

# The Quest for Optimal Health: How Functional Foods Can Help Your Clients

## Background

The concept of consuming foods for health dates back centuries to Hippocrates' famous quote "Let food be thy medicine and medicine be thy food." Since then, nutritional science has evolved from a focus on identifying nutrients and amounts needed to prevent deficiency diseases, to a focus on improving health and quality of life. Although people have been consuming foods for specific health reasons for years, the term "functional foods" was not commonly used until the early 1990s.

Initial research on functional foods centered on the health benefits conveyed by specific foods such as soybeans, garlic, red wine and fortified foods. This "whole foods" phase was followed by identification of specific components such as lutein, probiotics, prebiotics, flavonoids, anthocyanidins, lycopene and omega-3 fatty acids. Recently there has been an integration of these two approaches, with continued attention to specific compounds *and* awareness that consumption of certain whole foods yields health benefits.<sup>1</sup> The synergy of other food components often enhances the effect of the "active" component. The recently discovered weight-loss benefits of calcium, for example, are enhanced when the source is dairy foods.<sup>2</sup>

There are a number of reasons for the tremendous growth seen in the functional foods movement among many sectors of our society in the past few years:

- There is a greater demand among consumers for a variety of tasty, healthy and convenient products.<sup>3</sup>
- Our aging population and increases in health care costs are driving a search for ways to control one's own health through dietary choices and with minimal health professional involvement. In a 2002 study, 94 percent of consumers agreed that certain foods have health benefits that may reduce the risk of disease or other health concerns, and 85 percent were interested in learning more about the health benefits offered by functional foods.<sup>4</sup>
- Nutritional science is continually building upon our knowledge of the relation between diet and health.

- Changes in regulations have allowed greater use of health claim statements on food products, informing consumers of health benefits of a certain food or food component.
- Advances in food technology resulting in new components, products, processes and packaging have provided the food industry more opportunities for value-added products.

Although the consumer is one of the primary drivers of the functional foods movement, he/she is often overwhelmed with the confusing array of food products in the marketplace and the conflicting claims and marketing messages associated with these foods. **Health professionals are in a position to interpret the science and educate clients on types and amounts of functional foods that may help meet their unique needs, as well as lead them in integrating functional foods appropriately into their diets.**

## Definition

The term "functional foods" arose as nutritional science evolved from identifying and correcting nutritional deficiencies to designing foods that promote optimal health and reduce the risk of chronic disease. Focus group research showed that "functional foods" was recognized readily and was preferred by consumers over other terms such as "nutraceuticals" or "designer foods."<sup>4</sup>

Although there are a number of definitions for functional foods, the most widely accepted is: "Foods and food components that provide health benefits beyond basic nutrition for the intended audience."<sup>5</sup> Examples include conventional foods, fortified, enriched or enhanced foods.

## Features and Commonalities

General features of functional foods include:

- functional foods address specific dietary needs or health conditions and are thus designed for specific consumer groups in mind;
- they are consumed as part of the regular diet;
- their physiological functionality is based on bioactive compounds;
- the documentation of their safety and efficacy is essential; and
- any health claims or planned health claims are based on scientific research and are consistent with regulations.

The use of functional foods can be considered a continuum that ranges from the goal of maintaining optimal health to treating disease. The top ten benefits that consumers look for in functional foods are:<sup>6</sup>

- reduced risk of cardiovascular diseases
- reduced risk of cancer
- weight loss/management
- improved health in general
- improved memory
- reduced risk of other diseases
- reduced osteoporosis
- improved mental health
- quicker reaction time
- improved fetal health

Functional food components most often cited in the news in 2005 were calcium, vitamin D, omega-3 fatty acids, folic acid, magnesium, vitamin C, vitamin E, whole grains, B vitamins and plant estrogens.<sup>6</sup> There is also evidence that whey protein could be added to this list.<sup>7</sup>

## Application and Benefits

The American Dietetic Association (ADA) Position Paper on functional foods states:

*“It is the position of the ADA that functional foods, including whole foods and fortified, enriched, or enhanced foods, have a potentially beneficial effect on health when consumed as part of a varied diet on a regular basis, at effective levels.”<sup>8</sup>*

Since the 1990s, there has been a marked shift toward adding – rather than omitting – certain foods and food ingredients in an effort to improve health and prevent disease. Consuming foods for health has the benefit that dietary constituents often act synergistically to enhance absorption and utilization of nutrients, a feature not realized with supplements. Another benefit of achieving dietary goals through foods is the long-term compliance factor; since people must eat on a daily basis, a slight change in diet can be maintained fairly easily. Finally, consumers’ high level of trust in our food supply makes it easier for them to try new products.

Some functional foods for which research has shown health benefits at certain levels are listed below. For a more comprehensive list of functional foods, their active components and health benefits visit [www.mealsmatter.org](http://www.mealsmatter.org).

