



Nutrition and Food in Contemporary Science

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Abstract:

Although an individual needs many things to survive, food and nutrition are regarded as two of the most important requirements for human living. A person performs a variety of jobs and responsibilities during their life, and each one is accomplished in an efficient manner by receiving the energy, vigor, and strength that come from eating a healthy diet. Food is thought to be a necessary component for one's normal growth and development. It is not only necessary for one to perform well at work, finish school, manage household chores, and participate fully in extracurricular activities like sports, music, dance, art, and physical exercise. Eating specific meals that are high in nutrients affects how the body works, shields the body from illnesses and diseases, restores health, and determines how people react to environmental changes. A grasp of this composite, all-encompassing, and methodical region can be formed by an individual with the help of food and nutrition. In order to maintain structural and functional uprightness, human nutrition considers the ways in which cellular organelles, cells, tissues, organs, systems, and the body's operation employ the elements needed from food. This study aims to comprehend the notions of food and nutrition and the connection they have with an individual's health; the primary foci are comprehending food and nutrition, food functions, nutrient essentials, food and nutrition in India, food and nutrition and health, and food, nutrition, diet, and non-communicable diseases correlation. The understanding of how a person obtains and utilizes food and nutrients, from the molecular to the community level, as well as the factors that are required to determine and influence these processes, are highlighted in this research paper. Eating and developing the right foods and nutrients helps the human body grow and develop normally and improves living standards.

Keywords: Food, Nutrition, Health, Diet, Malnutrition, Nutrients

Introduction:

Understanding Food and Nutrition:

It is widely believed that food is essential to human existence and the existence of all other living things. Without it, it is impossible to maintain good health, carry out daily tasks effectively, recuperate from sickness, ensure that children grow and develop to their full potential, or simply survive. Articles, publications, talks, and advertising all see food as a very significant topic. Upon waking up in the morning, people in a home always look for food to prepare for the day. When someone eats what they want to eat when they are feeling down or furious, their mind becomes calm, which leads to relaxation. by indulging in comfort food; tasty, expertly prepared meals help people relax and focus. It is widely acknowledged that food, nutrition, and health are essential components of a person's existence. Food is defined as any substance that fits the body's needs for energy, structure, direction, and protection; it can be consumed in any form. According to Foods, Nutrition and Health (n.d.), food is regarded as the basic material that makes up bodies. There are many different kinds of food, and eating a diet high in nutrients and health benefits one's appearance, efficacy, and emotional stability.

Eating a diet high in nutrients also helps one's mental state to remain calm and uncompromised. When food functions, it is said to be nutritious. From the moment food is consumed until it is used to power different bodily processes, nutrition encompasses everything that happens to the meal. Food components known as nutrients are those that the body needs in adequate quantities to support growth, reproduction, and a normal, healthy life. A few examples of nutrients are water, minerals, vitamins, proteins, lipids, and crabs. Each of the groups contains multiple nutrients, which are as follows: proteins, fats, carbohydrates, minerals, and vitamins. For this reason, the terms have been stated in plural form. Consequently, food provides over forty vital nutrients that are utilized to precisely create thousands of components required for a healthy body and an active lifestyle (Foods, Nutrition and (Health, n.d.)).The state of the body as a result of the foods ingested and how the body uses them is known as nutritional status; it can be defined as adequate, moderate, or inadequate. Strong and robust bodies, prepared, agreeable personalities and behaviors, and maintenance of a healthy body weight are all results of high-quality nutritional status. A person who achieves optimal nutritional

status has constant happiness and well-being, develops a pleasant disposition, and consistently shows people politeness and respect. In general, good health is demonstrated by a strong work ethic, consistent eating and sleeping schedules, regular elimination of harmful substances, and a fight against all ailments and weaknesses. A listless, indifferent, and irritable disposition, an underdeveloped, small body, and a bad nutritional state all contribute to these symptoms. Body weight is not normal; it can be too low or too high, sagging, with undersized, ill-conditioned muscles and pale skin; obesity is one of the worst issues resulting from inadequate nutrition and can cause disfigurement; eating unhealthy foods can cause weight gain, which can then lead to obesity. (Foods, Nutrition and Health, n.d.) suggests that improper food choices, improper timing of food consumption, prolonged fasting without food, and insufficient sleep can all contribute to nutritional deprivation. Applications of Food According to how well the food performs its duties inside the body, it has been categorized; these activities are taken into consideration to have a significant role in accepting and organizing meals that are not only satisfying and comfortable in terms of nutrition, but also pleasant: 2004's Nutrition and Dietetics. The Role of Foods in Physiology Foods that provide energy, foods that develop muscle, and meals that regulate and protect the body are the three categories into which the physiological functions of food are divided.

