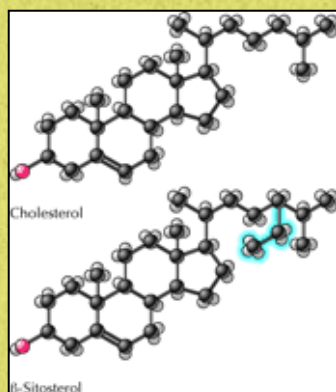




Plant Sterols

Phytochemicals, or “plant chemicals,” have been studied recently in an effort to explain why the consumption of fruits and vegetables may help prevent coronary heart disease. Of the three types of phytochemicals, namely plant sterols, flavonoids, and plant sulfur compounds, only plant sterols have been incorporated into margarine spreads.



Plant sterols are naturally occurring components of plant cell membranes, just like cholesterol is part of animal cell membranes. The three most abundant plant sterols are Beta-sitosterol, Campesterol, and Stigmasterol.

In the 1950's it was recognized that plant sterols lowered serum concentrations of cholesterol. Their chemical appearance is similar to cholesterol, but they are not found in the animal cells.

Plant sterols and their derivatives act in the intestinal track by inhibiting intestinal absorption of cholesterol. Thus, when plant sterols are part of a regular diet, lower serum concentrations of cholesterol can be seen.

Benefits

An analysis of 18 clinical trials suggests that regular consumption of 2 g per day of plant sterols and stanols, compared with margarine alone, lowers LDL cholesterol concentrations by on average of 10%-15%.

At this level of LDL lowering, a reduction in heart disease risk of 25% would be expected.



Take Control and Benecol

These are margarine-like spreads that have recently been authorized by the Food and Drug Administration to include cholesterol lowering claims on their labels. The FDA authorizes the claims based on the evidence that the plant sterol and stanol esters in these products may help lower LDL cholesterol, reducing the risk of coronary heart disease in some individuals. There is no change in HDL cholesterol with these products. Both of these items are available in the dairy case of your local supermarket.



Any Difference in Take Control and Benecol?

Yes, Benecol is composed of plant stanols, which are hydrogenated forms of plant sterols. This type of margarine is synthetically produced, as plant stanols exist only in small quantities in nature. Take Control contains unprocessed plant sterols, which are abundantly available. However, research indicates that both of the cholesterol-lowering margarines work equally well.

Benecol

The key ingredient in Benecol is a plant stanol ester, derived from pine trees. The effective daily dose of Benecol is 1.5 tablespoons a day eaten in three servings of 1.5 teaspoons. Unlike Take Control, the Benecol regular spread can be used for cooking and baking. However, Benecol light is not recommended for cooking.



Take Control

This product uses unmodified plant sterols extracted from soybeans as its active ingredient. Recommendations include using one tablespoon of Take Control as a spread twice a day as part of a diet low in saturated fat and cholesterol. Take Control cannot be used for cooking if the cholesterol-fighting effects of the margarine are to be expected. This is because the plant sterols break down when heated. Take Control is about \$4.00 for one 12 oz. tub of spread.



	Serving	Kcal	Total Fat	Saturated Fat
Benecol	1.5 Tablespoons	120	13.5	1.5
Take Control	1.5 Tablespoons	75	9.0	1.5



Safety?

The most important concern about plant sterols is that they reduce the absorption of some fat soluble vitamins. Randomized trials have shown that plant sterols and stanols have lowered blood concentrations of beta carotene, alpha carotene, and vitamin E by 25, 10, and 8%, respectively. Since these vitamins protect LDL cholesterol from oxidation, a good recommendation would be to consume more fruit and vegetables to counter the decrease in absorption.



Future Areas of Research

A possible inverse link between plant sterol consumption (beta-sitosterol) and cancer risk has been observed. In one study, when compared with a cholesterol control, beta-sitosterol provided to human prostate cancer cell line retarded cell growth rate by 24%. Because prostate cancer occurs worldwide and is the second main cause of cancer-related death in men, future work will undoubtedly be focused in this area.



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