This tough muscle is about the size of an adult fist, and it weighs about 1 pound.

Blood is supplied to your heart by two large blood vessels and their branches called **coronary arteries**. These arteries are on the outside of your heart muscle.

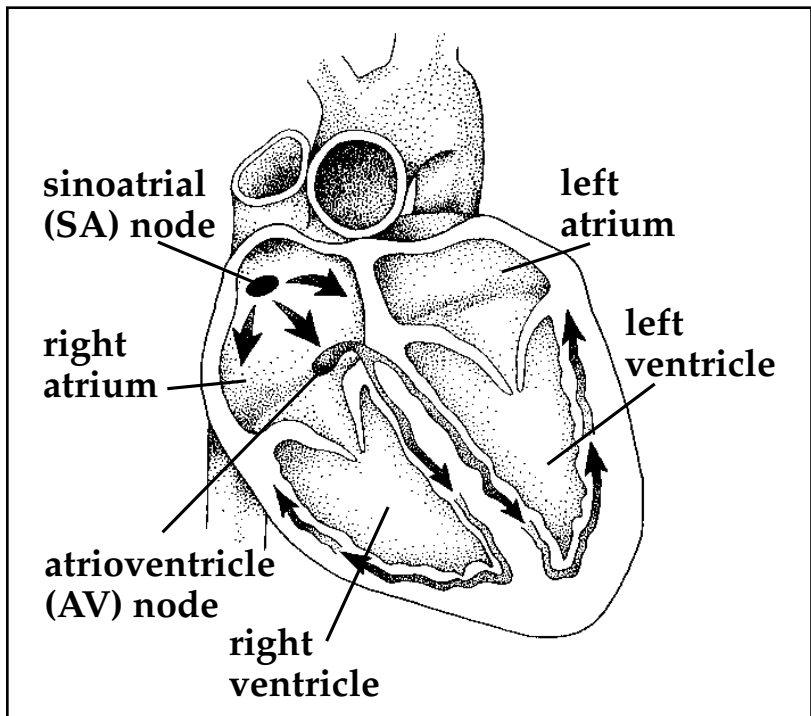
Your right coronary artery supplies the bottom and back of your heart. Your left coronary artery divides into two large blood vessels — the left anterior descending and the circumflex arteries. The left coronary artery supplies blood to the back, left side and front of your heart.

**Your heart muscle is about the size of an adult fist.**



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The left side of your heart receives blood with new oxygen from your lungs and sends it to your body. The right side of your heart receives blood from your body and pumps it to your lungs.



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The two sides of the heart.

The right side of your heart receives the oxygen-poor blood and pumps it to your lungs for a new supply of oxygen. The left side of your heart receives the oxygen-rich blood from your lungs and pumps it to the rest of your body.

Each side of your heart has two chambers, an upper one (called an **atrium**) and a lower one (called a **ventricle**). Between each chamber are **valves** that keep blood moving in the right direction.

The valves and their purposes are:

- Your **tricuspid valve** allows blood to flow from the right atrium to the right ventricle.
- Your **pulmonic valve** allows blood to flow from your right ventricle to your lungs through your pulmonary artery.
- Your **mitral valve** allows blood to flow from your left atrium to your left ventricle.
- Your **aortic valve** allows blood to flow from your left ventricle to all parts of your body through your aorta.

Your heart also has an electrical system, which powers your heart's pumping system. A group of special cells sends an electrical impulse through your heart muscle causing it to contract, or beat, about 60 to 100 times each minute.

To make a heartbeat, an electrical impulse starts in a spot in your upper heart called the sinoatrial (SA) node and travels through the atrium down to a spot between the atria and ventricles, called the atrioventricular (AV) node.

Then, the impulse travels through the ventricles. When the electrical impulse travels through the atria, it causes them to contract and send blood to the ventricles.



When the electrical impulse travels through the ventricles it causes them to contract and send blood to the body.

It is important for the atria and ventricles to contract in a coordinated way to prevent problems.

## Heart Disease

### Tip

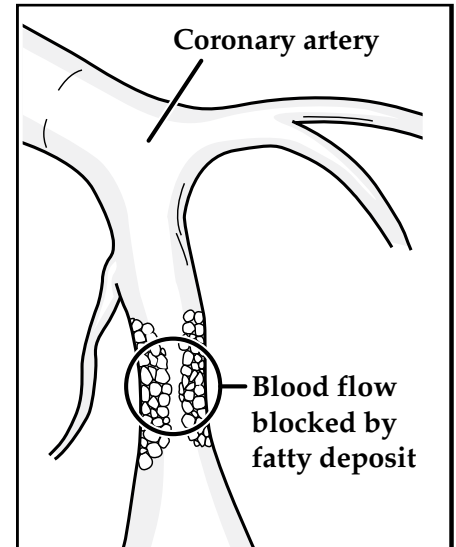
How to prevent heart disease:

- do not use tobacco
- maintain a healthful weight
- exercise regularly
- eat a healthy, well-balanced diet low in sodium and fat
- monitor your blood pressure
- manage your stress.

Fatty deposits can form and harden in the arteries of your heart. This material, or plaque, narrows the arteries in a process called atherosclerosis which can restrict blood flow to your heart. The more plaque in your arteries, the greater your risk for a heart attack or heart symptoms.

There are two types of plaque:

- **non-obstructive:** Plaque that cracks can cause a clot to form within a coronary artery. The clot can stop blood flow to your heart, leading to heart attack or heart damage. This form of plaque is the most likely to cause a heart attack.
- **obstructive:** Plaque can continue to build up slowly over time, reducing blood flow to your heart. When this happens, you may feel chest pains when you are physically active. Obstructive plaque does not always cause chest pain.



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**Coronary artery disease occurs when blood flow is blocked by fatty deposits inside an artery.**

## Tip

Angina is chest pain or discomfort when your artery becomes narrowed.

## Tip

Quick treatment in a hospital emergency room, especially within the first hour after an attack, reduces heart muscle damage and increases the odds of survival.

## Tip

Heart attack happens when an artery becomes blocked with plaque or a clot. When blood cannot flow to the heart, damage or death to the heart muscle may occur. This is a life-threatening situation.

There are several problems that could develop with your heart. The following are some common heart problems.

