

# *Coronary Heart Disease*

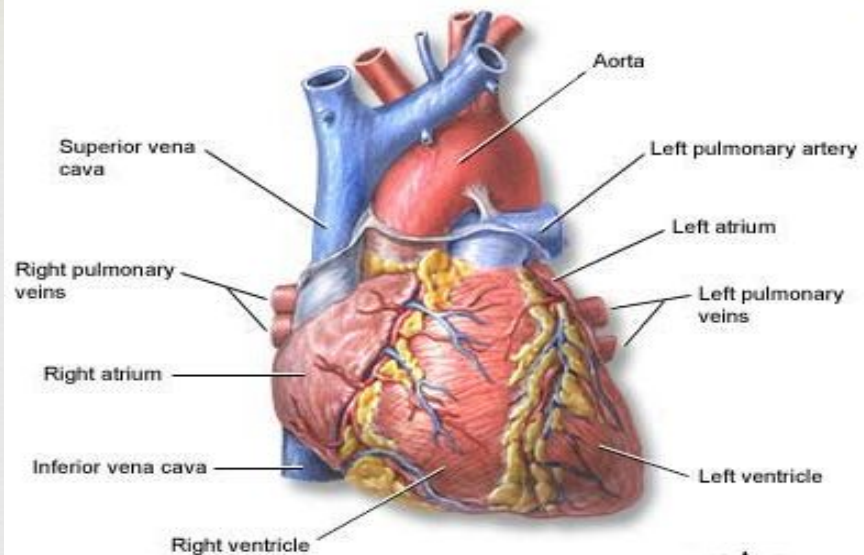


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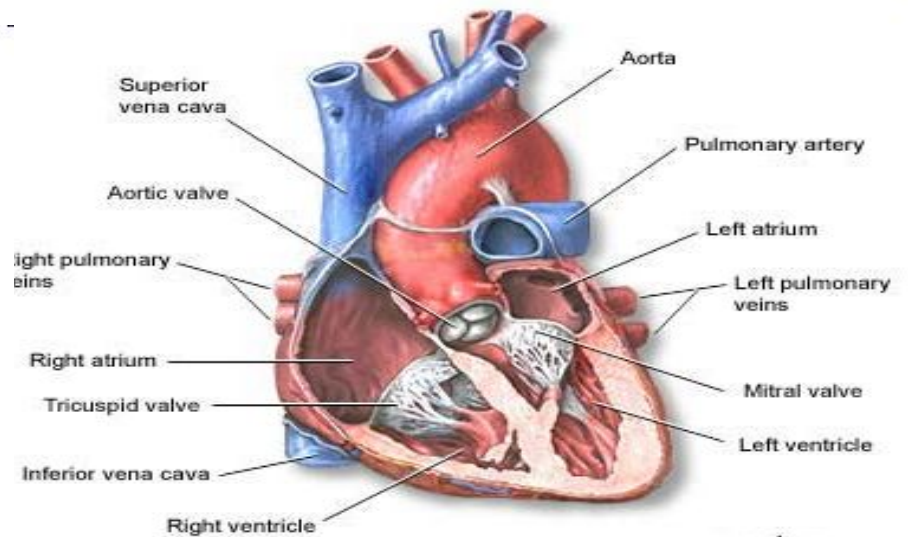
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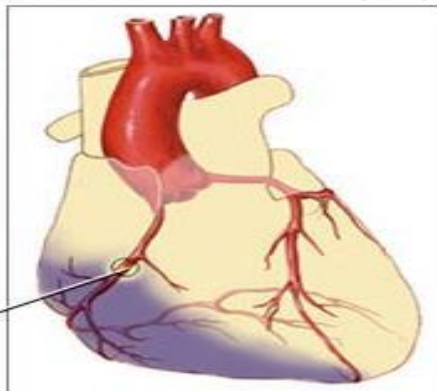


