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**FILE: ■Plant Stanols
■Cholesterol**

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RE: The Potential of Plant Stanols in Reducing Cholesterol – A Review

Salo P, Hopia A. Plant stanol esters: cholesterol-lowering studies. *NutraFoods*. 2004;3(2):23–29.

High cholesterol is an independent risk factor for cardiovascular disease. The U.S. Center for Disease Control and Prevention (CDC) estimates that 105 million Americans have elevated total cholesterol (> 200 mg/dL).¹ Certain plants produce chemicals called *stanols* and *sterols* that are structurally similar to cholesterol. They have been researched for their cholesterol-lowering potential since the 1950s. The authors provide a review of the research on the cholesterol-lowering effects of plant stanols.

People eating a Western diet consume 300-500 mg/day of plant sterols (sitosterol, campesterol, and stigmasterol), which approximates the average daily cholesterol consumption. Stanols are less abundant in nature, and about 30-50 mg/day are ingested. Normally, cholesterol is excreted in bile into the small intestine, where it travels down the gastrointestinal tract and is reabsorbed. Plant stanols, in their ester form, decrease cholesterol by inhibiting its absorption by 50-80%. This increases fecal excretion of cholesterol, thereby lowering blood cholesterol levels.

Plant stanols have been shown to decrease total cholesterol by 14% and LDL cholesterol by 10%. The optimal dose appears to be approximately 2 g/day. Interestingly, eating a low-fat diet in combination with taking stanol supplements does not appear to reduce cholesterol any more than taking stanols by themselves. Supplementing with stanols while taking statin drugs (e.g., Lipitor® or Zocor®) to decrease cholesterol, reduces cholesterol greater than taking statins alone. In one study, 70% of heart transplant patients were able to reduce their statin medications after beginning to supplement with stanols.

Stanols have also been researched for use in "functional foods." These food products are manufactured for health benefits. Benecol® (McNeil Nutritionals, a division of Johnson & Johnson), a margarine enriched with stanol esters was introduced to Finland in 1995. Stanol

esters have been used to enrich yogurt, pasta, and low-fat cheese. Stanol-enriched low-fat yogurt decreased total cholesterol by 9% and LDL cholesterol by 14%.

Statin drugs are currently the standard of care in conventional medicine for the reduction of total and LDL cholesterol. However, these medicines are expensive, costing from \$2 to \$3 per day, and do not come without risk.² Alternative methods of reducing cholesterol that are less expensive and safer than statins drugs can potentially meet an important public health need. Plant stanols are part of a growing list of natural anti-cholesterol supplements, which include the sugar cane policosanol (*Saccharum officinarum*), niacin, vitamin B5, red yeast rice, and gugul (*Commiphora mukul*), among others. The authors do not include reports of adverse events in their review of the research on plant stanols. They also do not inform the reader about the cost of supplementing with stanols. However, since this article was written for a European audience, the supplement cost might be different than in the U.S. or other parts of the world.

—John Neustadt, ND4

References

¹Highlights in minority health: cholesterol education. *U.S. Center for Disease Control and Prevention*. Available at: <http://www.cdc.gov/omh/Highlights/2004/HSept04.htm>. Accessed January 17, 2005.

²Gaby AR. Will statin drugs bankrupt the universe? (Editorial). *Townsend Letter for Doctors and Patients*. February 1 2004.

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