



**CORONARY**

Artery Disease

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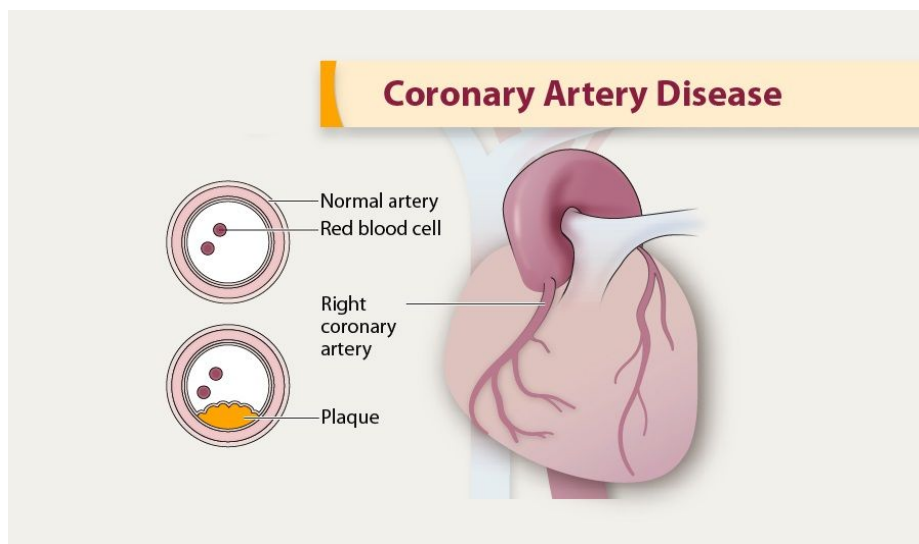
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## ***I. Overview of the disease***

It mainly affects the Coronary Arteries. They are blood vessels that transport blood to the heart. Coronary Artery Disease is the blocking or narrowing of the coronary arteries. Usually, it is caused by *Atherosclerosis*; the build-up of cholesterol and fat inside the arteries (also called plaque). The plaques can clog the arteries and significantly reduce the blood flow, or it can stop it completely.



*Image simplifying how the disease works*

Once the heart starts to receive little to no blood, it wouldn't be able to get any of the nutrients and oxygen the blood would provide. The heart needs these in order to function properly. The heart tissue starts to die and can lead to heart attacks or chest pain.

The coronary arteries supply blood, nutrients, and oxygen to your heart, but once fat (plaque) starts to build-up it narrows them and restricts the blood flow. Since the disease often develops through a long period of time, the person will not notice it until they have gone through a heart attack. As long as you have a healthy lifestyle, you can prevent it.

## ***II. Symptoms and Causes***

Healthy and normal coronary arteries are elastic and smooth. Inside the arteries are a lining called endothelium. It protects the lining of the arteries and keeps them functioning so the blood can flow freely.



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Image to show how plaque can reduce the blood flow

The disease can start at a very young age. Before you pass your teen years, the lining of your blood vessels would start to show streaks of fat. This builds up even more the older we grow, which could cause minor damage to the blood vessels. Substances that move in your blood may get stuck to the lining over time, which narrows it even more.

As plaque builds up in your coronary arteries, they won't be able to supply to your heart the things it needs (such as oxygen, nutrients, etc.). Although the symptoms would not be noticeable at first, you may develop the following:

- **(Shortness of your breath)** This may happen, especially during exercise. If your heart doesn't have the capability to pump your blood throughout the body, it can cause you to develop shortness of your breath with extreme fatigue.
- **(Chest pain, Angina)** Chest pain, or angina, is triggered by emotional stress. It can feel like a tension on your middle left of the chest, as if someone were standing on it. Usually, this goes away in a short period of time after stopping what's stressing the person.
- **(Heart attack)** Once your coronary artery is completely blocked, it could result in a heart attack. Since the heart doesn't receive the nutrients and the oxygen it needs, the tissues start to die from lack of these things. Heart attacks feel like a crushing pressure on your heart and pain in an area of your body (arm or shoulder). Sometimes, it can also cause shortness of breath or sweating. Usually for women.