### **Coronary artery disease (CAD)**

If the arteries to your heart become narrow, you probably have coronary artery disease (CAD). This narrowing is caused by atherosclerosis (fatty deposits inside your arteries), a spasm or a blood clot. This makes it difficult for the blood to get to the heart and give it oxygen to work. Coronary artery disease can cause angina or a heart attack.

Angina is a discomfort or pain caused by temporary decrease in the amount of blood to an area of the heart. It occurs when the blood vessels are unable to deliver enough oxygen to meet the heart muscle's need for oxygen. This lack of oxygen is called ischemia.

A heart attack may occur when a coronary artery is totally blocked. You may feel the same kind of discomfort as angina, but it doesn't go away after 15 minutes or with nitroglycerin. Because a part of your heart muscle is not getting oxygen during a heart attack, that part of the muscle may be permanently damaged. This is called a myocardial (heart muscle) infarction (tissue death).

The term "acute coronary syndrome" refers to unstable angina (chest pains) and to acute myocardial infarction (heart attack).

### **Both angina and heart attack may feel the same**

With angina and a heart attack you may feel:

- tightening, pressure, squeezing or aching in your chest or arms
- a feeling of indigestion
- a feeling of fullness
- a sharp, burning or cramping pain
- aching, weakness or numbness that begins in or spreads to your neck, jaw, throat, teeth, back, shoulder or arms
- discomfort in your neck or upper back, particularly between your shoulder blades
- trouble breathing
- nausea (upset stomach) or vomiting (throwing up)
- cold sweats
- paleness
- generalized weakness or severe fatigue (tiredness)
- anxiety.

## Did You Know?

- One in 4 women dies from heart disease.
- About 6 million American women have heart disease.
- About 3 million American women have had a heart attack.
- Two-thirds of American women who have had a heart attack do not make a full recovery.
- Nearly two-thirds of American women who die suddenly of a heart attack had no symptoms.

(Source: National Heart, Lung, and Blood Institute)

## What to do if angina or heart attack occurs

If you feel symptoms of angina, follow these steps unless your health care provider has given you other instructions:

- Take one nitroglycerin tablet or use one nitroglycerin spray. Sit for 5 minutes.
- If the angina goes away, rest for a while, then continue your normal routine.
- **If the angina does not go away or gets worse, call 911 right away. Do not delay. Do not drive yourself to a hospital emergency room or urgent care.**

After calling 911, the American Heart Association recommends taking an aspirin as soon as the warning signs of a heart attack occur. Research shows that if you take aspirin as soon as you feel heart attack symptoms (and get medical help) your chances of survival can significantly improve.

**Do not take aspirin if you have an allergy to aspirin.**

## Special information for women

Heart disease is the No. 1 killer of women in the U.S. The most common heart attack symptom for women, as with men, is chest pain or discomfort. But there are differences in how women and men respond to a heart attack. Women are less likely than men to believe they are having a heart attack and more likely to delay in getting emergency treatment.

Women's heart attack warning signs include:

- chest pain or discomfort
- pain or discomfort in other areas of the upper body, such as the arms, back, neck, jaw, stomach, midchest, shoulders, elbows or fingers
- shortness of breath, lightheadedness, unusual fatigue (tiredness), breaking out in a cold sweat, nausea, loss of appetite and indigestion.

**If you are not sure about what you are feeling or have questions about how you are feeling:**

- **Stop whatever you are doing right away.**
- **Call your clinic and ask to talk to a doctor or nurse.**

**Do not try to deny, dismiss or make excuses for early warning signs. Call 911 right away if the signs get worse when you walk around or if the signs do not get better when you rest.**

## Tip

A blood pressure reading with the top number less than 120 and the bottom number less than 80 is considered normal.

## Warning

**If you have loss of sensation, coldness and severe pain your leg, call 911.** This means the blood flow to your leg has stopped.

## High blood pressure (hypertension)

Blood pressure is the amount of pressure within the walls of arteries. Blood pressure is measured by two numbers:

- The first (top) is the systolic blood pressure. It measures the pressure within the walls of your blood vessels *during* heartbeats.
- The second (bottom) number is the diastolic blood pressure. It measures the amount of pressure in *between* heartbeats, when your heart is at rest.

When the amount of pressure inside your arteries is high, your heart has to pump with greater force to push the blood through the blood vessels. If high blood pressure (hypertension) is left untreated, your heart muscle becomes larger and its pumping ability weakens.

High blood pressure usually has no signs. You have high blood pressure if you usually have a top number of 130 or higher or a bottom number of 80 or higher.

## Peripheral artery disease (PAD)

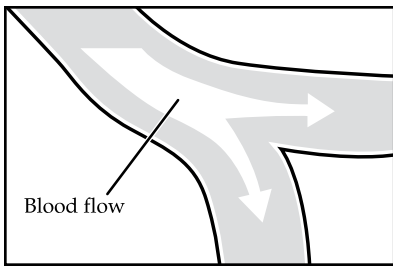
Other arteries in your body can become blocked with plaque (fatty deposits), too. Peripheral artery disease (PAD) occurs when plaque clogs the arteries in your legs, reducing blood flow to your legs and feet.

The lack of blood flow can cause leg or hip pain. You may notice cramping, pain or tiredness in your leg or hip muscle when you walk or exercise. The feelings go away when you rest but return when you resume activity.

PAD usually does not have symptoms until the blockage causes leg pain.

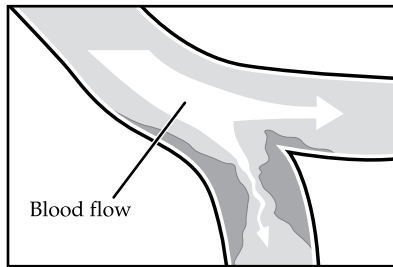
As arteries become blocked, smaller blood vessels carry the blood around the blockage. These vessels are known as collateral blood vessels.

If you have PAD, you may feel aches, pains, cramps, numbness or muscle fatigue during exercise. These feelings get better or go away when you stop exercising. When you exercise, your blood flow may not meet your body's need for extra oxygen.



