



Patient education: Coronary artery disease (The Basics)

Written by the doctors and editors at UpToDate

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What is coronary artery disease?

Coronary artery disease is a condition that puts you at risk for heart attack and other forms of heart disease. In people who have coronary artery disease, the arteries that supply blood to the heart get clogged with fatty deposits ([figure 1](#)).

Other names for this disease are "coronary heart disease" or just "heart disease."

What are the symptoms of coronary artery disease?

Many people have no symptoms. For those who do, the most common symptoms usually happen with exercise. They can include:

- Pain, pressure, or discomfort in the center of the chest – This type of chest pain is called "angina."
- Pain, tingling, or discomfort in other parts of the upper body – This might include the arms, back, neck, jaw, or stomach.
- Feeling short of breath

What are the symptoms of a heart attack?

The first symptom of coronary artery disease can be a heart attack ([figure 2](#)). That's why it is so important to know how to spot a heart attack.

The symptoms of a heart attack can include:

- Pain, pressure, or discomfort in the center of the chest
- Pain, tingling, or discomfort in other parts of the upper body, including the arms, back, neck, jaw, or stomach

- Shortness of breath
- Nausea, vomiting, burping, or heartburn
- Sweating or cold, clammy skin
- Racing or uneven heartbeat
- Feeling dizzy or lightheaded

If these symptoms last more than 10 minutes or they keep coming and going, **call for an ambulance right away** (in the US and Canada, **call 9-1-1**). Do not try to get to the hospital on your own.

Some people with coronary artery disease have chest pain even when they are not having a heart attack. This is most likely to happen when they are walking, going up stairs, or moving around. But if you have chest pain that is new or different, see a doctor right away.

Is there a test for coronary artery disease?

Yes. If your doctor or nurse thinks that you might have coronary artery disease, they might order blood tests and 1 or more of these tests:

- **Electrocardiogram ("ECG")** – This test measures the electrical activity in your heart.
- **Stress test** – This is also called an exercise test. For this test, you might be asked to run or walk on a treadmill while you also have an ECG. Physical activity increases the heart's need for blood. This test helps doctors see if the heart is getting enough blood. If you cannot walk or run, your doctor might give you a medicine to make your heart pump faster.
- **Echocardiogram** – This test uses sound waves to create an image of your heart as it beats.
- **Cardiac catheterization ("cardiac cath")** – During this test, the doctor puts a thin tube into a blood vessel in your leg or arm. Then, they move the tube up to your heart. Next, the doctor puts a dye that shows up on X-ray into the tube. This part of the test is called "coronary angiography." It can show whether any of the arteries in your heart are clogged.

How is coronary artery disease treated?

The main treatments for coronary artery disease are:

- **Lifestyle changes** – To reduce your risk of heart attack and death, you should:
 - Quit smoking, if you smoke. Your doctor or nurse can help with this.
 - Eat lots of fruits, vegetables, and foods with a lot of fiber. Avoid foods with a lot of sugar.
 - Walk or do some form of physical activity on most days of the week.
 - Try to lose weight, if you have excess body weight.
- **Medicines** – The medicines to treat heart disease are very important. Some medicines lower your risk of heart attacks and can help you live longer. But you must take them every day, as instructed. Your doctor might prescribe:
 - Medicines called "statins," which lower cholesterol
 - Medicines to lower blood pressure
 - [Aspirin](#) or other medicines that help prevent blood clots
 - Medicines to treat diabetes

People who have chest pain caused by coronary artery disease (called angina) can also get medicines to relieve their pain. These medicines might include "nitrates," "beta blockers," and others.

Some people with coronary artery disease can also have:

- **Stenting** – The doctor puts a thin plastic tube into the blocked artery and uses a tiny balloon to open the blockage. Then, the doctor leaves a tiny mesh tube called a "stent" inside the artery to hold it open.
- **Bypass surgery** – This is also known as "coronary artery bypass grafting" ("CABG"). During this surgery, the doctor removes a piece of blood vessel from another part of the body. Then, they reattach the blood vessel above and below the area that is clogged. This re-routes blood around the clog and allows it to get to the part of the heart that was not getting blood ([figure 3](#)).

