

Laughter, the best Medicine!!!



By Nik Nikam, MD, FACC

High cholesterol is a leading risk factor for coronary heart disease and stroke. Cholesterol is a waxy substance made by the liver and also comes from the animal dietary products such as meats, poultry, fish, eggs, and dairy products. Cholesterol circulates in the blood and insulates nerves. It is an important part of cell membranes and certain hormones. However, since the human body makes enough cholesterol, dietary cholesterol is not essential. Hypercholesterolemia is the term for high levels of blood cholesterol. Your aim should be to achieve desirable cholesterol and triglyceride levels as listed below:

Total cholesterol	<200	[<160]
LDL cholesterol	<100	[< 80]
HDL cholesterol	> 40	[> 50]
Triglycerides	<150	[<150]

Calorie cutback: Calorie reduction must be the initial step in your overall cholesterol reduction plan. This leads to a decline in the total and LDL cholesterol levels. Any excess calories coming from carbs, proteins, or fats, if not used for immediate energy, will eventually turn into fat that can raise your cholesterol levels. You can safely reduce your calorie intake to 1200 calories without compromising the nutritional value of your diet. Any excess calories you consume beyond that should be proportional to your physical activity and the amount of calories burned during those activities. Diabetics, no matter what type of lifestyle they are involved in, do well on 1800 calories per day. You can safely reduce your calorie requirements to what your body actually needs and not what your taste buds demand. Using my recommendation of fresh fruits, salads, beans, and grilled foods, you can eat normal foods and loose weight at the same time. The sugar in sweets very quickly spikes triglycerides in people. Avoid fruit juices, soda, pastries, pies, candy, cookies and sweet desserts.

Dietary cholesterol: If you eat one whole egg a day (one egg has 274 mg of cholesterol), try to avoid or limit other sources of dietary cholesterol on that day. You could eat 2 to 3 egg white per day, or egg substitutes, in place of whole eggs. Drastically reduce your consumption of fried foods, saturated fats, chicken skin, meats with visible fat, and spreads that have *trans-fatty* acids. Avoid eating baked goods (like muffins, cookies and cakes) that are rich in carbs, fats, and cholesterol from egg yolks. Make sure your meat choices are lean and no more than 4-6 ounces per meal. Select cholesterol-free vegetarian choices in place of meats for one of your daily meals.

Fiber: Since fiber can lower your LDL cholesterol level by 10-15%, include foods high in fiber such as green, leafy-vegetables, whole grains, and beans in your daily meals. Soluble fibers are also found in fiber supplements or in fruits such as apples, grapes, and citrus fruits. The fiber in these foods helps lower total cholesterol levels and often raises HDL levels. It is believed that fiber binds to cholesterol in the small intestine and prevents cholesterol absorption into the bloodstream, thus reducing cholesterol levels.

You need to consume at least 30 grams of fiber per day. One example is Psyllium, a fiber that is seen primarily in Iran or India. It is primarily used in traditional herbal medicines and is a common ingredient in bulk laxative products as well. A study of psyllium showed that consumption of psyllium through supplements lowered LDL cholesterol levels. The same study showed LDL level improvement in both children and adults. This benefit of psyllium is believed to come from its soluble fiber component. Another fibrous example is oat bran, a common breakfast staple. In one study, eating two ounces of oat bran per day showed a 16% reduction of LDL levels and a 15% increase of HDL levels. Oat bran and barley have a soluble fiber known as Beta Glucan that lowers cholesterol levels.

Body Weight: Obesity is a major cause of high triglyceride levels. If you are overweight, lose weight with regular exercise and by reducing your total calorie intake.

Red wines: Red wines such as Cabernet, Sauvignon, Merlot, and Pinot Noir contain antioxidants that slow down the oxidation of LDL cholesterol that

reduces the amount of LDL deposited in the plaques. Limit your intake of red wine to no more than 1-2 glasses per day.

