

Heart attack

Definition

A heart attack usually occurs when a blood clot blocks the flow of blood through a coronary artery—a blood vessel that feeds blood to a part of the heart muscle. The interrupted blood flow that occurs during a heart attack can damage or destroy a part of the heart muscle.

A heart attack, also called a myocardial infarction, can be fatal. Treatment for heart attack has improved dramatically over the years. It is crucial to promptly recognize symptoms and call 911 or emergency medical help if you think you might be having a heart attack.

Symptoms

Common heart attack symptoms include:

- Pressure, tightness, pain, or a squeezing or aching sensation in your chest or arms that may spread to your neck, jaw or back)
- A feeling of fullness, nausea, indigestion, heartburn or abdominal pain
- Shortness of breath
- Sweating or a cold sweat
- Feelings of anxiety or an impending sense of doom
- Fatigue
- Trouble sleeping
- Lightheadedness or dizziness

Heart attack symptoms vary

Not all people who have heart attacks experience the same symptoms or experience them to the same degree. Many heart attacks aren't as dramatic as the ones you've seen on TV. Some people have no symptoms at all, while for others, the first sign may be sudden cardiac arrest. Still, the more signs and symptoms you have, the greater the likelihood that you may be having a heart attack. The severity of heart attack symptoms can vary too. Some people have mild pain, while others experience severe pain.

A heart attack can occur anytime—at work or play, while you're resting, or while you're in motion. Some heart attacks strike suddenly, but many people who experience a heart attack have warning signs and symptoms hours, days or weeks in advance. The earliest

warning of a heart attack may be recurrent chest pain (angina) that's triggered by exertion and relieved by rest. Angina is caused by a temporary decrease in blood flow to the heart.

Many people confuse a heart attack with a condition in which your heart suddenly stops (sudden cardiac arrest). Sudden cardiac arrest occurs when an electrical disturbance in your heart disrupts its pumping action and causes blood to stop flowing to the rest of your body. A heart attack can cause cardiac arrest, but it's not the only cause of cardiac arrest.

What to do if you see someone having a heart attack

If you encounter someone who is unconscious from a presumed heart attack, call for emergency medical help. If you have received training in emergency procedures, begin cardiopulmonary resuscitation (CPR). This helps deliver oxygen to the body and brain.

Causes

A heart attack occurs when one or more of the arteries supplying your heart with oxygen-rich blood (coronary arteries) become blocked. Over time, a coronary artery can become narrowed from the buildup of various substances, including cholesterol and other substances. This buildup — collectively known as plaques — in arteries throughout the body is called atherosclerosis. When your coronary arteries have narrowed due to atherosclerosis, the condition is known as coronary artery disease. Coronary artery disease is the underlying cause of most heart attacks.

During a heart attack, one of these plaques can rupture and spill out cholesterol and other substances into the bloodstream. A blood clot forms at the site of the rupture, partly because the body is confused and is trying to repair the injured blood vessel. If the clot is large enough, it can completely block the flow of blood through the coronary artery.

Another cause of a heart attack is a spasm of a coronary artery that shuts down blood flow to part of the heart muscle. Drugs, such as cocaine, can cause such a life-threatening spasm. A heart attack can also occur due to a tear in the heart artery (spontaneous coronary artery dissection). Other uncommon causes of heart attack include small blood clots or tumors that have traveled from other parts of the body (coronary embolism). Heart attacks can also occur if blood flow to the heart is severely decreased, in situations such as very low blood pressure (shock).

Risk factors

Certain factors contribute to the unwanted buildup of fatty deposits (atherosclerosis) that narrows arteries throughout your body, including arteries to your heart. You can improve or eliminate many of these risk factors to reduce your chances of having a first or subsequent heart attack.

Heart attack risk factors include:

- **Age.** Men who are 45 or older and women who are 55 or older are more likely to have a heart attack than are younger men and women.
- **Tobacco.** Smoking and long-term exposure to secondhand smoke damage the interior walls of arteries — including arteries to your heart — allowing deposits of cholesterol and other substances to collect and slow blood flow. Smoking also increases the risk of deadly blood clots forming and causing a heart attack.
- **High blood pressure.** Over time, high blood pressure can damage arteries that feed your heart by accelerating atherosclerosis. High blood pressure that occurs with obesity, smoking, high cholesterol or diabetes increases your risk even more.
- **High blood cholesterol or triglyceride levels.** Cholesterol is a major part of the deposits that can narrow arteries throughout your body, including those that supply your heart. A high level of the wrong kind of cholesterol in your blood increases your risk of a heart attack. Low-density lipoprotein (LDL) cholesterol (the "bad" cholesterol) is most likely to narrow arteries. A high level of triglycerides, another type of blood fat related to your diet, also ups your risk of heart attack. However, a high level of high-density lipoprotein (HDL) cholesterol (the "good" cholesterol), which helps the body clean up excess cholesterol, is desirable and lowers your risk of heart attack.
- **Diabetes.** Diabetes is the inability of your body to adequately produce insulin or respond to insulin need properly. Insulin, a hormone secreted by your pancreas, allows your body to use glucose, which is a form of sugar from foods. Diabetes, especially uncontrolled diabetes, increases your risk of a heart attack.
- **Family history of heart attack.** If your siblings, parents or grandparents have had early heart attacks (by age 55 for male relatives and by age 65 for female relatives), you may be at increased risk.
- **Lack of physical activity.** An inactive lifestyle contributes to high blood cholesterol levels and obesity. People who get regular aerobic exercise have better cardiovascular fitness, which decreases their overall risk of heart attack. Exercise is also beneficial in lowering high blood pressure.
- **Obesity.** Obesity raises the risk of heart disease because it's associated with high blood cholesterol levels, high blood pressure and diabetes. Losing just 10 percent of your body weight can lower this risk, however.
- **Stress.** You may respond to stress in ways that can increase your risk of a heart attack.
- **Illegal drug use.** Using stimulant drugs, such as cocaine or amphetamines, can trigger a spasm of your coronary arteries that can cause a heart attack.
- **A history of preeclampsia.** This condition causes high blood pressure during pregnancy, and increases the lifetime risk of heart disease.