

# Phytosterols Inhibit Cholesterol Absorption Niacin Helps Flush Out Cholesterol Plaque

## Use of Phytosterols and Niacin in Controlling Cholesterol

The principal foods that contain relatively high amounts of cholesterol are eggs, dairy products and meats. Since these are important sources of nutrients...and they taste good...most Americans are reluctant, to say the least, to remove or drastically reduce these foods from their diets.<sup>(1,15)</sup>

The beneficial effect of taking **Phytosterol Complex™** with meals is usually seen within two weeks. For adults, one capsule with each meal is generally suggested, or more, depending on the amount of cholesterol in the meal.

Research has shown that both the degree of reduction in cholesterol absorption and decrease in plasma cholesterol vary greatly with the individual. The greatest decreases in total plasma cholesterol levels have been achieved in individuals whose initial cholesterol levels are highest.<sup>(1,2,5,7,8,9)</sup>

### PHYTOSTEROL COMPLEX™

**Cholestatin® 200 mg. Plus Niacin 20 mg.**

Product No. 864	Fill Size: Vegetable Capsules
Each all-vegetable capsule contains:	% Daily Value
Niacin - Vitamin B-3 (Nicotinic Acid) - - 20 mg.	100%
Cholestatin® Phytosterol Complex - - - 200 mg.	*
Beta-Sitosterol - - - - - - - - - - - 106 mg.	*
Campesterol - - - - - - - - - - - 52 mg.	*
Stigmasterol - - - - - - - - - - - 42 mg.	*

Other ingredients: rice flour, magnesium stearate.

®Cholestatin is a registered trademark of Traco Labs.

This product contains high purity phytosterols without saturated fat, trans-fatty acids or calories. Contains no animal products.

RECOMMENDED USE: One or more capsule with each meal. Two capsules may be taken if the meal is particularly high in cholesterol.

## The Phytosterols — Natural Cholesterol Controllers

Phytosterols have been shown to work in two ways to lower serum cholesterol levels.

Both animal and human studies have shown that phytosterol supplementation with meals consistently reduces the absorption of dietary cholesterol into circulation.<sup>(2-4,7,8,12,14,15)</sup>

One recent study showed "...the less soluble beta sitosterol reduced the solubility of cholesterol...to a greater extent than would be expected from a mole for mole replacement of cholesterol." This implies that each 100 mg. of beta-sitosterol would prevent the absorption of 100 mg. or more of cholesterol.<sup>(4)</sup>

In addition, phytosterols prevent resorption of recirculating cholesterol that is a normal constituent of bile in the intestine. This phenomenon has been shown in both humans and chickens by administering phytosterols in the total absence of dietary cholesterol.<sup>(7,15)</sup>

In a study dealing with familial hypercholesterolemia, the administration of beta-sitosterol reduced LDL (low density lipoprotein and VLDL (very low density lipoprotein) cholesterol and total cholesterol, while HDL (high density lipoprotein - the good cholesterol) levels were elevated. In this study, total cholesterol had dropped by 14.5% after 3 months and continued to drop, primarily due to the drop in LDL and VLDL fractions.<sup>(14)</sup>

Although there may be other mechanisms contributing to the overall cholesterol reducing effects of

phytosterols, interference with cholesterol absorption is a major factor. The exact mechanism by which phytosterols inhibit cholesterol absorption is unclear; however, there is much evidence to indicate that the plant sterols combine with cholesterol to form inseparable mixed crystals which are not absorbable.<sup>(7,12,15)</sup>

The most "intimate mixture" of phytosterols with cholesterol laden foods is important to maximize crystallization and reduce absorption. Therefore, supplements taken with meals are most beneficial.<sup>(2,12)</sup>

Tests were conducted in 1982 using nine human subjects to determine the amount of decrease in cholesterol absorption using plant sterols with a test meal. The researchers concluded that the plant sterols not only need to be taken at the same meal, but that the quantity taken should relate to the amount of cholesterol in the meal.<sup>(2)</sup>

### Natural, Effective and Safe

Phytosterols are fatty acids found in a multitude of vegetables including grains, nuts, seeds and fruits. Among the various types of phytosterols, three have been found to be of greatest nutritional importance. These are beta-sitosterol, stigmasterol and campesterol.<sup>(6,15)</sup>

Research on animals and humans dating as far back as the early 1950's using phytosterols in varying dosages has repeatedly shown their ability to lower plasma cholesterol as well as the total ab-

(over)

sence of any adverse side effects.<sup>(7-10,14,15)</sup> "Oral intake of phytosterols does not interfere with health or the absorption or metabolism of foodstuff other than cholesterol."<sup>(7)</sup>

According to the National Heart Lung and Blood Institute, "cholesterol lowering drugs should be used only on those with the highest risk or when diets fail" and urge that "maximal efforts" at dietary therapy be made before initiating drug therapy. Due to the busy American lifestyle, reducing cholesterol intake can be very difficult and it calls for giving up many of our favorite foods.

## Estimated One in Four Americans Have High Cholesterol

The U.S. Government estimates that one of every four adult Americans has high blood cholesterol. Although cholesterol is found in all body tissues and is manufactured by the body, it is not needed in the diet. Elevated cholesterol levels are a definite risk factor in the development of atherosclerosis, the underlying disorder in most coronary disease and plays a major role in cerebrovascular disease (stroke).<sup>(15)</sup>

A 10-year study by the National Heart, Lung and Blood Institute has shown that the risk of heart attack death drops 2% for every 1% reduction in serum cholesterol. In view of this finding, the National Institute of Health consensus panel agrees that most Americans can achieve a 10% to 15% reduction in serum cholesterol by diet alone. This could mean a 20% to 30% decrease in deaths due to coronary heart disease and could save as many as 150,000 lives a year.<sup>(15)</sup>

Based on the American Heart Association diet, the NIH consensus panel endorsed the following dietary guidelines for all Americans:

- Serum cholesterol should be kept below 200 mg/dl.
- No more than 30% of daily calorie intake should come from fat with no more than 10% from saturated fat.
- Cholesterol intake should be reduced to 250-300 mg. per day.

This diet would represent a major change in the eating habits of most Americans. The average American would consume half as many eggs, 20% less meat, poultry and fish and about 15% less fats and oils.

Proper diet, weight control and exercise are certainly important to our general health and well-being, as well as in controlling cholesterol and lowering the risk of cardiovascular disease. However, for most people some of the time and some people most of the time, absolute control

## Niacin Helps Flush Out Plaque

The National Institute of Health recommends Niacin (vitamin B-3 or nicotinic acid) for lowering cholesterol. Niacin enters the blood stream and helps expand the blood vessels so cholesterol plaque is put into circulation to be eliminated. Thus, **Phytosterol Complex™** provides a double barreled weapon in the war against elevated cholesterol and cardiovascular disease.

A temporary flushing, tingling or itching may result in a few individuals as the niacin acts. This is normal and will disappear with regular use.

over cholesterol intake can be terribly inconvenient if not downright impossible. **Phytosterol Complex™** is nature's way of helping.

WARNING: This information is provided for health care professionals only. **This publication and the product contained herein have not been approved or evaluated by the Food and Drug Administration. This publication, and the product contained herein are not intended to diagnose, treat, cure or prevent any disease.** The product relates to nutritional support only.

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