

Nutrition: Fundamentals Importance and Role in Health and Disease

Neha Verma*

Neha Department of Biotechnology, Indian Institute of Technology Delhi, New Delhi, India Verma

Editorial

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*For Correspondence

Neha Verma, Neha Department of Biotechnology, Indian Institute of Technology Delhi, New Delhi, India Verma

E-mail: neha.verma@iitd.ac.in

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of body functions. They are classified as:

Carbohydrates: Primary source of energy. Found in cereals, fruits, and vegetables. Proteins: Essential for tissue growth, repair, and enzyme production. Sources include meat, legumes, and dairy. Fats: Provide energy, aid in vitamin absorption, and protect organs. Sources include oils, nuts, and fatty fish. Vitamins: Organic compounds required in small amounts for metabolic processes. Examples include vitamins A, D, E, K, B-complex, and C. Minerals: Inorganic elements essential for bone health, nerve function, and enzyme activity. Examples include calcium, iron, magnesium, and zinc ^[2]. Water is vital for hydration, transport of nutrients, and regulation of body temperature. Phytochemicals, antioxidants, and fiber play protective roles in health by reducing oxidative stress and supporting digestion.

FUNCTIONS OF NUTRITION

Nutrition supports multiple physiological functions:

Growth and Development: Adequate protein, vitamins, and minerals are crucial for children and adolescents. Energy Provision: Carbohydrates and fats provide energy for daily activities. Immune Support: Nutrients like zinc, vitamin C, and vitamin D enhance

ABSTRACT

Nutrition is the study of how food and its components impact human health and growth. It involves understanding the roles of macronutrients, micronutrients, and bioactive compounds in maintaining bodily functions, preventing diseases, and promoting overall well-being. Proper nutrition is essential for growth, development, and the prevention of malnutrition-related disorders. This article explores the principles of nutrition, types of nutrients, their functions, dietary requirements, and the importance of nutrition in maintaining health and managing diseases.

Keywords

Nutrition, Nutrients, Dietary Guidelines, Malnutrition, Health, Metabolism

INTRODUCTION

Nutrition is a critical aspect of human life that influences health, productivity, and longevity. It encompasses the intake, absorption, metabolism, and utilization of nutrients obtained from food. Good nutrition is necessary for growth, tissue repair, energy provision, immune function, and the prevention of chronic diseases ^[1].

With rapid urbanization and changes in lifestyle, nutrition-related problems, including obesity, diabetes, and micronutrient deficiencies, have become major public health concerns globally.

TYPES OF NUTRIENTS

Nutrients are substances in food required for energy, growth, and maintenance

immune function. Disease Prevention: Proper nutrition reduces the risk of obesity, diabetes, cardiovascular diseases, and certain cancers ^[3].

DIETARY REQUIREMENTS

Dietary requirements depend on age, sex, physiological state, and physical activity. National and international guidelines, such as Recommended Dietary Allowances (RDA), provide nutrient intake recommendations. A balanced diet includes: Fruits and Vegetables: Rich in vitamins, minerals, and fiber. Whole Grains: Provide carbohydrates and dietary fiber. Lean Proteins: Include legumes, fish, poultry, and eggs. Healthy Fats: Include nuts, seeds, and plant oils

MALNUTRITION AND ITS CONSEQUENCES

Malnutrition includes undernutrition (deficiencies) and overnutrition (excessive intake). Undernutrition: Leads to stunted growth, anemia, weakened immunity, and increased mortality. Overnutrition: Causes obesity, metabolic syndrome, cardiovascular diseases, and type 2 diabetes ^[4].

NUTRITION AND HEALTH

Proper nutrition is essential for maintaining optimal health and preventing disease:

Childhood: Adequate nutrition supports growth, brain development, and cognitive function. Adulthood: Maintains energy balance, supports reproduction, and prevents chronic diseases. Elderly: Supports bone health, immunity, and reduces risk of age-related disorders.

Nutrition also plays a role in managing conditions such as diabetes, hypertension, and cardiovascular diseases through dietary interventions ^[5].

CONCLUSION

Nutrition is a cornerstone of human health, affecting growth, immunity, and disease prevention. Balanced diets that include macronutrients, micronutrients, water, and bioactive compounds are essential for maintaining health across all life stages. Addressing malnutrition and promoting healthy eating habits are critical for preventing lifestyle-related diseases and achieving public health goals. Continued research and awareness programs are essential for improving nutritional outcomes globally.

ACKNOWLEDGEMENT

None.

CONFLICT OF INTEREST

None.

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