a) Foods That Provide Energy The term "energy yielding foods" refers to diets high in lipids and carbohydrates, which provide the energy needed to support the involuntary processes essential to human survival. An individual has to consume enough food to sustain their everyday activities, such as doing tasks and functions that involve performance. Activities, whether they be domestic, work-related, or recreational, demand vitality and energy; hence, diets high in carbohydrates and fats are necessary for achieving these goals. Meals that are thought to be good providers of energy include wheat, pulses, cereals, roots, tubers, dried fruits, oils, butter, and ghee. The oxidation of the meals consumed provides the energy required. Body-Building Foods (b): Protein-rich foods are referred to as "body building" foods. Rich in high-quality proteins are foods like milk, meat, eggs, and fish. Although nuts and pulses are thought to be excellent sources of protein, the protein content is not improved. These meals support the person in maintaining a happy life and promote efficient growth and maturation; in addition, they give the body the energy it needs to carry out daily tasks. b) Protective and Regulatory Foods: Foods high in vitamins, minerals, and protein are classified as protective and regulatory foods. They are essential

for maintaining bodily temperature, controlling water balance, controlling muscle contraction, clotting blood, eliminating waste from the body, and sustaining heartbeat, among other actions and functions that are necessary for health. Fruits, vegetables, milk, eggs, liver, and other foods are considered protective foods.

Social Functions of Food: Food has long been an essential component of community, social, cultural, and religious life. When planning special occasions or events, such as weddings or religious rituals, food is taken into This is an important factor. It has been significant as a show of solidarity, friendship, and contentment during religious, social, and familial events, celebrations, and festivals. Food has a fundamental role in a person's social life; when friends and family come to town, food also fosters a cheerful and welcoming environment. Whenever a festival occurs, food is typically given to friends and family as gifts, such as cakes for Christmas.

The Role of Food in Psychology Foods are also seen to be essential for meeting emotional needs in people, such as those for security, love, and acceptance. Making tasty meals for family members, for instance, shows appreciation and affection. Distributing sharing food with others is regarded as a sign of friendship and acceptance. For instance, mothers feed their children delicious meals at school and encourage them to share them with their friends in order for them to be socially accepted and acknowledged. While familiar and familiar foods offer security, unfamiliar foods can make a person feel uneasy or unsatisfied after consuming them.

The Essentials of the Nutrients:

The relationship between an individual's nutrition and health is well-established. To maintain good health and lead a healthy lifestyle, one must be aware of the essential nutrients. For example, parents of young children should teach their children the importance of eating healthy foods. Preschools and kindergartens place a great deal of emphasis on the diets of their young students because eating a nutritious diet will help them learn effectively and develop good eating habits. The following should be covered in the study of nutrients and relevant nutritional knowledge: As stated by Gibney, Lanham-New, Cassidy, and Vorster in 2009.

1. One should be aware of all the benefits of eating, and the chemical and physical structure and features of the nutrients must be sufficiently grasped.
2. An individual in the household should be able to develop adequate knowledge regarding food preparation; food should be prepared with proper cooking materials to make the nutritional value available to the consumers. Food sources of nutrients, including food composition, the ways in which different foods are grown,

harvested, stored, processed, and prepared, should also be known.

3. Boiling milk removes fat particles and facilitates easy digestion, thus drinks like milk, tea, or coffee should be prepared after the milk has boiled. The processes of metabolism, assimilation, vascular circulation, and For optimal nutrition utilization, it is essential to understand both the regulation of these processes and the intake of nutrients by cells.
4. A person with optimal nutrition maintains good health, well-being, proper growth and development, and a high quality of life, as well as the ability to perform adequately in their studies, work, job duties, and other activities.
5. An individual with optimal nutrition has a food secure diet that is adequate, well-balanced, and cautious.

The condition of under nutrition occurs when a person lacks sufficient amounts of vital nutrients; this condition makes people feel uneasy about eating; these people live in poverty, in a backward or isolated environment, are jobless or underarm as well as mental growth and experience deficient health circumstances.

6. The condition known as over nutrition occurs when a person consumes more calories than necessary; if this person consumes excess calories without exercising, the excess nutrients are stored as fat in the body, which leads to obesity. An abundance of health issues, including obesity, hypertension, metabolic syndrome, heart disease, diabetes, and so on, are caused by over nutrition.
7. Malnutrition is a condition of undernourishment in which a person either consumes an excessive or insufficient amount of nutrients; it is commonly characterized by an excess of macronutrients and a deficiency of micronutrients. Malnutrition is defined as an extreme, inadequate, or disproportionate nutrient consumption of nutrients.

