



## CORONARY ARTERY DISEASE

### What is Coronary Artery Disease?

Coronary artery disease (also known as coronary heart disease, ischaemic heart disease or coronary microvascular disease) is a condition in which plaque builds up inside the walls of the arteries in your heart. The arteries supply oxygen-rich blood to the heart muscle. Coronary artery disease (CAD) therefore occurs when the arteries of the heart cannot deliver enough oxygen-rich blood to the heart due to plaque.

Plaque is made up of fat, cholesterol and calcium found in the blood. When plaque builds up in the arteries, the condition is known as atherosclerosis. Plaque narrows the arteries and reduces blood flow to the heart muscle. It also makes it more likely that blood clots will form in your arteries. Blood clots can partially or completely block blood flow. When your arteries are narrowed or blocked, oxygen-rich blood can't reach your heart muscle. This can cause angina (chest pain) or a heart attack.

### What causes it?

Coronary artery disease starts when certain factors damage the inner layers of the coronary arteries. These factors include:

- Smoking
- High amounts of certain fats and cholesterol in your blood
- High blood pressure
- High amounts of blood sugar in the blood due to insulin resistance or diabetes.

### What are the symptoms?

Symptoms of coronary artery disease may differ from person to person. However, because some people may have no symptoms, they are unaware that they may have coronary artery disease until they experience complications such as a heart attack or sudden cardiac arrest.

- Angina (chest pain)
- Shortness of breath. This symptom happens if CAD causes heart failure. When you have heart failure, your heart can't pump enough blood throughout your body. Fluid builds up in your lungs, making it difficult to breathe.
- Heart attack occurs when an area of plaque in a coronary artery breaks off, causing a blood clot to form. This blocks the blood flow to the heart muscle and prevents oxygen-rich blood from reaching that area of the heart muscle.
- Some people with CAD have no signs or symptoms. This is called silent CAD. It may not be diagnosed until a person shows signs and symptoms of a heart attack, heart failure or arrhythmia (irregular heart beat).
- Arrhythmia: With arrhythmia, your heart skips beats or is beating too fast. Some arrhythmias may cause your heart to suddenly stop beating. This condition is called sudden cardiac arrest (SCA). SCA can make you faint and it can cause death if it's not treated right away.

### How is it diagnosed?

Your doctor will diagnose coronary artery disease based on your symptoms, medical and family history, your risk factors, the results of a physical examination and certain diagnostic tests and procedures.

- Blood tests: blood tests check the levels of certain fats, cholesterol, sugar and proteins in your blood. Abnormal levels may show that you have risk factors for CAD.
- ECG: an ECG detects and records the electrical activity of your heart. It tells the doctor how fast your heart is beating, whether it has a regular rhythm and the strength and timing of electrical signals as they pass through each part of your heart.

- Stress testing such as walking or running on a treadmill may determine how your heart copes when under physical pressure.
- Echocardiography: This test uses sound waves to create a moving picture of your heart. It provides information about the size and shape of your heart and how well the heart valves and chambers are working. It shows areas where blood flow may be poor.
- Chest X ray: A chest X ray takes a picture of the organs and structures inside your heart or lungs. It can reveal signs of heart failure.
- Coronary angiogram: This test uses dye and special X-rays to show the insides of your coronary arteries.

### How can Coronary Artery Disease affect my health?

Coronary artery disease can cause serious complications. However, if you follow your doctor's advice and change your habits, you can prevent or reduce the chances of:

- Having a heart attack or permanently damaging your heart muscle
- Damaging your heart because of reduced oxygen supply
- Having arrhythmias
- Having chest pain
- Strokes
- Dying suddenly from heart problems

## Treatment

Treatment for coronary artery disease may include lifestyle changes, medicines and medical procedures. Treatment also depends on the type and severity of your coronary artery disease and well as other conditions you may have.

