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NEW
PLANT
COMPOUNDS
IN THESE HEALTHY,
CHOLESTEROL-LOWERING
FOODS SLASH YOUR RISK OF
HEART DISEASE BY 20 PERCENT.
WHAT TO BUY AND HOW TO EAT THEM.

NATURE'S HEART HEALERS

MAKE ROOM IN your pantry for a new batch of disease-fighting products: foods fortified with sterols and stanols, plant compounds proven to protect your heart. Sterols and stanols are found naturally in fruits,

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vegetables, nuts, and oils. Adding 2 g of either to your daily diet can help lower your total cholesterol by about 10%—often within 2 weeks, according to numerous studies published in both American and European medical journals. That may not sound like a substantial reduction, but it could translate to a 20% lower risk of heart disease—which is the number one killer in the United States, says Joseph Keenan, MD, a professor of family medicine and a joint professor of food science and nutrition at the University of Minnesota.

Our primer will help you better understand how these unique compounds work, how they can protect your health, and the easiest way to incorporate them into your diet.

WHY THEY'RE MAKING NEWS

For more than 5 decades, scientists have known about the health benefits of these compounds, but natural foods don't provide a high enough concentration to budge your cholesterol.

MOVES TO CUT LDL 30%

- **Reduce saturated fat to less than 7% of calories (for a 2,000 calorie diet, that's less than 15.5 g)**
- **Control calories to help maintain a healthy weight**
- **Decrease dietary cholesterol to less than 200 mg per day**
- **Have 20–30 g of fiber per day (10–25 g should be soluble fiber)**
- **Add 2 g of sterols/stanols per day**

SOURCE: NATIONAL INSTITUTES OF HEALTH'S CHOLESTEROL EDUCATION PROGRAM

(A tablespoon of corn oil, the best natural source, has only 0.13 g of sterols; that's a long way to go to reach the recommended 2 g a day.) But in the 1980s, Finnish chemists found a way to extract the sterols and stanols from plants and add them to the fat in foods. These new compounds, called sterol and stanol esters, first cropped up in margarine-type spreads in 2000. Today, new technology allows researchers to extract them from different plants and fortify more foods—such as cheese, orange juice, breads, and milk. Popular sterol brands you'll find in foods include Cardio-Aid (made by food manufacturer Archer Daniels Midland) and Coro-Wise (made by Cargill). By next year, global market researchers predict sterol-fortified products will be a \$250 million industry, nearly three times what it was when such products first hit supermarket shelves.

HOW DO THEY WORK?

Plant sterols and stanols act very much like cholesterol itself: Soft and waxy, they serve as building blocks for hormones, vitamins, and cell walls. These structural similarities give them their cholesterol-lowering capabilities. As sterols travel through the digestive tract, they compete with cholesterol, so some of the sterols are absorbed into the bloodstream instead of artery-clogging cholesterol. The bonus: Studies show that sterols and stanols don't affect artery-protecting HDL cholesterol.

WHO NEEDS THEM?

Sterols are most helpful when your cholesterol levels are slightly high (200 to 239 total cholesterol, 130 to 159



LDL). If your levels are substantially elevated (240 or higher total, 160 or higher LDL), your doctor will help determine if sterols, cholesterol-lowering medication (statins), or a combination of the two is best. Studies have shown that together, sterols and statins are more effective than taking a double dose of cholesterol-lowering medications, according to a report by researchers at Wageningen University in the Netherlands. They're an especially good choice for avoiding drug side effects. "If one of my patients has a high LDL level but doesn't tolerate statin drugs well, I recommend plant sterols and plenty of fiber," says Arthur Agatston, MD, a preventive cardiologist and an assistant professor of medicine at the University of Miami Miller School of Medicine.

If your cholesterol is healthy (less than 200 total, less than 100 LDL), adding sterols to your diet won't hurt, but the cholesterol reductions will not be as great, says Cyril Kendall, PhD, a research scientist at the University of Toronto who has studied plant sterols for the past 7 years.

WHO SHOULD AVOID THEM?

Scientists don't know if sterol- and stanol-fortified foods are safe for pregnant women and children, so it's best if these groups skip them altogether. Also important to note: Initial research indicates that sterols can interfere with the absorption of some carotenoids, such as beta-carotene, which your body uses to make vitamin A. If you eat sterols,

NATURE'S TOP 10

Fortified products may offer a heftier dose, but these natural foods have some sterols plus other benefits:

1 CORN OIL It's a good source of healthy polyunsaturated fat, which helps cut cholesterol. **0.13 g* per 1 Tbsp**

2 SUNFLOWER OIL High in monounsaturated fat, it lowers risk of heart disease and provides nutrients to keep cells healthy. **0.1 g* per 1 Tbsp**

3 BEANS They're full of fiber; studies show fiber-rich foods help lower your heart attack risk. **0.07 g* per 1/2 c**

4 CORN It contains folate, a B vitamin that reduces damage to blood vessels. **0.06 g* per 1/2 c**

5 PEANUT BUTTER The protein keeps you feeling full, which helps keep weight in check. **0.05 g* per 2 Tbsp**

6 OLIVE OIL An excellent source of good monounsaturated fats, which help lower bad LDL cholesterol and raise good HDL cholesterol. **0.03 g* per 1 Tbsp**

