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# Heart Health and Aging

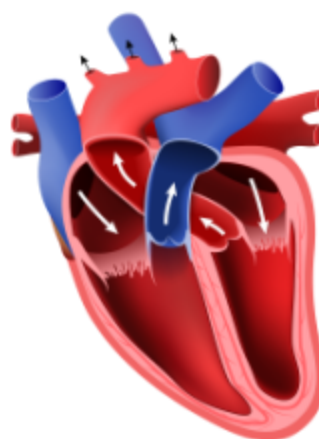
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## How does the heart work?

Your heart is a strong muscle that pumps blood to your body. A normal, healthy adult heart is about the size of your clenched fist. Just like an engine makes a car go, the heart keeps your body running.

Different parts of the heart have different functions:

- The right side pumps blood to the lungs to pick up oxygen.
- The left side receives oxygen-rich blood from the lungs and pumps it through arteries throughout the body.
- An electrical system in the heart controls the heart rate (heartbeat or pulse) and coordinates the contraction of the heart's top and bottom chambers.



## How your heart changes with age

Aging causes changes in the heart and blood vessels. Here are some of the changes that could occur:

- As you get older, your heart can't beat as fast during [physical activity](#) or times of stress. However, a person's resting heart rate — the number of heartbeats per minute at rest — does not change significantly with normal aging.
- You may feel a fluttering in your chest or have the feeling that your heart is skipping a beat or beating too hard. Occasional extra or skipped heartbeats may occur more often with increased age and are not dangerous. However, more frequent and/or persistent feelings that your heart is fluttering or racing may be signs of a heart rhythm abnormality (arrhythmia), which may require treatment.
- Over time, the chambers of your heart may increase in size. The heart wall thickens, so the amount of blood that a chamber can hold may decrease, despite the increased overall heart size. Increased thickness of the heart wall can increase the risk of [atrial fibrillation](#), a common heart rhythm problem in older people that can increase the risk of a stroke.

### Glossary

Find the definitions of common heart health terms in the **Heart Health Glossary**.

- The valves that control blood flow between the chambers of the heart may become thicker and stiffer. Stiffer valves can limit the flow of blood out of the heart or become leaky, both of which can cause fluid to build up in the lungs or in the legs, feet, and abdomen.

Changes in the heart and blood vessels that happen with age may increase a person's risk of heart disease and related health problems. Heart disease is a major cause of disability that can limit activity and erode quality of life for older people. Talk with a doctor if you have any concerns about your heart as you age.

Some risk factors for heart disease may also be linked to cognitive health, including a person's risk of dementia later in life. The good news is there are things you can do, such as [controlling your blood pressure](#), that may help delay or lower your risk. Taking better care of your overall cardiovascular health can help protect both your brain and your heart.

Read more about [cognitive health in older adults](#).

## Check your blood pressure and cholesterol

As you get older, it's important to have your blood pressure and cholesterol levels checked regularly, even if you are healthy.

High blood pressure could lead to [stroke](#) and problems with your heart, [eyes](#), brain, and [kidneys](#). [High cholesterol](#) can also lead to serious health problems, such as a heart attack, cardiac arrest, or stroke. Talk to a doctor about exercise, dietary changes, and medications that can help manage your blood pressure and cholesterol levels.

## What is heart disease?

Heart disease is a general term used to describe a variety of conditions that affect the heart's structure and how the heart works. Heart disease includes:

- Arteriosclerosis (ahr-TEER-ee-o-skluh-ROH-sis), sometimes called "hardening of the arteries," refers to increased stiffness of the large arteries. This can cause [high blood pressure](#) (hypertension), which becomes more common with age.
- [Atherosclerosis](#) (ATH-uh-roh-skluh-ROH-sis) is the slow buildup of fatty deposits, called plaques, in the walls of the coronary arteries. It is common, but it is not a normal part of aging. The buildup can also occur in arteries of the brain and legs, increasing the risk of stroke, and leg muscles not getting enough blood.
- [Angina](#) (an-JY-nuh) is pain or discomfort that usually occurs in the chest but can also be felt in the neck or left arm. Angina is caused by decreased blood flow to the heart due to plaque buildup or a plaque that breaks off and

restricts blood flow in a coronary artery, which supplies the heart muscle with oxygen and nutrients.

- A heart attack occurs when blood flow to the heart is blocked and the heart muscle does not get enough oxygen and nutrients.

