# Dietary Supplements and Nutraceutical

## Functional Foods

### Definition:

- Functional foods are foods that have a potentially positive effect on health beyond basic nutrition.
- These foods contain biologically active compounds that offer health benefits and/or reduce the risk of chronic diseases, in addition to their nutritional value.
- The concept includes whole foods as well as fortified, enriched, or enhanced foods.

### Examples:

- **Oats** – Contain beta-glucan, a soluble fiber that can help lower cholesterol levels.
- **Fatty fish (e.g., salmon)** – Rich in omega-3 fatty acids, which support heart health.
- **Yogurt with probiotics** – Helps maintain gastrointestinal health.

### Key Points:

- Consumed as part of a regular diet.
- Recognized for their potential health benefits.
- Not necessarily lab-created; many are naturally occurring foods with specific health-promoting properties.

## Nutraceuticals

### Definition:

- The term "nutraceutical" is a blend of "nutrition" and "pharmaceutical."
- These are products derived from food sources that provide additional health benefits beyond basic nutrition.
- Used to promote well-being, manage symptoms, and prevent disease.
- Includes isolated nutrients, dietary supplements, genetically engineered foods, herbal products, and processed foods like fortified cereals and beverages.

### Examples:

- **Lycopene in tomatoes** – May lower the risk of certain cancers.
- **Omega-3 supplements** – Derived from fish oils to support cardiovascular health.
- **Probiotic supplements** – Support digestive health.

### Key Points:

- Can be isolated from foods or synthetically produced.
- Commonly available in pills, powders, or other medicinal forms (not typically eaten as food).
- May support health, delay aging, prevent chronic diseases, and maintain body structure/function.

# Dietary Supplements

## Definition:

- Products intended to supplement the diet.
- Can include vitamins, minerals, herbs, amino acids, enzymes, and other nutritional substances.
- Available in capsule, tablet, powder, or liquid form.
- Not considered a food but intended to enhance dietary intake.

## Examples:

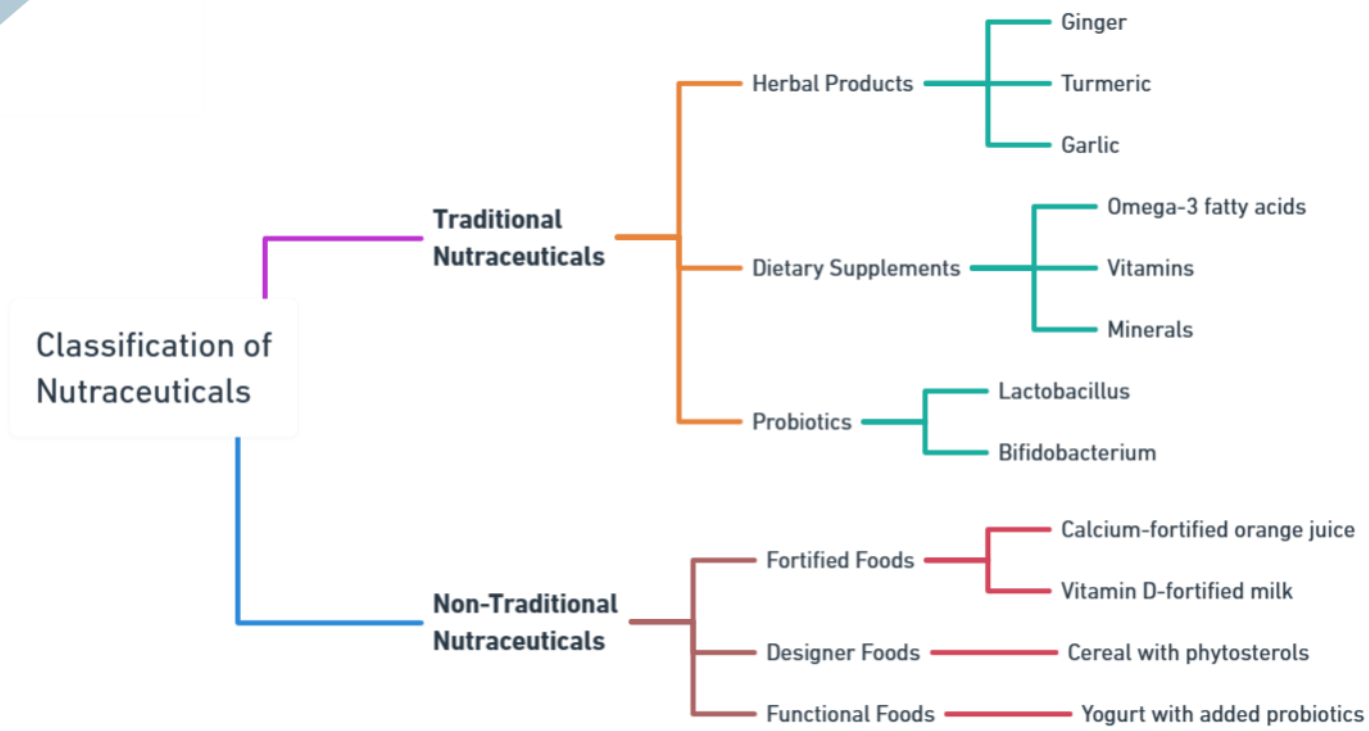
- **Vitamin D supplements** – Support bone health.
- **Iron supplements** – Used for treating iron deficiency anemia.
- **Herbal supplements (e.g., echinacea)** – Promote immune function.

## Key Points:

- Regulated as food (not as drugs) in many regions.
- Not intended to diagnose, treat, cure, or prevent diseases.
- Designed to supplement nutrition, not replace food.
- Safety and effectiveness can vary; typically, subject to less strict regulation compared to pharmaceuticals.

# Classification of Nutraceuticals

- Nutraceuticals—derived from "nutrition" and "pharmaceutical"—are food-based products that offer additional health benefits beyond basic nutrition.
- They can be broadly classified into **Traditional** and **Non-Traditional** categories based on their source, level of processing, and intended use.




## Traditional Nutraceuticals

- These are typically derived from natural sources like foods and plants used for centuries in traditional medicine.
- They are often minimally processed.

### Subcategories:

1. **Herbal Products**
   - Derived from plants; used in folk/traditional medicine.
   - **Examples:** Ginger, Turmeric, Garlic
2. **Dietary Supplements**
   - Concentrated forms of nutrients or substances with physiological benefits.
   - **Examples:** Omega-3 fatty acids, Vitamins, Minerals
3. **Probiotics**
   - Live microorganisms that support gut health.
   - **Examples:** *Lactobacillus*, *Bifidobacterium*

## Non-Traditional Nutraceuticals

- These are newer, often more processed or engineered products, developed to deliver specific health benefits or prevent diseases.

### Subcategories:

1. **Fortified Foods**
   - Foods enriched with additional nutrients or bioactive compounds.

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