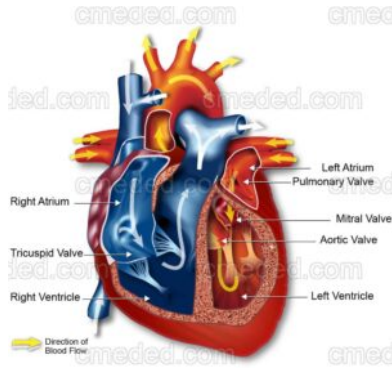
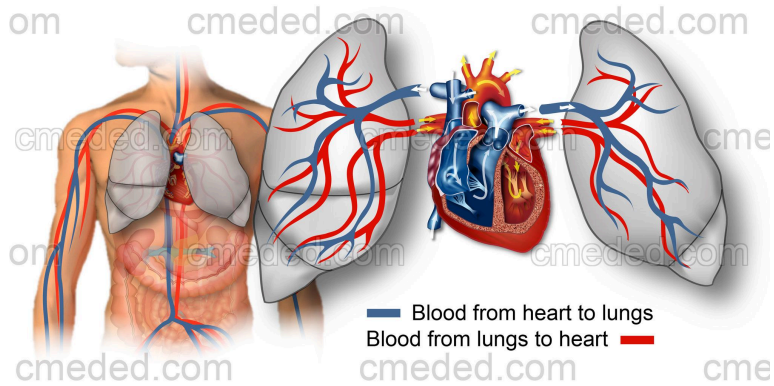


## Understanding Cardiovascular Disease

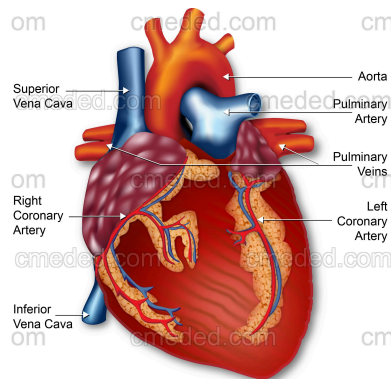
### The Heart



The heart is an organ that circulates blood and oxygen throughout the body. The heart beats about 60-100 times per minute when the body is at rest. Each time the heart beats, oxygen-depleted blood enters the right side of the heart and is pumped to the lungs to pick up oxygen. From here, the oxygenated blood travels from the lungs to the left side of the heart, which pumps the blood out of the heart through the aorta to deliver oxygen to the rest of the body. This cycle occurs every time the heart beats to ensure constant blood circulation and a constant supply of oxygen to the body's cells.



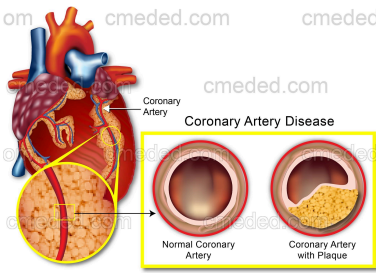
### Heart Disease



The term "heart disease" refers to any condition that causes the heart to pump blood and deliver oxygen less effectively. High blood pressure and high cholesterol are two relatively common heart conditions that can damage the heart and blood vessels, and can eventually lead to more serious types of heart disease:

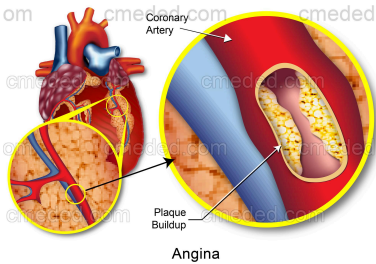
- > **High blood pressure:** Blood pressure is the pressure of blood on the inner walls of the arteries. High blood pressure (hypertension) is a serious condition that can damage the heart and arteries over time, leading to more serious problems such as coronary artery disease, heart attack, or stroke. [Read more about hypertension](#)
- > **High cholesterol:** Cholesterol is a fatty, waxy substance found in the blood. There are two types of cholesterol: LDL ("bad") and HDL ("good"). LDL cholesterol is harmful because it causes plaque to form on the inner walls of the arteries. This plaque can clog and narrow the arteries, and can eventually lead to more serious problems such as coronary artery disease, heart attack, and stroke. HDL cholesterol is good for your body because its function is to remove harmful LDL cholesterol from the arteries.

Untreated high blood pressure and high LDL cholesterol can eventually lead to more serious conditions such as coronary artery disease, heart attack, stroke, and congestive heart failure.



