

## **CAN NUTRITION AND EXERCISE IMPROVE CHOLESTEROL AND TRIGLYCERIDE AND PREVENT HEART DISEASE IN INDIANS?**

**A significant rise in heart disease among Indians could be due to inappropriate dietary habits and a lack of exercise. Some children may also be at a higher risk for developing dyslipidemia (high triglycerides and high LDL cholesterol).**

Dyslipidemia defined as high cholesterol and/or high triglyceride can be lowered with a healthful diet. Indians may have a condition called insulin resistance or “metabolic syndrome”. The primary cause of an increase in heart disease in Indians is due to the metabolic syndrome described as high triglyceride levels and low HDL (good cholesterol) levels. These levels are also associated with upper body (waist) obesity and high insulin levels in the blood. Metabolic syndrome includes dyslipidemia (high triglyceride levels, small LDL particles or pattern B, and low HDL levels), high blood pressure, a moderate increase in blood sugar or diabetes. Accompanied by a small weight loss (if overweight), consistent daily aerobic exercise for a minimum of 30 minutes to an hour e.g. walking can increase the good HDL cholesterol and lower triglyceride, lower blood pressure and lower blood sugar. In fact life style changes including exercise and weight loss (if overweight) can reverse insulin resistance and the metabolic syndrome in many people. The question we should ask is not whether one should exercise. The question we should be asking is whether we can afford NOT to exercise. A high level of homocysteine and lipoprotein (a) are also risk factors for heart disease. Ask your doctor if you should have these blood tests.

### **Lowering your triglyceride levels**

Triglycerides are the blood fats strongly associated with diet and weight. Being overweight, excessive sweets consumption and excessive alcohol intake can increase the triglyceride levels in the blood. The best level of triglyceride is 150 mg/dl or less, however, some lab slips indicate levels up to 250 mg/dl as normal. An increase in triglycerides can suggest changes in the lipoprotein patterns that are not healthy. This unhealthy change is referred to as Pattern B. Eating a high carbohydrate diet can cause triglycerides to increase. Both what you eat and the amount of food you eat can change triglyceride levels. If your overeating causes you to gain weight this will also raise your triglyceride. Alcohol can also increase triglyceride levels in the blood. Eating fatty fish e.g. salmon, mackerel and trout once or twice a week may help lower triglycerides as these are high in omega-3 fatty acids. Flax seeds may also be beneficial on a heart healthy diet although they do not have the two essential fatty acids EPA & DHA that fish does.

### **Fitting Fats and Oils into your daily diet**

Fat is an important nutrient because the body cannot produce its own and must get it from the diet. A low fat diet accompanied by weight reduction will lower triglycerides. Eating too little fat but enough food to maintain your weight usually results in your triglycerides going up and your HDL going down. Although your triglyceride may stay in the lab normal range (<150 mg/dl) you do not want your triglyceride to go over 100 mg/dl. If your triglyceride levels go above 100 mg/dl your HDL will usually go down. Obviously, you do not want to do anything to lower your HDL. A healthy HDL for men is at least 45 mg/dl and for women is 55 mg/dl. Sometimes, reducing your fat intake will allow you to lose some weight. During active weight loss, HDL is reduced.

## **Moderation - the key to a healthful diet**

The appropriate diet you should eat to lower your triglycerides is one that is moderate in fat. A typical woman can daily consume 3-4 Tablespoons (45-50 g/day) **of oils/fats** and a typical man 5-6 Tablespoons **of oils/fats**(75 g/day), but the fat should be primarily from monounsaturated sources. Monounsaturated fats are the fats found in olive oil and canola oil. Avoid foods made with saturated fat (fat that is solid at room temperature). To reduce the LDL (bad) cholesterol in your blood, saturated fat and dietary cholesterol should be reduced in the diet. Saturated fats have the most dramatic effect on raising LDL cholesterol. These are butter, ghee, lard, shortening, coconut and the fat in meat including chicken. They are solid at room temperature. They are also found in baked goods (pastries, kulfi, rasmalai, pies, cakes and cookies) and prepared foods made with these fats such as in restaurants (fried appetizers, marinated entrees, butter and cream based sauces). To lower your cholesterol you would choose as little saturated fat as possible and lose weight if you are overweight.

## **All fats are not created equal**

You can eat other types of fat. It is simply not true that “no fat in the diet is better than any fat in the diet”. One type of fat that is thought to be “good” is called monounsaturated fat. This is the type of fat in olives and olive oil, canola oil and peanut oil. By using canola and olive oil in food preparation you can improve your cholesterol levels. If you have a weight problem you will want to limit the intake of all oils including the monounsaturated oils. You can use these in cooking and on food such as salad dressings. There are a few margarines and mayonnaises made with monounsaturated fat. Read your labels carefully looking for canola or olive oil or that list more of these (monounsaturated fat) than other fats on the label. The new margarines made from plant cholesterol e.g. “Benecol” and “Take Control” can also lower LDL cholesterol levels.

## **Vegetarian alternatives including use of Soy**

Tofu is an excellent choice for protein especially in place of “Paneer”. Unlike “Paneer” which is high in saturated fat, the fat in tofu is preferable to unsaturated fat. Legumes (dried beans and lentils) including “daal” are naturally low in fat, high in protein and carbohydrate and in fiber. Soy milk like tofu is available in low fat varieties. Soy milk usually has a beany after taste which most people find quite pleasant. Try using soy milk with fresh fruit to make delicious smoothies. Soy yogurt and soy cheese is available. Check the fat content as these can be high in fat. One egg three times per week is quite acceptable in an otherwise low fat diet. Nuts and seeds, avocados and olives are considered good fats because they are high in monounsaturated (good) fat. Be aware that these good fats are also high in calories and can cause a weight problem. Vegetarian burger patties can be convenient and nutritious alternative to the meat patties. Two or three servings (2 or 3 oz each) of protein foods and two or three servings (8 fl oz) of low fat or non fat milk or buttermilk or yogurt is recommended daily. Also recommended are 6 to 11 servings of grains and 5 servings of fruits and vegetables daily. Use of whole milk in the preparation of “chai” and desserts during the Hindu festivals e.g. ‘peda’ can add saturated fat in the diet. Though such items can be worked into occasional use on an exchange basis, they can contribute to high cholesterol and/or high triglyceride levels.

## **For more information**

A registered dietitian can help you develop a customized meal plan while taking your personal food preferences and medical history and lab reports into account. This is referred to as medical nutrition therapy (MNT) by a registered dietitian (RD).

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