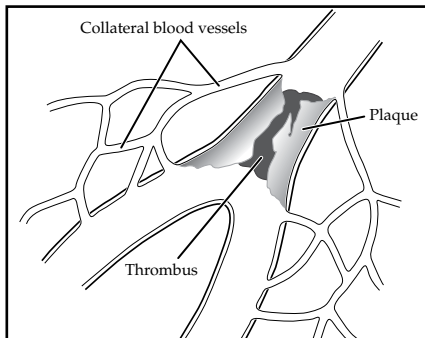
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**1. In an artery free of plaque (fatty deposits), blood flows freely.**



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**2. When plaque starts choking an artery, blood cannot flow freely, leading to peripheral artery disease (PAD).**



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**3. When an artery becomes blocked, smaller blood vessels around the blockage carry the blood. Those smaller vessels are known as collateral blood vessels.**

When the blockages are large enough that the blood flow is nearly or totally blocked, you may feel pain, even during rest. Without a constant supply of oxygen, tissue below the blockage can be permanently damaged.

There are many symptoms of PAD. You may have:

- an aching, cramping, tired feeling or numbness, tingling or pain in your feet, toes, legs or buttocks after walking (The pain goes away after a few minutes.)
- leg pain during the night or during rest that goes away if you hang your leg over the edge of your bed or put your leg up on a footstool
- blue or red discoloration of your foot or leg when sitting or standing
- a wound or sore on your foot that does not heal
- cold feet and cold or numb calves
- dry and scaly feet and legs
- less hair growth on your legs
- no pulse in your foot
- impotence (in men).

## Heart failure

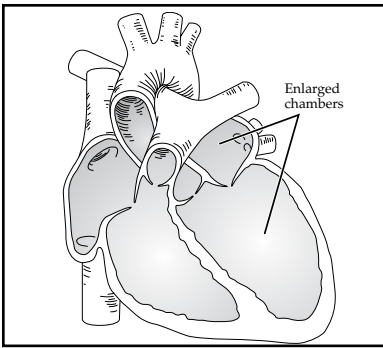
Heart failure does not mean your heart has stopped working or is about to stop working. It also does not mean that you have had a heart attack.

Heart failure means your heart is not pumping blood as efficiently as it should. Because your heart is not able to pump the normal amount of blood out of your ventricles, the blood vessels leading into your heart can become congested or “backed up” with blood.

Your heart may be damaged and pump with less force. To try to keep the same amount of blood moving through your body, the chambers stretch and enlarge to hold more blood. This process is called heart enlargement. Your heart muscle begins to weaken as it tries to pump this increased blood.

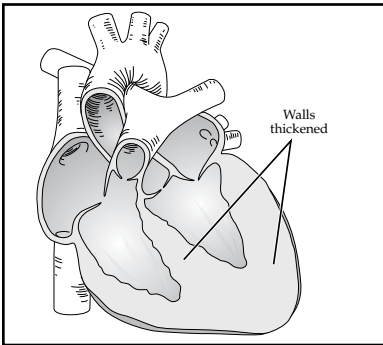
Because your heart is weakened, it pumps less blood to your organs — especially to your kidneys, which normally helps your body remove excess fluid.

Eventually, parts of your body hold excess fluid that is not being circulated very well by your heart. Your body becomes congested with fluid. This is why heart failure is sometimes called “congestive heart failure.”



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**Heart failure can make your heart chambers big (dilated).**



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**Heart failure can also make your heart muscle walls thicker (hypertrophied).**

Common symptoms of heart failure are:

- difficulty breathing
- waking up breathless at night
- swelling in your feet, ankles, legs, hands, lower back (edema), or all
- swelling in your abdomen (ascities)
- weight gain, even with a loss of appetite
- extreme fatigue
- dizziness, lightheadedness and lack of concentration
- palpitations.

Heart failure symptoms can be managed. The earlier you recognize your symptoms and report them to your health care team, the less time you may need to spend in the hospital. This means your life will be more enjoyable.

**Remember, if you have any recurring symptoms, call your health care provider right away. You may be able to keep yourself out of the hospital.**

### **Valve disease**

Valve disease occurs if one or more of your heart valves does not open or close properly. Examples are:

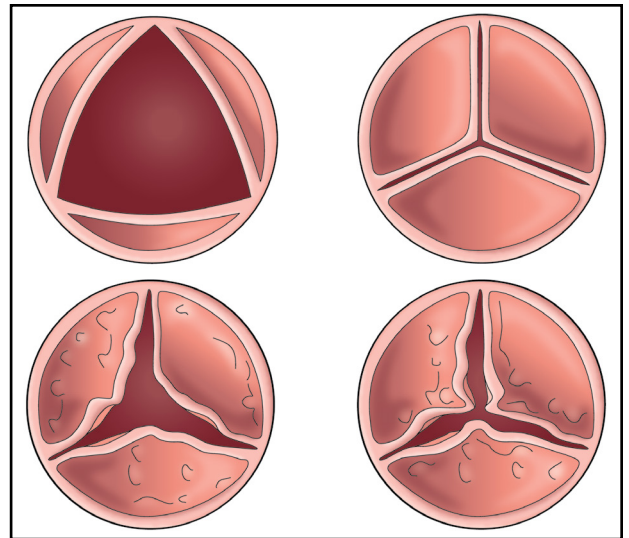
- stenosis (the valve opening is too narrow)
- atresia (the valve is not formed so blood cannot flow from one chamber to another)
- regurgitation or incompetence (the valve does not fully close so the blood leaks).

You may have had a valve disease since birth. Atrial septal defect is a hole in the wall that separates the upper chambers of the heart. Ventricular septal defect is a hole in the wall that separates the lower chambers of the heart.

Getting older and having a disease such as rheumatic fever can also damage a heart valve.

Signs and symptoms of valve disease include:

- shortness of breath
- fatigue, tiredness
- chest discomfort
- feeling lightheaded, dizzy or faint
- swelling in your feet, stomach or abdomen.



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Because your heart valves do not work properly, your heart works harder by thickening the walls (called hypertrophy) or by getting larger (dilating). Over time, the chambers in your heart lose their ability to pump well.

**(Top) How a normal valve opens and closes. (Bottom) How a valve looks when it doesn't fully open or close.**

## Heart Disease and Your Risks

### Tip

There are several risk factors you can control. The three major risk factors are tobacco use, high blood pressure and high blood cholesterol.

**If you have diabetes, you are at a greater risk for heart attacks and peripheral artery disease (PAD).**

You can help your heart and your health by managing your risk factors and living a healthy lifestyle. Risk factors are behaviors, habits or conditions that can put your heart at a high risk for problems.

There are two types of risk factors: those you can control and those you cannot.

