

Functional Foods: *Opportunities and Challenges*

Introduction to Functional Foods

While food has long been used to improve health, our knowledge of health is now being used to improve food. Strictly speaking, all food is functional, in that it provides energy and nutrients necessary for survival. But the term “functional food” in use today conveys health benefits that extend far beyond mere survival. Food and nutrition science has moved from identifying and correcting nutritional deficiencies to designing foods that promote optimal health and reduce the risk of disease.

The costly and complex process of translating scientific advances and nutritional innovations into consumer products is not without pitfalls. Sound science must underlie the development, marketing, and regulation of these new functional foods to protect and inform consumers. Regulatory oversight must ensure the safety and efficacy of products and the accuracy of their marketing claims.

Defining Functional Foods

The term “functional food,” although arbitrary, is nonetheless useful to convey to consumers the unique characteristics of the food and its associated health benefits. The Expert Report defines functional foods as foods and food components that provide a health benefit beyond basic nutrition (for the intended population). Examples may include conventional foods; fortified, enriched, or enhanced foods; and dietary supplements. Functional foods provide essential nutrients beyond quantities necessary for normal maintenance, growth, and development, and/or provide other biologically active components that impart health benefits or desirable physiological effects.

When defining functional foods, a word about dietary supplements is necessary. Some current legal standards classify dietary supplements separately

from whole foods and apply different requirements for benefit claims and supporting scientific documentation. The panel considered this legal distinction and decided that, from a scientific perspective, dietary supplements should be included in the definition of functional foods. Supplements merely constitute a different delivery vehicle for a bioactive component, and therefore the scientific demonstration of efficacy and safety remains the same.

Applying Scientific Advances

Creating a scientifically valid distinction between food and medicine has never been easy. Early nutrition research focused on establishing the necessary intake levels for vitamins and minerals, resulting in cures for numerous deficiency-based diseases. Recent scientific advances have further blurred the line between food and medicine, as scientists identify bioactive food components that can reduce the risk of chronic disease, improve quality of life, and promote growth and development.

Traditional definitions of and divisions between food and medicine should not restrict consumer access to knowledge about the benefits of functional foods. Likewise, the framework for strong regulatory oversight should not present unnecessary barriers to the development and marketing of functional foods. Where existing terminology and regulatory frameworks are inadequate, they must be modified.

Research currently underway will reveal how a myriad of substances can be used as functional food components. In some cases, advances are as simple as better understanding the role and optimal levels of traditional nutrients, especially for specific subpopulations. New research in proteomics, nutrigenomics, metabolomics, and other disciplines is helping to identify the biological basis by which food components promote health and wellness.

Shifting the Health Care Paradigm

“An apple a day keeps the doctor away” could perhaps be considered the first functional food advertisement. Functional foods offer opportunities to reduce disease risk and promote wellness with minimal health professional involvement.

A growing number of consumers perceive the ability to control their health by improving their present health and/or hedging against aging and future disease. These consumers create a demand for food products with enhanced characteristics and associated health benefits. The combination of consumer interest, advances in food technology, and new evidence-based science linking diet to disease and disease prevention provides an unprecedented opportunity to improve public health.

A new self-care paradigm recognizes that foods can provide health benefits that can coexist with traditional medical approaches to disease treatment. Science has clearly demonstrated additional dietary roles in reducing disease risk, and consumers have learned that food has a greater impact on health than previously known. At the same time, consumers recognize problems with the current health care system, perceiving that it is often expensive, time-constrained, and impersonal.

Functional foods fit into a continuum that ranges from health maintenance/promotion to disease treatment. On one end of the continuum are public health programs aimed at reducing disease risk in a large segment of the population through self-directed lifestyle changes. On the other end of the continuum is individualized treatment of disease by health care professionals, using drugs and other medical interventions.

Our health care system has a role for all these treatment options. Functional foods should be integral components of established health programs to reduce the risk of specific diseases while enhancing consumer control and minimizing cost.

Recognizing the tremendous health benefits offered by functional foods, the Institute of Food Technologists commissioned an expert panel to review the available scientific literature related to functional food development. The panel's report is divided into nine sections: Definitions, Introduction, Food and Genes, Current Legal Standards, Scientific Standards, Policy Limitations, Bringing Functional Foods to Market, Role of Research, and Conclusions. Copies of the report are available at www.ift.org. Founded in 1939, the Institute of Food Technologists is a 26,000-member international not-for-profit scientific society for food science and technology.