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Understanding Coronary Artery Disease (CAD)

What is Coronary Artery Disease (CAD)?

Coronary Artery Disease (CAD) is a type of heart disease that occurs when the blood vessels (coronary arteries) that supply blood to the heart become narrowed or blocked. This can lead to a reduction in blood flow to the heart, potentially causing chest pain (Angina) or a heart attack.

Causes of Coronary Artery Disease

The primary cause of Coronary Artery Disease is the build-up of cholesterol and fatty deposits known as plaque, on the inner walls of the coronary arteries. Over time, these plaques can restrict blood flow and in some cases, rupture, leading to the formation of blood clots that can further block the arteries.

Several risk factors contribute to the development of Coronary Artery Disease, including:

- **Smoking:** Tobacco smoke contains chemicals that can damage blood vessels and increase the risk of plaque formation
- **High Blood Pressure:** Uncontrolled high blood pressure puts additional stress on the arteries, promoting the accumulation of plaques
- **High Cholesterol:** Elevated levels of Low Density Lipoprotein (LDL) cholesterol can lead to the deposition of plaques in the arteries
- **Diabetes:** Poorly managed Diabetes can damage blood vessels and increase the risk of Coronary Artery Disease
- **Family History:** If close relatives have a history of Coronary Artery Disease, the risk may be higher
- **Age and Gender:** The risk of Coronary Artery Disease increases with age and men are generally at a higher risk than pre-menopausal women

Signs and Symptoms

- **Chest Pain (Angina):** This is the most common symptom, often described as a pressure or tightness in the chest
- **Shortness of Breath:** Reduced blood flow to the heart can lead to difficulty in breathing, especially during physical activity
- **Fatigue:** Insufficient blood supply to the heart can cause fatigue and weakness
- **Heart Attack:** Severe blockages in coronary arteries can result in heart attack, characterised by intense chest pain, shortness of breath and pain radiating down the left arm

Diagnosis

If Coronary Artery Disease is suspected, the doctor may recommend tests such as:

- **Electrocardiogram (ECG or EKG):** Measures the electrical activity of the heart
- **Echocardiogram:** Uses sound waves to create an image of the heart
- **Stress Test:** Assesses how well the heart functions during physical activity
- **Coronary Angiography:** Involves injecting a contrast dye into the coronary arteries to visualise blockages

Treatment Options

- **Lifestyle Changes:** Adopting a heart-healthy lifestyle, including a balanced diet, regular exercise, smoking cessation and stress management
- **Medications:** Prescription medications may be recommended to manage blood pressure, cholesterol levels and reduce workload on the heart
- **Angioplasty and Stenting:** A procedure to open narrowed or blocked arteries using a balloon and a stent to keep the artery open
- **Coronary Artery Bypass Grafting (CABG):** In more severe cases, surgery may be recommended to create new routes for the blood to flow properly

Prevention

- **Quit Smoking:** Smoking is a major risk factor for Coronary Artery Disease. Quitting can significantly improve the heart health
- **Healthy Diet:** Consume a diet rich in fruits, vegetables, whole grains and lean proteins while limiting saturated and trans fats
- **Regular Exercise:** Aim for at least 150 minutes of moderate-intensity exercise per week
- **Manage Stress:** Practice stress-reduction techniques such as deep breathing, meditation or yoga
- **Regular Check-ups:** Monitor blood pressure, cholesterol levels and blood sugar regularly

Understanding Coronary Artery Disease is crucial for managing and preventing its progression. By adopting a heart-healthy lifestyle and working closely with the healthcare team, one can take control of the heart health, and subsequently reducing the risk of complications. If one experiences any symptoms or have concerns about one's heart health, consult with the healthcare provider promptly. Remember, early detection and intervention are key to managing Coronary Artery Disease effectively.