For women, they can have different symptoms of the disease than men do. For example, women with a heart attack may:

- **Feel pain or discomfort in the chest or back**
- **A very fast heartbeat**
- **Shortness of breath**
- **Nausea or fatigue**

## ***Risk Factors***

The risk factors of coronary artery disease may be:

- **Smoking.** People who smoke have a significantly higher chance in obtaining any heart disease, especially coronary heart disease.
- **Age.** Growing older may increase your chances of damaging and narrowing your arteries.
- **High blood pressure.** Uncontrolled high blood pressure can result in the hardening and thickening of your arteries.
- **Sex.** Generally men are at a higher risk in getting the disease, but for women it's higher after their menopause.
- **Diabetes.** It is associated with an increase in heart disease. Type 2 diabetes and coronary artery disease share similar symptoms and factors
- **High cholesterol.** High levels of cholesterol in your blood can increase the risk of formation of plaque and atherosclerosis.
- **Obesity/Overweight.** Cause due to high fat percentage and excess fat in the body
- **Physical inactivity.** Lack of proper exercise is also associated with the disease along with some other factors as well.
- **Stress.** Unrelieved stress and long-term stress may cause serious problems to the heart.
- **Unhealthy diet.** Eating too much food that has high amounts of saturated fat, trans fat, salt and sugar can increase your risk of coronary artery disease.

## Treatment/s and Prevention

The causes of the disease can relate to an unhealthy way of living, an unhealthy lifestyle. Having a healthy lifestyle will improve your body and reduce the chances of getting the disease. It will keep your arteries strong and clear from excess plaque and fat. To improve your health, do the following:

- Reduce and manage your stress
- Stay physically active and exercise
- Avoid or stop smoking
- Maintain a healthy body weight
- Avoid diets consisting of high fat

However, if you are at a high risk for heart disease or already experiencing symptoms; your doctor/s may test you with the following:

<b>ECG or EKG (electrocardiogram)</b>	Measures the electrical activity, rate, and regularity of your heartbeat.
<b>Echocardiogram</b>	Uses ultrasound (special sound wave) to create a picture of the heart.
<b>Exercise stress test</b>	Measures your heart rate while you walk on a treadmill. This helps to determine how well your heart is working when it has to pump more blood.
<b>Chest X-ray</b>	Uses x-rays to create a picture of the heart, lungs, and other organs in the chest.
<b>Cardiac catheterization</b>	Checks the inside of your arteries for blockage by inserting a thin, flexible tube through an artery in the groin, arm, or neck to reach the heart. Health care professionals can measure blood

	pressure within the heart and the strength of blood flow through the heart's chambers as well as collect blood samples from the heart or inject dye into the arteries of the heart (coronary arteries).
<b>Coronary angiogram</b>	Monitors blockage and flow of blood through the coronary arteries. Uses X-rays to detect dye injected via cardiac catheterization.
<b>Coronary artery calcium scan</b>	A computed tomography (CT) scan that looks in the coronary arteries for calcium buildup and plaque.

People with heart disease undergo ***Cardiac Rehabilitation***. It is crucial for those recovering from heart attacks, heart failure, or any other form of heart related issues. This can improve quality of life and can help prevent any more heart related problems, especially heart attacks. This program consists of the following:

- ***Physical activity***
- ***Counseling to relieve stress and improve a person's mental health***
- ***Also teaches about healthy eating, taking prescribed medication, and to help those who struggle to quit smoking***



**Sources:**

<https://my.clevelandclinic.org/health/diseases/16898-coronary-artery-disease>

<https://www.mayoclinic.org/diseases-conditions/coronary-artery-disease/symptoms-causes/syc-20350613>