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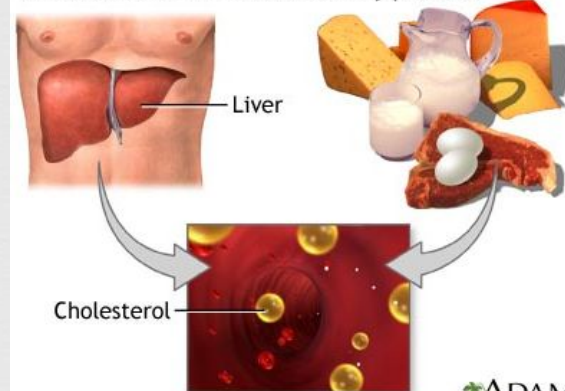
Plaque build up in the coronary artery blocking blood flow and oxygen to the heart

Damage and death to heart tissue shown in purple



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Cholesterol is produced by the liver and we consume it from meat and dairy products



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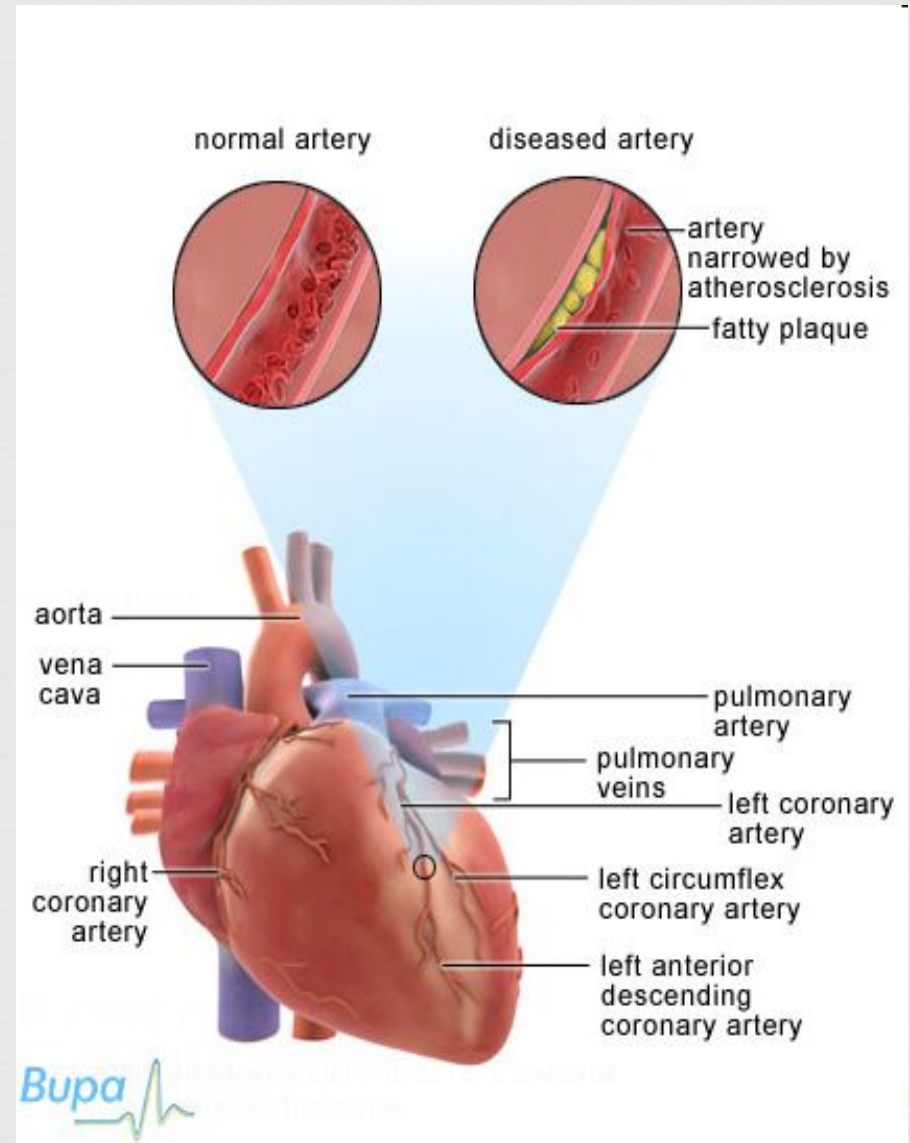
Coronary heart disease (CHD) is a narrowing of the small blood vessels that supply blood and oxygen to the heart.