Orange Juice: In one study conducted at the University of Western Ontario in Canada, twenty-five students drank orange juice every day for a four-week period and had a 21% increase in their HDL levels. The rise in HDL was thought to be related to the flavonoid in the orange juice.

Beans: Kidney and red beans are a wonderful choice for raising HDL. The low-glycemic index carbohydrates in these foods cause less profound insulin spikes. People who consume foods rich in low-glycemic carbohydrates have higher HDL levels.

Fish: Omega-3-fatty-acid-rich-fish, eaten several times a week, can raise your HDL level. Sardines, salmon, sea bass, herring, mackerel and tuna fall in this category. If you do not like to eat fish, fish-oil capsules can be used as a supplement.

Olive Oil: Olive oil, a mono-saturated fatty acid, has been shown to lower blood cholesterol. Extra virgin olive oil is suggested to be better than other varieties. Including 1-2 teaspoons of olive oil with each

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meal has been shown to reduce cholesterol levels.

Cholesterol-lowering spreads: Spreads made with plant stanols and sterols esters have been shown to lower LDL cholesterol by as much as 14%. They do not alter the HDL cholesterol levels. They lower cholesterol to a greater extent in people with elevated cholesterol compared to those with normal cholesterol levels. These sterols trick your intestine into thinking they are cholesterol. When the intestine tries to absorb them, it is not able to, therefore blocking actual cholesterol from being absorbed. The National Cholesterol Education Program of the National Institute of Health recommends adding 2 grams of plant stanols and sterols into a general dietary plan. Presently, two types of these products are available on the market. *Take Control* contains plant sterol esters, and *Benecol* contains plant sterol. *Benecol* can be used as spread or in cooking and baking without altering the food flavor or color. Because it does not contain any trans-fatty acids, it is a safe substitute for all other margarine or spreads. *Take Control* can be used as a spread. However, it is not presently suitable for baking

or cooking. Switch your normal margarine or butter choices to *Benecol* or *Take Control* products that are specifically designed to help reduce cholesterol.

Onions: Some research suggests that eating one half of a raw onion per day may raise HDL levels by as much as 30%.

Soy Products: An analysis of thirty-eight studies on soy confirmed that it lowers total cholesterol, LDL cholesterol, triglycerides, and raises HDL cholesterol. To achieve the desired results (15-25% reduction in cholesterol), you have to consume at least 25 grams of soy protein per day. Soy protein is available in numerous forms such as fresh soybeans, protein bars, shakes, milk and tofu.

Nuts: Nuts such as almonds and walnuts have high amounts of monounsaturated or polyunsaturated fatty acids that help lower cholesterol. Researchers at the Loma Linda University found that a diet containing pecans not only lowered total and LDL cholesterol levels significantly, but it also helped to maintain desirable HDL cholesterol levels. Another study found that the Mediterranean style diet, which includes walnuts, lowers cholesterol.

Trans-Fatty Acids: Avoid eating trans-fatty-acid-containing foods such as French fries, cookies, cakes and many of the fried fast foods. They behave as saturated fats and easily raise your cholesterol levels.

Minimize Carbohydrates: Minimize your consumption of carbohydrates—sugar, flour, potatoes, white rice, etc.—because they can turn into fat and cholesterol. Blood sugar spikes by carbohydrates can dramatically lower your HDL level.

Smoking cessation: According to a study from Vanderbilt, people who quit smoking experienced a rise in their HDL levels by seven points.

Royal Jelly: One way to help reduce your cholesterol levels while you quit smoking may be to have a little royal jelly. Surprisingly, this has been noticed to lower cholesterol levels by reducing some of the cholesterol-elevating effects of nicotine.

Natural Supplements: Having several different avenues for lowering cholesterol is important because the causes of high cholesterol levels vary greatly from person to person. Natural remedies such as Guggul, Pantethine, Policosanol,

Curcumin, and Beta-Sitosterol are just a few supplements that are easily available at a low cost compared to prescribed drugs.