## Functional Foods

Broccoli	May lower LDL cholesterol, reduce risk of cancer and maintain healthy immune system in some population groups
Cranberries	May improve urinary tract health, prevent urinary infection and reduce risk of heart disease
Dark Chocolate	May decrease risk of heart disease
Garlic	May reduce risk of cancer, lower total cholesterol level and blood pressure
Oatmeal	May reduce total and LDL cholesterol levels
Salmon	May improve mental and visual function and reduce risk of heart disease
Soy	May reduce risk of heart disease and decrease risk of certain cancers in some people
Tea	May reduce risk of heart disease and cancer and boost the immune system
Whey protein	May reduce the risk of some cancers, strengthen the immune system and improve exercise performance
Yogurt with probiotics	Some strains may improve intestinal health, reduce risk of some cancers and reduce cholesterol levels

## International Perspective

The U.S. is not alone in its quest for functional foods and ingredients and optimal health. Europe and Japan are two other leading players in this field, comprising respectively 32 percent and 25 percent of the \$60 billion global market (the U.S. comprises 34 percent at \$24.5 billion).<sup>9</sup> There are, however, country-specific differences in health concerns resulting in an array of functional ingredients and products, as shown in the chart below:

Country	Primary health concerns	Most common functional foods
USA	Heart disease Obesity	Bars, cereals, juices, beverages
Europe	Digestive health Heart disease Obesity Osteoporosis	Beverages, cereals, dairy products, spreads
Japan	Digestive health Heart disease Immunity	Beverages, spreads, juices

Globally, soy-based products and drinkable yogurts are the fastest growing segments of functional foods market. In the U.S., whole grain products and those that incorporate omega-3 fatty acids have grown substantially.<sup>3</sup>

## Education and Application: the Health Professional's Role

Specific suggestions on how the health professional can guide consumers to incorporate appropriate levels of functional foods into their diets to optimize health and reduce disease risk include:

- Stay abreast of research showing benefits of specific foods and food components, distinguishing between the study types (animal, laboratory, epidemiological, randomized clinical trials) and strengths and limitations of each. Often, a single study can be misconstrued as the final word without considering the whole body of research on the food or component in question.
- Be aware of foods and products in the marketplace that tout specific component(s) and health benefits, and the levels that are present in a typical serving. Keep in mind that availability of functional foods can vary based on geographical location.
- Be ready to translate scientific evidence into practical and applicable dietary advice for clients. Offering clients accurate and personally relevant information will empower them to control their own health through the choices they make.
- Discourage clients from the mindset that there is a single “magic bullet” food or product that can guarantee health or cure/prevent disease. The best advice is to choose a wide range of foods from each of the food groups to ensure consumption of a multitude of beneficial components. A change in lifestyle, including appropriate physical activity, may also be necessary to reach their goals.

## What the future holds

Functional foods will continue to be incorporated into diets as long as taste and convenience – key factors in food choices – are considered in developing and marketing these foods. As nutritional research progresses and the role of diet in health strengthens, functional food products will become even more prevalent. Our aging population, the ever-increasing cost of health care and the desire to enhance personal health are other factors that will continue to drive this functional foods movement. Consumer confidence in regards to the safety and efficacy of functional foods will also continue to increase.

With the advance of nutritional genomics, it may be possible in the future to design foods and diets to regulate gene expression, change metabolism and thus prevent specific diseases to which an individual is prone. As a result, the ability to tailor diets to meet specific needs and health goals will become more highly individualized. Consumer awareness and demand for such personalized diets will undoubtedly increase.

Research will continue to identify foods and food components that can play a role in optimizing health and preventing disease. Expanded research on the benefits of specific nutrients and bioactive components, levels of consumption needed to reap health rewards, and biomarkers and physiological endpoints will further our understanding of functional foods.

- Monitor your clients' consumption of functional and fortified foods as well as use of supplements, to ensure they are not consuming excesses of any particular nutrient(s). Health professionals with minimal training in nutritional sciences can rely on dietitians as the primary resource to carry out this charge.
- Age, gender, activity level, allergies and intolerances and disease risk are obvious factors

influencing dietary recommendations. Consider also cultural and ethnic preferences, weight loss and performance goals, socioeconomic factors that might play a role in food procurement, availability and access, and family and work environments – all in a holistic fashion – to optimize buy-in and compliance with dietary advice.

### Additional Resources

[www.eatright.org](http://www.eatright.org)  
American Dietetic Association

[www.ific.org](http://www.ific.org)  
International Food Information Council

<http://foodsci.rutgers.edu/nci>  
The Nutraceuticals Institute (joint partnership of Rutgers' and St. Joseph's Universities)

[http://members.ift.org/IFT/Research/IFTExpertReports/functionalfoods\\_report.htm](http://members.ift.org/IFT/Research/IFTExpertReports/functionalfoods_report.htm)  
Institute of Food Technologists

[www.ars.usda.gov](http://www.ars.usda.gov)  
USDA's Agricultural Research Service

### References

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- <sup>2</sup> Zemel MB, Thompson W, Milstead A, Morris K, Campbell P. Calcium and dairy acceleration of weight and fat loss during energy restriction in obese adults. *Obesity Research*. 2004; 12(4):582-590.
- <sup>3</sup> *Nutrition Business Journal* Volume X, No. 5/6, May/June 2005, pp. 26-27.
- <sup>4</sup> International Food Information Council. The consumer view on functional foods: Yesterday and today. *Food Insight*. May/June 2002.
- <sup>5</sup> Clydesdale F. Functional Foods: Opportunities and Challenges. *Food Technology* 2004; 58(12):35-40.
- <sup>6</sup> Food for Thought VI: International Food Information Council Foundation, Dec 2006. Available at: [www.ific.org](http://www.ific.org); accessed 12/19/05.
- <sup>7</sup> DCC Monograph, 2004. Whey Protein: Waste product of the past is nutritional powerhouse of the future. Available at: [http://www.dairycouncilofca.org/PDFs/whey\\_monograph.pdf](http://www.dairycouncilofca.org/PDFs/whey_monograph.pdf). Accessed 12/19/05.
- <sup>8</sup> Position of the American Dietetic Association: Functional Foods. *J Am Diet Assoc* 2004; 104:814-826.
- <sup>9</sup> A.C. Nielson Report 2004.



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