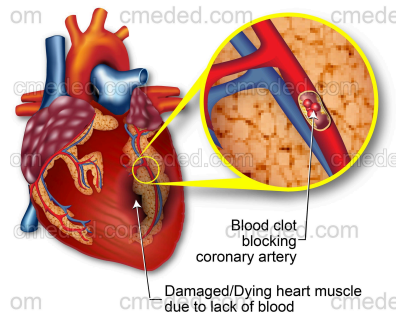
## Coronary Artery Disease

Coronary artery disease is a disease in which plaque (a waxy substance made up of fat, cholesterol, and other substances) builds up on the inner walls of the arteries that supply the heart with blood. This buildup of plaque inside the arteries is called **atherosclerosis**. Over time, these arteries can become narrowed and clogged, reducing the supply of blood to the heart. This can cause angina, which is severe chest pain that occurs when the heart muscle isn't getting enough oxygen. Eventually, plaque can completely block an artery, causing heart attack or stroke.



## Angina

Angina is a severe chest pain that occurs when the heart muscle isn't getting enough oxygen. Angina most often occurs in individuals with coronary artery disease. As the arteries become narrow and clogged, the heart muscle doesn't get enough oxygen. This lack of oxygen causes it to hurt.

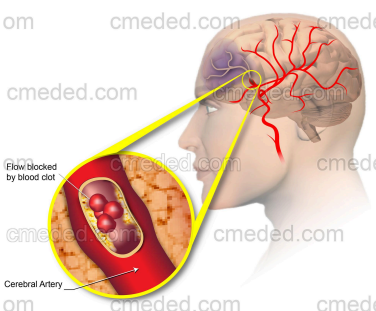


## Heart Attack

A heart attack (**myocardial infarction**) occurs when a coronary artery in the heart becomes completely blocked by plaque. Often plaque builds up in another part of the blood stream, breaks off, and travels to the small coronary arteries, where it can cause a blockage. When a coronary artery is clogged, a section of the heart is unable to receive the oxygen it needs to function properly. This lack of oxygen can damage and kill the heart muscle.

Signs and symptoms of heart attack include the following:

- › Pressure, fullness or a squeezing pain in the center of your chest that lasts for more than a few minutes
- › Pain extending beyond your chest to your shoulder, arm, back, or even to your teeth and jaw
- › Prolonged pain the upper abdomen
- › Shortness of breath
- › Sweating
- › Fainting
- › Nausea and Vomiting



## Stroke

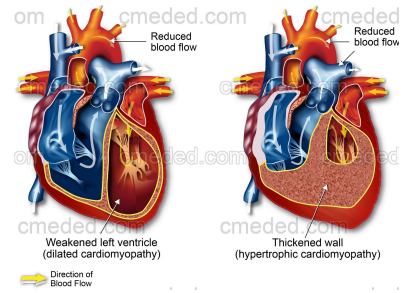
A stroke (**cerebrovascular accident**) occurs when a blood vessel that supplies blood to the brain becomes clogged by plaque. This plaque may form in another part of the blood stream and travel to the small blood vessels in the brain (cerebral arteries), where it can cause a blockage. This is called a **cerebral embolism**. When a cerebral artery is blocked, the brain is unable to receive the oxygen it needs to function properly, which can damage and kill brain tissue. You can reduce your risk for stroke by making lifestyle changes that allow you to control your blood pressure and blood cholesterol, as well as taking medication.

## Strokes may happen in one of two ways:

- › Ischemic strokes occur when the blood supply is blocked from the brain.
- › Hemorrhagic strokes occur when blood vessels in the brain burst.

## Signs and symptoms of stroke include the following:

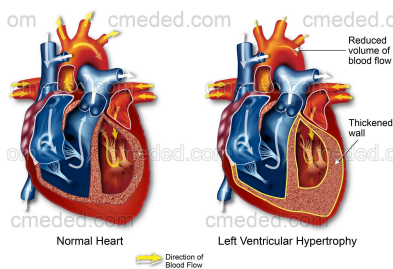
- › Face drooping
- › Arm weakness
- › Speech difficulty
- › Problems with balance
- › Vision problems
- › Severe headache
- › Numbness
- › Problems Understanding



## Congestive Heart Failure

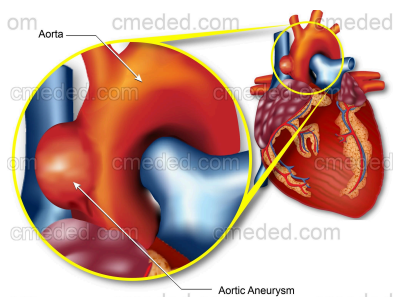
Congestive heart failure is a condition in which the heart is weakened and unable to pump blood throughout the body effectively. A normal, healthy heart pumps blood and transports oxygen to all of the cells in the body. When the heart cannot pump blood effectively, it is unable to supply the body with enough oxygen to function properly. Heart failure may mean that the heart is unable to fill with enough blood, or it may mean that the heart does not pump blood with enough force. Congestive heart failure develops over time as the heart weakens with age, but may be exacerbated by other heart diseases such as coronary artery disease and high blood pressure, as well as diabetes. Congestive heart failure may occur on the left or the right side of the heart.

