

Conditions InDepth: Coronary Artery Disease (CAD) and Angina

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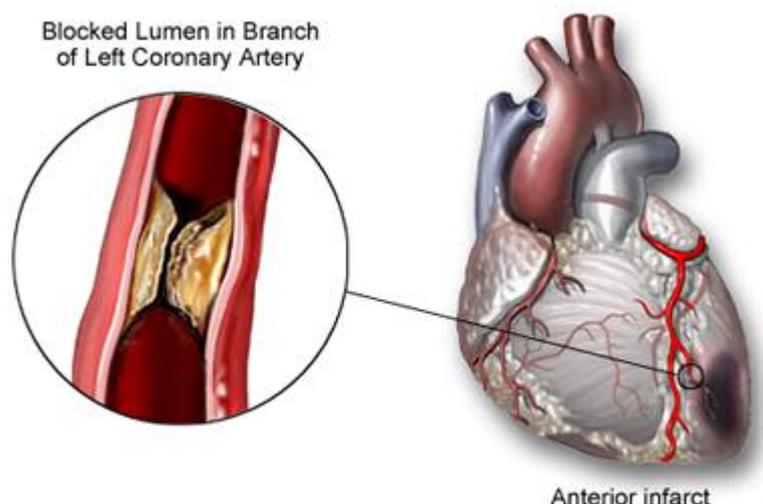
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Coronary Artery Disease (CAD)

CAD is caused by a narrowing of the arteries that supply the heart muscle with blood. This narrowing is a result of **atherosclerosis** —the buildup of cholesterol and other fatty substances in the arteries. When the arteries narrow, blood flow is reduced. The reduced blood flow causes the heart muscle to receive less oxygen than it needs to function properly. This is termed ischemia. When ischemia occurs patients typically develop angina or chest pain originating from the heart. If the blood flow is completely cut off, a **heart attack** (myocardial infarction) will occur, and the heart muscle will be permanently damaged.

Blocked Coronary Artery



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CAD is the most common life-threatening disease in the United States. According to the American Heart Association, 80 million Americans have one or more forms of cardiovascular disease (eg, [high blood pressure](#), heart disease, [stroke](#), [heart failure](#)).

Angina

Angina is a symptom of CAD. It has been described as chest pain or discomfort that has a squeezing or pressure-like quality, usually felt behind the breastbone (sternum), but sometimes felt in the shoulders, arms, neck, jaws, or back. Angina is an indicator that your heart is not getting all the oxygen it needs to keep working at its optimal level. People who have angina are at an increased risk of having a heart attack.

Having anginal pain, especially for the first time, may be frightening. People may mistake it for having a heart attack or mistakenly think it is [heartburn](#). A stable pattern of angina does not necessarily mean a heart attack is about to occur. But if the pattern changes—for example, angina becomes more frequent, lasts longer, comes on

more easily, or happens for the first time—the risk of a heart attack is higher. Listed below are some common differences between angina and heart attacks:

- Duration of pain —In general, anginal pain lasts for only a few minutes and is relieved by rest or nitroglycerin. Heart attack pain is usually more severe than anginal pain and may last longer, often 15 minutes or more. Pain that lasts less than 30 seconds and goes away with a few deep breaths or a change in position is usually not angina.
- External factors—Anginal pain is often brought on by exercise or activity, emotional tension, dreams, cold or windy weather, low blood sugar, or even eating. Your symptoms can subside when you alter the behavior or environmental trigger. Heart attack pain will usually not subside with rest and may be accompanied by other symptoms such as shortness of breath, nausea, or sweating. The elderly or people with diabetes may have less typical or more subtle symptoms signaling angina or heart attack. Some people may have “silent ischemia” and experience no symptoms.

Note of Caution

If you experience chest pain that is new, worsening, or persistent, **call 911 immediately**. Do not try to determine for yourself if the pain is due to angina, a heart attack, or some less serious condition. Do not drive yourself to the hospital. Heart attacks can cause severe, permanent damage to the heart or death. Seeking help quickly is important because some of the most effective treatments to increase survival and recovery are ideally given within the first hour after symptoms begin. About half of all deaths due to heart attack happen within one hour of the start of symptoms, often before a person gets to the hospital.

Types of Angina

There are three primary types of angina:

- Stable angina—The attacks are predictable, and the triggers that cause them can be identified. They do not occur when you are resting or relaxed, and symptoms will usually disappear after a few minutes of rest.
- Unstable angina—The symptoms are less predictable. Chest pain may occur while resting or even sleeping (nocturnal angina), and the discomfort may last longer and be more intense. Stable angina becomes unstable when symptoms occur more frequently, last longer, or are precipitated more easily. You should call your doctor immediately if you experience symptoms at rest, or a worsening pattern of symptoms.
- Variant or Prinzmetal's angina—This is usually caused by the spasm of a coronary vessel. It occurs when you are at rest and often in the middle of the night. It can be quite severe and in some cases associated with arrhythmias or abnormal heart rhythms.

What are the risk factors?

What are the symptoms?

How are CAD and angina diagnosed?

What are the treatments?

Are there screening tests?

How can I reduce my risk?

What questions should I ask my doctor?

What is it like to live with CAD and angina?

Where can I get more information?

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