Assessing the Benefits of Functional Foods

Scenario

The administrators at your school have proposed to ban the sale of conventional snack foods in the school cafeteria. They want to replace these foods with functional foods, such as high-fibre grain and nut bars, fortified beverages, and yogurt with probiotics. (Probiotics are the “good” bacteria that live in your digestive tract. They are often added to food to boost digestive health.) Some examples of functional foods and their potential health benefits are shown in the table on the right. The school’s goal is to promote healthier eating habits.

They are concerned about recent statistics that show a steady increase in obesity, as well as increased risk for heart disease, type 2 diabetes, and some types of cancer, even among young people. **Eating well involves being informed and making choices that are right for you.**

Some students support the school’s proposal and view this change in snack food choices as a positive one. However, other students oppose the change. They contend that no functional foods have been shown to be more beneficial to health and well-being than conventional foods. They also say that the school should not impose decisions about food choices on students. The student council has called an after-school meeting so that both sides can state their points of view and to try to resolve the issue.

What Are Functional Foods?

All types of foods provide the nutrients that your body needs, to varying degrees. But some foods, known as functional foods, are claimed to do more for your body than just provide essential nutrients. Some nutritionists and manufacturers of functional foods claim that these foods perform specific beneficial functions in the body.

These functions include strengthening the immune system, preventing and treating disease, improving certain physical or mental conditions, or slowing the aging process. As shown in the table, there are several categories of functional foods. Whole foods contain a natural level of a functional component. Examples include the antioxidant beta-carotene in carrots and the dietary fibre in whole grains. (Antioxidants are substances that protect the body’s cells from damage caused by environmental stressors such as air pollution, radiation, and cigarette smoke.) Fortified foods contain added ingredients, such as calcium-fortified fruit juice. Enhanced foods contain a functional component that has been introduced into the organism from which the food comes. This can happen through breeding, feeding, or genetic engineering. For example, chickens may be fed fish oil, which naturally contains omega-3 fatty acids. Thus, the chickens produce omega-3-enhanced eggs.

In Canada

In Canada there are no regulations dealing specifically with nutraceuticals or functional foods. All foods and drugs fall under the provisions of the Food and Drugs Act and Regulations.

The current regulatory environment is said to discourage innovation and marketing for nutraceuticals/functional foods. Under the Food and Drugs Act, only a specified range of claims may be made for foods; otherwise, they are classed as drugs. The food regulations currently permit:

- positioning the food as part of healthy eating
- claiming that a nutrient or nutritive substance (as listed in the Regulations) is generally recognized as an aid or factor in maintaining the functions of the body, or necessary for the maintenance of good health and normal growth and development (also known as "biological role claims" and nutrient function claims).

Under the current regulatory framework nutraceuticals/functional foods appear to have an awkward fit. Although some may appear to consumers as ordinary foods, they are known to produce physiological effects. Others appear to be in a "drug-like" form however, some manufacturers are reluctant to consider them as such. There are several reasons why food producers generally want to avoid their products being treated as drugs.

One is the public perception that foods are consumed for "wellness" whereas drugs are necessary to fight "illness". Moreover, drugs must meet numerous constraints, including stringent regulations governing Good Manufacturing Practices, testing procedures and post-market surveillance. The end result is that few manufacturers have even applied for Drug Identification Number (DIN).

Because of the dichotomy between foods and drugs, manufacturers of nutraceuticals/functional foods are faced with two choices: They can either market their product with no health claims, or they can follow the more stringent regulatory requirements necessary for drugs.

- The first option restricts the manufacturer's freedom to market the goods with health claims, and limits dissemination of information to consumers.
- The second option can delay a product's entry onto the market, limit its advertising and potentially add to its cost.

For example, Section 3 of the Food and Drugs Act prohibits the sale or advertisement to the general public of any food, drug, cosmetic or device if it is represented as a treatment, preventative or cure for any of the diseases, disorders or abnormal physical states referred to in Schedule A. Schedule A includes conditions such as alcoholism, arteriosclerosis, arthritis, asthma, cancer, diabetes, heart disease, hypertension, obesity, thrombotic and embolic disorders.

Subsection 5 (1), makes it an offence to make claims for a food that are false, misleading or deceptive or that may create an erroneous impression regarding the food's character, value, quantity, composition, merit or safety. Subsection 9(1) creates the same offence for products in the drug category.

The restrictions imposed by Section 3 and the definition of a drug are becoming an issue. Considerable evidence has accumulated from epidemiology, clinical trials and modern nutritional biochemistry supporting the concept that diet does, in fact, affect human health -- not only in the short term, but also in the development and management of chronic disease.

Examples of Functional Foods

Functional Food	Key Functional Component	Potential Health Benefits
Whole Foods		
Fish, flaxseed	Omega-3 fatty acids	Reduce blood cholesterol; reduce risk of heart disease and certain cancers
Fruits and vegetables, nuts and seeds, black and green tea, coffee, dark chocolate	*Phytochemicals* (chemical substances found in plants)	Reduce risk of heart disease, high blood cholesterol, cancer, and cell damage
Oats and other whole grains	Soluble fibre	Reduce blood cholesterol; reduce risk of heart disease and certain cancers; aid in controlling blood glucose levels
Soy foods (tofu, soy milk, soybeans)	Soy protein	Reduce blood cholesterol; reduce risk of osteoporosis (permanent loss of bone mass), heart disease, and certain cancers
Fortified Foods		
Cereals with added fibre, juices with added fibre	Soluble fibre	Reduce blood cholesterol; reduce risk of heart disease and certain cancers
Juices with added calcium	Calcium	Reduce risk of osteoporosis and high blood pressure
Milk with added vitamin D	Vitamin D	Reduce risk of soft bones and osteoporosis
Enhanced Foods		
Beverages with added green tea extracts	Antioxidants	Reduce risk of heart disease and cancer; reduce high blood pressure
Dairy products with added probiotics	*Lactobacillus acidophilus* (beneficial live bacteria)	Reduce risk of colon cancer; control tissue inflammation; help treat diarrhea and some skin disorders
Eggs with added omega-3 fatty acids	Omega-3 fatty acids	Reduce blood cholesterol; reduce risk of heart disease and certain cancers
Margarine with added phytochemicals	Phytochemicals	Reduce risk of heart disease, high blood cholesterol, and cancer

Research and Analyze

1.) Multifunctional foods are foods that serve more than one function, such as satisfying a snack craving while providing a specific health benefit. What types of products have resulted from society's demand for multifunctional foods, such as low-calorie snack foods? **Research a popular snack food that claims to be healthy, and it to the conventional version of that snack food.**

	Similarities	Differences
Healthy Snack Food Choice		
Conventional Snack Food Choice		

Is the healthy snack food actually healthier? Explain why or why not.

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2.) Do you believe consumers are adequately protected from potentially false health claims by food manufacturers in Canada? Explain

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3.) Do you think that the rules in regulations on advertising stop companies from marketing their products as functional foods? Explain

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4.) What are some pros and cons of choosing functional food over the conventional versions of these foods.

Pros	Cons

5.) Why would you support or challenge the school's proposal to substitute functional snack foods for conventional snack foods?

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