The goals of treatment are to:

- Relieve symptoms
- Reduce risk factors in an effort to slow down, stop or reverse the build-up of plaque
- Lower the risk of blood clots forming
- Widen or by-pass clogged arteries
- Prevent complications of CAD.

Lifestyle changes:

- Follow a healthy eating plan to reduce your fat and cholesterol intake. Reduce your weight if you are overweight.
- Increase your physical activity. Exercise more often.
- Stop smoking
- Try to learn to reduce and cope with stress in your life.

Medicines:

Medicines may be needed to control CAD. Medicines can help to:

- Decrease workload on the heart and relieve symptoms of CAD
- Decrease your chance of having a heart attack.
- Lower your cholesterol and blood pressure
- Prevent blood clots
- Prevent or delay the need for special cardiac procedure e.g. angioplasty or coronary artery bypass grafting( CABG)

Medicines used to treat CAD include:

- Aspirin
- ACE Inhibitors e.g. Perindopril, Lisinopril, Captopril, Enalapril
- Beta blockers e.g. Atenolol, Bisoprolol
- Calcium channel blockers e.g. Amlodipine, Verapamil
- Nitroglycerin
- Statins or other medicines to lower your cholesterol e.g. Simvastatin, Atorvastatin, Rosuvastatin.
- Nitrates to prevent or relieve chest pain from angina

Medical procedures: angioplasty or a CABG may be required to treat CAD and to help improve blood flow.

- Angioplasty: opens blocked or narrowed coronary arteries.
- CABG: arteries or veins from other parts of your body are used to bypass your narrowed coronary arteries.

## Your role in managing this condition

Taking action to reduce your risk factors can help to prevent or delay coronary artery disease.

- Tell your doctor about any coronary events in your family history so that your doctor is aware of your risk factors
- Increase your physical activity by doing exercise, walking or swimming.
- Stop smoking
- See your doctor regularly for a check-up
- Regularly test your blood pressure, cholesterol levels, kidney function and check for anaemia.
- Make sure your blood sugar is under control if you are a diabetic.
- Reduce your fat and cholesterol intake.
- Try to lose weight if you are overweight
- Take your medicines religiously as prescribed by your doctor
- Do not stop any of your medicines without talking to your doctor.
- Try to avoid stress in your life or know how to perform techniques to manage your stress.
- Learn to recognise the symptoms of heart attack and arrhythmia. Call your doctor or emergency number if you have these symptoms for more than 5 minutes: Every minute matters.

The signs and symptoms of a heart attack include:

- Nausea, vomiting, light-headedness or fainting, or breaking out in a cold sweat. These symptoms of a heart attack are more common in women.
- Prolonged or severe chest pain or discomfort not relieved by rest or nitroglycerin. This involves uncomfortable pressure, squeezing, fullness, or pain in the center or left side of the chest that can be mild or strong. This pain or discomfort often lasts more than a few minutes or goes away and comes back.
- Shortness of breath. This may accompany chest discomfort or happen before it.
- Upper body discomfort. This can be felt in one or both arms, the back, neck, jaw, or upper part of the stomach.
- Learn the signs and symptoms of a stroke. If you think someone may be having a stroke, act F.A.S.T. and do the following simple test:  
F-Face: Ask the person to smile. Does one side of the face droop?  
A-Arms: Ask the person to raise both arms. Does one arm drift downward?  
S-Speech: Ask the person to repeat a simple phrase. Is their speech slurred or strange?  
T-Time: If you observe any of these signs, call the emergency number immediately. Early treatment is essential.

## Disclaimer

The reader should always consult a doctor if they believe they may be suffering from this medical condition. The information contained herein is intended to assist understanding and should not take the place of your doctor's advice or instructions. Whilst every effort has been made to ensure the accuracy of the information contained herein, Universal Care does not accept responsibility for any errors or omissions or their consequences, and shall not be liable for any damages suffered arising out of the use of this information.

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