### Risks you can control

#### ☐ Tobacco use

Tobacco use is the most preventable cause of death in the U.S. People who smoke are 2 to 4 times more likely to develop heart disease than people who do not smoke, and 10 times as likely to develop PAD.

They are at an increased risk for heart attack, stroke, circulatory problems, cancer and lung disorders.



## Did You Know?

Nicotine has effects like both caffeine (“upper”) and alcohol (“downer”).

## What is in tobacco

Cigarette smoke contains more than 7,000 chemicals. More than 70 can cause cancer.

Tobacco products include cigarettes, electronic nicotine delivery systems (ENDS, includes e-cigarettes), cigars, smokeless tobacco (dip or chew), hookahs, pipes, roll-your-own, and oral nicotine products.

## What tobacco does to your heart

Tobacco use is especially dangerous to your blood vessels and arteries. It can cause atherosclerosis, a build-up of plaque (fatty substances found in your blood). Over time, the plaque hardens and narrows your blood vessels and arteries.

Smoking also makes the blood vessels and arteries sticky. This leads to “obstructions” in blood flow, meaning that your blood cannot flow easily. The side effects of using tobacco can result in needing stents, coronary artery bypass surgery or both to keep your blood vessels and arteries open. It can also lead to heart attack or stroke.

Tobacco use:

- causes heart disease and stroke
- increases your heart rate
- increases your blood pressure
- lowers your good (HDL) cholesterol
- can cause irregular heart beats
- makes your heart work harder (adding stress to scarred or weakened blood vessels and arteries)
- can interfere with how well your heart medicines work
- causes heartburn and peptic ulcers
- can delay healing from surgery.

A damaged heart has to try to cope with the effects of tobacco. Quitting smoking and avoiding secondhand smoke can help reverse heart and blood vessel damage and reduce your heart disease risk.

## What secondhand smoke does to your body

Secondhand smoke is a mixture of smoke coming from the burning tips of cigarettes, pipes and cigars and smoke exhaled by someone who is smoking.



Anyone around secondhand smoke breathes in the chemicals from the tobacco smoke. Secondhand smoke causes death and disease in people who do not smoke.

Even briefly breathing secondhand smoke can damage the lining of blood vessels and cause your blood to become stickier. These changes can cause a deadly heart attack.

The only way to protect your family from secondhand smoke is to live in a smoke-free environment. No amount of secondhand smoke is safe.

### Smokeless tobacco

Smokeless tobacco (snuff, chewing tobacco, oral nicotine products and snus) is not a safe alternative to smoking. Any form of tobacco contains many toxins and high levels of nicotine.

The nicotine levels in 1 tin of smokeless tobacco are roughly equal to 4 packs of cigarettes.

It affects your heart by increasing your heart rate and blood pressure. Smokeless tobacco also contains *a lot* of sugar. This can make it harder to control your glucose levels.

### Did You Know

Secondhand aerosol from vaping is not safe. The aerosol has many of the same residual chemicals as cigarettes including:

- heavy metals such as tin, nickel and chromium
- nicotine
- toxins such as benzene, formaldehyde, lead and toluene.

E-cigarette aerosol contains a higher amount of ultrafine particles that are closer together (concentrated) than in tobacco cigarette smoke.

These tiny particles can go into your lungs, putting you at a high risk for shortness of breath and lung damage.

**Source: U.S. Surgeon General**

### E-cigarettes

E-cigarettes are known by many names such as e-cigarettes, e-cigs, vapes and electronic nicotine delivery systems (ENDS).

E-cigarettes are not safe. They are a tobacco product.

- The U.S. Food and Drug Administration (FDA) is starting to regulate ENDS products. This is a slow process.
- The FDA approves some e-cigarette brands to be sold. Even though e-cigarettes have fewer chemicals than cigarettes, they are not safe. "Safer" does not mean safe.
- Private and federally funded tests found many of the same chemicals in ENDS products that make cigarettes so dangerous.
  - benzene (found in car exhaust)
  - heavy metals (nickels, tin, lead)
  - arsenic (found in rat poison)
  - formaldehyde (used to preserve dead tissue)
  - glycerin and glycol (used in antifreeze).
- Testing has also found chemicals known to cause cancer in humans and scarring in the lungs.

### Need help quitting?

See the resources on page 33.

## Tip

If you have diabetes, your blood pressure goal is less than 139/89.

## Did You Know?

Guidelines call for treating high blood pressure earlier. Your doctor may want you to have treatment if you are in the elevated range (120-129 and less than 80). Treatment will include a low-sodium diet and exercise.

## ❑ High blood pressure

Nearly one in three American adults has high blood pressure (also known as hypertension). Blood pressure is the amount of pressure within the walls of your arteries. Blood pressure is measured by two numbers:

- The first (top) number is the **systolic blood pressure**. It measures the amount of pressure within the walls of your blood vessels *during* heartbeats. (When your heart is pumping.)
- The second (bottom) number is the **diastolic blood pressure**. It measures the amount of pressure within the walls of your blood vessels *between* heartbeats. (When your heart is resting.)

Your blood pressure is written with the systolic number above the diastolic number (such as 120/80). High blood pressure is a top number of at least 130 or a bottom number of at least 80.

There are usually no signs or symptoms of high blood pressure. If left untreated, high blood pressure can cause heart failure, heart attack, kidney failure, aneurysms (small bulges) in blood vessels, vision changes, and stroke.

If you have high blood pressure, follow your health care team's instructions. Although high blood pressure cannot be cured, it can be managed.

To lower your blood pressure, you may need to:

- eat less than 2,400 milligrams of salt each day
- get regular exercise
- decrease the amount of alcohol you drink
- stop using tobacco
- take medicine to lower your blood pressure.

Have your blood pressure checked regularly. Ask your health care provider for your target blood pressure.

## ❑ High blood cholesterol

Blood cholesterol naturally occurs in your body. It is a white, waxy substance that is found in your cell walls, hormones and bile acids. How much cholesterol you have in your body is determined by your genetics (family history), food choices, weight and activity level.

There are two kinds of cholesterol, sometimes called “good” and “bad.”

- “Good” cholesterol is called **high density lipoprotein, or HDL**. HDLs are believed to help remove “bad” cholesterol from your body, so the more you have — the higher your HDL levels — the better.

