Reducing Cholesterol

By Gene Bruno, MS, MHS – Dean of Academics, Huntington College of Health Sciences

Heart and blood vessel (cardiovascular) disease is the No. 1 killer of Americans, and study after study points to elevated cholesterol as a major contributor to the problem. Some authorities have indicated that for every one percentage point that cholesterol levels are reduced, the risk for cardiovascular disease is reduced by 2 points.

The current conventional medical treatment is cholesterol-lowering prescription drugs, along with low saturated fat diets. Although these drugs do lower serum cholesterol, they also have potential side-effects. Consequently, it makes sense to work with your doctor in trying one or more of the following relatively risk-free dietary supplement approaches before taking drugs.

Policosanol

Policosanol is a mixture of long-chain alcohols (waxes), including octacosanol, extracted from natural sources. Test tube and animal studies indicate that policosanol is capable of inhibiting cholesterol production by the liver.[1] [2]

Extensive preliminary and double-blind research in Cuba and other countries in Latin America has demonstrated that taking 10 to 20 mg per day of policosanol extracted from sugar cane results in significant changes in blood cholesterol levels, including total cholesterol (17 to 21% lower on average), LDL cholesterol (21 to 29% lower), and HDL cholesterol (7 to 29% higher).[3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14]

Policosanol may also have some effect on lowering serum triglycerides. However, the studies have been inconsistent, ranging from no effect up to as much as a 19% reduction.[15] [16] [17] [18] [19] [20] [21] [22] [23] [24]

Chromium

Chromium supplementation has reduced total cholesterol,[25] [26] LDL cholesterol[27] [28] and increased HDL cholesterol[29] [30] in double-blind and other controlled trials, although other trials have not found these effects.[31] [32] One double-blind trial found that high amounts of chromium (500 mcg per day) in combination with daily exercise was highly effective, producing nearly a 20% decrease in total cholesterol levels in just 13 weeks.[33] Not surprisingly, people with higher blood levels of chromium appear to be at lower risk for heart disease.[34]

Inositol hexanicotinate

High amounts (several grams per day) of niacin lower cholesterol; an effect recognized in the approval of niacin as a prescription medication for high cholesterol.[35] At such intakes, however, acute symptoms (flushing, headache, stomachache) may be severe. In an attempt to avoid the side effects of niacin, alternative health practitioners increasingly use inositol hexaniacinate, recommending 500 to 1,000 mg, taken three times per day, instead of niacin.[36] [37] This special form of niacin has been reported to lower serum cholesterol but so far has not been found to cause significant toxicity.[38]

Guggul

Guggul, a mixture of substances taken from a plant, is an approved treatment for elevated cholesterol in India and has been a mainstay of the Ayurvedic approach to preventing atherosclerosis. One double-blind trial studying the effects of guggul reported that serum cholesterol dropped by 17.5%.[39] In another double-blind trial comparing guggul to the drug clofibrate, the average fall in serum cholesterol was slightly greater in the guggul group; moreover, HDL cholesterol rose in 60% of people responding to guggul, while clofibrate did not elevate HDL.[40] A

third double-blind trial found significant changes in total and LDL cholesterol levels, but not in HDL.[41]

Garlic bulb
Garlic has significant lipid-lowering effects. Thirteen trials involving a total of 795 participants demonstrated a positive correlation between garlic supplementation and lipid-lowering effects. Six randomized, double-blind, placebo-controlled, as well as two double-blind, multi-center studies supported the use of garlic in treating elevated lipid conditions including hyperlipidemia and hypercholesterolemia.[42] Two meta-analyses on the effect of garlic on total cholesterol found a statistically significant reduction in total cholesterol levels.[43] [44]

Plant Sterols
Beta-sitosterol alone, and in combination with similar plant sterols, has been shown to reduce blood levels of cholesterol in preliminary[45] and controlled[46] trials. This effect may occur because beta-sitosterol blocks absorption of cholesterol.[47] In studying the effects of 0.8, 1.6, and 3.2 grams of plant sterols per day, one double-blind trial found that higher intake of sterols tended to result in greater reduction in cholesterol, though the differences between the effects of these three amounts were not statistically significant.[48]

In another controlled trial, supplementation with 1.7 grams per day of a plant-sterol product combined with dietary changes, led to a dramatic 24% drop in LDL ("bad") cholesterol compared with only a 9% decrease in the diet-only part of the trial.[49]

Green Tea Leaf Extract
Green tea has been shown to lower total cholesterol levels and improve people's cholesterol profile, decreasing LDL cholesterol and increasing HDL cholesterol in most studies,[50] [51] [52] [53] but not all.[54] It seems to be the naturally occurring catechin polyphenols content of green tea, particularly epigallocatechin gallate (EGCG), which provides these benefits. The mechanism by which green tea works appears to be that EGCG inhibits the absorption of dietary cholesterol and promotes its fecal excretion; and that EGCG acts as an antioxidant inhibiting the oxidation of LDL cholesterol.

Black Tea Theaflavins
Black tea is made from green tea as the result of a fermentation process. During the fermentation process the catechins are converted into other substances called theaflavins. These black tea theaflavins compare equally to green tea catechins as antioxidants.[55] As a matter of fact theaflavins have even been shown to be more effective than catechins in preventing the oxidation of LDL cholesterol.[56] Furthermore, theaflavins have been shown to reduce total and LDL cholesterol in adults with mildly high cholesterol levels[57], as well as effectively lowering cholesterol in patients with mild to moderately high cholesterol levels when added as a component to green tea.[58] Hence the combination of green and black tea may have greater cardiovascular benefit than just green tea alone.

Pantethine
Pantethine, a byproduct of vitamin B5 (pantothenic acid), may help reduce the amount of cholesterol made by the body. Several preliminary[59] [60] [61] [62] [63] and two controlled[64] [65] trials have found that pantethine (300 mg taken two to four times per day) significantly lowers serum cholesterol levels and may also increase HDL.

Red-yeast-rice (aka, red-rice-yeast)
Red-yeast-rice (*Monascus purpureus* Went yeast fermented on rice) is a traditional botanical used in Chinese medicine. Recent research indicates that red-yeast-rice can actually help to reduce serum cholesterol in combination with dietary modification. Red-yeast-rice yeast has this benefit because it naturally contains HMG-CoA reductase inhibitors. Basically, the HMG-CoA reductase inhibitors interfere with cholesterol production in the liver.[66]

In 1999, the UCLA School of Medicine conducted a 12-week, double-blind, placebo-controlled study on the cholesterol-lowering effects of a red-yeast-rice supplement in a group consuming a diet similar to the American Heart Association Step I diet. The results were that total cholesterol concentrations decreased significantly between baseline and 8 weeks in the red-yeast-rice-treated group compared with the placebo-treated group (from 254mg/dL to 208 mg/dL). LDL cholesterol and total triacylglycerides were also reduced with the supplement.[67] In another study using red-yeast-rice similar results were seen: total cholesterol decreased by 22.7% and LDL cholesterol by 30.9%. Furthermore, the subjects experienced a 19.9% increase in HDL cholesterol (the "good cholesterol") and a 34.1% decrease in serum triglycerides.[68]

The research suggests that the effective dose is at least a total of 9.6 mg HMG-CoA reductase inhibitors from red-yeast-rice daily.

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