Heart Disease

Heart disease refers to any problem affecting the heart, such as coronary artery disease, arrhythmia, and heart failure.

According to the Centers for Disease Control and Prevention (CDC), heart disease is the leading cause of death in the United States. Around 1 in 4 deaths in the U.S. occur due to heart disease, and the condition affects all genders as well as all racial and ethnic groups.

Types

Heart disease refers to any condition affecting the cardiovascular system. There are several different types of heart disease, and they affect the heart and blood vessels in different ways.

The sections below look at some different types of heart disease in more detail.

Coronary artery disease

Coronary artery disease, also known as coronary heart disease, is the most common type of heart disease.

It develops when the arteries that supply blood to the heart become clogged with plaque. This causes them to harden and narrow. Plaque contains cholesterol and other substances.

As a result, the blood supply reduces, and the heart receives less oxygen and fewer nutrients. In time, the heart muscle weakens, and there is a risk of heart failure and arrhythmias.

When plaque builds up in the arteries, it is called atherosclerosis. Plaque in the arteries can rupture from blockages and cause blood flow to stop, which can lead to a heart attack.

Congenital heart defects

A person with a congenital heart defect is born with a heart problem. There are many types of congenital heart defects, including

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- Atypical heart valves: Valves may not open properly, or they may leak blood.

- Septal defects: There is a hole in the wall between either the lower chambers or the upper chambers of the heart.
- Atresia: One of the heart valves is missing.

Congenital heart disease can involve major structural issues, such as the absence of a ventricle or problems with unusual connections between the main arteries that leave the heart.

Many congenital heart defects do not cause any noticeable symptoms and only become apparent during a routine medical check.

According to the American Heart Association (AHA)

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, heart murmurs often affect children, but only some are due to a defect.

Arrhythmia

Arrhythmia refers to an irregular heartbeat

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. It occurs when the electrical impulses that coordinate the heartbeat do not work correctly. As a result, the heart may beat too quickly, too slowly, or erratically.

There are various types of arrhythmias, including:

- Tachycardia: This refers to a rapid heartbeat.
- Bradycardia: This refers to a slow heartbeat.
- Premature contractions: This refers to an early heartbeat.
- Atrial fibrillation: This is a type of irregular heartbeat.

A person may notice a feeling like a fluttering or a racing heart.

In some cases, arrhythmias can be life threatening or have severe complications.

Dilated cardiomyopathy

In dilated cardiomyopathy, the heart chambers become dilated, meaning that the heart muscle stretches and becomes thinner. The most common causes of dilated cardiomyopathy are past heart attacks, arrhythmias, and toxins, but genetics can also play a role.

As a result, the heart becomes weaker and cannot pump blood properly. It can result in arrhythmia, blood clots in the heart, and heart failure.

It usually affects people aged 20–60 years

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, according to the AHA.

Myocardial infarction

Also known as heart attack, myocardial infarction involves an interruption of the blood flow to the heart. This can damage or destroy part of the heart muscle.

The most common cause of heart attack is plaque, a blood clot, or both in a coronary artery. It can also occur if an artery suddenly narrows or spasms.

Are there different types of heart attack? Learn more here.

Heart failure

When a person has heart failure, their heart is still working

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but not as well as it should be. Congestive heart failure is a type of heart failure that can occur from problems with the pumping or relaxing function.

Heart failure can result from untreated coronary artery disease, high blood pressure, arrhythmias, and other conditions. These conditions can affect the heart's ability to pump or relax properly.

Heart failure can be life threatening, but seeking early treatment for heart-related conditions can help prevent complications.

Hypertrophic cardiomyopathy

This condition usually develops when a genetic problem affects the heart muscle. It tends to be an inherited condition.

The walls of the muscle thicken, and contractions become harder. This affects the heart's ability to take in and pump out blood. In some cases, an obstruction can occur.

There may be no symptoms, and many people do not receive a diagnosis. However, hypertrophic cardiomyopathy can worsen over time and lead to various heart problems.

Anyone with a family history of this condition should ask for screening, as receiving treatment can help prevent complications.

Hypertrophic cardiomyopathy is the main cause of cardiac death

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among young people and athletes under 35 years old, according to the AHA.

Mitral valve regurgitation

This event occurs when

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the mitral valve in the heart does not close tightly enough and allows blood to flow back into the heart.

As a result, blood cannot move through the heart or body efficiently, and it can put pressure on the chambers of the heart. In time, the heart can become enlarged, and heart failure can result.

Learn more about heart valves here.

Mitral valve prolapse

This happens when the valve flaps of the mitral valve do not close properly. Instead, they bulge into the left atrium. This can cause a heart murmur.

Mitral valve prolapse is not usually life threatening, but some people may need to receive treatment for it.

Genetic factors and connective tissue problems can cause this condition, which affects around 2%

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of the population.

Aortic stenosis

In aortic stenosis

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, the pulmonary valve is thick or fused and does not open correctly. This makes it hard for the heart to pump blood from the left ventricle into the aorta

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A person may be born with it due to congenital anomalies of the valve, or it may develop over time due to calcium deposits or scarring.

Symptoms

The symptoms of heart disease depend on the specific type a person has. Also, some heart conditions cause no symptoms at all.

That said, the following symptoms may indicate a heart problem:

- angina, or chest pain
- difficulty breathing
- fatigue and lightheadedness
- swelling due to fluid retention, or edema

In children, the symptoms of a congenital heart defect may include cyanosis, or a blue tinge to the skin, and an inability to exercise.