## Signs of heart disease

People in the early stages of these heart diseases often don't have symptoms, or the signs may not be noticeable. In some people, early symptoms may be felt only during times of stress or during strenuous exercise. Many people have no symptoms until they experience a heart attack or other related medical problem. That's why regular [checkups with a doctor](#) are important.

**If you experience any of the symptoms listed below suddenly or without exertion, call 911 for emergency assistance.** Although other conditions can cause chest discomfort, don't assume it's something minor. It is critical to have your symptoms checked out quickly in case it is a heart attack. Immediate treatment is essential to prevent permanent damage when the heart is not getting enough oxygen.

Chest pain is not always the main warning sign of a heart attack, so be aware of other possible symptoms:

- Crushing chest pain or pressure in the center or left side of the chest
- Pain, numbness, and/or tingling in the shoulders, arms, neck, jaw, or back
- Shortness of breath when active, at rest, or while lying flat
- Fainting, lightheadedness, or sudden dizziness
- Rapid or irregular heartbeat
- Cold sweats
- Nausea, vomiting, or stomach upset
- Tiredness or [fatigue](#)
- Weakness
- Anxiety

The symptoms of a heart attack can be different in men and women. Women are more likely than men to experience shortness of breath; tiredness; weakness; upset stomach; anxiety; and pain in the shoulder, back, or arm. For more information, visit [The Heart Truth](#), a national heart disease awareness campaign for women from the NIH National Heart, Lung, and Blood Institute (NHLBI).

Although these problems can be signs of heart disease, they can also be associated with other health conditions. [Tell your doctor](#) about any health concerns you have. If you have signs of heart disease, your doctor may send you to a [cardiologist](#), a doctor who specializes in the heart.

## Medical Tests for heart disease

If your doctor suspects you have heart disease, they will probably check your blood pressure and do a blood test to check your cholesterol.

Other tests they may perform include:

- An [electrocardiogram](#) (ECG or EKG), a test that records the heart's electrical activity. This painless test uses electrodes (sticky patches) attached to the skin on the chest, arms, and legs while you are lying still.
- A chest X-ray, which can show whether your heart is enlarged and/or your lungs have fluid in them.
- A series of blood tests, one to check for a hormone called brain natriuretic peptide (BNP), which increases in heart failure, and another to check the levels of proteins that are markers of inflammation in the body.
- An [echocardiogram](#), a painless test that uses sound waves to produce images of your heart in motion to help determine how well your heart or heart valves are functioning.

## What is heart failure?

[Heart failure](#) occurs when one or both sides of the heart cannot pump enough blood to meet the body's needs. It develops over time as the pumping action of the heart gets weaker, or if it becomes difficult for the heart to adequately fill with blood between heartbeats. Heart failure does not mean that the heart has stopped or is about to stop working.

When heart failure affects the left side of the heart, the heart cannot pump enough oxygen-rich blood to the rest of the body. When it affects the right side of the heart, the heart cannot pump enough blood to the lungs to pick up oxygen. When the heart is weakened by heart failure, resulting symptoms can include shortness of breath and swelling in the feet, ankles, abdomen, and legs.

Older adults with long-term high blood pressure and obesity are at greater risk of developing heart failure. In these people, heart failure results from thickened and stiff heart muscle that relaxes too slowly. Although the heart muscle is not damaged or weak in this type of heart failure, if left untreated, the condition can be debilitating and make it difficult to do even basic activities.

Heart failure can be caused by other diseases or conditions that damage the heart muscle, such as [coronary artery disease](#), [cardiomyopathy](#), [heart inflammation](#), [heart attacks](#), [diabetes](#), viral illnesses, long-term use of alcohol, and high blood pressure. Treating these problems before the heart muscle is damaged can help prevent heart failure. Buildup of a protein called amyloid within the heart muscle can be another cause of heart failure, especially in older adults of African, Hispanic, or Caribbean descent. If the condition is found early in these individuals, treatment for the buildup may be available to help prevent heart failure.

## Keeping your heart healthy

There are many steps you can take to help keep your heart healthy. Here are some ideas:

**Stay physically active.** If possible, aim to get at least 150 minutes of [physical activity](#) each week. Research has found that resistance training (also called strength training) and aerobic exercise can both benefit heart health. But it's most important just to get moving — any physical activity is better than none. [Talk with your doctor](#) about the type of activities that would be best for you.

**If you smoke, quit.** [Smoking is the leading cause of preventable death](#). Smoking adds to the damage to artery walls that occurs in heart disease. [Quitting smoking](#), even in later life, can improve your health and lower your risk of heart disease, stroke, and [cancer](#).

