

# Science Read

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## **Designer Food: Hype or health benefits**

Functional food is taking up more space on supermarket shelves. But not all types are healthier.

Madam Koh Siew Luan, 74, recently switched to milk powder that has been fortified with heart-friendly omega-3 fatty acids. The retiree, who is on medication for high blood pressure, said she had been feeling out of breath recently and wanted to do more to protect her heart. Buying fortified milk powder seemed so easy and beneficial to her health. She said: "The new milk powder was only about a dollar more than the old one. So, I thought I would give it a try."

Spurred by health-conscious consumers such as Madam Koh, "functional food"- food which has added ingredients that claim to confer health benefits beyond basic nutrition - is making its presence felt on supermarket shelves. Besides food and beverages fortified with omega-3 fatty acids, there are also milk and margarine which

come with plant sterols (beneficial substances that occur naturally in plants) to lower blood cholesterol, and yogurt with prebiotics and probiotics added to promote gut health.

The functional food market is forecast to rise from \$32 billion last year to \$38 billion by next year, with Asia-Pacific accounting for 40 per cent of the total market share, the Ministry of Health here said last year.

Riding on the trend, the Health Promotion Board (HPB) in Singapore launched the Finest Food Programme in 2011, a one-stop resource hub to equip industry players venturing into the functional food market with the necessary knowledge and skills. Finest is an acronym for Functional, Innovative, Nutritious, Effective, Science-based and Tasty. The programme introduced salt with lower sodium content and wholegrain noodles to the mass market in 2011.

It also developed various prototypes from low glycaemic index (GI) noodles, buns and muffins, to heart-friendly food and beverages fortified with omega-3 fatty acids last year.

The GI is a ranking of different types of food based on their immediate effect on a person's blood glucose level. Carbohydrates that break down quickly during digestion have a high GI while those that break down slowly have a low GI. A low GI diet helps in diabetes and weight management by making a person feel fuller longer. Omega-3, on the other hand, is protective of the brain and heart.

An HPB spokesman said that nutrition science has moved from the classical concept of adequate to optimal nutrition, with more food products designed to optimise well-being as well as reduce the risk of chronic diseases such as diabetes and heart diseases.

The National Nutrition Survey findings showed that daily food intake for most Singaporeans meets the recommendations for protein, vitamins and minerals. But more can be done to help Singaporeans gain optimum nutrition in the fight against chronic diseases, said the spokesman. And this is where functional food can play a role.

## **DIFFERENT TYPES OF FUNCTIONAL FOOD**

There are two main groups of functional food which have gained popularity in recent years, said Ms Tan Zhen Lin, an academic staff and a trained dietitian at the Republic Polytechnic's School of Applied Science.

The first is food enriched with an increased amount of a particular nutrient that is normally found in it. Examples are biscuits and cereals enriched with fibre. The second, and increasingly more popular group, is food fortified with nutrients not normally found in it. They include food and beverages fortified with omega-3 fatty acids, wholegrain noodles and "healthy snacks" such as wholegrain chips and crackers with added calcium or iron.

Also included is food made with specially chosen ingredients which claim to provide a certain health benefit. They include yogurt drinks with prebiotics (types of plant fibre which help stimulate the growth of "friendly bacteria" in the gut), and margarine and milk fortified with plant sterols (which lower cholesterol).



The supermarket shelves are filled with functional food such as (from left to right) bread enriched with vitamins and minerals bread spread and milk fortified with plant sterols, omega-3 enriched eggs and wholegrain potato chips.

- ST PHOTOS: ALPHONSUS CHERN

## **STRINGENT REGULATIONS**

All prepacked food products for sale here have to be labelled according to the requirements specified in the Food Regulations under the Agri-Food and Veterinary Authority (AVA). This does not allow manufacturers to make claims on food labels that a particular type of food can treat or cure diseases. A spokesman said food is consumed for general well-being and not to replace mainstream medicine in treating or curing diseases. But manufacturers can make proven claims about the nutrients - which include macronutrients, vitamins and minerals - in their products and the AVA has a list of what these are. For instance, a food label can state that a macronutrient, such as dietary fibre, aids the digestive system.

The AVA also allows claims for these four ingredients - collagen, prebiotics, probiotics and plant sterols. Manufacturers are, for instance,

allowed to claim that collagen is a protein in connective tissues found in skin, bones and muscles. They can state that prebiotics promote the growth of good Bifidus bacteria to help maintain a healthy digestive system and that probiotics (bacteria found in the guts) help in digestion. They can also claim that plant sterols or stanols - which the AVA has classified as special purpose food - can lower or reduce blood cholesterol and that high blood cholesterol is a risk factor in the development of coronary heart disease.

## **READ THE FOOD LABEL CAREFULLY**

Ms Tan said functional food can make healthy substitutes for what a person normally eats.

Functional food can also serve as a reminder to pay attention to making good food choices, she said.

"When people choose functional food due to its properties, it is often a conscious decision," she noted.

And this should only be a first step towards living a healthy lifestyle that also includes healthy eating and regular exercise. But not all forms of functional food are equal. Dietitians said it is important for

consumers to look at the actual content of the beneficial ingredient present in the product.

Some products may contain too little of that ingredient to produce the claimed benefits shown in studies.

For instance, soya products enriched with omega-3 fatty acids may contain too little of the beneficial ingredient to meet a person's daily requirements of omega-3, said MsLynette Goh, a senior dietitian at National Healthcare Group Polyclinics. Other fortified products may require the consumer to take more than the usual amount to reap their benefits, she said.

For instance, studies have shown that taking 2 to 3 g of plant sterols a day can lower blood cholesterol by up to 10 to 15 per cent. But this would mean eating about one to 1.5 tablespoons of sterol spread, which could also push up the amount of other nutrients such as fat, and calories - not a good idea for those who are watching their weight. Similarly, to meet the daily requirement of alpha-linolenic acid (ALA), the plant source of omega-3 fatty acids, one needs to eat three omega-3 enriched eggs a day. These eggs are derived from hens that have been fed a diet consisting of 10 to

20 per cent flaxseeds, which contain the most omega-3 fatty acids among major types of seed oil.

But eating three eggs a day is not advisable for people watching their cholesterol levels, said Ms Goh.

Ms Ong Yawei, a senior dietitian at Tan Tock Seng Hospital, said that some kinds of low GI food may not be healthy, because they can be high in calories, sugar or saturated fat. Besides, studies have shown that the total amount of carbohydrates in food is more likely to affect blood sugar level than the GI of the food, she added.

Some consumers such as Mrs Wendy Tan, 30, a public servant, would not choose functional food for health reasons if it does not taste as good. So she would not substitute the potato chips she loves with wholegrain chips. She said: "A snack is a snack. How healthy can it be?"

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