

Atherosclerosis

WHAT IS IT?

Atherosclerosis is a disease in which plaque builds up on the insides of your arteries. Plaque is made up of fat, cholesterol, calcium, and other substances found in the blood. Over time, plaque hardens and narrows your arteries. The flow of oxygen-rich blood to your organs and other parts of your body is reduced. This can lead to serious problems, including heart attack, stroke, or even death.

Also Known As: Coronary Artery Disease (CAD), Hardening of the Arteries

BASIC FACTS

- Atherosclerosis is a disease in which plaque builds up on the insides of your arteries.
- Over time, plaque hardens and narrows your arteries. The flow of oxygen-rich blood to your organs and other parts of your body is reduced. This can lead to serious problems, including heart attack, stroke, or even death.
- Atherosclerosis can affect any artery in the body.
 - Coronary artery disease (CAD) occurs when plaque builds up in the coronary (heart) arteries. CAD is a leading cause of death in the United States.
 - Carotid artery disease happens when plaque builds up in the carotid arteries (the arteries that supply blood and oxygen to your brain).
 - Peripheral arterial disease (PAD) occurs when plaque builds up in the major arteries of the legs, arms, and pelvis.
- The exact cause of atherosclerosis isn't known. It may start when certain factors damage the inner layers of arteries. When damage occurs, your body starts a healing process. This healing causes plaque to build up where the arteries are damaged. Over time, the plaque may crack and causes blood clots to form in the arteries. This can worsen angina (chest pain) or cause a heart attack.
- Many factors raise your risk for atherosclerosis. Major risk factors include unhealthy cholesterol levels, high blood pressure, smoking, insulin resistance, diabetes, overweight or obesity, lack of physical activity, age, and a family history of early heart disease.
- Atherosclerosis usually doesn't cause signs and symptoms until it severely narrows or totally blocks an artery. Many people don't know they have the disease until they have a medical emergency, such as a heart attack or stroke. Other signs and symptoms depend on which arteries are narrowed or blocked.
- Your doctor will diagnose atherosclerosis based on your medical and family histories, your risk factors, and the results of a physical exam and diagnostic tests.

- Treatments for atherosclerosis may include lifestyle changes, medicines, and medical procedures and surgery. Lifestyle changes include following a healthy eating plan, increasing physical activity, maintaining a healthy weight, quitting smoking, and reducing stress.
- Taking steps to control your risk factors can help prevent or delay atherosclerosis and its related diseases. These steps include making lifestyle changes and/or taking medicines as prescribed by your doctor.
- Improved treatments have helped reduce deaths from atherosclerosis-related diseases. However, the number of people diagnosed with atherosclerosis remains high.
- If you've been diagnosed with atherosclerosis, you can control the disease with lifestyle changes and/or medicines. See your doctor regularly, and call him or her if you develop any new symptoms or your symptoms worsen.

WHAT CAUSES ATHEROSCLEROSIS?

The exact cause of atherosclerosis isn't known. However, studies show that atherosclerosis is a slow, complex disease that may start in childhood. It develops faster as you age.

Atherosclerosis may start when certain factors damage the inner layers of the arteries. These factors include:

- Smoking
- High amounts of certain fats and cholesterol in the blood
- High blood pressure
- High amounts of sugar in the blood due to insulin resistance or diabetes

When damage occurs, your body starts a healing process. Fatty tissues release compounds that promote this process. This healing causes plaque to build up where the arteries are damaged.

Over time, the plaque may crack. Blood cells called platelets (PLATE-lets) clump together to form blood clots where the cracks are. This narrows the arteries more and worsens angina (chest pain) or causes a heart attack.

Researchers continue to look at why atherosclerosis develops. They hope to find answers to such questions as:

- Why and how do the arteries become damaged?
- How does plaque develop and change over time?
- Why does plaque break open and lead to clots?

WHO IS AT RISK FOR ATHEROSCLEROSIS?

Coronary artery disease (atherosclerosis of the coronary arteries) is the leading cause of death in the United States.

The exact cause of atherosclerosis isn't known. However, certain traits, conditions, or habits may raise your chance of developing it. These conditions are known as risk factors. Your chances of developing atherosclerosis increase with the number of risk factors you have.

You can control most risk factors and help prevent or delay atherosclerosis. Other risk factors can't be controlled.

MAJOR RISK FACTORS

- Unhealthy blood cholesterol levels. This includes high LDL cholesterol (sometimes called bad cholesterol) and low HDL cholesterol (sometimes called good cholesterol).
- High blood pressure. Blood pressure is considered high if it stays at or above 140/90 mmHg over a period of time.
- Smoking. This can damage and tighten blood vessels, raise cholesterol levels, and raise blood pressure. Smoking also doesn't allow enough oxygen to reach the body's tissues.
- Insulin resistance. This condition occurs when the body can't use its own insulin properly. Insulin is a hormone that helps move blood sugar into cells where it's used.
- Diabetes. This is a disease in which the body's blood sugar level is high because the body doesn't make enough insulin or doesn't use its insulin properly.
- Overweight or obesity. Overweight is having extra body weight from muscle, bone, fat, and/or water. Obesity is having a high amount of extra body fat.
- Lack of physical activity. Lack of activity can worsen other risk factors for atherosclerosis.
- Age. As you get older, your risk for atherosclerosis increases. Genetic or lifestyle factors cause plaque to build in your arteries as you age. By the time you're middle-aged or older, enough plaque has built up to cause signs or symptoms.
 - In men, the risk increases after age 45.
 - In women, the risk increases after age 55.
- Family history of early heart disease. Your risk for atherosclerosis increases if your father or a brother was diagnosed with heart disease before 55 years of age, or if your mother or a sister was diagnosed with heart disease before 65 years of age.

Although age and a family history of early heart disease are risk factors, it doesn't mean that you will develop atherosclerosis if you have one or both.

Making lifestyle changes and/or taking medicines to treat other risk factors can often lessen genetic influences and prevent atherosclerosis from developing, even in older adults.