

# Angina

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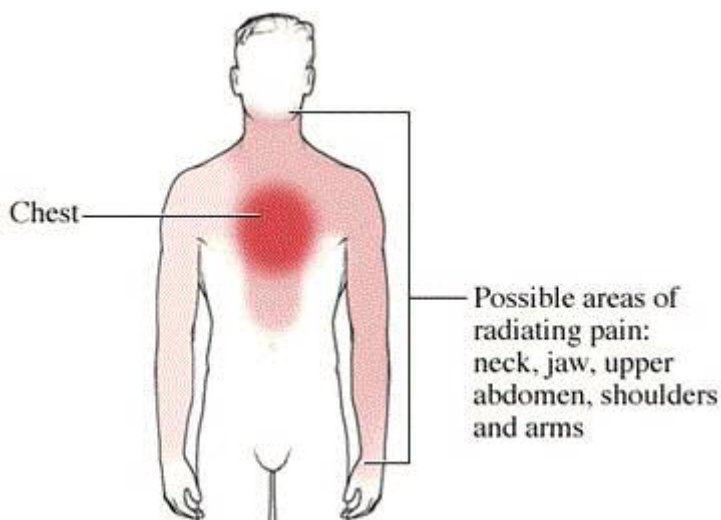
En Español (Spanish Version)

More In-Depth Information on This Condition

## Definition

Angina is a pain or discomfort in the chest that often has a squeezing or pressure-like quality. This discomfort can also be felt in the shoulders, arms, neck, jaws, or back. Anginal pain usually lasts for no more than 2-10 minutes, and is relieved by rest or nitroglycerin.

Angina: Most Common Areas of Pain



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## Causes

Angina is usually a symptom of coronary artery disease. It occurs when the blood vessels leading to the heart are blocked. This results in less blood, and therefore less oxygen, reaching the heart muscle. When the heart muscle is deprived of oxygen, chest pain and other symptoms result.

Types of angina include:

**Stable Angina**— has a predictable pattern. A person with stable angina can usually predict what type and level of activity will cause angina, and what level and length of discomfort such activity will produce. For example, a person may often get angina that lasts 3-5 minutes after walking a half-mile up a small incline toward their home. Anginal pain goes away within minutes with rest or the use of a medication called nitroglycerin. It occurs when your heart's need for blood and oxygen is increased by:

- Exercise, exertion
- Cold weather
- A large meal

- Emotional stress

**Unstable Angina**– is used to describe more unpredictable or severe angina. Chest pain may occur while resting or even sleeping (nocturnal angina), and the discomfort may last longer and be more intense than that of stable angina. Stable angina becomes unstable when symptoms occur more frequently, last longer, or are precipitated more easily. Unstable angina may be a sign that you are about to have a heart attack. It should be treated as an emergency.

**Variant or Prinzmetal's Angina**– is usually caused by a spasm of a coronary vessel. It occurs when you are at rest, most often in the middle of the night, and can be quite severe. It may indicate that you have one of the following conditions:

- Coronary artery disease
- Extremely high blood pressure
- Hypertrophic cardiomyopathy
- Diseases of the heart valves

## Risk Factors

A risk factor is something that increases your chance of getting a disease or condition.

Major risk factors for coronary artery disease (CAD) include the following:

- Male gender
- Advancing age
- Strong family history of heart disease
- Obesity and overweight
- Smoking
- High blood pressure
- Sedentary lifestyle
- High blood cholesterol (specifically, high LDL cholesterol and low HDL cholesterol)
- Diabetes

Other risk factors for CAD:

- Stress
- Excessive alcohol intake

## Symptoms

- Pressure or squeezing chest pain– While this is the classic description of chest pain due to coronary artery disease, some people do not experience the pain as being so severe. Elderly people, women, and people with diabetes may be more likely to have atypical or subtle symptoms. Some people have "silent ischemia" and experience no symptoms of chest pain. Chest pain of any kind deserves a medical evaluation to determine its cause.

Chest pain or discomfort is the hallmark symptom of angina. When chest discomfort is severe, lasts more than 15 minutes, and is accompanied by other symptoms listed below, then the likelihood of a heart attack, versus an anginal episode, is increased.

