From Dr Harold Gunathillake

Lipid Disorders

Lipids are fatty material in your blood, a broad group that includes fats, waxes, sterols like cholesterol, fat-soluble vitamins like A.D.E.K, mono and di-glycerides, phospholipids, and triglycerides. The latter forms a subgroup of fats. The stored form of fat under your skin and around glands are triglycerides, very necessary for protection, storage, keeping your body warm and giving body shape to recognize your gender. These lipids are essential for normal metabolic activities in the body and for survival, but too much in your blood can cause problems.

A lipid disorder increases your risk for atherosclerosis, like many other factors, and lead to heart disease, stroke, high blood pressure and other problems.

About 2000mgs of cholesterol is required daily for the body's normal metabolic processes, out of which 80 per cent is manufactured in the liver.

About 300mg are absorbed daily in your diet from eggs, meat and dairy foods. Overall this represents less than 200mg of total cholesterol in the blood, when taken from the veins through venipuncture after 12 hours without food.

The liver has a homeostatic 'balancing' mechanism to control the manufacture and distribution of cholesterol and other metabolites. What this means is that if you consume more cholesterol containing food, the liver tends to synthesize less and vice versa.

In order to distinguish water-insoluble-cholesterol from soluble cholesterol, it is subdivide as High Density - labeled as "good" cholesterol - and Low Density - "bad" cholesterol - according to its combination with the size of the lipoproteins manufactured in the liver.

There are several genetic disorders that lead to abnormal levels of cholesterol and triglycerides. They include:

* Familial combined hyperlipidemia

* Familial dys-betalipo-proteinemia

* Familial hypertriglyceridemia

Abnormal levels of hyperlipidemia can be caused by acquired factors, too.

* Being overweight or obese, with diabetes and hypertension is referred to

as Metabolic Syndrome X.

* Certain medications tend to increase triglyceride levels in the blood,

such as birth control pills, estrogen, corticosteroids, certain diuretics

for passing excess urine, beta blockers, and certain antidepressants.

* Diseases such as diabetes, hypothyroidism (underactive gland), Cushing syndrome, polycystic ovary syndrome and kidney disease

* Excessive alcohol and excess carbohydrates consumption. Small doses of alcohol consumed daily increases the "good" HDL cholesterol

* Excessive consumption of fatty acids in red meat, high fat dairy products and trans-fatty acids in margarine and other processed commercial food products, also can be subjected to hyperlipidemia

* Sedentary lifestyles with no exercise

* Smoking

Dilemma

Though hyperlipidemia means increased amounts of fats in the arterial blood,supposed to cause atherosclerosis, heart disease, stroke, among others, the medical profession seems to assess the situation by evaluating these lipid levels by taking venous blood through venipuncture, and not by checking on the blood from the arteries.

In the veins, an increased level of lipids (hyperlipidemia) ironically causes no morbidity (damage) to the vessel walls whilst the atherosclerotic changes occur only in the major and minor arteries in the body.

So why check on lipid levels on venous blood, and not on blood taken from the arteries where the damage and pathology occurs? And why do the researchers write their conclusions on such findings? Food for thought! Probing deeper, cholesterol, being mainly synthesized in the liver, is distributed through the hepatic veins through the inferior vena cava (the major vein that accompanies the descending aorta) that takes venous blood back to the right heart, then pumped through the lung tissue for oxygenation, and distributed to every cell and tissue in the body by pumping through the left ventricle of the heart. It is assumed that this oxygenated blood would supply the cholesterol to all parts of the body for its daily metabolic processes.

Once again it is reiterated that the levels of cholesterol and other lipids circulating through these arteries are not taken into consideration in the research papers.

Coronary risk profile

Total cholesterol

HDL/LDL ratio

Lipoprotein analysis

Triglyceride test

Treatment of Hyperlipidemia

Treatment is assessed on the age, health history, and other risk factors for

heart disease, such as:

* Diabetes

* Poorly controlled high blood pressure

* Any family history of heart disease

The recommended values for adults are different depending on the above risk factors, but the average normal findings are:

* LDL: 70-130 mg/dL (lower numbers are better)

* HDL: more than 40-60 mg/dL (high numbers are better)

* Total cholesterol: less than 200 mg/dL (lower numbers are better)

* Triglycerides: 10-150 mg/dL (lower numbers are better) Steps to take to lower your lipid levels in the blood

* Eat a heart-healthy diet with plenty of fiber-rich fruits and vegetables.

Avoid saturated fats (found mostly in animal products) and trans-fatty acids (found in fast foods and commercially baked products). Instead, choose unsaturated fats

* Exercise regularly to help raise your HDL ("good" cholesterol)

* Get periodic health checkups and cholesterol screenings

* Lose weight if you are overweight

* Quit smoking

If these lifestyle changes are not benefitting you, you need to see your doctor. Eating foods for the heart

* Fresh Herbs

Include herbs in your salads and cuisines. Use less salt and fat when herbs are involved. Rosemary, sage, oregano and thyme are some herbs containing antioxidants. Curry leaves are an excellent herb in Asian curries.

* Black beans

They are packed with healthy nutrients including folate, magnesium and fiber. Canned black beans are quick additions to soups and salads.

* Red Wine and Resveratrol

Resveratrol and catechins are antioxidants in red wine that may protect artery walls. Alcohol also boosts the HDL. Just one drink a day is healthy.

* Omega 3 fish oils

Fish, especially salmon is heart-healthy food; it's rich in the omega-3s EPA and DHA. Omega-3s lower risk of rhythm disorders, which can lead to sudden cardiac death. Salmon also lowers blood triglycerides and reduces inflammation. The American Heart Association recommends two servings of salmon or other oily fish a week. Tuna is also a good source of heart-healthy omega-3s. It generally costs less than salmon. Albacore (white tuna) contains more omega-3s than other tuna varieties. Reel in these other sources of omega-3s, too: mackerel, herring, lake trout, sardines, and anchovies.

Tip: Grill tuna steak with dill and lemon; choose tuna packed in water, not oil. Bake fish in foil with herbs and veggies. Nuts

A handful of nuts a day, such as walnuts, gram, chick peas, may reduce cholesterol and reduce inflammation of coronary arteries. Walnuts are packed with omega 3 oil. Unfortunately, in Sri Lanka it is available in supermarkets, but beyond the reach of the average wage earner. Wellawatte is full of gram (kadale) and other nuts available on the wayside boutiques.

They are mainly favored bites of the Jaffna people. The bottom line is eat less fat, exercise and achieve body weight within the normal range (BMI 25-27). That would be an excellent tip for you heart, body and wellbeing.