- HDL levels lower than 40 mg/dL for men and lower than 50 mg/dL for women are considered a risk factor for heart disease.
- You may increase your HDL level by doing aerobic exercise, losing weight and not using tobacco. Do not be too disappointed if your HDL levels do not go up much. Your low HDL may be caused by your family history.

## Tip

Guidelines for LDL are based on your overall risk for heart disease. If you have diabetes or heart disease, consider taking a statin medicine to protect your arteries. Talk with your health care provider about your LDL goal.

- “Bad” cholesterol is **low density lipoprotein, or LDL**. LDL carries cholesterol from your liver to other tissues in your body, and forms deposits on blood vessel walls. Too much cholesterol can build up in your blood vessels and “clog the pipes.”

Sometimes, you’ll hear **triglycerides** discussed along with cholesterol. Triglycerides are a type of fat. They come from the food you eat. They are also produced from any extra calories and stored in fat cells. High levels can be caused by alcohol use or high sugar intake.

High triglycerides (150 and above) with a low HDL are linked to an increased risk of heart disease.

## Ways to help control your cholesterol

You can help control your cholesterol level in the following ways:

- Eat foods low in saturated fat, trans fat and cholesterol. This includes:

- vegetables and fruits
- whole grains
- fat-free or low-fat dairy products
- lean protein such as chicken or turkey breast without the skin, fish, legumes (beans, lentils, peas) and soy
- healthful oils (olive oil, canola oil, etc.) and nuts.

Limit red meats (especially processed meats), and sweets and sugar-sweetened beverages. Avoid eating “tropical” oils such as coconut, palm kernel and palm oils.

- Lose weight if you are overweight. This can lower your LDL level and raise your HDL level.

- Be physically active three to four times each week for a total of at least 150 minutes. This can also lower your LDL level.
- Take any medicine to lower your cholesterol as prescribed. Eating more healthful foods and increasing your activity level are often not enough to reach your cholesterol goals.

You may have a high cholesterol level and not yet have any signs of disease. Your health care provider will recommend how often to have your cholesterol level checked.

## Did You Know?

For every 1 pound of extra weight that you carry, your heart has to pump your blood through an extra mile of blood vessels.

### Lack of exercise

Regular aerobic exercise is important to maintain your ideal body weight, manage your cholesterol levels, stress level and blood pressure.

Exercise may also improve your muscle tone, improve how well your heart and circulation work, increase your resistance to fatigue, help prevent blood clots from forming in your arteries, improve your mental and emotional well-being, decrease your blood fats, suppress your appetite and more.

### Weight

Being overweight makes your heart work harder. Help manage this risk by working to maintain the body weight that is right for you.

- Eat a well-balanced diet. Eating foods high in saturated fat can raise your cholesterol count and lead to coronary artery disease. Eating too much sodium makes your body retain fluid.
- Limit fats and sweets.
- Do activities and exercise as you are able and as recommended by a health care provider.
- Eat only when you are hungry, not when you are bored, tired or feeling stressed.

## **Warning**

If you have diabetes, do not smoke. Smoking doubles your risk for heart disease.

(Source: National Diabetes Education Program)

## **□ Diabetes**

Having diabetes puts you at an increased risk for heart problems because of the disease's effect on your blood vessels. When diabetes is not under control, a build-up of glucose in your blood leads to an increase in triglycerides, which can lead to peripheral artery disease (PAD).

About 65 percent of people who have diabetes die from heart disease or stroke, according to the National Diabetes Education Program.

Diabetes is a stronger heart disease risk factor for women than it is for men.

Diabetes is a lifelong disease that cannot be cured, but it can be managed. To reduce your risk for heart disease and stroke, control your glucose and lipid levels, manage your blood pressure, get regular exercise, control your weight, watch your diet and do not smoke.

Work with your health care team to keep your hemoglobin A1c below 7 percent. Talk with your health care provider about your fasting blood glucose goal.

## **□ Alcohol**

Studies show a link between heavy alcohol use and heart disease. Heart enlargement and heart failure can occur after long-term drinking of moderate or high levels of alcohol (more than two drinks each day).

Heavy use of alcohol can increase your blood pressure, raise your triglyceride levels and add more calories to your diet. Talk with your health care team about your alcohol use.

## **□ Stress**

Strong emotions can cause your body to make more adrenaline, a hormone that increases your heart rate and blood pressure. Tension causes small arteries throughout your body to contract (get smaller) and may temporarily raise your blood cholesterol levels.

How you handle stress will have an affect on your body and emotional well-being. You can help manage stress by trying to reduce the causes. When you are under stress, you must take good care of yourself.

Take deep breaths and release them slowly. Schedule activities at a leisurely pace. Avoid rush hour traffic and busy shopping times. Schedule time to “do nothing” or do activities that you enjoy. Take care of yourself. Attend a relaxation class, or try massage to cope with your stress.

## **Risks you cannot control**

### **Age**

Typically, your risk of coronary artery disease increases with age. As you get older, more plaque forms in your arteries. The more plaque you have, the higher the risk the plaque will break apart and cause a clot to form. This may cause a heart attack or reduce blood flow to your heart.

### **Sex**

Men\* have a greater risk of heart disease earlier in life than women\*. However, after menopause, a woman’s risk of heart disease gradually increases to equal a man’s risk. The process of atherosclerosis (hardening of the arteries) is slower in women than in men because of the estrogen, a hormone.

### **Family history**

A positive family history of early heart disease means a heart attack, bypass surgery, angioplasty or sudden cardiac death in:

- a father or brother before age 55
- a mother or sister before age 65.

If you have a positive family history, you should be aware of your other risk factors, such as high cholesterol. Your doctor may suggest a cholesterol blood profile if you have a positive family history of early heart disease.

To determine your risk factors, fill out the chart on the next page.

