Risk Factors of Coronary Artery Disease

The actual cause of cardiovascular disease has yet to be discovered.   However, scientific studies have uncovered several contributing factors:

(a)   Age

Aging population is a major factor in the increasing number of deaths caused by coronary heart disease. Twenty years ago, only 5% of the population was older than age 65 in Hong Kong. Nowadays it has increased to 9%. Men aged 45 or older and women aged 55 or older have a higher risk of developing coronary heart disease. The risk increases as both groups get older. When men and women develop coronary heart disease early before ages 55 and 65 respectively, their immediate family members will have a higher risk of developing the disease as well.

(b)   Family History and Heredity

Young people who died during physical activity usually suffered from congenital or hereditary heart disease. Some patients were born without the natural ability to remove the fat in their blood that causes plaque buildup. Also, some people have congenital hypertrophic cardiomyopathy, an abnormal thickening of the heart muscle. It is recommended that anyone who has a family member who died of a heart attack should have a total body checkup — even if they are young. It is important to discover if they have a latent chance of developing heart disease.

(c)   Hypercholesterolaemia

Patients with high blood cholesterol are 3 times more likely to have heart disease.
High cholesterol in food is not the only factor influencing blood cholesterol. Food high in saturated fat and the body systems that process cholesterol (especially the liver) also affect a person's cholesterol level greatly.
Cholesterol has many important functions such as formation of cell membranes and some hormones. The mixture of fatty cholesterol and proteins that compose lipoproteins affect the overall transport of cholesterol in the bloodstream. Low-density lipoprotein (LDL) can lead to cholesterol buildup in the arteries and narrow the space through which blood can flow. That is why LDL cholesterol is known as the "bad" cholesterol. High-density lipoprotein (HDL) cholesterol helps bring cholesterol back to the liver, which reduces the amount of cholesterol in the blood. Thus, HDL is known as the "good" cholesterol. There is also very low-density lipoprotein (VLDL), which mainly transports triglycerides. After depositing them, it will become low-density lipoprotein.
If blood is high in LDL and low in HDL cholesterol, there is increasing chance of heart disease. If we can reduce just 1% of the LDL cholesterol in our bodies, we will also reduce 1.5 to 3% of the risk of heart disease and help to avoid atherosclerosis.

(d)   Hypertension

Patients with high blood pressure are 2 times more likely to have heart disease.
Medical studies have shown that if blood pressure is reduced by 6 mm Hg, the risk of developing coronary

heart disease would be reduced by 25%.

(e)   Cigarette Smoking

Smokers are 2 to 4 times as likely to suffer heart attack and coronary heart disease as non-smokers.
Smoking causes 30% to 40% of the deaths related to cardiovascular disease.

The nicotine and carbon monoxide in tobacco smoke damages the cardiovascular system. If the blood vessel wall becomes fragile, cholesterol will easily build up. The cardiovascular risk after quitting smoking diminishes quickly in two to three years and normalizes in about ten years.

(f)   Diabetes Mellitus

Diabetes mellitus is associated with a 2 - 3 fold increase in risk of ischemic heart disease.

Diabetics who have higher glucose level are more prone to obesity and hypertension. High blood sugar may also affect platelet function that could cause blockage of blood vessels.

(g)   Stress

Stress excites the sympathetic nervous system. When heart rate increases and blood vessels constrict, blood pressure builds up.   Extra strain is placed on the heart; irregular heartbeat or heart failure can occur. A stressful life can also cause an imbalance in the hormones, which can also adversely affect the heart.

(h)   Obesity

People who are overweight are more likely to develop high blood pressure, high cholesterol, and diabetes, all of which can cause heart disease. Weight loss can effectively control high blood pressure, high level of blood cholesterol, and reduce the risk of developing diabetes.

The normal body mass index recommended for Asians is between 18.5 and 22.9.   Body mass index = weight (kg)/height2(m)

(i)   Metabolic Syndrome

People with metabolic syndrome are at high risk to developping coronary heart disease.   The syndrome is identified by the presence of three or more of the five conditions namely central obesity, low HDL cholesterol, high blood pressure, high fasting glucose, high triglycerides.

Newly identified risk factors include elevated levels of Prothrombotic proteins, lipoprotein (a), homocystein, and C-reactive protein.