



Functional foods – An Overview



Agenda

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- An illustration on the left side of the slide shows a hand holding a green pencil, checking off a list on a clipboard. The clipboard has a white sheet of paper with three checkboxes. The first checkbox is checked with a red checkmark. The second and third checkboxes are empty. To the right of each checkbox are two horizontal yellow lines. The clipboard is attached to an orange folder.
1. Definition
 2. What are functional foods?
 3. Classifying functional foods.
 4. Benefits.
 5. Examples of functional foods.
 6. Difference between functional foods & nutraceuticals.
 7. Food technology and its impact.
 8. References.

1. Definitions

Definition:

- A natural food to which a beneficial component has been introduced.
- a food from which a harmful component has been removed.
- or food in which the nature of one or more components has been altered.

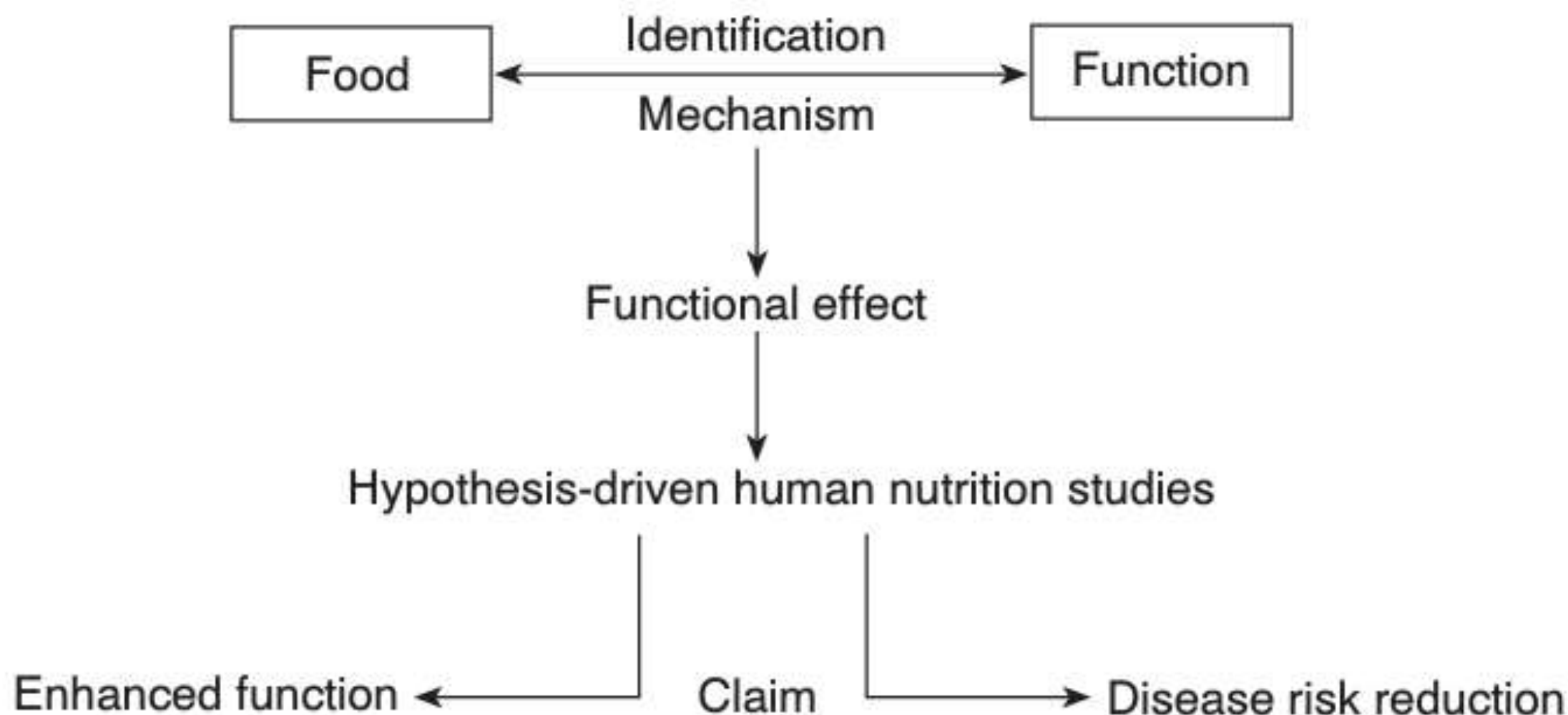
2. What are functional foods?