**\*Male at birth. Female at birth.**

## Your Heart Disease Risk Factor Goals

Risk Factor	Your Health Profile	Target Goal
High blood pressure	Blood pressure range: _____	<ul style="list-style-type: none"> <li>■ Below 120/80 mm/Hg</li> </ul>
High blood cholesterol	Date: _____ LDL: _____ HDL: _____ Triglycerides: _____	<ul style="list-style-type: none"> <li>■ LDL 100 mg/dL or lower*</li> <li>■ men: HDL 40 mg/dL or above</li> <li>■ women HDL 50 mg/dL or above</li> <li>■ Triglycerides below 150 mg/dL</li> </ul>
Tobacco	Have you used tobacco in the last 12 months?  Yes ____ No ____	no tobacco use
Physical activity	Past exercise program: _____ _____ _____	Get regular aerobic exercise (such as walking or biking) for at least 30 minutes most, if not all, days of the week.
Weight	Do you consider yourself overweight?  Yes ____ No ____	Weight loss goal: _____
Stress	Do you have stress that feels out of control?  Yes ____ No ____	Find the ability to recognize stress and cope with stress in healthy ways (such as exercise or relaxation).
Diabetes	Date: _____ Glucose: _____ Hemoglobin A1c: _____	<ul style="list-style-type: none"> <li>■ Talk with your health care provider about your fasting blood glucose goal.</li> <li>■ Hemoglobin A1c below 7 percent</li> </ul>

**\*Guidelines for LDL are based on your overall risk for heart disease. If you have diabetes or heart disease, consider taking a statin medicine to protect your arteries. Talk with your health care provider about your LDL goal.**

# Nutrition

## Tip

Saturated fats are solid at room temperature (such as butter or stick margarine). Trans fats make these solid.

Monounsaturated and polyunsaturated fats are liquid at room temperature (such as oils).

## Tip

Because butter is rich in both saturated fat and cholesterol, it could raise your cholesterol level.

Most margarine is made from vegetable fat and provides no dietary cholesterol. Select margarines that do not contain trans fats.

Choose trans fat-free margarines or spray margarines such as PAM®, Smart Balance® (spray).

Eating a diet low in saturated fat, cholesterol and trans fat is the first change you can make to lower your risk of heart disease. Besides lowering your total cholesterol, a low-fat diet promotes a longer, healthier life. In contrast, a high-fat diet is linked with obesity, heart disease and cancer.

Fats are an essential nutrient and your body needs fat to work properly. But, too much fat can increase your blood cholesterol level and your risk of heart disease.

## Saturated fats

Saturated fats are found in animal products such as butter, cheese, whole milk, ice cream and fatty meats. They are also found in some vegetable products (coconut, palm and palm kernel oil). Saturated fats and trans fatty acids raise blood cholesterol more than anything else in your diet.

## Polyunsaturated fats

Polyunsaturated fats include corn, safflower, sunflower, soybean, cottonseed, olive and sesame seed oils. Polyunsaturated fats can help reduce blood cholesterol, if you use them in place of saturated fats.

## Trans fats

Trans fatty acids (trans fats) result from a chemical process known as hydrogenation. Trans fats can raise LDL cholesterol levels and add to heart disease. Shortening, partially hydrogenated vegetable oil and hydrogenated vegetable oils are examples of trans fats. Trans fats are often used in cooking in many restaurants and fast food chains.

(Note: Trans fats also occur naturally in some foods such as meat and milk.)

Read ingredient labels. Buy items that have a recommended fat, such as canola or soybean oil. Avoid foods that have hydrogenated vegetable oil, partially hydrogenated oil or shortening. Choose foods that have as close to 0 grams trans fat as possible.

## Monounsaturated fats

Monounsaturated fats include olive, peanut and canola oils. Avocados and most nuts are also high in monounsaturated fats. Monounsaturated fats, in appropriate amounts, may reduce total cholesterol and LDL (low density lipoprotein) cholesterol, the bad cholesterol.



## How to Read Food Labels

Use the nutrition label below to understand the following.

- **Serving size:** The serving size lists the amount of food in one serving and the number of servings in one package.
- **Calories:** Calories are a measure of energy released by a food. Try to limit your food choices to those that have less than one-third calories from fat.

<b>Nutrition Facts</b>	
8 servings per container	
<b>Serving size</b>	<b>2/3 cup (55g)</b>
<b>Amount per serving</b>	
<b>Calories</b>	<b>230</b>
	<b>% Daily Value*</b>
<b>Total Fat</b> 8g	<b>10%</b>
Saturated Fat 1g	<b>5%</b>
<i>Trans</i> Fat 0g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 160mg	<b>7%</b>
<b>Total Carbohydrate</b> 37g	<b>13%</b>
Dietary Fiber 4g	<b>14%</b>
Total Sugars 12g	
Includes 10g Added Sugars	<b>20%</b>
<b>Protein</b> 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

Source of labels: U.S. Food and Drug Administration

- **Total fat:** Total fat includes all types of fat (saturated, unsaturated, trans). Try to eat foods low in saturated and trans fats.
- **Saturated fat:** Saturated fat raises LDL (“bad”) cholesterol. Reduce saturated fats to help protect your heart.
- **Trans fat:** Trans fats can raise LDL cholesterol, lower HDL (“good”) cholesterol, and add to heart disease. Eat as little trans fats as possible. Avoid foods that contain “partially hydrogenated” oils.
- **Cholesterol:** Foods from animals (meat, fish, eggs, cheese, butter) have cholesterol.
- **Sodium:** You need sodium (salt) to help your organs work well and keep your fluids in balance. Too much sodium can lead to high blood pressure. One teaspoon of salt has 2,400 milligrams of sodium. This is the upper limit most people need each day.
- **Total carbohydrate:** Carbohydrates give your body energy. Too many can raise your blood glucose. Everyone’s blood glucose is affected by carbohydrates differently.
- **Fiber:** Fiber is the part of food that cannot be broken down during digestion. Because it moves through your body “undigested,” it plays an important role in keeping your digestive system moving and working well.
- **Total sugars:** This is the total amount of natural sugars such as lactose (sugar in milk) or fructose (sugar in fruit) and added sugars.
- **Added sugars:** Part of the total sugars is added when the food was made.
- **Protein:** Protein is important for healing, building muscle, strengthening your immune system.
- **Percent (%) daily value:** This number tells you if a serving is low or high in the listed nutrients. In general:
  - 5% or less is low in the nutrient
  - 20% or more is high in the nutrient.

## Tip

You should eat 25 to 30 grams of total dietary fiber each day.

## Diet high in fiber, low in sodium

Eating a diet high in fiber and low in sodium is another way to lower your risk of heart disease.

