



## **Education**

### **Coronary Artery Disease**

#### **What is coronary artery disease?**

Coronary artery disease (CAD) is a type of heart disease. Your heart gets oxygen and nutrients from the blood that flows through the coronary arteries. In CAD, thick patches of fatty substances stick to the walls of the coronary arteries. These patches are called plaque. As the plaque thickens, the artery opening gets narrow and blood flow slows. This causes the heart to get less blood and oxygen. The plaque, or a blood clot that forms on the plaque, may completely block an artery and stop all blood flow. This narrowing or blockage of the arteries increases your risk for heart attack and sudden death.

#### **How does it occur?**

Coronary artery disease is caused by gradual blockage of the coronary arteries. Several factors put you at risk for developing CAD:

- a family history of coronary artery disease
- cigarette smoking
- high blood pressure
- diabetes
- obesity
- an inactive lifestyle
- high levels of blood fat (for example, cholesterol).

There may be other factors we do not yet understand.

#### **What are the symptoms?**

Coronary artery disease may have no symptoms. When there are symptoms, the most common one is chest pain, called angina. The symptoms of angina may include pain in the chest that lasts for more than 2 minutes, or that goes away and comes back. It can feel like pressure, squeezing, fullness, or pain. There may be pain in other areas of the upper body, such as in one or both arms, the back, neck, jaw, or stomach. You may also be short of breath, break out in a cold sweat, or feel lightheaded or sick to your stomach.

Angina tends to happen with activity, after a heavy meal, or with emotional stress. However, angina may also happen when you are resting. The pain happens more in cold weather.

#### **How is it diagnosed?**

Your health care provider will ask about your symptoms and then examine you. He or she will also ask about your personal and family medical history.

Blood samples will be tested in the lab to check the levels and types of fats (lipids) in your blood. Your provider will order an electrocardiogram (ECG or EKG).

Your provider may want to know how your heart works when you exercise. You may have an exercise treadmill test. An echocardiogram (ultrasound images of the beating heart) may be done after you exercise on the treadmill. Another test that may be done is a scan of the heart. These scans are done before and after you exercise. They use a radioactive dye that is injected into one of your veins. If there is a problem with blood flow through an artery, the pictures will show that the dye is not getting to the heart muscle. A special kind of CT scan may also show coronary artery disease.

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Heart catheterization and angiography are often needed. Angiography takes x-ray pictures of the coronary arteries. This allows the doctor to check the blood flow, including the number, location, and size of any blockages. This information will help determine the best treatment for you.

### **How is it treated?**

The goal of treatment is for you to resume a full and active lifestyle. Your treatment depends on many factors, such as your age, heart muscle function, and other health problems.

At first, treatment may include diet changes and an exercise program. Your health care provider may prescribe medicine. If this treatment doesn't work, or if your coronary arteries are badly blocked, the blockages may need to be opened up or bypassed.

In balloon angioplasty, a small balloon is inserted into the artery to the blockage and then blown up to flatten the blockage against the artery wall. Angioplasty may be combined with inserting a stent. A stent is a device that keeps the artery open to improve blood flow.

If you have many blockages, or if they are bad, your health care provider may recommend coronary artery bypass surgery. Arteries from the chest or veins from the legs or arms are used to make a path around blocked areas in the heart artery.

### **How long will the effects last?**

Many people do well after balloon angioplasty or bypass surgery and return to very active lives, sometimes more active than before their diagnosis. People who already have advanced heart disease with complications when they are diagnosed and those who do not change to a healthier lifestyle are least likely to do well.

### **How can I take care of myself?**

- Follow your provider's advice about activity, exercise, medicine, and follow-up visits.
- Lower the amount of salt, fats, and cholesterol in your diet.
- Work with your health care provider to control diabetes, blood pressure, or other health conditions you may have.
- Lose weight if you are overweight.
- Do not smoke.

### **What can I do to help prevent coronary artery disease?**

Eating a healthy diet, staying fit with the right kind of exercise, and not smoking are the best ways to prevent CAD. Talk to your health care provider about your personal and family medical history and your lifestyle habits. This will help you know your risks for coronary artery disease.

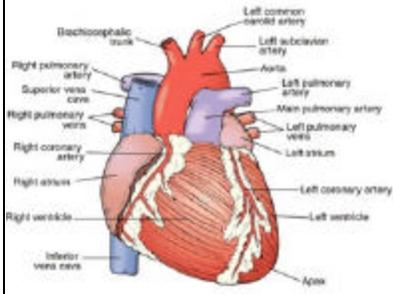
If you have a strong family history of CAD, a healthy lifestyle may slow the start of the disease and maybe even keep you from getting it. However, you must have regular checkups to keep a close watch on the health of your heart.

If you ever have chest pain symptoms, get medical attention right away.

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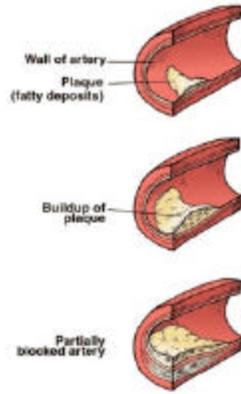


### Heart: External View



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### Plaque Buildup in Arteries



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