

The Role of Functional Foods Supplements in Human Body

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Introduction:

The need for functional foods is rising as the globe undergoes profound change in the 21st century due to new problems, a longer life expectancy, increased healthcare expenditures, quick scientific and technological advancements, changes in lifestyle and worries about the quality of life. The scientific community keeps learning more about how to improve nutrition quality. Eating patterns and changes in food production and consumption have an impact on people's health, the environment and society. Gut health is impacted by diet. Diet plays a role in the development of gastrointestinal disorders like ulcerative colitis, irritable bowel syndrome, and celiac disease that is resistant to gluten therapy. Notably, the digestive system is sterile at birth; intestinal microflora develops after birth, with the rate of colonization differing depending on things like the delivery method, newborn feeding, usage of antibiotics, diet, and age. An individual's general health is determined by their gut health.

The human gut has the following functions:

- It transforms food into nutrients.
- It makes it easier for nutrients to pass through intestinal walls and into the circulation.
- It stops harmful and alien substances from getting into the bloodstream.

In the 1980s, Japan was the first country to introduce the idea of functional meals. The Japanese government established research initiatives as part of a broad national initiative to lower the rising cost of healthcare. Foods that proved physiological advantages or decreased illness risks in addition to carrying out their essential physiological tasks are referred to as Foods for Specific Health Use (FOSHU), a term that was introduced in 1991.

What is functional food?

When ingested at effective levels as a regular part of a varied diet, functional foods can be defined as those whole, fortified, enriched, or enhanced foods that offer health advantages beyond the provision of necessary elements (such as vitamins and minerals).

Functional foods contain supplements that are meant to benefit health. These foods are often referred to as nutraceuticals or

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designer foods. Any food or food ingredient that may provide a health benefit beyond the traditional nutrients it contains" is what is meant by functional foods.

Functional foods categories:

According to their mode of action, functional foods of plant or animal origin can be divided into the following categories:

- Dietary fiber, such as lignin and non-digestible carbs
- Lowering cholesterol (e.g., phytosterols, Omega-3 fatty acids)
- Phyto-chemicals (such as carotenoids, lycopene and phenolic substances)
- Fortification with vitamins and minerals (such as vitamin C, folic acid, calcium, and iron)
- Yogurt, kefir, fruits, and vegetables, which are examples of probiotics, prebiotics and symbiotic

There are numerous types of functional foods. Some of these might be common meals containing bioactive components that have been discovered and connected to beneficial health effects. Some may be improved or fortified foods that have been specially created to lower the risk of disease. Consumers currently have access to a wide range of foods that are fortified with functional ingredients, such as milk that has been fortified with folate, or that naturally contain these components

(such as soy protein, fish, and olive oil). The potential for making functional foods will be extensive as more bioactive components are discovered. Eggs with higher levels of omega-3 fatty acids are an example of a food that has been upgraded to boost the level of a bioactive substance that is naturally present in the diet. On the other hand, foods can be strengthened if they don't naturally contain a bioactive component. (e.g., orange juice enriched with calcium).

Functional foods development:

In order to introduce functional foods to the market, the following procedures have been recommended.

- Research the connection between a certain food ingredient and health advantages.
- Research using animal and inanimate specimens in in vitro and in vivo settings.
- Human trials that screen for negative side effects and use bioactive substances at humane concentrations.
- Creation of the ideal food delivery system.
- Publicity campaigns to promote the product and raise awareness of its health advantages.

- Long-term population studies to determine the effectiveness of the product overall.
- Evaluation of public opinion on functional food.

Examples of functional foods:

Functional foods are typically divided into two categories: regular foods and food that has been modified-

- Conventional foods are made of natural, whole foods that are a good source of vitamins, minerals, antioxidants, and heart-healthy fats.
- To boost a food's health advantages, modified foods have been fortified with extra substances including vitamins, minerals, probiotics, or fiber. Here are some examples of conventional functional foods:

Fruits: berries, bananas, kiwis, pears, peaches, apples, and oranges.

Vegetables: kale, spinach, broccoli, cauliflower, and zucchini.

Nuts: Brazil nuts, macadamia nuts, pistachios, almonds, cashews

Legumes: Black beans, chickpeas, navy beans and lentils

Whole grains: barley, brown rice, oats, couscous, buckwheat.

Fermented foods: kombucha, kefir, sauerkraut, tempeh, kimchi.

Herbs and spices: cinnamon, cayenne pepper, turmeric, ginger

Here are a few examples of modified foods with functional properties:

- Fortified eggs
- Fortified juice
- Fortified cereal and granola
- Fortified grains, such as bread and pasta
- Fortified dairy products, such as milk and yogurt
- Fortified milk alternatives, such as almond, rice, coconut and cashew milk

Conclusion

Functional foods especially the need for consuming appropriate diets, health issues surrounding failure to adhere to the known healthy eating models, development of new food supplements with novel health benefits.

The development of functional foods is a multi-stage process that with a crucial requirement to win over consumers. This industry will only experience sustained growth and sustainability if these partners collaborate across the various components of the continuum from concept to effective marketing of functional foods.