Some signs and symptoms that could indicate heart attack include:

- chest pain
- breathlessness
- heart palpitations
- nausea
- stomach pain
- sweating
- arm, jaw, back, or leg pain
- a choking sensation
- swollen ankles
- fatigue

- an irregular heartbeat

Heart attack can lead to cardiac arrest, which is when the heart stops and the body can no longer function. A person needs immediate medical attention if they have any symptoms of a heart attack.

If cardiac arrest occurs, the person will need

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- immediate medical help (call 911)
- immediate cardiopulmonary resuscitation
- a shock from an automated external defibrillator, if available

Causes and risk factors

Heart disease develops when there is:

- damage to all or part of the heart
- a problem with the blood vessels leading to or from the heart
- a low supply of oxygen and nutrients to the heart
- a problem with the rhythm of the heart

In some cases, there is a genetic cause. However, some lifestyle factors and medical conditions can also increase the risk. These include:

- high blood pressure
- high cholesterol
- smoking
- a high intake of alcohol
- overweight and obesity
- diabetes
- a family history of heart disease
- dietary choices
- age
- a history of preeclampsia during pregnancy
- low activity levels
- sleep apnea
- high stress and anxiety levels
- leaky heart valves

The World Health Organization (WHO)

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mentions poverty and stress as two key factors contributing to a global increase in heart and cardiovascular disease.

Which foods can help manage cholesterol? Learn more here.

Treatments

The treatment options will vary depending on the type of heart disease a person has, but some common strategies include making lifestyle changes, taking medications, and undergoing surgery.

The following sections look at some of these options in more detail.

Medications

Various medications

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can help treat heart conditions. The main options include:

- Anticoagulants: Also known as blood thinners, these medications can prevent clots. They include warfarin (Coumadin) and the direct oral anticoagulants dabigatran, rivaroxaban, and apixaban.
- Antiplatelet therapies: These include aspirin, and they can also prevent clots.
- Angiotensin-converting enzyme inhibitors: These can help treat heart failure and high blood pressure by causing the blood vessels to expand. Lisinopril is one example.
- Angiotensin II receptor blockers: These can also control blood pressure. Losartan is one example.
- Angiotensin receptor neprilysin inhibitors: These can help unload the heart and interrupt the chemical pathways that weaken it.
- Beta-blockers: Metoprolol and other medications in this class can reduce the heart rate and lower blood pressure. They can also treat arrhythmias and angina.
- Calcium channel blockers: These can lower blood pressure and prevent arrhythmias by reducing the pumping strength of the heart and relaxing the blood vessels. One example is diltiazem (Cardizem).
- Cholesterol-lowering medications: Statins, such as atorvastatin (Lipitor), and other types of drugs can help reduce levels of low-density lipoprotein cholesterol in the body.

- Digitalis: Preparations such as digoxin (Lanoxin) can increase the strength of the heart's pumping action. They can also help treat heart failure and arrhythmias.
- Diuretics: These medications can reduce the heart's workload, lower blood pressure, and remove excess water from the body. Furosemide (Lasix) is one example.
- Vasodilators: These are medications to lower blood pressure. They do this by relaxing the blood vessels. Nitroglycerin (Nitrostat) is one example. These medications can also help ease chest pain. Learn more about vasodilation here.

A doctor will work with the individual to find a suitable option.

Sometimes, side effects occur. If this is the case, it may be necessary to review the medication regimen.

Surgery

Undergoing heart surgery can help treat blockages and heart problems when medications are not effective.

Some common types of surgery

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include:

- Coronary artery bypass surgery: This allows blood flow to reach a part of the heart when an artery is blocked. Coronary artery bypass grafting is the most common surgery. A surgeon can use a healthy blood vessel from another part of the body to repair a blocked one.
- Coronary angiography: This is a procedure that widens narrow or blocked coronary arteries. It is often combined with the insertion of a stent, which is a wire-mesh tube that allows easier blood flow.
- Valve replacement or repair: A surgeon can replace or repair a valve that is not functioning correctly.
- Repair surgery: A surgeon can repair congenital heart defects, aneurysms, and other problems.
- Device implantation: Pacemakers, balloon catheters, and other devices can help regulate the heartbeat and support blood flow.
- Laser treatment: Transmyocardial laser revascularization can help treat angina.
- Maze surgery: A surgeon can create new paths for electrical signals to pass through. This can help treat atrial fibrillation.

Learn how long it takes to recover from bypass surgery here.

Prevention

Some lifestyle measures can help reduce the risk of heart disease. These include

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- Eating a balanced diet: Opt for a heart-healthy diet that is rich in fiber and favors whole grains and fresh fruits and vegetables. The Mediterranean diet and the DASH diet may be good for heart health. Also, it may help to limit the intake of processed foods and added fat, salt, and sugar.
- Exercising regularly: This can help strengthen the heart and circulatory system, reduce cholesterol, and maintain blood pressure. A person may wish to aim for 150 minutes of exercise per week.
- Maintaining a moderate body weight: A healthy body mass index (BMI) is typically between 20 and 25. People can check their BMI here.
- Quitting or avoiding smoking: Smoking is a major risk factor for heart and cardiovascular conditions.
- Limiting alcohol intake: Women should consume no more than one standard drink
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- per day, and men should consume no more than two standard drinks per day.
- Managing underlying conditions: Seek treatment for conditions that affect heart health, such as high blood pressure, obesity, and diabetes.

Taking these steps can help boost overall health and reduce the risk of heart disease and its complications.