

functional foods: can food serve as *medicine?*

General interest in the concept of functional foods has existed long before the term was coined. In fact, over 150 years ago, bakers in Britain began to market “digestive” biscuits, claiming that consumption would aid in digestion. More recently, manufacturers have produced margarine with pine extracts to help reduce cholesterol, cereal with added vitamins, yogurt with probiotics, and numerous other products. While it is only natural to turn towards food to satisfy a growling stomach and to meet the body's energy needs and nutritional demands, can food play more of a role than simply that of providing sustenance? Can foods be functionalized with certain health benefits to be considered as medicine?

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what exactly are "functional foods"?

The Food and Nutrition Board of the Institute of Medicine defines a functional food as "any food or food ingredient that may provide a health benefit beyond the traditional nutrients it contains." However, since the Food and Drug Administration (FDA) does not specifically define the term, there is no official category for "functional foods" that is regulated by the law. As a result, manufacturers of these products have the freedom to decide how to classify their products when submitting them for approval. One of the main decisions manufacturers must make is whether to categorize their product as a food or a drug.

The American Council on Science and Health warns that consumers should be aware that in the United States, foods do not have to meet any set criteria to be characterized as "functional." Also, be aware that claims made by manufacturers can either be "health claims" or structure-or-function claims. While "health claims" must be approved by the FDA, structure-or-function claims are not regulated. Regardless, it is often difficult for the average consumer to differentiate between the two categories. For instance, the Center for Science in the Public Interest notes that the health claim "may reduce the risk of heart disease" and the structure-or-function claim "promotes a healthy heart" are typically seen as comparable statements to most people. However, while the first statement would be regulated and restricted, the second would not.



functional foods promote good health, but **are functional foods always the healthiest option?**

Some foods with added components, such as iodized salt and vitamin D-fortified orange juice and milk, confer certain health benefits by potentially compensating for nutritional deficiencies. These functional foods are particularly effective because they are usually part of a typical person's ordinary diet. However, because manufacturers now fortify a variety of products that may not necessarily have much nutritional value on their own, a major concern is that consumers will flock to these fortified foods misguidedly. The Center for Science in the Public Interest warns that fortified junk foods are still junk foods. As a safe practice, be sure to check the nutrition label before purchasing, regardless of advertisements for the benefits of fortification.



what are functional foods **not**?

Keep in mind that functional foods are not "magic bullets" and the best formula for good health is maintaining a balanced diet and exercising regularly. A main concern surrounding functional foods is that people will fall into the mindset that functional foods are a free pass that will allow them to remain in good health without having to follow a healthy lifestyle consisting of a well-balanced diet and exercise. According to the American Council on Science and Health, functional foods can be an effective method to promote good health if they are incorporated with other healthy habits.

the guide » what are functional foods?

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examples of **manufacturer made** functional foods

orange juice with vitamin D

While vitamin D is known for its importance in bone development and calcium absorption, it is also essential for tissues in the body to function properly. Vitamin D deficiency increases the risk of colon, breast, and prostate cancers, high blood pressure, cardiovascular disease, and many autoimmune diseases. Because vitamin D deficiency is a common problem, a wide variety of foods have been fortified with this vitamin. Orange juice enhanced with vitamin D can make this vitamin more accessible to the general population. In fact, a 2003 study in *The American Journal of Clinical Nutrition* found that fortified orange juice delivers vitamin D as effectively as pill supplements of the vitamin.



eggs with docosahexaenoic acid (DHA) omega-3 fatty acid

Numerous scientific studies support the ability of omega-3 fatty acids to reduce the risk of heart disease. Additionally, research suggests that omega-3 fatty acids have anti-inflammatory properties and may be important in novel ways to treat and prevent inflammatory diseases, such as rheumatoid arthritis. Although the relationship between omega-3's and memory is still an area of active research, it is generally accepted that omega-3 fatty acid consumption promotes brain health.



While all eggs naturally contain omega-3 fatty acids, hens with modified diets consisting of DHA-rich foods such as marine algae, fish oil, or pearl millet produce omega-3 enriched eggs that can contain up to 12 times the omega-3 content of a typical egg. For those who dislike seafood, but want to increase their intake of omega-3, eating omega-3 enriched eggs may be a good alternative.

yogurt with probiotics

Probiotics can confer a wide range of health benefits depending on the strain of bacteria. As a result, many yogurt manufacturers now add live bacterial cultures to their products. Numerous studies support probiotics' anti-diarrheal effects and their ability to aid with stool regularity. Some strains may also reduce the symptoms of lactose intolerance. Additionally, there is ongoing research exploring probiotics' possible role in enhancing the immune system and reducing the risk of certain cancers, such as colorectal cancer.



some **natural foods** are also considered to be "functional" due to their disease prevention benefits

flaxseed

health benefits



› Flaxseed is an oilseed crop that has been known for its medical benefits since its cultivation beginning around 5,000 BC. This functional food is not only the leading source of the omega-3 fatty acid, linolenic acid (ALA); it is also a good source of lignans, a type of phenolic compound. While ALA is known for its potential to reduce the risk of cardiovascular disease, lignans also may reduce the risk of hormonally-dependent cancers like breast and prostate cancers.

› According to a 2001 review article in the *Journal of the Science of Food and Agriculture*, multiple studies have reported that daily consumption of about 30 grams of flaxseed reduces both total and low-density lipoprotein (LDL) cholesterol. Additionally, studies of postmenopausal women reveal that flaxseed helps maintain bone health and reduce the risk of hormone-related cancers.

easy ways to incorporate flaxseed into your diet

- › Stir ground flaxseed into juice or blend with smoothies
- › Mix in with pancake batter
- › Top yogurt with flaxseed

garlic

health benefits



› As a member of the *Allium* genus, garlic contains the phytochemical allicin, which may aid in the production of enzymes that combat cancer-causing agents.

› A 2006 review in the *Medical Journal of Australia* reports that daily consumption of between a half and one clove of garlic can lower cholesterol by up to 9%.

cooking tips that preserve garlic's health benefits

› While intact garlic bulbs have few medicinal benefits, crushing or chopping garlic prompts enzymes to convert the amino acid alliin into allicin, which decomposes into sulfur compounds that give garlic its anti-carcinogenic properties.

› Dr. John Milner, PhD, head of the Department of Human Nutrition at Penn State University, recommends waiting at least five minutes after crushing garlic before cooking it. This provides the time necessary for the sulfur-containing compounds to develop and allows garlic to confer its maximal health benefits. **iw**