



Coronary Arteries: The Pathways that Keep your Heart Beating

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DESCRIPTION

The RCA branches into several smaller arteries, such as the Posterior Descending Artery (PDA), which supplies the inferior part of the heart. The coronary arteries are also classified by their size and function into epicardial (on the surface of the heart), and intramyocardial (within the heart muscle). The coronary arteries are the first to receive oxygenated blood from the aorta as it leaves the heart. Coronary Artery Disease (CAD) is the most common form of heart disease and the leading cause of death worldwide. It occurs when the coronary arteries become narrowed or blocked by the buildup of fatty deposits, known as atherosclerosis. Over time, these blockages reduce the flow of oxygen rich blood to the heart muscle, causing ischemia. If left untreated, a blockage can lead to a heart attack or other serious complications. The primary cause of coronary artery disease is the buildup of atherosclerotic plaques within the arteries. These plaques are made up of cholesterol, fat, calcium, and other substances that accumulate on the walls of the arteries over time. Elevated levels of Low Density Lipoprotein (LDL), or "bad" cholesterol, can lead to plaque formation in the coronary arteries. High blood pressure can damage the inner walls of the arteries, promoting the formation of plaques. Smoking damages the blood vessels and increases the likelihood of plaque buildup in the arteries. Diabetes increases the risk of atherosclerosis due to high blood sugar levels, which can damage the blood vessels and promote plaque formation. Being overweight increases the risk of CAD by contributing to high blood pressure, high cholesterol, and diabetes. Lack of physical activity is associated with a higher risk of heart disease. A family history of heart disease can increase the likelihood of developing CAD. CAD becomes more

common with age, and men are at a higher risk at a younger age. However, the risk for women increases after menopause. In the early stages of coronary artery disease, symptoms may not be noticeable. Chest pain or discomfort that occurs when the heart is not getting enough oxygenated blood. Angina can feel like pressure or tightness in the chest and may radiate to the arm, neck, or jaw. Difficulty breathing, especially during physical activity, as the heart struggles to pump blood effectively. Feeling tired or weak, which can result from the heart's inability to pump enough blood to meet the body's needs. If a blockage in a coronary artery completely obstructs blood flow, it can lead to a heart attack, with symptoms such as severe chest pain, nausea, lightheadedness, sweating, and pain radiating to the arm, jaw, or back. Measures the electrical activity of the heart and can identify signs of ischemia or a heart attack. Involves monitoring the heart's response to physical exercise or medication induced stress, providing valuable information about blood flow to the heart. A procedure in which a contrast dye is injected into the coronary arteries, allowing doctors to visualize blockages or narrowing through X-ray imaging. A non invasive imaging the test that uses Computed Tomography (CT) to provide detailed images of the coronary arteries. Healthy lifestyle modifications such as quitting smoking, eating a heart-healthy diet, and exercising regularly are essential in to the managing CAD.

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CONFLICT OF INTEREST

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

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