

Acute Coronary Syndrome: Overview

What is acute coronary syndrome?

Acute coronary syndrome (ACS) is the term used to describe certain conditions that cause a reduction of blood flow to the heart. These conditions include: unstable angina and myocardial infarction (heart attack).

ACS is usually treatable when diagnosed quickly. However, without treatment, ACS can be fatal.

What causes ACS?

The arteries that carry blood and oxygen to the heart are called coronary arteries. Blockages in one or more of the coronary arteries can reduce the flow of blood and oxygen to the heart. A blood clot is the most common cause of a blockage in the coronary arteries. Over time, fatty deposits can cause buildup inside the coronary arteries, and may also cause a blockage. This can lead to ACS.

What are the symptoms of ACS?

Symptoms of ACS may include:

- Chest discomfort, which may feel like pain, pressure, tightness, heaviness or burning.
- Pain or discomfort in the neck, shoulders, lower jaw, arms, upper back or abdomen.
- Shortness of breath that lasts more than a few seconds.
- Feeling lightheaded, dizzy or faint.
- Nausea and/or vomiting.
- Unusual sweating.
- Overwhelming fatigue.
- Feeling anxious.
- Heart palpitations (feeling like your heart is beating really fast, or out of rhythm).

What should I do if I have symptoms of ACS?

If you experience symptoms of ACS, follow these steps:

- Dial 911 or call an ambulance right away. **Do not drive yourself to the hospital.**
- After calling for emergency medical help, chew and swallow 1 uncoated adult aspirin (325 mg) or 4 uncoated baby aspirins (81 mg each).
- If you are alone, unlock your door to let emergency help enter your home.
- Sit in a comfortable chair and wait for help.
- Keep a phone near you.

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How is ACS diagnosed?

You may need several tests to determine the cause of your symptoms.

- **Electrocardiogram (ECG, or sometimes called “EKG”)** – Your doctor will want you to have an ECG. This test records the electrical activity of your heart. It can help diagnose heart rhythm problems or any damage that the decrease in blood flow may have caused to your heart.
- **Blood tests** – Your doctor will probably order blood tests to help diagnose your symptoms. When not enough blood flows to the heart, special proteins leak into the blood system. A simple blood test can detect these proteins. Your doctor will probably want to test your blood several times during the first 24 hours to 48 hours after your symptoms start.

Other tests your doctor may want you to have include:

- **Echocardiogram** – This test sends out sound waves that allow your doctor to get pictures of your heart. The pictures show your doctor how well your heart is pumping. It can also show if there are problems with your heart valves.
- **Chest X-ray** – This test allows your doctor to evaluate the size and shape of your heart. It also shows if there is any congestion (fluid) in your lungs.
- **Nuclear imaging** – This test involves injecting a very small amount of a radioactive substance into your blood. This substance travels to your heart. Then, a special camera or scanner uses the radioactive substance to produce pictures that show how well your heart is pumping. The radioactive substance is safe and leaves your body completely after the test is finished.
- **Coronary angiography** – This test is sometimes called cardiac catheterization. In this test, a long tube is inserted into a blood vessel. The tube is guided to the heart or arteries that carry blood to the heart. Then, a substance is injected into the tube. This substance is visible by X-ray. It allows your doctor to see where the blockage that caused the decrease in blood flow to your heart is located.

How is ACS treated?

Your treatment will depend on what is causing your symptoms. If you have an acute case of angina, your doctor will probably give you nitroglycerin. Nitroglycerin can temporarily relieve your symptoms and improve blood flow to your heart. It does that by widening the arteries that carry blood to the heart.

If you are having a heart attack, your doctor may give you a medicine called a thrombolytic, or may choose to do an angiography and possibly an angioplasty or stent. A thrombolytic drug can help dissolve the blood clot that is blocking the coronary artery. An angioplasty is a procedure in which a tiny balloon is inserted through an artery in the arm or leg up to the heart. The balloon pushes open blocked coronary arteries. A small metal rod called a stent might be put into the artery where the blockage was to hold the artery open.

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How is ACS treated? (continued)

If an angioplasty and/or stenting are not appropriate, you may need coronary artery bypass surgery. This is a major surgery, in which the doctor takes either veins from your legs and/or an artery from your upper body to bypass the blockages in your coronary arteries. Coronary bypass surgery allows blood to flow to the area of the heart past the blockage.

Regardless of the treatment your doctor selects for you, the sooner you get medical help, the greater your chances of surviving a heart attack. Do not delay getting immediate medical attention if you are experiencing symptoms of ACS.

Treatment of ACS also includes medicines that you will need to take even after you leave the hospital. These medicines help improve blood flow to your heart, prevent clotting, and reduce the risks of having another ACS. These medicines include: aspirin, beta blockers, statins, ACE inhibitors and fish oil. Your doctor will prescribe the medicines that are right for you.

If you have had an ACS, your doctor will also talk to you about lifestyle changes you can make to prevent more heart problems.

What is a cardiac rehabilitation program?

Before you leave the hospital, your doctor will talk to you about starting a cardiac rehabilitation program. A cardiac rehabilitation program provides information that will help you understand your risk factors and guide you to begin a heart-healthy lifestyle that can help in your recovery and prevention of another heart attack in the future. Exercise is a major part of cardiac rehabilitation programs.

Once you enroll in a cardiac rehabilitation program, regular attendance is very important.

What can I do to help prevent ACS?

A healthy lifestyle can help prevent ACS. This includes:

- Quitting smoking if you smoke, and avoiding secondhand smoke.
- Keeping a healthy diet that is low in fat and low in cholesterol.
- Exercising regularly.
- Managing your stress.
- Controlling your blood pressure.
- Managing your blood sugar level if you have diabetes.
- Seeing your doctor regularly for check-ups.

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