- Foods that are functionally driven rather than product-driven, it is more likely to be universal and less impacted by local traits or cultural traditions.
- Some of them include vitamins or other components that are meant to boost one's health.
- The notion began in Japan in the 1980s
- These foods are different from nutraceutical, pharmafood, Medi food, designer food, or vita food, and a category that does not include dietary supplements.
- Functional foods are and must be foods, not drugs, as they have no therapeutic effects.

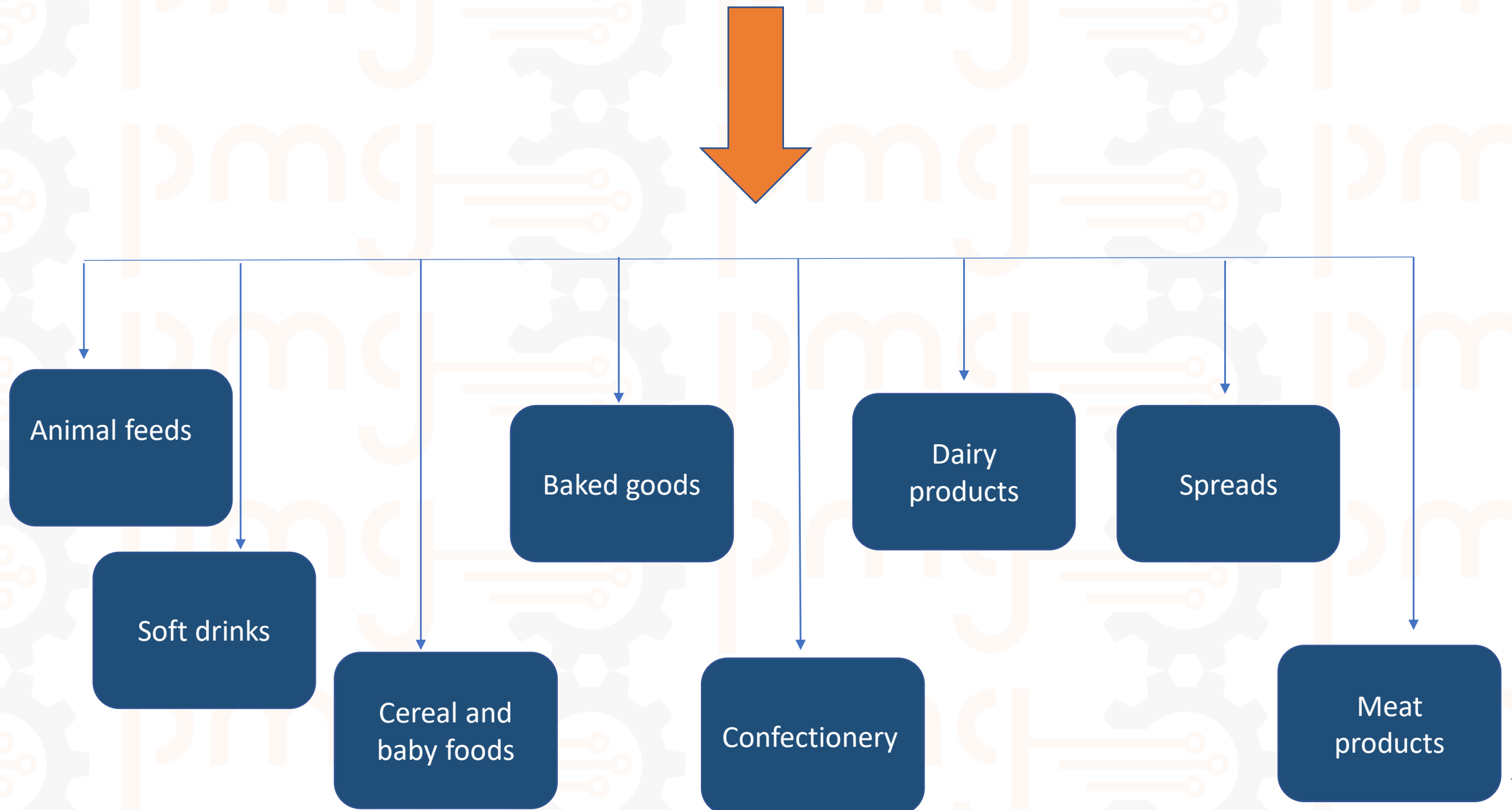
2.1. Unique features

- Having a positive effect on target functions beyond nutritive value/basic nutrition.
- Composed of naturally occurring components
- May enhance well being and health
- reduce the risk of disease

2.2. Functional food mechanism



3. Classifying functional foods



4. Benefits

- Vitamin and mineral fortification
- Cholesterol reduction
- Dietary fiber
- Probiotics, prebiotics, and synbiotics
- Antioxidants
- Phytochemicals
- Herbs and botanicals.



5. Examples of conventional functional foods

- **Fruits:** Berries, kiwi, pears, peaches, apples, oranges, bananas
- **Vegetables:** Broccoli, cauliflower, kale, spinach, zucchini
- **Nuts:** Almonds, cashews, pistachios, macadamia nuts, Brazil nuts
- **Seeds:** Chia seeds, flax seeds, hemp seeds, pumpkin seeds
- **Legumes:** Black beans, chickpeas, navy beans, lentils
- **Whole grains:** Oats, barley, buckwheat, brown rice, couscous
- **Seafood:** Salmon, sardines, anchovies, mackerel, cod
- **Fermented foods:** Tempeh, kombucha, kimchi, kefir, sauerkraut
- **Herbs and spices:** Turmeric, cinnamon, ginger, cayenne pepper
- **Beverages:** Coffee, green tea, black tea

5.1. Examples of modified functional foods

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



6. Difference Between Functional Foods and Nutraceuticals

Functional foods

- Functional foods are food with bioactive compounds such as beta-carotene, lycopene, resveratrol, ferulic acid, etc.