If your doctor recommends stenting or bypass surgery, ask these questions:

- What are the benefits of this procedure for me? Will it help me live longer? Will it reduce my chance of having a heart attack? Will I feel better if I have this procedure?
- What are the risks of this procedure?
- What happens if I don't have this procedure?

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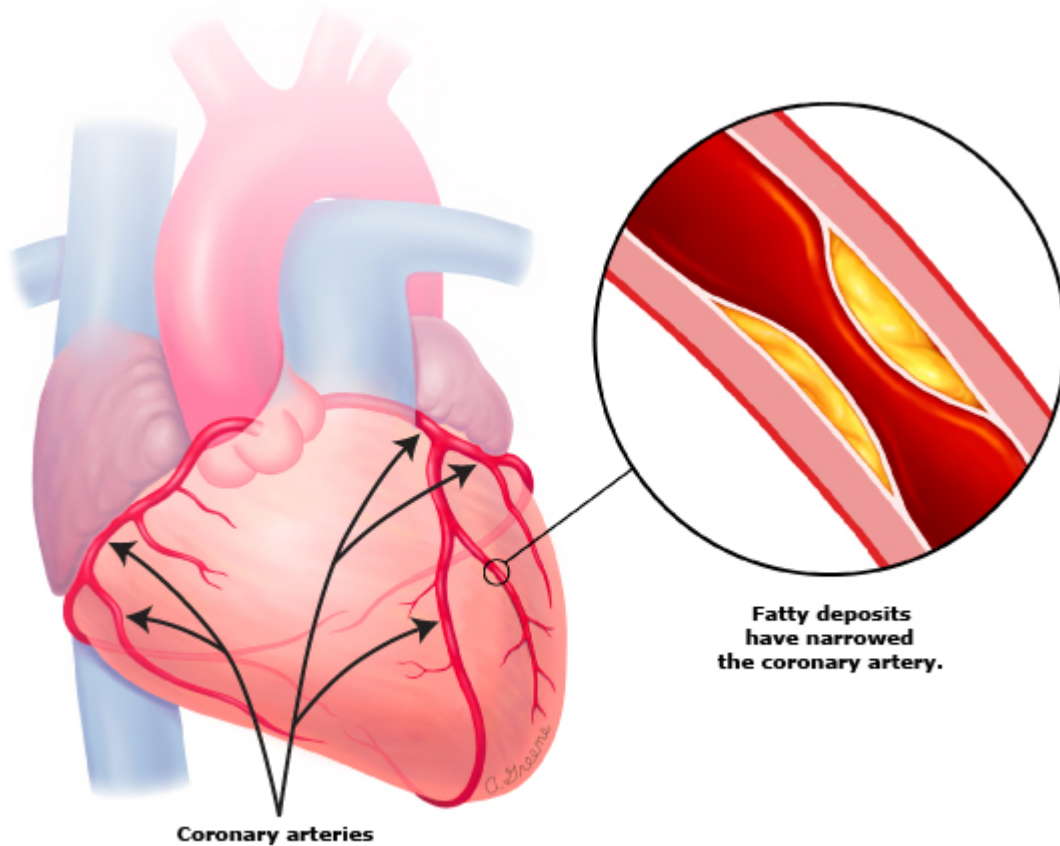
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Topic 15331 Version 35.0

