

Heart Foundation

Position Statement

Phytosterol/stanol enriched foods

Questions and Answers – Professional

August 2007

Background

Epidemiological data has shown a continuous linear relationship between low-density lipoprotein cholesterol (LDL-cholesterol) levels and coronary heart disease (CHD) events^{1,2}. Studies indicate that incorporating plant sterols into the diet may be an effective method of lowering total and LDL-cholesterol levels. By consuming plant sterols daily, adults may lower their LDL-cholesterol levels by around 10% depending on the age of the person. A reduced blood cholesterol level is associated with a reduced risk of CHD and stroke.

The Heart Foundation reviewed the relevant scientific research and developed the publication *Summary of evidence on phytosterol/stanol enriched foods* and associated *Position Statement*. Both papers are available from www.heartfoundation.org.au.

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. The main sources of plant sterols added to foods in Australia are soybean oil or tall (pine) oil.

What does the Heart Foundation recommend for adults with high blood cholesterol?

To lower LDL-cholesterol the Heart Foundation recommends adults consume 2 to 3 grams of plant sterols per day from plant sterol enriched foods. Consuming more than this amount will not do harm but will not give any additional benefits.

In Australia, foods approved for enrichment with plant sterols are: margarine spreads, breakfast cereal, low-fat yoghurt and low-fat milk. Australian regulations allow 0.8 grams - 1.0 gram of plant sterols per serve of these foods; which means you should advise your patients to consume 2 to 3 serves of plant sterol enriched foods per day.

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

- 10 grams of margarine spread (about 2 teaspoons)
- 45 grams of cereal (about 1 cup or two breakfast 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 those people at risk of cardiovascular disease, and in particular those with high blood LDL-cholesterol levels. People with familial hypercholesterolaemia or diabetes should also choose plant sterol enriched foods.

How will plant sterol enriched foods affect a patient's statin treatment?

Plant sterols are not meant to replace cholesterol lowering drugs. If patients are already on cholesterol lowering medication, they should continue taking it. Research shows that plant sterol enriched foods work together with statins, to have an even greater impact on lowering LDL-cholesterol levels.

How safe are plant sterols?

There is no evidence of safety concerns associated with the short-term (12 months) consumption of plant sterols. Long-term safety studies have not yet been performed.

Plant sterols have been shown to lower the levels of carotenoids in the blood. Lower levels of blood carotenoids may increase risk of CHD. To counteract this, the Heart Foundation recommends an eating plan that is low in saturated fat and high in fish, wholegrains and fruit and vegetables. In particular, individuals should choose at least one daily serve (half a cup of cooked/stewed or 1 cup or raw) of orange/yellow fruit/vegetables high in beta-carotene such as: carrots, pumpkin, sweet potato, broccoli, spinach, squash, apricots, mangoes and rockmelon.

What lifestyle changes can patients take to lower their blood cholesterol?

Lifestyle is very important in helping to control blood cholesterol and its associated risks. Health professionals should advise patients to:

- be smoke-free (for 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, 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)

Heart Foundation

Position Statement

Phytosterol/stanol enriched foods

Questions and Answers – Professional

August 2007

- undertake at least 30 minutes of moderate intensity physical activity on most, if not all, days of the week.
- take cholesterol-lowering medication as advised if prescribed.

References

1. 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.
2. Barzi F, Patel A, Woodward M, Lawes C, Ohkubo T, Gu D, Lam T, Ueshima H and Asia Pacific Cohort Studies Collaboration: A comparison of lipid variables as predictors of cardiovascular disease in the Asia Pacific region. *Ann Epidemiol.* May;15: 405-13, 2005.

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.

For a detailed discussion of the evidence, please refer to the full *Summary of evidence on phytosterol/stanol enriched foods* and the accompanying *Position Statement on www.heartfoundation.org.au*. A separate Q&A for the general population suitable for patients is also available from the website.