- Pain in the shoulder(s) or arm(s) (often the left shoulder or arm), or into the jaw
- Weakness
- Sweating
- Nausea
- Shortness of breath

## Diagnosis

If you arrive at the emergency room with chest pain, some tests will be done right away to see if you are having an episode of angina or a heart attack. If you have a stable pattern of angina, other tests may be done more electively to determine the severity and extent of your disease and to create a treatment plan.

The doctor will ask about your symptoms and medical history, and perform a physical exam.

Tests may include:

**Blood Tests**– to look for certain heart attack markers in the blood; helps determine if you are having angina or an acute heart attack

**Electrocardiogram (ECG, EKG)** – records the heart's activity by measuring electrical currents through the heart muscle. This test can reveal evidence of past heart attacks, acute heart attacks, and heart rhythm problems.

**Echocardiogram**– uses high-frequency sound waves (ultrasound) to examine the size, shape, and motion of the heart. Provides information about the structure and function of the heart.

**Exercise Stress Test** – records the heart's electrical activity during increased physical activity. May be coupled with echocardiogram. Patients who cannot exercise may be given medication intravenously that simulates the effects of physical exertion.

**Nuclear Scanning** – radioactive material (such as thallium) is injected into a vein and observed as it is absorbed by the heart muscle. Areas with diminished flow, and therefore uptake of the radioactive material, show up as dark spots on the scan.

**Electron-beam CT Scan** – (coronary calcium scan, heart scan, CT angiography). – a type of x-ray that uses a computer to make detailed pictures of the heart, coronary arteries, and surrounding structures. This type of scan measures the amount of calcium deposits in the coronary arteries and based on that and other health information attempts to determine the risk of heart disease, including heart attacks. The American Heart Association (AHA) published guidelines in 2006 indicating that heart scans are not for everyone and those most likely to benefit from the procedure are patients at intermediate risk of coronary artery disease.

CT

**Coronary Angiography** – x-ray taken after dye is injected into the arteries; allows the doctor to look for abnormalities (narrowing or blockage) in the arteries.

## Treatment

Treatments for angina include:

### Nitrate Medications

Nitroglycerin is usually given during an acute attack of angina. It can be given as a tablet that dissolves under the tongue or as a spray. There are also longer-lasting types that can be used to prevent angina before you participate in an activity known to cause it. These may be given as pills, or applied as patches or ointments.

### Blood Thinners

A small, daily dose of aspirin has been shown to decrease the risk of heart attack. Patients who have had an unstable angina or a heart attack may benefit from the addition of warfarin (ie, coumadin), though there is an increased risk

of bleeding with this medication. \*Talk to your doctor before taking aspirin daily or warfarin.

## **Beta-blockers and Calcium-channel Blockers**

When used regularly (not a treatment for acute angina), these medications may reduce the occurrence of angina.

## **Cholesterol-lowering Medications**

These may prevent the progression of coronary artery disease and may even improve existing coronary artery disease.

## **Angiotensin-converting Enzyme (ACE) Inhibitors and Angiotensin Receptor Blockers (ARBs)**

These medications lower blood pressure and are especially beneficial for patients who had a heart attack in the past. They also decrease the workload on your heart.

## **Surgery**

Patients with severe angina or unstable, progressing angina may benefit from:

- Coronary artery bypass graft
- Coronary angioplasty

## **Prevention**

If you already have angina, you can prevent it from setting in by being aware of the activities or conditions which tend to bring it on.

If you don't have angina, preventing the development and/or progression of coronary artery disease may reduce your chance of getting angina.

Steps to prevent coronary artery disease include managing risk factors:

- Maintain a healthy weight.
- Begin a safe exercise program with the advice of your doctor.
- Stop smoking.
- Eat a healthful diet, one that is low in saturated fat and rich in whole grains, fruits, and vegetables.
- Appropriately treat high blood pressure and/or diabetes.
- Appropriately treat abnormal cholesterol levels or high triglycerides.

## **RESOURCES:**

American Academy of Family Physicians  
<http://familydoctor.org>

American Heart Association  
<http://www.americanheart.org>

National Heart, Lung, and Blood Institute  
<http://www.nhlbi.nih.gov>

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\*Updated section on Blood Thinning on 7/14/06 according to the following study, as cited by DynaMed's Systematic Literature Surveillance: Andreotti F, Testa L, Biondi-Zoccai GG, et al. Aspirin plus warfarin compared to aspirin alone after acute coronary syndromes: an updated and comprehensive meta-analysis of 25,307 patients. *Eur Heart J*. 2006 Mar;27(5):519-26.

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