- Coronary heart disease is usually caused by a condition called atherosclerosis. Coronary heart disease is usually caused by a condition called atherosclerosis, which occurs when fatty material and a substance called plaque build up on the walls of your arteries. This causes them to get narrow. As the coronary arteries narrow, blood flow to the heart can slow down or stop. This can cause chest pain (stable angina). Coronary heart disease is usually caused by a condition called atherosclerosis, which occurs when fatty material and a substance called plaque build up on the walls of your arteries. This causes them to get narrow. As the coronary arteries narrow, blood flow to the heart can slow down or stop. This can



- In atherosclerosis, fat and cholesterol in your blood builds up on an artery wall, forming a plaque or atheroma. The plaque can prevent the heart muscle from getting the blood supply (and therefore oxygen) that it needs. If you have atherosclerosis, physical exertion or emotional stress can bring on chest pain called angina (see What can coronary heart disease cause).
- Because of the reduced blood flow and the rough edges of the plaque, a blood clot sometimes forms. This can block the artery. Or the plaque may rupture, which also causes the blood to clot. This is called atherothrombosis.
- Atherothrombosis stops an area of the heart muscle receiving blood and oxygen, leading to permanent damage. This is called a myocardial infarction (MI), or heart attack. If a lot of your heart muscle is damaged your heart may stop beating regularly, or stop beating at all. This is fatal (see What can coronary heart disease cause).



# Causes

- ❑ Bad genes (heredity) can increase your risk. You are more likely to develop the condition if someone in your family has had a history of heart disease -- especially if they had it before age 50. Your risk for CHD goes up the older you get.
- ❑ Diabetes is a strong risk factor for heart disease.
- ❑ High blood pressure increases your risk of coronary artery disease and heart failure.
- ❑ Abnormal cholesterol levels: your LDL Abnormal cholesterol levels: your LDL ("bad") cholesterol should be as low as possible, and your HDL ("good") cholesterol should be as high as possible.
- ❑ Metabolic syndrome Metabolic syndrome refers to high triglyceride levels, high blood pressure, excess body fat around the waist, and increased insulin levels. People with this group of problems have an increased chance of getting heart disease.
- ❑ Smokers have a much higher risk of heart disease than nonsmokers.
- ❑ Chronic kidney disease can increase your risk.
- ❑ Already having atherosclerosis or hardening of the arteries in another part of your body (examples are stroke Already having atherosclerosis or hardening of the arteries in another part of your body (examples are stroke and abdominal aortic aneurysm) increases your risk of having coronary heart disease.
- ❑ Other risk factors including alcohol abuse, not getting enough exercise, and

# Symptoms



- ❑ Chest pain or discomfort (angina) is the most common symptom. You feel this pain when the heart is not getting enough blood or oxygen. How bad the pain is varies from person to person.
- ❑ It may feel heavy or like someone is squeezing your heart. You feel it under your breast bone (sternum), but also in your neck, arms, stomach, or upper back.
- ❑ The pain usually occurs with activity or emotion, and goes away with rest or a medicine called nitroglycerin.
- ❑ Other symptoms include shortness of breath and fatigue with activity (exertion).

# Tests



- Many tests help diagnose CHD. Usually, your doctor will order more than one test before making a definite diagnosis.
- Electrocardiogram (ECG)
- Exercise stress test
- Echocardiogram
- Nuclear scan
- Electron-beam computed tomography (EBCT) to look for calcium in the lining of the arteries -- the more calcium, the higher your chance for CHD
- CT angiography -- a noninvasive way to perform coronary angiography
- Magnetic resonance angiography
- Coronary angiography/arteriography -- an invasive procedure designed to evaluate the heart arteries under x-ray