Guggul: A gum resin from the mukul myrrh tree known as Guggul has been shown to lower cholesterol levels. In one trial, the researchers who compared Guggul to *Clofibrate*, a cholesterol-lowering drug, noted that the average fall in serum cholesterol was slightly greater in the Guggul group. The HDL cholesterol level also rose in 60% of people in the Guggul group. Guggul has also been shown to reduce the stickiness of platelets—another effect that lowers the risk of coronary artery disease

Pantethine: Some people who have taken pantothenic acid, a naturally occurring substance, have noticed an increase in their HDL levels.

Policosanol: One study showed a reduction in total cholesterol levels by 17%, LDL cholesterol levels by 28%, and raise HDL cholesterol levels by 28% in those people who took policosanol compared to those who did not take policosanol.

Curcumin: This reduces cholesterol levels by interfering with intestinal cholesterol uptake,

increasing the conversion of cholesterol into bile acids, and increasing the excretion of bile acids.

Niacin: This naturally occurring vitamin lowers total cholesterol levels, raises HDL levels (as much as 15 to 30%), and reduces triglyceride levels (as much as 50%). It comes in 500 mg tablets and can be taken 2 to 3 times a day. Combining niacin with vitamin B6 can minimize facial flushing, a common side effect resulting from blood vessel dilatation. Another form of Niacin called Inositol has been shown to cause less flushing.

Chromium: Chromium supplements have been shown to increase HDL cholesterol levels by an average of nearly 6 points (a 16 % increase), leading to a 20% reduction in the heart attack risk.

Calcium Citrate: Taking one gram of calcium daily (as the citrate) has been shown to lower LDL cholesterol levels by 6% and increase HDL cholesterol levels by 7%.

Vitamins B and C: Like niacin, B vitamins also lower LDL levels by decreasing the rate at which LDL is oxidized. In addition, Vitamin C has been

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noted to slightly reduce cholesterol levels.

Carnitine: This natural supplement also has been shown to increase HDL levels.

Coenzyme Q10: It has been noted to reduce total cholesterol levels. It has also improved the heart function of patients with heart failure.

Garlic: This little plant that lowers blood pressure has also been widely studied for its cholesterol-lowering properties.

Grape Seed Extract: Another unusual cholesterol-lowering supplement, this has also been noted to reduce total cholesterol serum levels.

Flaxseeds: Flaxseeds provide alpha-linolenic acid, a poly-unsaturated fat that has been shown to lower cholesterol while providing needed soluble fiber. Flaxseed also contains Omega-3 fatty acids that stabilize the arterial lining membranes.

Red Yeast Rice: This Chinese red yeast rice comes from fermenting yeast called *Monascus purpureus* over red rice. The red yeast rice has been noted to have a substance similar to certain prescription medications commonly referred to as "statins," which lower cholesterol. *Monascus purpureus* inhibits the

action of an enzyme called HMG-CoA reductase, which is known to raise cholesterol. Presently, the U.S. Food and Drug Administration (FDA) classifies red-yeast rice as a dietary supplement. Some studies of red yeast rice have shown it to reduce total cholesterol levels by 16%, LDL cholesterol by 21%, and triglycerides by 24%, while increasing HDL by 14%. It is available as 500 to 600 mg capsules that can be taken 2 to 4 times daily. However, just as the statins, red yeast rice also has been shown to affect the liver. Hence, you need to monitor your liver tests done if you are taking the pills for a long period.

Grapefruit Juice: When grapefruit or grapefruit juice is taken with HMG-CoA reductase inhibitors (such as Atorvastatin, Cerivastatin, Fluvastatin, Lovastatin, Pravastatin, and Simvastatin), it enhances the effect of the medications. It also causes a significant increase in the drug blood levels, leading to a greater risk of serious side effects or liver damage. Because red yeast rice appears to act in much the same way as these cholesterol-lowering drugs, it would be wise to avoid grapefruit, its juice, or other grapefruit products (such as

marmalade) while taking red yeast rice.

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