**Follow a heart-healthy diet.** Eat plenty of fruits, vegetables, lean proteins, and foods high in fiber (such as those made with whole grains). Also choose foods that are low in saturated fats, added sugars, and salt. As we get older, our bodies become more sensitive to salt, which can cause high blood pressure and swelling in the abdomen, legs, and feet. Learn more about the [Dietary Approaches to Stop Hypertension](#) (DASH), a flexible and balanced eating plan that helps create a heart-healthy eating style, and the [U.S. Department of Agriculture's dietary guidelines](#).

**Maintain a healthy weight.** Balancing the calories you eat and drink with the calories burned through being physically active helps to [maintain a healthy weight](#). Ways you can stay at a healthy weight include limiting portion sizes and getting regular exercise that includes resistance training.

**Keep your [diabetes](#), high blood pressure, and/or high cholesterol under control.** Follow your doctor's advice to manage these conditions, and take medications as directed.

**Don't drink much or any [alcohol](#).** As we age, alcohol consumption can make existing health problems worse and have dangerous interactions with some medications.

**Manage stress.** Learn how to manage stress, relax, and cope with problems to improve physical and emotional health. Consider activities such as a [stress management program](#), [meditation](#), [physical activity](#), and talking about concerns with friends or family. To learn more about stress management techniques, visit the [NIH National Center for Complementary and Integrative Health](#).

**Get enough sleep.** Getting enough good-quality sleep is another way to help reduce the risk of heart disease. As we get older, our sleep patterns begin to change, making it more difficult to fall asleep or stay asleep. Sleep disorders such as sleep apnea can also affect how much and how well you sleep. Talk with your doctor if you have difficulties sleeping. Read more about [getting a good night's sleep](#).

### Learn more about heart health

Check out [NHLBI](#) to learn more about heart health, different types of heart disease, [heart-healthy living](#), and questions you can ask your doctor about your risk for heart disease.

## The future of research on aging and the heart

Today more than ever, scientists understand the effects that aging has on the heart and blood vessels, and how aging and other factors affect the risk of developing heart disease. They are learning much more about how physical activity, diet, and other lifestyle factors influence the rate of aging in the heart and arteries. Aging processes in other organ systems, including the muscles, kidneys, and lungs, also likely contribute to heart disease. Changes in metabolism, including [insulin resistance](#), are increasingly recognized as risk factors for heart disease. Research will continue to unravel how these aging systems influence each other, which may reveal new targets for treatments and help develop new ways to prevent and manage heart disease.

Interventions that slow the effects of aging in the heart and arteries in healthy young and middle-aged people could prevent or delay the onset of heart disease, [stroke](#), and other cardiovascular disorders in later life. Some of these include [healthy eating](#), maintaining a healthy weight, [exercising](#) (particularly resistance training), reducing stress, [quitting smoking](#), and getting quality sleep. Additionally, the more we understand the changes that take place in cells and molecules during aging, the closer we get to the possibility of designing drugs that target those changes. One day, gene therapies that target specific cellular changes may be another potential way to intervene in the aging process and help keep the heart healthy for as long as possible.

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- Learning more about [heart attacks](#)
- Viewing and sharing an infographic on [high blood pressure](#)

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## For More Information About Heart Health

### National Heart, Lung, and Blood Institute

301-592-8573

[nhlbiinfo@nhlbi.nih.gov](mailto:nhlbiinfo@nhlbi.nih.gov)

[www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)

### National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

800-860-8747

866-569-1162 (TTY)

[healthinfo@niddk.nih.gov](mailto:healthinfo@niddk.nih.gov)

[www.niddk.nih.gov](http://www.niddk.nih.gov)

### **MedlinePlus**

National Library of Medicine

[www.medlineplus.gov](http://www.medlineplus.gov)

### **Smokefree60+**

National Cancer Institute

877-448-7848

(877-44U-QUIT)

[cancergovstaff@mail.nih.gov](mailto:cancergovstaff@mail.nih.gov)

[www.60plus.smokefree.gov](http://www.60plus.smokefree.gov)

### **Million Hearts Initiative**

Centers for Disease Control and Prevention

Centers for Medicare & Medicaid Services

<https://millionhearts.hhs.gov>

### **American Heart Association**

800-242-8721

[inquiries@heart.org](mailto:inquiries@heart.org)

[www.heart.org](http://www.heart.org)

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