

Nutraceuticals- Are They Safe and Do They Really Lower Cholesterol? (Part 2)

In part one, I began a review of "Nutraceuticals" that have been touted in the media as having lipid-lowering properties. We discussed the pros and cons of these supplements and their true impact on lipid levels as supported by good evidence based medical studies. In part two, we will once again cover other well-known "Nutraceuticals" and their impact on cholesterol management. Certain foods including nuts, soy, and dietary fiber have been reported to lower lipid levels. Other "Nutraceuticals", also known as "functional foods", have been portrayed to have lipid-lowering properties such as garlic, apple-cider vinegar and lecithin.

The FDA recommends that consumption of 1.5 ounces of nuts per day MAY reduce cardiovascular risk. Aside from the fatty acid composition of nuts, other components such as arginine, plant sterols, and phenolic components may play a favorable role in the lowering of lipid levels for those who eat nuts as a regular part of their diet.

Walnuts and almonds have been most comprehensively studied. Most clinical trials evaluating the impact of nuts on lipid profiles have been small scale (10-49 participants). LDL-C (the bad cholesterol) reduction has been consistently shown in these small scale studies, typically in the range of 12-13%. Though less consistent, triglyceride reduction was shown. However, HDL-C (the good cholesterol) generally remained unchanged. One must always remember that these studies are far too small to establish any guidelines and there certainly is not one ounce of outcome data regarding the effect on cardiovascular morbidity and mortality. The American Dietetics Association evidence library concludes that "consumption of 50-113 grams (1/2 cup to 1 cup) of nuts daily with a diet low in saturated fat and cholesterol decreased total cholesterol by 4-21% and LDL-C by 6-29% when weight was not gained." However, we have to remember that a diet rich in nuts is a heavy caloric load and may lead to weight gain. I recommend somewhat smaller portions of nuts as part of a healthful diet.

There are two kinds of Fiber or Nondigestible Carbohydrates. The first, which is insoluble, aids in bowel function. An example is wheat bran. The second is soluble fiber, now referred to as viscous fiber, which has an additional cholesterol lowering effect. Examples include dried beans, grains, certain fruits and vegetables. Psyllium is a source of soluble fiber and has been shown to augment the lipid lowering response when combined with other lipid lowering medications. Oat products have the most soluble fiber of any grain. Several recent studies have looked specifically at the effects of oats or oat bran on LDL-C. Both oats and oat bran demonstrated favorable results in the lowering of LDL-C. Robitaille's study on overweight pre-menopausal women provided 28 grams of oat bran daily over 4 weeks and not only obtained LDL-C reductions, but also demonstrated an 11.2% increase in HDL-C. In moderately hypercholesterolemic men and women, a study found significant positive results from the consumption of barley. A reduction of 20% in total cholesterol and 24% in LDL-C was obtained in 1 study. The ATP III (Adult Treatment Panel) recommends a minimum of 5-10 grams a day of total dietary fiber for people with even mildly elevated LDL-C levels but higher intakes of 10-12 grams of fiber per day can be more beneficial in those with more severe

hyperlipidemia. In large prospective epidemiological studies, total dietary fiber has been shown to protect against coronary heart disease. These studies examined the relationship between whole grain consumption and CHD. Researchers found 20-40% reduction in CHD risk for those who habitually consumed whole grains as compared to those who rarely ate whole grains. There are several mechanisms by which it is believed dietary fiber may protect against CHD. They include lowering serum cholesterol and LDL-C, attenuating blood triglyceride levels, and decreasing hypertension. Fiber consumption also predicts insulin levels and weight gain more strongly than a low total fat and saturated fat diet. High fiber diets may protect against obesity and cardiovascular disease (CVD) by lowering insulin levels. It has been shown that the intake of dietary fiber is inversely correlated with cardiovascular disease risk factors in both sexes. However, most of the evidence shows that a mixture of both soluble and insoluble forms of fiber is an important part of a diet that promotes general good cardiovascular health. Based upon this conclusion, the National Academy of Science recommends 25 grams per day of fiber for women 19-50 years of age and 21 grams per day for women over 50. For men 19-50 years of age, 38 grams per day is recommended and 30 grams for men over 50. This is set from an established 14 grams of fiber per 1,000 calories.

In the last 12 years, Soy has been believed to lower LDL-C. However, recent data has not shown soy to be a practical means to lower LDL-C. In order to achieve any meaningful LDL-C reduction, large amounts of soy are required. Even when individuals consume half their daily protein with soy protein only a very small reduction (3%) in LDL-C is achieved. Soy seems to be a more efficacious lipid-lowering agent in persons with marked hyperlipidemia. It should be noted that reduction in lipids may be due to replacing high-fat animal protein with soy rich foods that may indirectly result in lipid reduction via a reduction in saturated fat intake.

At least 3 well-designed studies failed to document any influence of Garlic on serum lipoproteins. Lecithin is another widely promoted lipid-lowering functional food that is derived from soy beans and sold as a "fat emulsifier". Many people believe that this "emulsifier" actually breaks down fat and cholesterol in the bloodstream. These claims are totally unsubstantiated by any medical literature.

Another promoted cholesterol lowering remedy is daily a dose of apple-cider vinegar. To date, I have yet to see substantial evidence in the form of any clinical trial evidence that supports these claims.

I have tried to shed some light on the most common "Nutraceuticals" that are promoted to lower lipid levels. I have used solid, evidence-based studies to provide the latest, most accurate information. Perhaps you have found studies on the Internet to support the claims that many of these functional foods will lower cholesterol levels. I would like to bring three important points to your attention:

First, it is important to remember that most of consumer-based literature published has no or little scientific components and are purely retrospective data gathered via

questionnaires. Remember, any one can write a paper on any topic and get it published in some type of journal but I can guarantee that none of these journals are "peer review" journals. Second, the Nutraceutical industry is unregulated. It is possible for companies promoting functional foods to fund a study which is designed to show the favorable results they had planned on prior to construction of the study. Finally, what is most important is Outcome Data. This simply means, as a result of the drug or supplement's effect on lipid levels, did that substance affect change that resulted in fewer cardiovascular events and death?

Every week, questions come to me from patients and on my message board on WebMD about the use of Statins. Statin drugs are currently the most studied class of drugs and they have changed the face of cardiovascular disease by reducing cardiovascular events by 35-40% in multiple clinical trials.

As a Cholesterol Expert, I fully believe it is important to lower cholesterol by any means necessary. My greatest concern for patients and consumers regards the safety of many of the supplements we have discussed. Simply stated, they have not been well studied. Be an informed patient!

When taking any substance, caution should always be exercised. There are many drug interactions with over-the-counter supplements, vitamins and other nutraceuticals and a medical professional well-versed in lipid management should be consulted before considering any drug or non-drug protocol.