

Food Fact Sheet: Stanols and Sterols

Plant stanols and plant sterols are found in a range of plant foods such as cereals, vegetable oils, seeds and nuts. This Food Fact Sheet will look at their role in reducing the bad type of cholesterol in our blood which can lead to heart disease and stroke.

What do plant stanols and sterols do?

Because they have a similar structure to cholesterol, plant stanols and sterols work to reduce the absorption of cholesterol in the gut so more is lost in the faeces (poo). This in turn helps to lower total cholesterol and LDL-cholesterol (the bad type of cholesterol) in the blood. There are a number of good quality studies to support this. High cholesterol levels have been shown to increase the risk of coronary heart disease and stroke. Stanols and sterols do reduce cholesterol. However, we do not have enough evidence to show that they reduce or prevent heart problems or strokes, as little research has been done in this field.

Most doctors agree that a total cholesterol level below 5mmol/L and an LDL-cholesterol below 3mmol/L are considered healthy. People at high risk/with existing coronary heart disease, may be asked to lower their cholesterol levels further.

How much plant stanols and sterols do I need?

Most diets provide a small amount of plant stanols and sterols (around 300mg per day); vegetarian diets contain about twice this amount. It is not essential to take plant stanols or sterols to help manage your cholesterol. There may be other simpler and less expensive changes that you can make, such as regular exercise and eating plenty of fruit, vegetables, pulses and wholegrains and choosing lean meat, lower fat dairy products, fish, nuts and soya foods more often and replacing butter and lard with vegetable, nut and seed oils.

However, people at high risk of heart disease, especially those with high blood cholesterol levels, may benefit from eating foods that have added (fortified) plant stanols and sterols. If you do choose to use a plant stanol or sterol product in addition to the changes outlined above, they need to be eaten every day, with meals, and in the right amount. An intake of 1.5-2.4g per day can lower cholesterol by 7-10% and an intake of 2.5-3.0g per day by 10-12.5% in two to three weeks. If you stop using the products then the potential benefit of lowered cholesterol will also stop.

Most studies show that eating more than the recommended 3g per day of plant stanols/sterols is unlikely to lower cholesterol levels further and may have a negative effect on the absorption of fat soluble vitamins.

Why are stanols and sterols added to foods?

It is not possible to get enough plant stanols and sterols to help lower cholesterol from the foods we eat. However there is a range of dairy foods which have been fortified with plant stanols and sterols which can help you reach the amount needed to help lower your cholesterol. These include fortified milk, spreads, yoghurts and yoghurt drinks. These products are more expensive compared to ordinary spreads, milk and yoghurts and recent research suggests it is more important to buy healthy foods rather than stanols and sterols if money is tight. Both branded and own-label products are available.

Plant sterols and stanols may be also added to other foods as well as being present in supplements. However, because of a lack of research, it is not known if these products are as effective at lowering cholesterol as fortified dairy foods.

Safety

One concern with plant stanols and sterols is that they may reduce the absorption of fat soluble vitamins. However, in general, any reduction in fat soluble vitamins can be compensated for by making sure you eat a diet that is rich in fruit and vegetables.

As the consumption of plant sterols and stanols can interfere with the absorption of beta-carotene, it is important to choose at least one fruit or vegetable high in beta-carotene (such as carrot, pumpkin, squash, broccoli, spinach, apricot, mango or rock melon) daily.

It is unlikely that people with 'normal' levels of cholesterol will benefit from including plant stanols and sterols fortified foods. As cholesterol is essential for normal growth these products are not recommended for children or women who are pregnant or breastfeeding unless on the advice of a doctor or dietitian.

Studies have shown that products containing plant stanols and sterols are safe to use in conjunction with and as an addition to cholesterol-lowering medications, but they should not replace what is prescribed by a doctor.

Adding stanol and sterol fortified foods to the diet may be more effective than doubling a statin (a type of cholesterol lowering medication) dose. However sterols and stanols are not usually recommended when taking ezetimibe, a cholesterol lowering medicine usually prescribed by a specialist. This is because they both work in a similar way, and plant sterols and stanols are unlikely to have any extra effect.

How do I ensure the right intake?

To be effective any plant sterol or stanol fortified foods or supplements need to be consumed at meal times. This is because they work by mixing with the food in your intestines. To provide 1.5-3g per day of plant stanol/sterol you need to consume either:

- one plant sterol or stanol fortified mini yoghurt drink per day

or

- 2-3 portions of foods providing at least 0.8g of plant sterol per day:
 - two teaspoons fortified spread
 - one fortified yoghurt
 - a glass (250ml) milk.

Summary

High blood cholesterol levels increase the risk of developing coronary heart disease. Research has shown that consuming sterols and stanols in combination with a healthy lifestyle can significantly lower blood cholesterol.

However, it is not essential to take plant stanols or sterols to help manage your cholesterol. There may be other simpler changes that you can make, such as regular exercise and eating plenty of healthy food low in saturated fat. People with high cholesterol or risk of coronary heart disease may benefit from eating recommended amounts of dairy products fortified with plant stanols and sterols. However, this should not replace prescribed cholesterol-lowering medication but can be used in addition to these medications.