The American Heart Association suggests eating a variety of food fiber sources. Good sources of fiber include fruits, vegetables, whole grain foods, beans and legumes. There are two types of fiber:

- **soluble fiber.** This type of fiber can help lower your blood cholesterol. Foods high in soluble fiber include oat bran, oatmeal, beans, peas, barley, citrus fruits, strawberries and apple pulp.
- **insoluble fiber.** This type of fiber cannot help lower your blood cholesterol, but it helps with normal bowel function. Foods high in insoluble fiber include whole wheat breads, wheat cereals, wheat bran, rye, rice, barley, most other grains, cabbage, beets, carrots, brussels sprouts, turnips and cauliflower.

You should eat 25 to 30 grams of fiber a day. This should come from food, not supplements. Most people only eat half as much fiber as they need.

The average American eats 3,400 milligrams (mg) of sodium each day. The recommended amount of sodium is 2,300 mg or less each day. If you are trying to cut down on the amount of sodium in your diet, here are a few guidelines:

- Try herbs and spices that do not contain sodium.
- Remove the salt shaker from your kitchen table.
- Reduce or eliminate salt in cooking.
- Reduce the amount of salt you use to flavor food.
- Cut back on eating processed foods.

## How to cook heart-healthy

You can easily change most recipes to reduce calories, fat and cholesterol. With just a few minor changes in ingredients and preparation, you can change most of your favorite foods into healthy ones.

- Choose lean (low-fat) cuts of meat.
- Remove all fat and skin from meats and poultry before cooking.
- Use cooking methods that use little or no fat: boil, broil, bake, roast, poach, steam, saute, stir-fry with a small amount of recommended oil, or use the microwave.


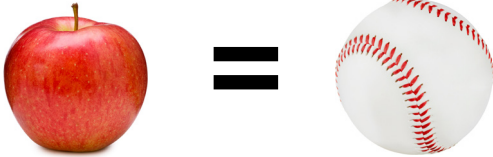
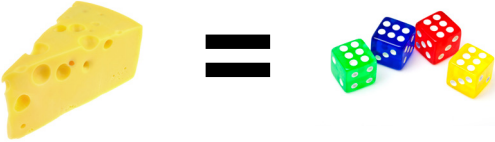
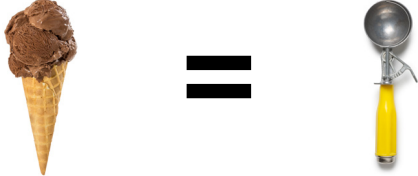

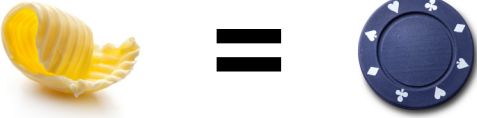
- Do not deep-fry foods. Instead, saute meats or vegetables in a small amount of oil, flavored vinegars, low-calorie cooking spray, water or broth.
- Pan broil foods on a nonstick surface (such as Teflon® or Silverstone®). Remove any fat as it accumulates.
- Coat cookware with a low-calorie vegetable oil cooking spray. Avoid using shortening or butter.
- Skim fat off soups and stews before serving. Use an ice cube to congeal and remove fat, or a gravy strainer to separate fat from the juices. Chill soups, stews and gravies after cooking so you can remove the hardened fat from the top.
- Choose skim or 1 percent milk and nonfat or low-fat yogurt and cheeses.
- Use herbs, spices or lemon juice to add flavor instead of butter, bacon or salt.

### **Tips for eating out**

- Ask how foods are prepared and ask about substitutions.
- Order salad dressings and sauces on the side. Try lemon juice or vinegar instead of salad dressing.
- At fast food restaurants, order plain foods (such as a regular hamburger) and skip the sauces, cheese and bacon.
- Consider picking up a made-to-order sandwich at a grocery store deli or sandwich shop.
- For dessert, try frozen yogurt, sherbet or fresh fruit.

## Learn the proper portion sizes

When a food scale or measuring cups are not handy, you can still estimate your portion. Remember:

<p>3 ounces of meat is about the size and thickness of a deck of playing cards.</p>	
<p>1 medium apple or 1 cup of cooked vegetables is about the size of a baseball.</p>	
<p>1 ounce of cheese is about the size of 4 stacked dice.</p>	
<p>One-half cup of ice cream or one-half cup of cooked pasta is about the size of an ice cream scoop.</p>	
<p>1 slice of bread or one 6-inch tortilla is about the size of a DVD.</p>	
<p>1 teaspoon of butter is about the size of a poker chip.</p>	

# Exercise

## Tip

You do not need to join a health club or buy expensive equipment to get exercise. You can:

- Take stairs instead of the escalator or elevator.
- Park your car a little farther from the door when at work or shopping.
- Go for a brisk walk or a bike ride.
- Do aerobics.
- Run up and down stairs.
- Go dancing, swimming, jogging, or any activity you enjoy.
- Ride a stationary bike while watching TV.

Talk with your doctor about starting an exercise program if you have health problems, concerns, questions or if you are older than age 50.

## Why you should exercise

Lack of regular aerobic exercise puts you at risk for heart disease. Exercise improves the efficiency of the heart and muscles. The heart muscle grows stronger with exercise. Even a little exercise is better than none at all.

If you move your body, you will feel better. Aim for at least 30 minutes of physical activity most, if not all, days of the week.

There are two types of exercise that can help keep you physically healthy:

- **aerobic:** Aerobic exercise is a rhythmic, repetitive activity such as walking, swimming and biking that continues for at least 30 minutes. This exercise restores a steady supply of oxygen to the muscles that are being exercised.
- **strength training:** Strength training improves your muscle strength and tone, reduces body fat and may reduce pain in your low back. There are several different types of strength training: elastic bands, cuff and hand weights, free weights, wall pulleys and weight machines.

## Benefits of exercise

The benefits of exercise are many. Exercise:

- increases your muscle strength and flexibility
- helps build and maintain healthy bones, muscles and joints
- helps manage your weight by increasing the amount of calories burned
- lowers your risk for heart disease, colon cancer and diabetes
- helps control your blood pressure
- helps increase HDL (“good”) cholesterol
- makes you feel better
- reduces your stress
- increases self-esteem
- helps control blood glucose.

## Your home exercise program

Exercise at a level that you would describe as “fairly light” to “somewhat hard.”

- Increase your exercise every day by 1 to 3 minutes as you can.
- Your goal is to work toward a total of 30 to 45 minutes of nonstop exercise most days.
- You may not be able to exercise for a full 30 minutes at one time. You can exercise for 10 to 15 minutes 2 to 3 times a day.