GRAPHICS

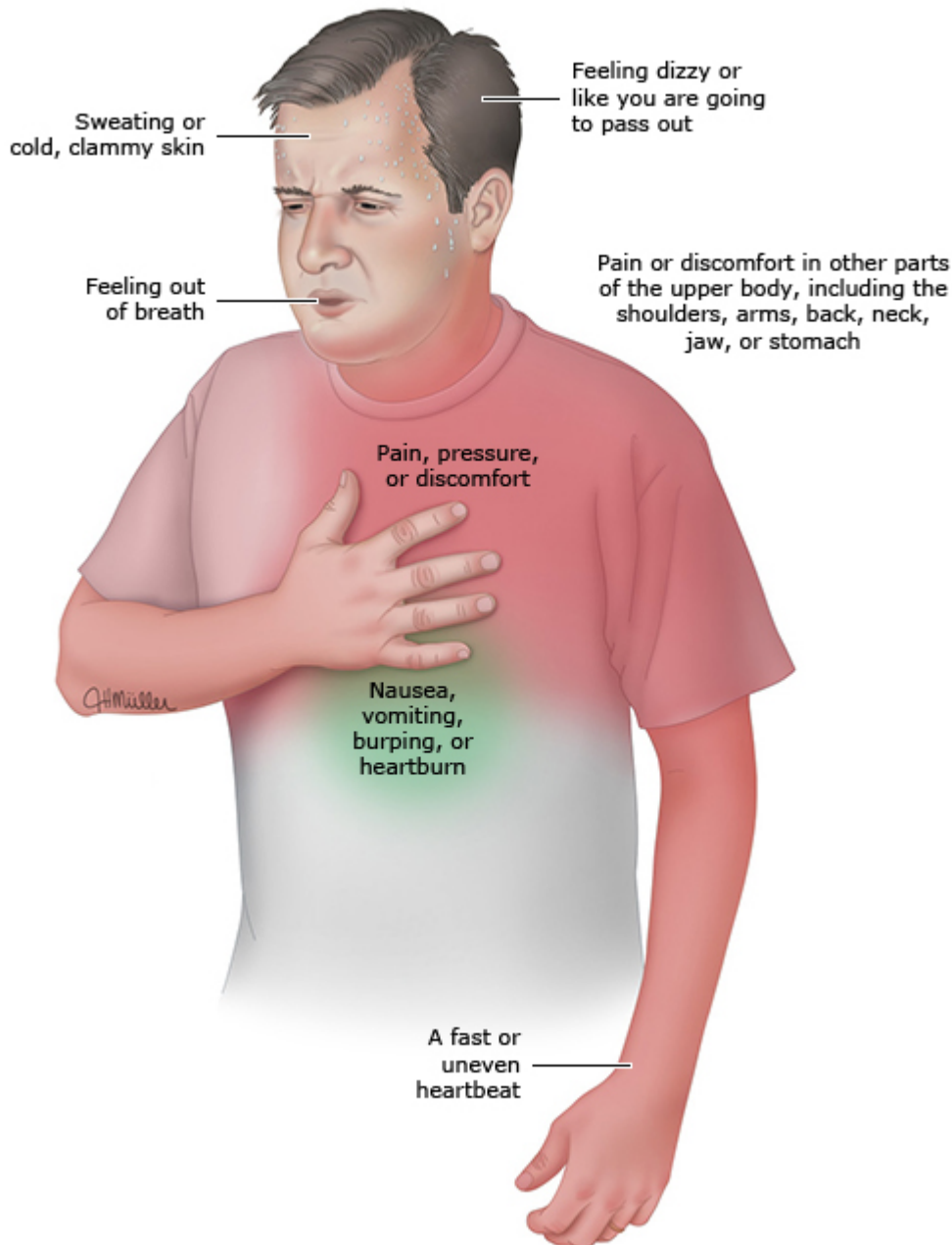
Coronary heart disease



In people with coronary heart disease, the coronary arteries get clogged with fatty deposits called plaques.

