

## Modifiable Risk Factors

### A. Elevated lipid levels:

HDL and LDL are two types of lipoproteins. These lipoproteins help in the transportation of cholesterol. HDL (High Density Lipoproteins) has a protective action on the heart and LDL (Low density Lipoproteins) has an ill effect on the heart.

The LDL and cholesterol are related to the consumption of fats. The foods rich in saturated fats are beef, butter, egg, whole milk and milk products. Fish and poultry are comparatively low in saturated fats. The body is capable of synthesizing cholesterol. High intake of animal fats increase the synthesis of cholesterol and triglycerides in large amounts beyond the amount that can be stored in the liver.

Physical activity and vigorous exercise appear to help a person to keep the cholesterol level low in blood. The increased amount of cholesterol produced in the body is deposited in the arteries resulting in a condition known as atherosclerosis. If a man has a plasma cholesterol level above 260 mg%, his risk of suffering M I is more than 5 times that of a man of the same age whose cholesterol level is less than 220 mg%.

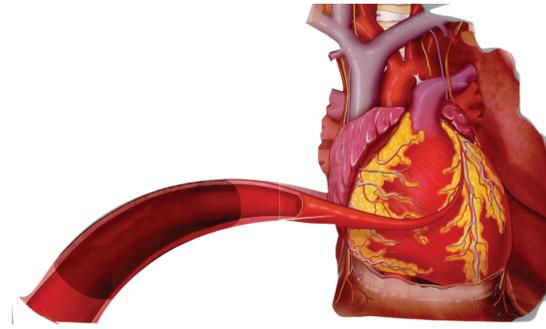
### B. Hypertension:

Hypertension is a Major factor in the development of CAD. The factors associated with high blood pressure include family history, obesity, excessive alcohol intake, old age and intake of salt more than 5 mg / day; low educational and socio - economic states.

### C. Smoking:

Cigarette smoking enhances the risk of myocardial infarction and sudden death. The risk of infarction is related to the number of cigarettes smoked daily. Nicotine present in the tobacco lowers the HDL and increases the LDL levels. It also impairs O<sub>2</sub> utilization in the body. Nicotine can directly damage the heart and blood vessels.

## WHAT IS CORONARY ARTERY DISEASE (CAD)?



**Coronary artery disease (CAD)** is the progression of atherosclerosis within the coronary arteries. The increased amount of cholesterol produced in the body is deposited in the arteries resulting in a condition known as Atherosclerosis. It is a disease that over time causes the formation of fatty plaque buildup within the walls of the arteries. This forms a lump called atheroma (Plaque) just below the inner lining of the artery. The plaque may enlarge and gradually narrow the opening of a coronary artery, then limiting the blood supply to the surrounding heart tissue.

**Coronary artery disease** may be life threatening if there is a rupture of the inner lining of the artery and the plaque. This triggers the body's natural clotting response system and rapidly causes a thrombus (blood clot) over the rupture itself.

If the sudden formation of a thrombus partially or completely blocks the artery lumen, blood flow through that vessel may stop. Complete blockage may cause heart tissue death resulting in heart attack.

### RISK FACTORS OF CORONARY ARTERY DISEASES

Most of these risk factors are associated with life styles and habits of the individual and can be modified by adopting a healthy lifestyle. However, there are often risk factors that cannot be changed.



# Act Now For Healthy Heart



### ANATOMY OF THE HEART

The heart consists of **4 chambers** whose walls are made of cardiac muscle fibers. When these fibers contract the blood in the chambers is squeezed out of the heart into the arteries that can carry O<sub>2</sub> and nutrients to all the organs of the body.

### CORONARY ARTERIES

The heart itself receives its O<sub>2</sub> and nutrients from blood supplied by the coronary arteries. These arteries branch off the aorta and travel downward along the muscular wall of the heart. These branches supply the heart with blood.

#### D. Obesity:

Obesity is often linked with increased levels of LDL and Cholesterol in the blood, Diabetes mellitus and excessive intake of Alcohol.

#### E. Diabetes Mellitus:

There is a fourfold increase in the incidence of CAD in people who suffer from diabetes mellitus, it is often associated with a severe form of atherosclerosis and it is a common precipitating factor of acute MI.

#### F. Sedentary Living:

Sedentary lifestyle contributes to the development of CAD. The tendency towards physical inactivity is becoming more marked even in the developing countries; on account of increased availability of transport, More Sedentary occupations involving no physical exercise. Sudden death is common in those individuals who spend much time indoors. Practicing vigorous exercise during leisure time has a protective action against CAD.

### Type A personality (Coronary prone behavior)

Type A personality characterized by time urgency, hostility, aggression, ambition, impatience, competitiveness, frustration etc. is closely associated with CAD. Practicing relaxation techniques may help to reduce the intensity of Type A behavior.

#### Psychosocial stress

Prolonged stress potentiates CAD. Anxiety, depression, irritability, sleeplessness etc. are related to stress. Tension at work, in the home situation and stressful events in the individual's life are the most frequent and immediate causes of heart attack.

#### Oral Contraceptives

The Use of oral contraceptives has been suspected to have a marked influence on CAD in premenopausal women. These drugs tend to produce an increase in blood pressure level as well as disturbance in the clotting of blood and enhance thrombo - embolic potential risk.

### Non - modifiable risk factors

#### Age

With increasing age there is progressive atherosclerosis, so the risk of CAD increases.

#### Sex

Women have a decreased incidence of CAD as compared to men because of the protective influence of estrogen. After menopause the incidence of CAD tends to become equal in two sex groups. In women who have reached menopause, the incidence of CAD is 3 times higher than those women of the same age who are still menstruating.

#### Family History

It appears that there is a strong familial genetic predisposition towards CAD.

#### Manifestation of Cad

When the blood supply to the myocardium is inadequate to meet its demands for O<sub>2</sub>, it produces symptoms. Depending on the degree of obstruction of the blood supply, the disease manifests in one of the following forms.



#### Angina pectoris

Angina pectoris means pain or choking sensation in the chest, it occurs when coronary circulation is inadequate to meet demands of myocardium.

#### Myocardial Infarction

An acute myocardial infarction or heart attack occurs when a portion of the cardiac muscle is deprived of an adequate supply of arterial blood with O<sub>2</sub> and nutrients, undergoes necrosis. The Precipitating cause of acute MI can be occlusion of an already narrowed atherosclerotic coronary artery by thrombus.

#### Sudden death

Sudden death is defined as death occurred within an hour of the onset of symptoms. In Patients without any obvious pre- existing disease sudden death usually due to acute M.I. majority of such deaths occur before patients even reaches the hospital and are due a to life threatening arrhythmias.

## FACTS & TIPS

### Lifestyle changes for a healthy heart includes:

- Do not smoke to prevent nicotine from further damaging your lungs and arteries.
- Exercise regularly to maintain a healthy body weight, which lowers your blood pressure and improves circulation.
- Eat a heart healthy diet that includes fruits, vegetables and whole grains. Avoid fat and salt.
- Manage stress with muscle relaxation and deep breathing exercise, to help your body naturally control stress.
- Have your Doctor regularly check your blood cholesterol level and blood pressure.

Contact us on **1781 2222**

[www.bahrainspecialisthospital.com](http://www.bahrainspecialisthospital.com)