



## Significance of Acute Coronary Syndrome and its Causes

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### Description

Acute Coronary Syndrome (ACS) refers to a group of cardiovascular diseases that are caused by an abrupt reduction in blood flow to the heart. It is a medical emergency that can result in serious consequences, including heart attack and death [1].

### Symptoms of acute coronary syndrome

ACS typically presents with symptoms that indicate an acute reduction in blood flow to the heart [2]. The most common symptoms of acute coronary syndrome are chest pain or discomfort, breathing difficulty, nausea, vomiting, sweating, and dizziness. However, every person obtains these symptoms, and others may present with distinctive signs such as fatigue or abdominal pain [3].

Chest pain or discomfort is the most common symptom of ACS, and it usually presents as a tightness or pressure in the chest. The pain can transmit to the arms, back, neck, or jaw [4]. It is important to emphasize that ACS does not cause pain in the chest, and other conditions, such as acid reflux or muscle strain, can cause similar symptoms.

### Causes of acute coronary syndrome

The most common cause of ACS is the formation of a blood clot in the coronary arteries, which supply oxygen and nutrients to the heart muscle [5]. The blood clot can form when a plaque that has built up in the artery ruptures, exposing its contents to the bloodstream. The body's natural response to this injury is to form a blood clot to prevent the bleeding, but this can also block the artery, resulting in an abrupt reduction in blood flow to the heart. Other factors that can increase the risk of developing ACS include smoking, high blood pressure, high cholesterol levels, diabetes, obesity, a sedentary lifestyle, and a family history of heart disease [6]. Acute coronary syndrome is more common in people over the age of 45, but it can occur in each person, including women and individuals in adolescence.

### Treatment of acute coronary syndrome

ACS is a medical emergency that requires immediate treatment to prevent further damage to the heart muscle. The aim of treatment is to

maintain blood flow to the affected artery [7]. Treatment possibilities for ACS include medications, such as aspirin, nitroglycerin, and heparin, and invasive procedures, such as angioplasty and stenting, or coronary artery bypass surgery [8].

Patients with ACS are frequently prescribed aspirin to avoid additional blood clotting. Nitroglycerin can be used to relieve chest pain by dilating the blood vessels and increasing blood flow to the heart [9]. Heparin is a blood thinner that can prevent the formation of new blood clots. Invasive procedures, such as angioplasty and stenting, involve inserting a catheter into the affected artery and increase the limited or restrained region. A stent small metal mesh tube can be implanted to maintain the artery. Coronary artery bypass surgery involves to creating a new technique for blood flow to the heart by transfer a blood vessel from another part of the body [10].

In addition to these treatments, lifestyle changes can also help to reduce the risk of developing ACS. These changes include preventing smoking, eating a healthy diet, exercising regularly, maintaining a healthy weight, and managing chronic conditions, such as high blood pressure and diabetes.

### Prevention of acute coronary syndrome

Acute coronary syndrome can be prevented by establishing a healthy lifestyle choices and managing risk factors for heart disease. Preventing smoking, maintaining a diet in saturated and fatty acids, exercising regularly, maintaining a healthy weight.

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