Graphic 61785 Version 5.0

Heart attack symptoms



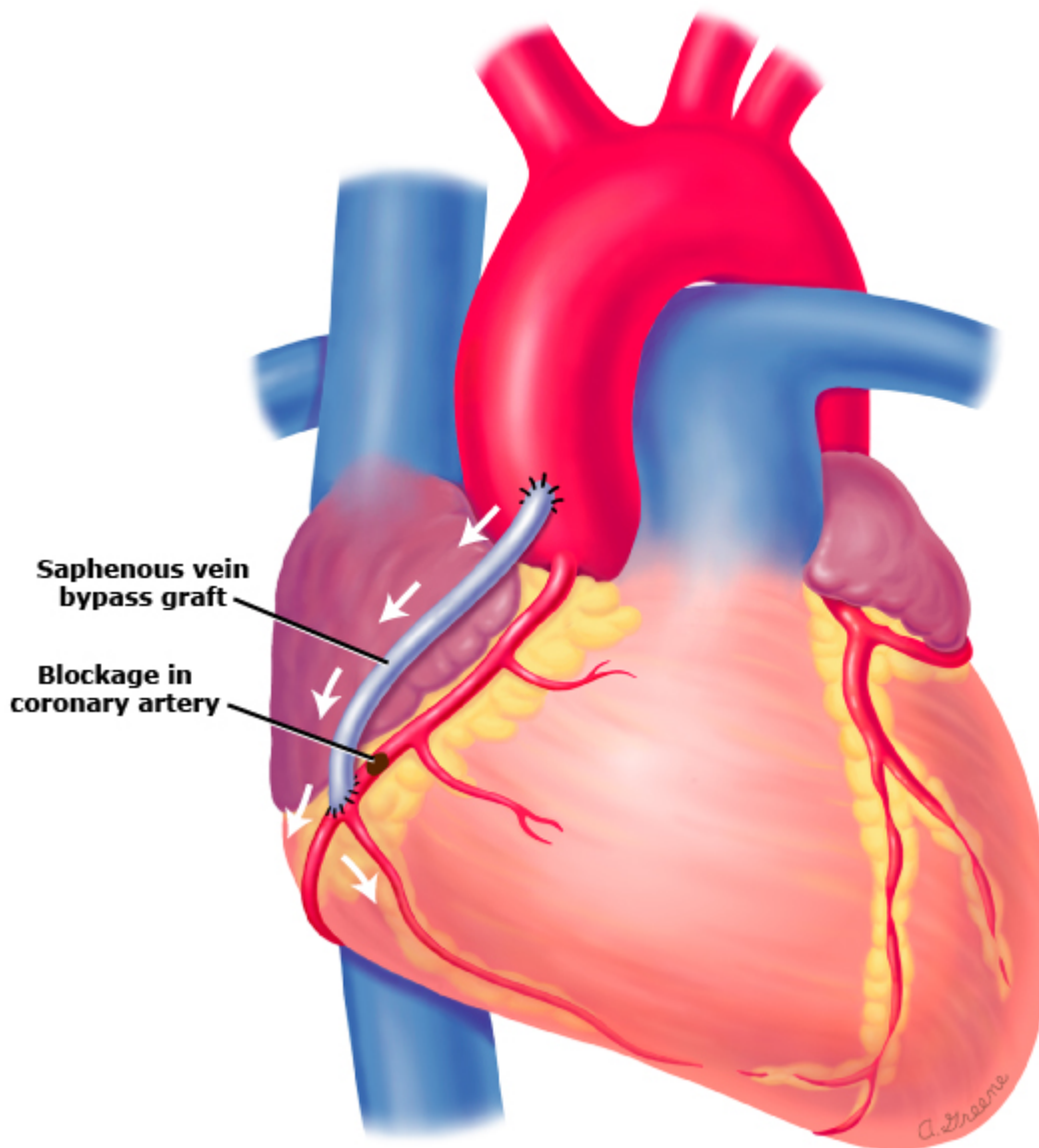
This picture shows the main symptoms of a heart attack. People who are having a heart attack often have only some of these symptoms. The pain, pressure, and discomfort caused by a heart attack mostly affect the left side of the body, but can also affect the right.

Women are more likely than men to have symptoms other than chest pain. But chest pain or discomfort is the most common symptom of a heart attack in both women **and** men.

If you think that you are having a heart attack, **call for an ambulance** (in the US and Canada, **call 9-1-1**). Do not try to get yourself to the hospital.

Graphic 52579 Version 5.0

Coronary artery bypass graft surgery



During coronary artery bypass surgery, the surgeon removes a piece of blood vessel from the leg, chest, arm, or belly. Then, they use that piece of blood vessel (called a "graft") to reroute blood around the blocked artery. This is called "bypass surgery" because it bypasses the blockage. Some people have more than 1 blocked artery bypassed. In this picture, the graft came from a vein in the leg called the "saphenous vein." But grafts can come from other places, too.

Graphic 73589 Version 7.0