Certain disorders and diseases can damage the heart and contribute to congestive heart failure. These conditions include coronary artery disease, high blood pressure, heart attack, heart valve disease, heart muscle diseases such as [dilated cardiomyopathy](#) and [hypertrophic cardiomyopathy](#), [inflammation](#) of the heart muscle (myocarditis), [congenital](#) heart defects, lung disease, and diabetes.



## Left Ventricular Hypertrophy

Left ventricular hypertrophy (LVH) is a thickening of the muscle in the wall of the heart's left [ventricle](#). The left [ventricle](#) is the chamber of the heart that pumps oxygenated blood to the rest of the body. LVH may be caused by other heart conditions such as high blood pressure and coronary artery disease. These conditions cause the heart to work harder, which causes the muscles in the left [ventricle](#) to thicken and lose elasticity. A hardened, less elastic heart pumps blood less effectively and can lead to more serious conditions such as congestive heart failure.



## Aortic Aneurysm

An aneurysm is an [abnormal](#) bulge in the wall of an artery. An aneurysm occurs when a weakened wall of an artery stretches and balloons as blood flows through it. Aneurysms can occur in the brain and other parts of the body, but most often occur in the aorta. The aorta is the large artery that transports oxygen-rich blood from the heart to the rest of the body. Aortic aneurysms are serious medical problems, and can grow large and eventually burst, causing severe internal bleeding and possible death.

## Symptoms for Heart Disease:

## Risk Factors for Heart Disease:

- › Smoking
- › Lack of regular exercise
- › High cholesterol
- › High blood pressure
- › Stress
- › Diabetes
- › Use of alcohol or illegal drugs
- › Shortness of breath
- › Feeling weak and tired after regular activity or at rest
- › Trouble breathing while laying down
- › Coughing and shortness of breath that disrupts sleep
- › Swollen feet, ankles or legs
- › Dizzy spells
- › Chest discomfort
- › Fast heart beat

## Prevention for Heart Disease

You can make lifestyle changes in order to help lower your risk for developing heart disease or to manage existing heart conditions. Talk to your physician in order to determine what steps you should take to help lower your risk for the development of heart disease. Steps that may be suggested by your physician are as follows:

### Healthy Diet and Nutrition

A healthy diet plays a key role in preventing and managing high blood pressure, which can lead to the development of other heart conditions. Eating well is a good way to ensure that your body is receiving the nutrients it needs in order to function properly. The following is a list of healthy food choices that should be considered.



- › Eat many fruits and vegetables.
- › Any dairy consumed should be low-fat.
- › Eat foods that have less saturated and total fat.



- › Reduce sodium intake, as sodium causes the body to retain fluid, which increases blood pressure.



- › Eat potassium-rich foods that will combat the complications that come about due to high levels of sodium in the body. Examples of potassium-rich foods include bananas, spinach, white beans, potatoes and sweet potatoes.

- › Limiting sugar in your diet can lower blood sugar and help you to prevent diabetes.



### Maintain a Healthy Weight

The more weight on your body, the harder your heart has to work to pump blood to the entirety of the body. A heart that has to work too hard may fail. Strive to remain in a healthy body mass index (BMI) range between 18.5 and 24.9. If you know your weight and height, you can calculate your BMI at CDC's [Accessing Your Weight](#) website.



### Get Active

Aim for at least 90 to 150 minutes of moderate-intensity exercise, like brisk walking or bicycling, per week in order to strengthen your heart. A stronger heart is able to pump blood more efficiently and takes some of the pressure off of your arteries, lowering your blood pressure.



## Limit Alcohol Consumption

Overconsumption of alcohol has deleterious effects on blood pressure, so limit alcohol consumption to 1 to 2 drinks per day. Men should not have more than two drinks a day, while women should not have more than a single drink a day.



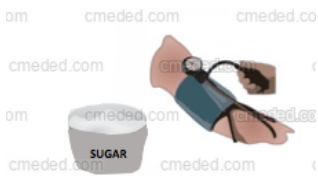
## Quit Smoking

Smoking cigarettes greatly increases the risk for heart disease. If you smoke, quitting will lower your risk for heart disease. Seek out your physician as he or she can suggest ways to help you quit. If you do not currently smoke, do not start.



## Reduce Your Stress Level

Any amount of added stress on the body may have deleterious effects on your health. Try to limit your stress in order to prevent the development of heart disease.



## Monitor and Control Other Conditions

Monitoring and controlling other health conditions, such as high blood pressure, diabetes, or high cholesterol, may benefit you greatly in the prevention of heart disease.



## Medications

Medications to treat risk factors for heart conditions like coronary artery disease, high cholesterol, high blood pressure, irregular heartbeat, and weak blood flow, may be taken if advised by your physician.



## Surgical Procedures

Certain surgical procedures may be carried out in order to restore blood flow within the heart.

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