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Introduction to Nutrition.

Nutrition is the science that studies food, the nutrients it contains, and how the human body process them to obtain energy, grow, repair tissues, and maintain overall health. It encompasses the processes of ingestion, digestion, absorption, metabolism, and excretion of nutrients. These nutrients are classified into macronutrients—carbohydrates, proteins, and fats—which are needed in larger amounts, and micronutrients—vitamins and minerals—which are required in smaller amounts but are equally essential for optimal physiological functioning. Water, too, plays a critical role as the medium in which nearly all biochemical reactions occur. Nutrition also interacts with broader social, cultural, economic, and environmental factors. Food choices are influenced by traditions, availability, affordability, food systems, and public health policies.

Summary.

Nutrition is the science that studies nutrients, their role in the body, and the way they influence health, growth, and disease prevention. Its importance lies in providing the knowledge needed to maintain a balanced diet, improve quality of life, and prevent problems related to nutrient deficiencies or excesses.

The main branches of nutrition include:

- Clinical nutrition.
- Sports nutrition.
- Community or public health nutrition.
- Animal nutrition.
- Bromatology.

What is nutrition?

Nutrition is the fundamental process by which organisms obtain the nutrients necessary for their survival and functioning.

However, to better understand what nutrition is, we can turn to the functional perspective provided by the WHO. Nutrition is a critical aspect of development and overall health. It is closely linked to well-being at different stages of life, from childhood to adulthood, contributing to stronger immune systems, safer pregnancies, and a lower incidence of non-communicable diseases such as diabetes and cardiovascular disease.

Furthermore, adequate nutrition fosters better academic performance in children and greater productivity in adults, helping to break the cycles of poverty and hunger.

However, malnutrition remains a significant threat, manifesting itself in both undernutrition and overweight, a growing problem in low- and middle-income countries.

Functions of Nutrition

Recognizing the functions of nutrition is essential to understanding the difference between nutrition and feeding.

While feeding refers to the act of consuming food, nutrition focuses on how the body processes and utilizes those nutrients to maintain its vital functions.

Understanding nutrition involves recognizing its role in tissue building, energy production, regulating metabolic processes, and preventing disease. These internal biological processes are essential for the body's development, health and overall well-being, and are clearly distinct from simply eating food.

According to the Spanish Nutrition Foundation, nutrition functions are essential for maintaining the body in optimal condition. The main ones are listed below:

- **Energy supply:** necessary for physical and mental activities.
- **Tissue construction and repair:** crucial for growth and healing.
- **Regulation of metabolic processes:** ensures the proper functioning of bodily functions.
- **Disease prevention:** helps protect against chronic diseases and strengthens the immune system.

Types of Nutrition.

Depending on how organisms acquire and utilize nutrients, five types of nutrition can be distinguished:

- **Autotrophic nutrition:** characteristic of organisms such as plants and some bacteria, which are capable of producing their own food from inorganic substances through processes

Such as photosynthesis.

- **Heterotrophic nutrition:** This type of nutrition is typical of organisms that depend on other living beings or organic matter to obtain their nutrients. It includes most animals, fungi, and some bacteria.

- **Holozoic nutrition:** Within heterotrophic nutrition, holozoic nutrition refers to the ingestion of solid foods that are then digested internally. It is typical in animals and humans.

- **Saprophytic nutrition:** Some organisms, such as certain fungi and bacteria, feed on decomposing organic matter, contributing to the recycling of nutrients in nature.

- **Parasitic nutrition:** In this type, an organism (parasite) feeds on another living organism (host), often causing harm to the host while obtaining its nutrients.

This classification highlights the diversity of mechanisms that organisms have developed to survive in diverse environments.

Relationship between nutrition and health.

The relationship between nutrition and health is close, as a balanced and varied diet contributes to improving a person's overall health and well-being.

According to the Spanish Agency for Food Safety and Nutrition (AESAN), adopting an eating pattern that prioritizes plant-based foods and reduces the consumption of animal products can reduce the risk of chronic diseases and improve quality of life.

Activities to promote a healthy diet are aligned with AESAN recommendations, which also foster environmental sustainability goals, promoting a comprehensive approach known as One Health, which links human health with that of the environment. It is recommended to include an adequate amount of fruits, vegetables, legumes and whole grains daily, while limiting the intake of red meat and ultra-processed products.

Current Trends in Nutrition

Currently, trends in food and nutrition are transforming the way people relate to food and health. In this sense, interest in plant-based diets and sustainability in food production has increased.

Furthermore, the scientific field constantly redefines what nutrition is, understood as something that goes beyond satisfying hunger, including functional foods that provide specific health benefits.

The most prominent trend are:

- Plant-based eating: Increasing preference for plant-based diets, with a focus on reducing meat consumption and seeking nutritious alternatives.

- Fermented foods: Yogurt, kefir, and kimchi are gaining popularity for their probiotic properties and digestive benefits.

• **Functional foods:** Products that offer additional health benefits, such as those enriched with probiotics, stand out.

• **Sustainability:** growing interest in local, seasonal, and organic foods, in response to environmental concerns.

• **Precision nutrition:** diets are personalized based on individual data, such as genetics and microbiome, to improve health.

• **Nutrition education:** emphasis is placed on the need to improve nutrition education, especially due to the impact of social media.

These trends indicate a shift toward more mindful, healthy, and sustainable eating.

Conclusion.

Nutrition is a fundamental aspect of human health and well-being, influencing not only physical development but also cognitive function, immunity, and overall quality of life. Understanding nutrition requires a holistic perspective that goes beyond merely satisfying hunger, emphasizing the importance of consuming balanced diets that provide essential macronutrients, micronutrients, and bioactive compounds. In recent years, the field of nutrition has evolved to integrate scientific discoveries about the interactions between diet, genetics and the gut microbiome, highlighting that each individual may have unique dietary needs. Moreover, the modern approach to nutrition increasingly considers the environmental, social, and cultural dimensions of food.

Linkography.

¿Qué es la nutrición? funciones, tipos y tendencias actuales. (UNIR). <https://share-google-drive-photos.com/5C1ohsxYE8o53mmp>.

You can red more in the Merck Manual Introduction to Nutrition:

<https://www.merckmanuals.com/home/nutritional-disorders/introduction-to-nutrition-to-nutrition>.