Exercise 1 - 15 min.  
3 times/day.

Exercise 15 - 20 min.  
2 times/day.

Exercise 30 - 45 min.  
1 time/day.

Date	Morning	Afternoon	Evening	Comments
<i>example</i>	5 minutes	5 minutes	5 minutes	short of breath
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

## **Borg RPE Scale®**

Try to keep your effort between 11 and 14 on the Borg RPE® Scale below.

6	No exertion at all
7	
8	Extremely light
9	Very light
10	
11	Light
12	
13	Somewhat hard
14	
15	Hard (heavy)
16	
17	Very hard
18	
19	Extremely hard
20	Maximal exertion

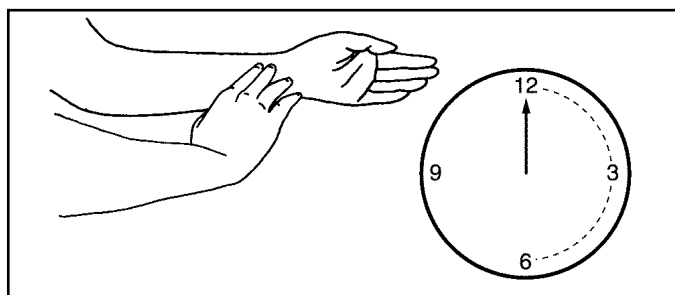
Borg-RPE-skalan®  
© Gunnar Borg, 1970, 1985, 1994, 1998

The scale with correct instructions can be obtained from Borg Perception, see the home page: [www.borgperception.se/index.html](http://www.borgperception.se/index.html).

## Target heart rate

Your target heart rate can help you stay in a safe exercise heart rate range. You should exercise at your age guidelines below. (See the chart below.)

**Note:** Medicines may change your heart rate. Check with your health care provider about changes to your exercise heart rate.



To find your beats per minute, put 2 fingers (don't use your thumb) on the inside of your wrist (see above). Count the beats for 30 seconds. Double that number to get the beats per minute.

Age (years)	Target heart rate zone (beats per minute)
20	110 to 160 bpm
30	105 to 152 bpm
35	102 to 148 bpm
40	99 to 144 bpm
45	96 to 140 bpm
50	94 to 136 bpm
55	91 to 132 bpm
60	88 to 128 bpm
65	85 to 124 bpm
70	83 to 120 bpm
75	80 to 116 bpm

**BPM** stands for beats per minute. This is how hard your heart is beating during exercise.



## Sexual activity

- You may resume sexual activity as soon as you are comfortable enough to tolerate activity equal to climbing two flights of stairs. There is no danger to your heart.
- Do not use positions that put weight on your arms.
- Call your doctor if you have any of the following symptoms:
  - rapid heart rate or shortness of breathe that lasts 4 to 5 minutes after intercourse
  - chest pain during or after intercourse
  - feelings of extreme fatigue the next day.

## Signs you are doing too much

As you exercise, you should be aware of your body's response. Signs you are doing too much include:

- dizziness or lightheadedness
- nausea (upset stomach) and vomiting (throwing up)
- cold sweat
- shortness of breath, making conversation difficult
- exhaustion or unusual fatigue
- feeling as if your heart is suddenly racing or pounding
- any chest pain or pressure in your:
  - teeth
  - arm
  - jaw
  - ear
  - neck
  - between your shoulder blades.

## What to do

1. Stop and rest if you feel any of the above symptoms.
2. Call 911 if you have symptoms after resting.
3. If you are out of an emergency service area, have someone drive you to the nearest hospital Emergency Department right away. **Do not drive yourself.**

## Resources: Websites

### Professional organizations/government

- American Dietetic Association  
[eatright.org](http://eatright.org)
- American Heart Association  
[americanheart.org](http://americanheart.org)
- American Stroke Association  
[strokeassociation.org](http://strokeassociation.org)
- MEDLINE plus  
[medlineplus.gov](http://medlineplus.gov)
- National Heart, Lung, and Blood Institute  
[nhlbi.nih.gov](http://nhlbi.nih.gov) and [hearttruth.gov](http://hearttruth.gov)
- U.S. Food and Drug Administration  
[fda.gov](http://fda.gov)

### Allina Health

- Allina Health  
[allinahealth.org](http://allinahealth.org)

## Resources: Quitting Tobacco



### Product-specific Resources

- financial aid Nicotrol® inhaler  
— 1-844-989-PATH (7284)  
— [pfizerxpathways.com](http://pfizerxpathways.com)
- Plant Extracts aromatherapy  
— 1-877-999-4236  
— [plantextractsinc.com](http://plantextractsinc.com)

### Allina Health (if you had a recent hospital stay)

- Tobacco Intervention Program at Abbott Northwestern Hospital  
— 612-863-1648
- Tobacco Intervention Program at Mercy Hospital  
— 763-236-8008
- Tobacco Intervention Program at River Falls Area Hospital  
— 715-307-6075
- Tobacco Intervention Services at Allina Health United Hospital – Hastings Regina Campus  
— 715-307-6075
- \*United Hospital Lung and Sleep Clinic Tobacco Cessation Program  
— 651-726-6200
- \*Penny George™ Institute for Health and Healing (LiveWell Center) tobacco intervention coaching  
— 612-863-5178

### Other

- Quit Partner  
— 1-800-QUIT-NOW (1-800-784-8669) or [quitpartnermn.com](http://quitpartnermn.com)  
— My Life, My Quit™ (ages 13 to 17): text “Start My Quit” to 36072 or call 1-855-891-9989 to talk with a coach  
— American Indian: 1-833-9AI-QUIT or [aiquit.com](http://aiquit.com)  
— Spanish: 1-855-DEJELO-YA (1-855-335-3569) or [quitpartnermn.com/es](http://quitpartnermn.com/es)  
— [asiansmokersquitline.org](http://asiansmokersquitline.org)
- online tobacco cessation support  
— [smokefree.gov](http://smokefree.gov)
- American Lung Association/Tobacco Quit Line  
— 651-227-8014 or 1-800-586-4872
- \*Mayo Clinic Nicotine Dependence Center’s Residential Treatment Program  
— 1-800-344-5984 or 1-507-266-1930

**\*There may be a cost to you. Check with your insurance provider.**



[allinahealth.org](http://allinahealth.org)