

Nutrition and Health Info Sheet

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Some Facts About Plant Sterols

What are cholesterol and plant sterols?



Cholesterol is a substance that is used in the body. It is used in cell membranes, to make bile, and to make some kinds of hormones. Plant sterols are the plant version of cholesterol. Humans can make cholesterol in the liver or get it from food, but our bodies can't make any kind of plant sterol. We only get those from food.

What are low-density lipoprotein (LDL) cholesterol and high-density lipoprotein (HDL) cholesterol?

Low-density lipoproteins (LDL) and high-density lipoproteins (HDL) are special particles used to move fat and cholesterol around in the blood. LDL-cholesterol and HDL-cholesterol refer to the cholesterol that is carried by these lipoproteins. The cholesterol that is carried by the lipoproteins includes cholesterol that comes from the food we eat, but also cholesterol that is made by the liver.

Low-density lipoprotein (LDL) cholesterol is sometimes called "bad" cholesterol. Too much in the blood (above 160 mg/dl) can raise a person's risk for heart disease (1).

Table 1. Cholesterol in the blood (1)

	Healthy Levels (mg/dl)	Unhealthy Levels (mg/dl)
Low-density lipoprotein (LDL, "bad" cholesterol)	Less than 100	More than 160
High-density lipoprotein (HDL, "good" cholesterol)	More than 60	Men: Less than 40 Women: Less than 50

High-density lipoprotein (HDL) cholesterol is sometimes called "good" cholesterol. Having more of this can help protect against heart disease. HDL cholesterol that is too low (below 40 mg/dl for men and 50 mg/dl for women) can raise a person's risk of heart disease (1).

What is the evidence that plant sterols protect against disease?

Studies have found that eating 1-2 grams each day of plant sterols can lower LDL cholesterol by 6 to 10 percent. This may lower risk for heart disease (2-4).



How do plant sterols work?

Plant sterols work by keeping the small intestine from absorbing as much cholesterol as it normally would. With less cholesterol being absorbed, LDL-cholesterol goes down. (3, 4).

What is the recommended intake?

The National Cholesterol Education Program recommends 2 grams of plant sterols a day as an option to help lower LDL cholesterol (1).

What are some foods that have plant sterols?

Plant sterols are found in very small amounts in many vegetable oils and nuts. There are also foods that have extra plant sterols added. (See table 2 for a list of foods with plant sterols).

Table 2. Foods containing plant sterols

Food or Supplement	Serving size	Plant sterols per serving (g)	Calories per serving
Brussels sprouts	½ cup	0.035	28
Almonds	1 ounce	0.039	163
Wheat bran	½ cup	0.058	63
Peanuts	1 ounce	0.062	166
Canola oil	1 tablespoon	0.092	120
Corn oil	1 tablespoon	0.102	120
Sesame oil	1 tablespoon	0.118	120
Wheat germ	½ cup	0.197	207
Centrum Cardio	1 tablet	0.4	N/A
Giant Eagle Fat Free Milk with Corowise Plant Sterols	8 fl oz (1 cup)	0.4 g	90
Kroger Active Lifestyle Milk	8 fl oz (1 cup)	0.4	90
Smart Balance Heart Right Fat Free Milk	8 fl oz (1 cup)	0.4	110
VitaFusion HeartOne Gummy Vitamins	2 gummy vitamins	0.4	15
Lifetime Low Fat Cheese (Cheddar, Extra Sharp Cheddar, Jalapeno Jack, Mozzarella and Swiss)	1 oz	0.65	47
Rice Dream Heart Wise – Original Flavor	8 fl oz (1 cup)	0.65	130
Rice Dream Heart Wise – Vanilla Flavor	8 fl oz (1 cup)	0.65	140
Silk Heart Health	8 fl oz (1 cup)	0.65	80
Benecol Smart Chews	1 chew	0.7	20
Cardio Chews (Cherry and Chocolate flavors)	2 chews	0.8	30
Kroger Active Lifestyle Bread 5 Seed Whole Grain	2 slices	0.8	160
Kroger Active Lifestyle Bread Honey Oat	2 slices	0.8	150
Benecol Light Spread	1 tablespoon	0.85	50
Benecol Spread	1 tablespoon	0.85	70
Minute Maid Premium Heartwise Orange Juice	8 fl oz (1 cup)	1	110
Promise activ Light Spread	1 tablespoon	1	45
Smart Balance Heart Right Light Spread	1 tablespoon	1.7	45
Smart Balance Heart Right Spread	1 tablespoon	1.7	80

Information for this table was obtained from: USDA Nutrient Database for Standard Reference; manufacturer's published data; Oregon State University Linus Pauling Institute Micronutrient Research Center (<http://lpi.oregonstate.edu/infocenter/phytochemicals/sterols/>).

Can too much be harmful?

Eating too many plant sterols might reduce absorption of beta-carotene, a kind of vitamin A (5). Those with the rare disorders known as sitosterolemia or phytosterolemia should stay away from foods with added plant sterols (1). Pregnant and breast-feeding women should also stay away from foods with added plant sterols, as the safety of these has not been studied in these groups (1).

References:

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