- Furthermore, functional foods have naturally-occurring bioactive compounds in the food while

Nutraceuticals

- Nutraceuticals are the bioactive compounds found in fortified food, dietary supplements, or herbal products.
- Nutraceuticals can come as pills, capsules, or liquids.

7. Food technology and its impact

- From the point of view of food processing, the development of functional foods will often require an increased level of complexity and monitoring of food processing because the following will have to be considered carefully.
- New raw materials including those produced by biotechnologies.
- Emerging thermal and non-thermal technologies.
- New safety issues.
- Integration throughout the entire food chain especially to ensure the preservation and/or enhancement of functionality.

7.1. Technological challenges

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- A large, stylized green DNA double helix is positioned on the left side of the slide, partially overlapping the blue content area. It is rendered in a simple, graphic style with thick lines.
- **A genetic modification:** The use of under-utilized or unconventional natural sources (e.g., algae, seaweeds), the development of bioreactors based on immobilized enzymes
 - **Membrane-processing techniques:** Use of controlled and modified atmospheres, use of high hydrostatic pressure, high-intensity electric field pulse technology, or ultrasound treatments.
 - **Monitoring:**
 - microbial viability
 - productivity for probiotic functions.

8. References

1. <https://www.foodbusinessnews.net/articles/14537-tyson-launches-new-functional-foods-brand>
2. <https://www.researchgate.net/figure/Classification-of-markers-relevant-to-the-effects-of-functional-foods-Reproduce-from-fig1-312274469>
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6. <https://pediaa.com/what-is-the-difference-between-functional-foods-and-nutraceuticals/>

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