



## Coronary Artery Disease: Causes, Symptoms, and Treatment

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### INTRODUCTION

Coronary Artery Disease (CAD), also known as ischemic heart disease, is the leading cause of death globally, claiming millions of lives every year. It develops when the coronary arteries, which supply blood to the heart muscle, become narrowed or blocked due to atherosclerosis. This buildup of plaque restricts blood flow, depriving the heart of the oxygen and nutrients it needs to function properly. CAD can lead to serious complications such as angina (chest pain), heart attacks, and heart failure. Understanding the causes, symptoms, risk factors, and treatment options for CAD is crucial for prevention and management. The primary cause of coronary artery disease is atherosclerosis, a condition characterized by the buildup of fatty deposits (plaque) in the walls of the arteries. Over time, these deposits harden and narrow the arteries, reducing blood flow to the heart. This process can begin as early as childhood and progress over decades, often without causing symptoms until it reaches an advanced stage. Several factors contribute to the development of atherosclerosis and, consequently, CAD. High Cholesterol Levels-cholesterol, particularly Low Density Lipoprotein (LDL) cholesterol, is a major contributor to plaque formation. When cholesterol levels in the blood are high, excess LDL cholesterol can accumulate in the arterial walls, initiating the atherosclerotic process.

### DESCRIPTION

High blood pressure increases the force against arterial walls, causing damage that makes it easier for cholesterol and other substances to accumulate and form plaque. Smoking damages the lining of blood vessels, reduces oxygen supply to the heart, and raises cholesterol levels, significantly increasing the risk of CAD. Diabetes-people with diabetes are at a higher risk of developing CAD because high blood sugar levels can damage blood vessels and promote plaque buildup. Obesity and Physical

Inactivity: Excess weight and a sedentary lifestyle contribute to other risk factors such as high blood pressure, high cholesterol, and diabetes, which all increase the likelihood of CAD. A family history of heart disease increases an individual's risk, suggesting a genetic predisposition to developing CAD. The risk of CAD increases with age. Men are at a higher risk of developing CAD earlier than women, although the risk for women increases significantly after menopause. In the early stages, CAD may not cause any noticeable symptoms. As the disease progresses and the coronary arteries become more narrowed, symptoms may begin to appear, especially during physical exertion or stress when the heart requires more oxygen. The most common symptoms of CAD include Angina (Chest Pain). Angina is a common symptom of CAD.

### CONCLUSION

It typically feels like pressure, tightness, or a squeezing sensation in the chest. It can also radiate to the shoulders, arms, neck, jaw, or back. Angina occurs when the heart muscle doesn't get enough blood, often triggered by physical activity or emotional stress, and usually subsides with rest. If the heart is unable to pump enough blood to meet the body's needs, a person may experience difficulty breathing, especially during exertion. A heart attack occurs when a coronary artery becomes completely blocked, cutting off blood flow to part of the heart muscle. This causes severe chest pain, shortness of breath, nausea, lightheadedness, and sweating.

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### CONFLICT OF INTEREST

The author's declared that they have no conflict of interest.

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