7 ALMONDS The monounsaturated fats and vitamin E work together to cut cholesterol. **0.02 g* per 1 oz**

8 ORANGE This fruit is an excellent source of immune-boosting vitamin C. **0.02 g* per 1 small**

9 APPLE It provides filling, waist-friendly fiber. **0.01 g* per 1 small**

10 AVOCADO Known for the monounsaturated fat, it also contains potassium to help regulate blood pressure. **0.008 g* per 1 oz**

*Amount of natural sterols present.

include a few servings of vegetables rich in beta-carotene—such as carrots, squash, sweet potatoes, and dark leafy greens—to your diet once or twice a week to compensate, suggests Keenan.

HOW DO YOU EAT THEM?

Stick to 2 g a day; getting more may actually reduce the positive effects, says Kendall. And once you start eating sterol-fortified foods, don't stop—otherwise your LDL levels will head back up. Follow these guidelines:

■ Split up your 2 g daily goal

“Have about 1 g at breakfast, and then another at either lunch or dinner,” says Keenan. This not only helps prevent absorption of the cholesterol in your meal but also blocks the cholesterol your body manufactures during digestion—which amounts to about 80% of your total count.

■ **Use them as substitutes** If a food you already eat comes in a sterol-fortified version, use that product instead. Otherwise, try to cut an equivalent

STEROLS AT THE SUPERMARKET

The National Institutes of Health advises getting 2 g daily of plant sterols and stanols from fortified foods like these to lower your cholesterol.


| | STEROL | CAL | FAT | FIBER |
|-------------------------------------------------------------------------------|--------|-----|---------------------|---------------|
| DAIRY AISLE | | | | |
| 1. Promise Activ Super Shots (serving size: 3 oz) | 2 g | 70 | 3.5 g (0 g sat fat) | Less than 1 g |
| 2. Lifetime Low Fat Block Cheddar (serving size: 1 oz) | 0.65 g | 55 | 2.5 g (1 g sat fat) | 1 g |
| 3. Lifetime Low Fat Cheese Singles (serving size: 1 slice) | 0.65 g | 30 | 1 g (0.5 g sat fat) | 0 g |
| 4. Kroger Active Lifestyle Fat Free Milk (serving size: 8 oz) | 0.4 g | 90 | 0 g | 0 g |
| JUICES AND DRINKS | | | | |
| 5. CocoaVia Rich Chocolate Indulgence Beverage (serving size: 5.65 oz) | 1.1 g | 150 | 3 g (1 g sat fat) | 3 g |
| 6. Minute Maid Premium Heart Wise Orange Juice (serving size: 8 oz) | 1 g | 110 | 0 g | Less than 1 g |
| 7. Rice Dream Heartwise Vanilla Rice Milk (serving size: 8 oz) | 0.65 g | 140 | 2 g | 3 g |



number of calories elsewhere in your diet. Because sterol-fortified foods aren't necessarily low cal, they may cause harmful weight gain if you aren't mindful of how much you're eating.

■ **Include them as part of a low-fat, low-cholesterol, high-fiber diet** That will reduce your risk of heart disease even more. Although sterols and stanols do give your heart a boost, they aren't your only route to good health. See "Moves to Cut LDL 30%" on p. 186 for ideal eating rules for your heart. ■

HEART HEALTH FOR YOU!

 For an extended list of sterol-fortified foods and a sample cholesterol-cutting menu, and to create and print a customized grocery list, visit prevention.com/heartsmartfoods.

| | STEROL | CAL | FAT | FIBER |
|-------------------------------------------------------------------------------------------------------------------------|--------|-----------|---------------------------------|-----------|
| BREAD | | | | |
| 8. Thomas' Hearty Grains Oatmeal and Honey English Muffins (serving size: 1 muffin) <i>bagels also available</i> | 0.4 g | Up to 290 | Up to 2 g (up to 0.5 g sat fat) | Up to 3 g |
| 9. Vitamuffin Dark Chocolate Pomegranate Vita Top (serving size: 1 muffin top) | 0.4 g | 100 | 1.5 g (0.5 g sat fat) | 6 g |
| SNACKS | | | | |
| 10. Right Direction Cookies (serving size: 1 cookie) <i>Chocolate Chip and Oatmeal Raisin available</i> | 1.3 g | Up to 150 | Up to 6 g (up to 2 g sat fat) | Up to 6 g |
| 11. CocoaVia Chocolate Covered Almonds (serving size: 1 oz) | 1.1 g | 140 | 11 g (3.5 g sat fat) | 3 g |
| 12. Nature Valley Healthy Heart Chewy Honey-Nut Granola Bar (serving size: 1 bar) | 0.4 g | 160 | 4 g (0.5 g sat fat) | 3 g |
| 13. Corazonas Tortilla Chips (serving size: 1 oz) | 0.4 g | 140 | 7 g (0.5 g sat fat) | 3 g |

