

WRNNMC Pediatric Endocrinology

Plant Sterols and Fiber



PLANT STEROLS

What are some ways to lower cholesterol through diet?

Eating or taking the following may help to lower cholesterol through diet: fiber that absorbs water or that is thick and sticky, fiber supplements, plant sterols and stanols, sterol or stanol supplements, and nuts.

What are plant sterols and stanols?

Plant sterols and stanols are substances naturally found in fruits, vegetables, whole grains, legumes, nuts and seeds.

How do plant sterols and stanols affect my body?

Research has shown that plant sterols and stanols help lower cholesterol. Cholesterol is a waxy substance your body uses to protect nerves, make cell tissues and produce certain hormones. Your liver makes all the cholesterol your body needs. Your body also gets cholesterol directly from the food you eat (such as eggs, meats and dairy products).

There are 2 types of cholesterol: low-density lipoprotein (LDL), or "bad" cholesterol, and high-density lipoprotein (HDL), or "good" cholesterol. High levels of LDL cholesterol can damage your arteries and contribute to heart disease. A high level of HDL cholesterol, on the other hand, can actually help protect your arteries and prevent atherosclerosis.

If you have high cholesterol, eating plant sterols and stanols can help lower your LDL cholesterol while keeping your HDL cholesterol the same. Normally, your body's small intestine absorbs cholesterol from the foods you eat. To your body, plant sterols and stanols "look" a lot like cholesterol. They can prevent your body from absorbing LDL cholesterol. Over time, this lowers the level of LDL cholesterol in your blood.

How much do I need to help lower my cholesterol?

If you need to lower your cholesterol, the National Cholesterol Education Program recommends that you take in 2 grams of plant sterols and stanols each day. However, it is important to remember that plant sterols and stanols alone will not help you reach your cholesterol goals. To improve your cholesterol levels, you will also need to make lifestyle changes that include eating a heart-healthy diet, exercising and quitting smoking.

What foods contain plant sterols and stanols?

Although plant sterols and stanols are naturally found in some foods, these amounts have only a very small effect on cholesterol levels. To use sterols and stanols to reduce your LDL cholesterol level, you will need more than these foods can provide.

Some foods are now fortified with plant sterols and stanols. These include fortified margarines, cheese, orange juice, milk and bread. Dietary supplements are also available.

If you do use these products, keep in mind that the amount of plant sterols/stanols varies from product to product. For example, a 2- to 4-tablespoon serving of margarine fortified with plant sterols provides the recommended 2 grams. Two 8-oz. servings of fortified orange juice also provides the recommended amount. You must read label information carefully to find out the appropriate daily dosage or serving size of these products. Also, remember that more isn't always better.

You still need to eat a wide variety of foods and be aware of how many calories you are eating.

FIBER

Fiber can help decrease the absorption of cholesterol also reduces the speed at which starches and sugars in food are absorbed by the body. If taken before meals, it may promote weight loss by absorbing water and giving the sense of being full.

Good sources of helpful fiber:

- **Oat bran** binds cholesterol and prevents absorption.
- **Ground flax seed** also has the benefit of being rich in omega-3 fatty acids. The best and most cost-effective way to take flax seed is to buy the seed in bulk and grind up a week's worth in a coffee grinder. Once you grind the seed, it spoils quickly so store it in the refrigerator. Take 1-2 tablespoons daily over salads, with cereal or on yogurt.
- **Wheat, barley, fungi, and yeast** are other sources of helpful fiber. Barley can lower LDL cholesterol by about 10 points. Three grams of barley oil extract, or 30 grams of barley bran flour, or 0.4 to 6 grams of fiber from barley have been used in studies. Pearled barley, or barley flour, flakes, or powder in doses of 3-12 grams each day have also been used.

Nutritional fiber supplements

These can be taken at a dose of 1 Tbsp. in 8-10 oz of water daily or 1 tsp. in 6-8 oz of water before each meal.

- o **Psyllium** (*Metamucil* and others)
- o **Methyl cellulose** (*Citrucel*)
- o **Guar gum** (*NOW Foods guar gum powder*) Less gritty and tastes better than psyllium.
- o **Ground flax seed**