Aerobic exercise is any form of activity that requires a rhythmic form of motions, which ultimately increase your breathing and heart rate. This can include anything from jogging to cross-country skiing.
Picture: www.trendhealth.org

Prevention of atherosclerosis

ATHEROSCLEROTIC diseases like Coronary artery disease (CAD) and cerebrovascular diseases are major reason for morbidity and mortality if Fiji.

Prevention of atherosclerotic disease presents a major challenge to the health care professionals and for the public health authorities.

We at Oceania hospitals are focused on preventing the atherosclerotic disease, as prevention is much more cost effective for an individual patient, insurance providers and for the government.

Risk factors for atherosclerosis are classified as major and minor.

The major risk factors are diabetes, hypertension, smoking, strong family history of cardiac related disease (this include family history of myocardial infarct (heart attack) and low High Density Lipoprotein (HDL) otherwise called good cholesterol levels.

Risk factors include having one or more of the following.
1. Diabetes mellitus;
2. Cigarette smoking;
3. Hypertension (BP ≥140/90 mmHg or on anti-hypertensive medication);
4. Low HDL cholesterol [<1.0 mmol/L (<40 mg/dL)];
5. Family history of premature CHD;
❑ CAD in male first-degree relative <55 years of age;
❑ CAD in female first-degree relative <65 years of age;
6. Age (men ≥45 years; women ≥55 years); and
7. Lifestyle risk factors.
❑ Obesity (BMI ≥30 kg/m2);
❑ Physical inactivity; and
❑ Atherogenic diet.

These are further classified as modifiable and non-modifiable. Of these age and family history are immutable risk factors and all the others are modifiable with drug therapy and/ or therapeutic life style changes (TLC).

Diabetes is no longer considered as major risk factor, in fact it is an equivalent of atherosclerotic disease CAD.

Before initiating any intervention the risk has to be assessed.

Risk assessment is done based on the research done by long term studies like Framingham Heart Study.

This study began in 1948 and it is now its fourth generation of participants.

Based on this study, scoring system was developed and is known as Framingham risk score.
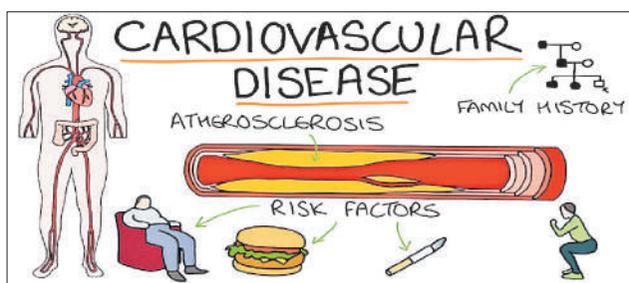
This scoring system has now been modified.

The current scoring system is known as cardiovascular risk score.

It can be accessed at www.cvriskcalculator.com.

Risk is classified as low, moderate, moderately high, high and very high based on the quantitative assessment using this calculator and taking consideration of the existing risk factors.

Diabetes mellitus:

Atherosclerosis and Coronary Artery Disease (CAD).
Picture: SUPPLIED

Diabetes mellitus is considered as a CAD equivalent.

All individuals with diabetes above forty years of age should be on cholesterol reducing agents. They also need rigorous control of LDL cholesterol. LDL target for individuals with diabetes is less than 1.8 mmol/L.

Hypertension:
Epidemiologic data suggests a strong relation-ship between Hypertension and atherosclerosis. Tight control of hypertension reduces the risk of stroke, heart failure and heart attacks.

Smoking:
Smoking is one of the easily modifiable risk of CAD and stroke. Counselling should be provided during every consultation. Drug therapy and/or psychotherapy may also be helpful

Lipid Disorders:
Lipid lowering treatment is the mainstay of atherosclerosis prevention. Worldwide treatment is done based on the recommendations given by the National Cholesterol Education Project Adult Treatment Panel III (ATP III).

Current guidelines recommend lipid screening in all adults >20 years of age. The screen should include a fasting lipid profile (total cholesterol, tri-glycerides, LDL cholesterol, and HDL cholesterol) repeated every five years.

Lipid profile should be repeated every six months for individuals with Diabetes. Individuals with established risk, lipid profile is tested every year. LDL target is based on the risk level.

Metabolic syndrome:
Metabolic syndrome is a cluster of risk factors like Hypertension, obesity, insulin resistance and dyslipidaemia.
Metabolic Syndrome—Any Three Risk Factors
Risk Factor Defining Level
1. Abdominal obesity:
❑ Men (waist circumference) b >102 cm (>40 in.)
❑ Women >88 cm (>35 in.)
2. Triglycerides: >1.7 mmol/L.

3. HDL cholesterol:
❑ Men <1 mmol/L
❑ Women <1.3 mmol/L
4. Blood pressure: 130/≥85 mmHg
5. Fasting glucose: >6.1 mmol/L
Metabolic syndrome needs intervention for each risk factor.

Regular exercise for 30 minutes of moderate intensity is recommended by American Heart Association.

Exercise in-creases the HDL levels, reduces the body weight, improves blood sugar control and reduces the blood pressure.

Medications:
❑ Statin – Cholesterol reducing agents;
Statins are the mainstay in lowering the lipid levels and LDL cholesterol.

The drugs available in the market are Atorvastatin, Simvastatin, Rosuvastatin and Pravastatin and Pitavastatin.

Drug therapy tailored for each individual patient.

Once the desired target of LDL cholesterol is achieved, lipid profile is tested every year.

Side effects of statins are muscular pain, elevated muscle enzymes and liver damage.

Many individuals are under treated or not at all treated.
Few individuals are over treated.

Aspirin
Aspirin in the dose of 81mg per day or 325mg on alternate days can reduce the risk of CAD and stroke in certain contexts.

Aspirin is over used in certain individuals.

Challenge in Oceania Hospitals:
Doctors in Oceania hospital are striving to keep the patients well informed about the risk factors, level of risk and the need for necessary intervention.

Risk score is calculated and patients are educated.
Drug dosages are optimised for individual patient.

Counselling is given for regular exercise, weight reduction, diet control, smoking cessation and salt restriction.

We also give dietary consultation with the help of the dietician.

■ Dr John Peter is a specialist physician at Oceania Hospitals Pte Ltd. The views expressed in the article are the author's and are not the views of this newspaper.