# Prevention

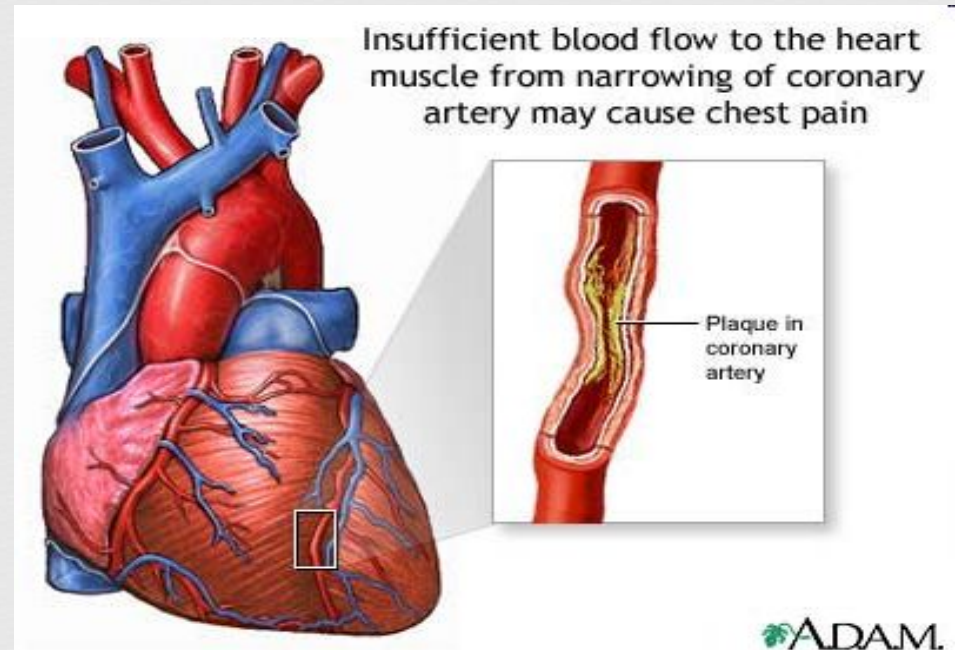


- ❑ Avoid or reduce stress as best as you can.
- ❑ Don't smoke.
- ❑ Eat well-balanced meals that are low in fat and cholesterol and include several daily servings of fruits and vegetables.
- ❑ Get regular exercise. If your weight is considered normal, get at least 30 minutes of exercise every day. If you are overweight or obese, experts say you should get 60 - 90 minutes of exercise every day.
- ❑ Keep your blood pressure below 130/80 mmHg if you have diabetes or chronic kidney disease, and below 140/90 otherwise
- ❑ Keep your cholesterol and blood sugar under control.
- ❑ Moderate amounts of alcohol (one glass a day for women, two for men) may reduce your risk of cardiovascular problems. However, drinking larger amounts does more harm than good.



# Angina

- Angina is a type of chest discomfort caused by poor blood flow through the blood vessels (coronary vessels) of the heart muscle (myocardium).



# Treatment



- ❑ After having a heart attack, or if you develop angina, you will usually be prescribed heart medicines to help stop your heart disease getting worse or to prevent further heart attacks. Some examples are listed below. Always read the patient information that comes with your medicine, and follow your doctor's advice.
- ❑ Aspirin. Taking a small (75 mg) daily dose of aspirin makes your blood less likely to form clots in your coronary arteries and reduces your risk of having a heart attack.
- ❑ Statins. These drugs help to lower your cholesterol levels and so slow down the process of atherosclerosis.
- ❑ Beta-blockers. These drugs slow your heart rate and reduce the pumping power of the heart. This reduces your heart's demand for oxygen. Beta-blockers also widen blood vessels helping to lower blood pressure.
- ❑ ACE inhibitors. These drugs are often used in people with heart failure or after a heart attack. They lower your blood pressure.

# Surgery



- Angioplasty (also known as percutaneous coronary intervention or PCI). In this operation a collapsed balloon is threaded through the blood vessels until it reaches the arteries of the heart. The balloon is inflated to widen the narrowed coronary artery. A stent (flexible mesh tube) is sometimes inserted to help keep the artery open afterwards. The stent sometimes releases a drug that helps to keep the blood vessel open. You should be able to go home the day after the operation.
- Coronary artery bypass graft (CABG). In this operation, the surgeon takes a piece of blood vessel from your leg or chest and uses it to bypass the narrowed coronary arteries. The bypass provides the heart with more blood. This is open-heart surgery and requires a longer stay in hospital.