

Heart Foundation

Position Statement

Phytosterol/stanol enriched foods

Questions and Answers – General

August 2007

What are plant sterols?

Plant sterols (or phytosterols) are a naturally occurring part of all plants. They are mainly found in vegetable oils but are also present in smaller amounts in nuts, legumes, grains, cereals, wood pulp and leaves.

What are plant sterol enriched foods?

Plant sterol enriched foods are foods which have had plant sterols added to them. The main sources of plant sterols added to foods in Australia are soybean oil or tall (pine) oil.

What effect do plant sterols have on blood cholesterol levels?

Plant sterols have been shown to lower blood cholesterol levels by about 10% depending on the age and individual metabolism of the person. The lower your blood cholesterol level the lower your risk of heart disease.

Plant sterols and cholesterol have a similar chemical structure. Because of their similarity, plant sterols and cholesterol compete for absorption in the small intestine, so the plant sterols actually stop the cholesterol from being absorbed.

Why is it important to lower blood cholesterol levels?

The higher your blood cholesterol level, the higher your risk of heart disease. High blood cholesterol is a major cause of a process called atherosclerosis, which can gradually clog the blood vessels supplying the heart, brain and other parts of the body. This 'clogging' may eventually prevent the blood from getting to parts of your heart or brain, resulting in a heart attack or stroke.

In Australia, 51% of adults have high blood cholesterol – that's 6.4 million adults¹. Research shows that if you lower your blood cholesterol levels you will lower your risk of heart disease and stroke².

¹ Australian Institute of Health and Welfare (AIHW) 2004. Heart, stroke and vascular diseases – Australian facts 2004. AIHW Cat. No. CVD 27. Canberra: AIHW and National Heart Foundation of Australia (Cardiovascular Disease Series No. 22).

² Zhang X, Patel A, Horibe H, Wu Z, Barzi F, Rodgers A, MacMahon S, Woodward M and Asia Pacific Cohort Studies Collaboration: Cholesterol, coronary heart disease, and stroke in the Asia Pacific region. *Int J Epidemiol.* Aug;32: 563-72, 2003

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I have high blood cholesterol. How much plant sterol enriched food should I consume?

For people with high blood cholesterol, the Heart Foundation recommends consuming 2 to 3 grams of plant sterols every day from plant sterol enriched foods. In Australia the foods approved for enrichment with plant sterols are: margarine spreads, breakfast cereal, low-fat yoghurt and low-fat milk.

Australian regulations allow between 0.8 grams and 1.0 gram of plant sterols per serve of these foods; which means you can consume a total of 2 or 3 serves per day (make sure you look for the brands that have the plant sterols added).

For example, one serve of plant sterol enriched foods is approximately:

- 10 grams of margarine (about 2 teaspoons)
- 45 grams of cereal (about 1 cup or two biscuits)
- 250 millilitres low-fat milk (about 1 cup)
- 200 grams of reduced-fat yoghurt (1 small tub)

Who should eat plant sterol enriched foods?

These products will benefit people who are at risk of heart disease, and in particular have high blood cholesterol levels. People with familial hypercholesterolaemia or diabetes may also choose plant sterol enriched foods to help lower blood cholesterol levels.

How can I lower my blood cholesterol levels?

There are several lifestyle changes that will help to lower blood cholesterol levels. Some of these are listed below.

- be smoke-free (for information and help on quitting smoking, call the Quitline on 13 QUIT)
- achieve and maintain a healthy body weight
- choose polyunsaturated or monounsaturated oils and margarine spreads
- choose foods such as wholegrain bread and cereals, brown rice, wholemeal pasta, vegetables, fruits, legumes (e.g. chick peas, kidney beans and lentils), lean meats and poultry, oily fish and reduced fat dairy products
- consume plant sterol enriched foods as part of a health eating plan
- limit cholesterol-rich foods including offal and egg yolks if advised to do so
- limit alcohol intake to no more than 2 standard drinks per day (men) or no more than 1 standard drink per day (women)

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- get at least 30 minutes of moderate intensity physical activity on most, if not all, days of the week.

There are some people who may need medication to lower their blood cholesterol levels as well as making these lifestyle changes. If prescribed for you, take the cholesterol lowering medication as advised.

Can I eat too many plant sterol enriched foods?

Plant sterol enriched foods can be included in a healthy eating plan. The recommended intake is 2 to 3 grams per day which is approximately 2 or 3 serves of plant sterol enriched foods per day. Consuming more than this amount will do you no harm but will not give you any additional benefits.

Remember, for good health it is important to enjoy a variety of food every day, such as wholegrain cereals and breads, rice, pasta, fruit and vegetables, legumes, lean meats, poultry, fish and reduced fat dairy products.

Doesn't the Heart Foundation recommend eating less margarine spread, not more?

The Heart Foundation recommends you replace saturated fats such as butter and dairy blends, with polyunsaturated or monounsaturated margarine spreads and oils. These fats help to lower blood cholesterol levels and have other heart health benefits. The plant sterol enriched margarine spreads are high in polyunsaturated and monounsaturated fats, plus have the benefits of plant sterols to help lower your blood cholesterol levels further. The Heart Foundation recommends all polyunsaturated or monounsaturated margarine spreads be consumed in moderate amounts.

For added cholesterol-lowering benefits, you may like to switch to plant sterol enriched margarine and use this as 1 to 2 of your daily plant sterol serves.

Should I stop taking my medication if I am eating plant sterol enriched foods?

Plant sterols are not meant to replace cholesterol lowering drugs. If you are already on cholesterol lowering medication, continue taking it as recommended by your doctor. You can use plant sterol enriched foods at the same time as taking your cholesterol lowering medication, but check with your doctor first. Research shows that plant sterol enriched foods work together with cholesterol lowering drugs such as statins, to have an even greater impact on lowering blood cholesterol levels.

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Will plant sterol enriched foods stop me from having a heart attack?

No food can guarantee anyone against a heart attack. There are a number of risk factors for heart disease, one of which is high blood cholesterol. By consuming plant sterol enriched foods, we know that people can significantly lower their blood cholesterol levels.

Can children eat plant sterol enriched foods?

Plant sterol enriched foods are most useful for people with high blood cholesterol levels. In general, children (other than those with familial hypercholesterolaemia) and lactating or pregnant women do not need plant sterol-enriched products because it is not appropriate to reduce blood cholesterol in these situations.

Studies in pregnant women are not available; however, the effects of plant sterols in children with familial hypercholesterolaemia are well studied. While consumption by children with high cholesterol is without adverse effects, it is agreed that children do not derive a benefit to the same extent as adults from a reduction in their cholesterol levels.

Are there any side effects from eating plant sterols?

Research has not found evidence of safety concerns from the consumption of plant sterols, although such studies have only continued for around 12 months. Longer term safety studies have not been performed.

Do plant sterols interfere with other nutrients in the body?

Plant sterols have been shown to lower the levels of carotenoids in the blood. People who have lower levels of carotenoids in their blood may have a greater risk of heart disease. The Heart Foundation recommends consuming plant sterol enriched foods within an eating plan high in beta-carotene. This means eating at least one serve of orange/yellow coloured fruit and vegetables, such as: carrots, pumpkin, sweet potato, broccoli, spinach, squash, apricots, mangoes and rockmelon, every day.

Further information

For more information, contact the Heart Foundation on **1300 36 27 87** (local call cost) or email heartline@heartfoundation.org.au, or visit www.heartfoundation.org.au.