What are functional foods?
Currently, there is no universally accepted definition for a functional food in the United States. Instead, a functional food is commonly defined as a food that provides benefits beyond the basic nutrition provided by that food. The additional benefit is due to a component in the food item that offers physical or biological—i.e., functional—benefits.

Functional foods have become increasingly popular in the United States and worldwide (Statista n.d.). Some foods naturally contain a functional component, whereas with other foods, a functional ingredient is added to the food to create a functional food. Functional foods may help reduce the risk of certain diseases or improve overall health.

How are functional foods regulated?
The US Food and Drug Administration (FDA) is the government agency responsible for regulating and ensuring the safety of food. As the FDA does not have a formal definition of a functional food, the rules regulating functional foods depend on how the manufacturer chooses to market the food product to the consumer.

A manufacturer can market its product as a whole food, or as enriched food, fortified food, or enhanced food if nutrients are added:

- **Enriched**—the addition of one or more nutrients that was lost during food processing
- **Fortified**—the addition of one or more nutrients into a food
- **Enhanced**—the addition of one or more nutrients into a food by modification or indirect methods

Figure 1. Food label of unknown origin featuring various structure-function claims, together with fine-print disclaimer that reads, “This product is not intended to treat, cure or prevent any disease or ailment.”

Credits: Kai Schreiber, CC BY-SA 2.0, http://flic.kr/p/88c3bq
Claims Made for Functional Foods

The FDA is also responsible for monitoring the health claims that manufacturers make for their food products (DHHS). As a consumer, it is important to take notice of the claims that may be located on the packaging of functional foods. Most claims on functional food labels are considered structure-function claims. Structure-function claims are often placed on foods and are not highly regulated by the FDA. The Federal Food, Drug and Cosmetic Act (DHHS) states that a structure-function claim cannot be proven to be false or misleading to the consumer and cannot claim to treat, cure, or prevent a disease or disease condition. Some examples of structure-function claims are “Calcium builds strong bones”, “Vitamin D helps contribute to bone health”, and “Vitamin A may help to contribute to maintenance of healthy vision”.

Classification of Functional Foods

Functional foods can be divided into two broad categories. The first category consists of functional foods that naturally contain a component that offers additional benefits to the consumer. The other category of functional foods consists of processed foods in which a component is added to the food to give it additional benefits.

Foods with Naturally-Occurring Functional Components

Tomato is an example of a functional food because it contains the bioactive component lycopene. Lycopene is associated with a decreased prostate cancer (Chen et al. 2015). Table 1 lists some examples of functional foods along with the component that occurs naturally in the food item and its possible health benefits. Many of the foods in this category are commonly found in your grocer’s produce department.

Foods with Enhanced Functional Components

Omega-3 enriched eggs are considered a functional food because they contain the bioactive food ingredient omega-3 fatty acids. Omega-3 fatty acids are not added directly to the eggs. Instead the hens that lay these eggs are given a feed that contains large amounts of an ingredient (commonly flax seed) that is high in omega-3. Omega-3 fatty acids are thought to reduce the risk of fatal coronary heart disease (Del Gobbo et al. 2016).

Foods with Added Functional Ingredients

Table 2 lists functional foods along with the component that manufacturers have added and its possible benefits. The foods in this category are generally processed. Examples include orange juice with added vitamin D, breads and cereals with added fiber, and a wide variety of other food products.

Should we consume functional foods?

Functional foods may provide additional health benefits to you if you consume them regularly as part of a varied diet. As functional foods become increasingly popular in the US, it is important to be an informed shopper.

References


Table 1. Foods with functional components.

<table>
<thead>
<tr>
<th>Functional Food</th>
<th>Functional Component*</th>
<th>Potential Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomatoes, Watermelon</td>
<td>Lycopene</td>
<td>Lower risk of prostate cancer (Chen et al. 2015)</td>
</tr>
<tr>
<td>Citrus</td>
<td>Flavanones</td>
<td>Reduced risk of some cancers (Wang et al. 2015, Liang et al. 2014, Song and Bae 2013)</td>
</tr>
<tr>
<td>Soy-based foods</td>
<td>Isoflavones</td>
<td>Lowers LDL, total cholesterol and triglycerides, and improves HDL (Tokede et al. 2015)</td>
</tr>
<tr>
<td>Cranberries</td>
<td>Proanthocyanidins</td>
<td>Lower risk of urinary tract infection (Micali et al. 2014, Vasileiou et al. 2013)</td>
</tr>
<tr>
<td>Fatty fish</td>
<td>Omega-3 fatty acids</td>
<td>Reduced risk of cardiovascular disease (Chowdhury et al. 2012)</td>
</tr>
<tr>
<td>Whole grain foods</td>
<td>Bran/fiber</td>
<td>Reduced risk of cardiovascular disease, cancer, and mortality from all causes (Aune et al. 2016)</td>
</tr>
</tbody>
</table>

*Note: Other components of these whole foods may contribute to the potential benefit beyond the functional component listed.*

Table 2. Foods with added functional ingredients.

<table>
<thead>
<tr>
<th>Functional Food</th>
<th>Functional Ingredient</th>
<th>Potential Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange juice with added vitamin D</td>
<td>Vitamin D</td>
<td>Reduced risk of bone diseases</td>
</tr>
<tr>
<td>Yogurt with a probiotic</td>
<td>Probiotic</td>
<td>Gastrointestinal wellness</td>
</tr>
<tr>
<td>Breads and cereals with added fiber</td>
<td>Fiber</td>
<td>Alleviates constipation</td>
</tr>
<tr>
<td>Margarine fortified with plant sterols</td>
<td>Plant sterols</td>
<td>Reduces cholesterol</td>
</tr>
</tbody>
</table>