



designs for health®

FORESTEROL™

NATURAL SUPPORT FOR HEALTHY CHOLESTEROL

90 SOFTGELS | NPN80045348 | FOR090-CN



“There is an urgent clinical need for a low-cost, low-risk intervention that can treat those individuals that have not responded well to dietary modification, and where pharmaceutical intervention is not desirable. Consumption of foods containing phyto-(i.e. plant) sterols has the necessary characteristics to meet that need.” (de Graaf J. et al. Br J Nutr. 2002.)

Foresterol™ contains a phytosterol mixture of plant sterols/stanols that works to support healthy cholesterol levels in the body, as evidenced by research and years of clinical use.

When ingested, phytosterols inhibit absorption of cholesterol, thereby lowering plasma total and low-density lipoprotein (LDL) cholesterol levels.¹ Foresterol™ consists mainly of the four major phytosterols: beta-sitosterol, campesterol (in the free sterol form, not as sterol esters) and campestanol, sitostanol. It has been shown to inhibit absorption of both dietary and biliary cholesterol from the small intestine, therefore even vegetarians with no dietary cholesterol benefit from Foresterol™.

It is important to note that much of the cholesterol found in serum is derived from intestinal reuptake of cholesterol that has been deposited into the intestine from the liver and gall bladder.

WHAT IS THE SOURCE OF FORESTEROL™?

The phytosterol mixture Foresterol™ is sourced from coniferous trees which are non-genetically modified, unlike alternative phytosterol products that are obtained from potentially GMO soybean and/or rapeseed oil seed.

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PROVEN EFFICACY

According to research by de Graaf *et al*, ingestion of 1.8 g of a phytosterol-phytostanol mixture per day for four weeks in patients with baseline elevations of plasma cholesterol, total cholesterol was reduced by 6.4% and LDL cholesterol was reduced by 10.3%. Levels of plasma HDL cholesterol and triglycerides were not affected.⁷ Researchers also note although reduction in cholesterol absorption is partially re-compensated by an increase of cholesterol synthesis, this increase is not large enough and consequently, plasma circulation of total and low-density lipoprotein cholesterol is reduced.⁶ In another study, Jones of McGill University notes that sterol supplementation significantly decreased the estimated cholesterol concentrations within small, medium, and large LDL particles by 13.4, 13.5, and 14.4% respectively.⁴ He quotes, "Plant sterols and exercise favourably alter lipid profiles in a way that protect against future coronary heart disease (CHD)."¹

USE OF PHYTOSTEROLS IN CONJUNCTION WITH STATIN DRUGS

Research has demonstrated that when patients on statin drugs ingest phytosterols, an additional 10% LDL reduction was achieved. Effects are additive with diet or drug interventions: eating foods low in saturated fat and cholesterol and high in stanols or sterols can reduce LDL by 20%.³ When ingested with drugs that inhibit cholesterol absorption, phytosterols have demonstrated an additional 11% reduction in LDL cholesterol.³

PLANTS STEROLS AND FAT-SOLUBLE VITAMIN ABSORPTION

Clinical trials conducted with sterol and stanol ester margarine spread have shown that alpha and beta-carotene levels were reduced by 10-25%, however there appeared to be no effect on serum retinol levels, vitamin D and vitamin K. Since it is known that dietary intake of carotenoids will greatly influence plasma carotenoid content, the decrease in carotenoid levels associated with the intake of sterols can be counter-balanced by a modest consumption of fruits and vegetables.

A meta-analysis of 10-15 trials per vitamin showed that plasma levels of vitamins A and D are not affected by stanols or sterols. Alpha carotene, lycopene, and vitamin E levels remained stable relative to their carrier molecule, LDL. Beta carotene levels declined, but adverse outcomes were not expected.³ What is helpful to know, however, is that the reduction in beta-carotene bioavailability was significantly less with plant-free sterols than with plant sterol esters. The reduction in alpha-tocopherol vitamin E bioavailability was also less with plant free sterols than with plant sterol esters.⁸ Foresterol™ contains free sterols, not sterol esters.

COMBINING FORESTEROL™ WITH EXERCISE

Consider recommending an appropriate exercise regimen along with Foresterol™. As stated by Jones *et al*, "In comparison with plant sterols or exercise alone, the combination of plant sterols and exercise yields the most beneficial alterations in lipid profiles. Implementation of such a combination therapy could improve lipid profiles in those at risk of coronary artery disease."⁴

Medicinal Ingredients (per softgel):

Plant sterols/stanols..... 600 mg

Non-Medicinal Ingredients: Bovine gelatin, water, glycerine (softgel ingredients), curcumin (natural colour). **Recommended Dose:** Adults: Take 3 softgels per day, 1 with each meal, or as directed by your health care practitioner.

REFERENCES

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6. Zawistowski J. ReduCo™ - Cholesterol lowering functional food phytosterols. *Innovations in Food Technology*, pp. 38-41, May 2003.
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Foresterol™

Natural support for healthy cholesterol levels

Foresterol™ is a proprietary formula designed to help support healthy cholesterol levels. Its active ingredient, Reducol™, is a non-GMO (not genetically modified) mixture of phytosterols, which are naturally occurring compounds in plants that have been found to inhibit the production and absorption of cholesterol.

Phytosterols

Phytosterols are considered the plant equivalent to animal cholesterol. Because they are similar in structure to cholesterol, phytosterols compete with cholesterol absorption in the intestines, thereby inhibiting absorption of both dietary cholesterol and cholesterol made by the liver. People consume phytosterols every day in their diets as all plants contain them, but not in amounts sufficient to affect cholesterol levels.

Therefore, in addition to prescription drugs and dietary changes, supplementing with phytosterols may also be very effective. In fact, The National Cholesterol Education Program (established by the National Heart, Lung, and Blood Institute) recommends plant sterols as part of their Therapeutic Lifestyle Changes diet for patients with high cholesterol.

Facts about Cholesterol

Our bodies actually need cholesterol, as it helps to make cell membranes, hormones, and vitamin D, and is important for brain function. What we do not need is an excessive build-up of cholesterol in the wrong places, such as in our arteries, because this may lead to heart disease.

When your doctor tests your cholesterol, there are three main readings to look at:

- **Total cholesterol** – a measure of LDLs, HDLs, and other lipid components
- **LDLs** – transport cholesterol into tissues, where an overabundance can build up in your arteries to form plaque (atherosclerosis), which is undesirable
- **HDLs** – remove excess cholesterol from arterial plaque, which may help prevent heart disease

Total/HDL ratio: the proportion of total cholesterol levels over HDL levels. Aim for your ratio to be below 5, with optimal levels around 3.5.

Recommended Dose: Adults:

- Take 3 capsules per day, 1 with each meal, or as directed by your health care practitioner.
- Consult a health care practitioner if you are pregnant or breastfeeding.
- It is also recommended that you exercise (with the consent of your physician).

Does not contain gluten.