Food and Nutrition in India:

Actual GDP per capita grew by 5.4% annually between 2000 and 2005, and by 3.95% annually between 1980 and 2005. The Indian economy has recently expanded at historically exceptional rates, making it one of the fastest-growing economies in the world. Real per capita income in India is currently 2.5 times higher than that of both Kenya and Nigeria when calculated at world prices. In 1950, India's per capita income was roughly the same as that of Kenya, and half that of Nigeria. The real per capita utilization rate also grew quickly: from the 1980s to the 1990s, it increased at a rate of 2.2% annually, 2.5% annually, and 3.9% annually between 2000 as well. However, Even these reduced growth rates are connected with a

significant drop in poverty during the early 1980s. The house-hold survey data reveal substantially lower rates of per capita consumption growth than do these national accounts calculations. However, the average amount of calories consumed as well as the amount of many other nutrients consumed is declining; in fact, the only major nutritional type whose consumption is specifically increasing is fats.

Over 75% of the current population lives in households where the average daily caloric intake is less than 2,100 calories in urban areas and less than 2,400 calories in rural areas; these figures are often cited as the minimum requirements in India (Deaton & Dreze, 2009). An additional worry is that, in India, anthropometric indicators of malnutrition In this country, the issue of malnutrition has been widespread, affecting both adults and children in a situation of deprivation. In addition, the pace at which these nutrition-related metrics are developing seems sluggish in light of global knowledge and experience as well as India's present strong economic development rates. It is true that during 1998–1999 and 2005–2006, the National Family Health Survey showed essentially no change in the proportion of underweight children; for children aged 0–3 years, this percentage varied from 47% to 46% (Deaton & Dreze, 2009). Malnutrition, which is defined as the inadequate, excessive, and unbalanced consumption of nutrients, has been a serious issue in India and continues to be a high-level concern today. Compared to men, women and children have been more affected by this issue. When people do not get enough calories and protein from their diet to support their growth and development, they are considered malnourished or undernourished. When people eat more calories than they need, they either suffer from over nutrition or malnutrition.

The Relationship between Food and Nutrition and Health:

Childhood and adolescence are regarded as critical stages for a person's health and development because physiological demands for nutrients rise throughout these years, and eating a diet rich in the right necessary nutrients is especially important. These formative years may see the continuation of established lifestyle patterns, food habits, and behavior patterns throughout adulthood. The way someone eats does affect their mentality, physical health, and general well-being. The risk of acute nutrition related to health issues like obesity, dental issues, and inactivity is decreased when children and adolescents consume a healthy and nutritious diet. Individuals' health and food are directly correlated; eating a diet high in nutrients has an impact on one's health. & well-being of the individuals; for instance, if a person regularly eats unhealthy foods like sweets, fast food, or an excess of fat without exercising, he may gain weight; conversely, eating

healthy foods like fruits, vegetables, etc. may help a person maintain a healthy body weight and mental equilibrium (Food and Nutrition, 2006). Certain situations involve people who don't know what foods to eat—children, for example, may think they should eat more fast food and sweets than is healthy. The fundamentals of a balanced diet were not taught to many kids and teenagers growing up; when peoples when pursuing their higher education away from home, they typically eat out and indulge in fast food because it's convenient and reasonably priced. However, eating fast food has negative effects on one's health and can contribute to obesity and lethargy. Conversely, the important nutrients that give rise to a feeling of health and activity are fruits, vegetables, low-fat milk, and proteins (Food and Nutrition, 2006). Fast food should always be consumed in moderation. Meals should be taken at the proper times, and eating in between meals should typically be avoided. Obese people should never skip meals or fully avoid consuming any particular food. If a person goes an extended period of time without eating.

His health is impacted since, after, say, 10 to 12 hours, his brain's sugar levels start to drop and he usually becomes angrier and more irritable. Because many people, especially adolescents, believe that being skinny is desirable, they occasionally skip meals or eat low-calorie foods like fruits and salads. As a result, they may not be getting the essential nutrients that their bodies need, which cause them to lose weight and suffer from dietary deficiencies that could have an impact on their health. Food has a significant impact on a person's performance and other aspects of his life, including mental health, physical appearance, mental health issues, obesity, and skinniness takes in (Food and Nutrition, 2006).

The Connection between Food, Nutrition, Diet and Non-Communicable Diseases:

It's crucial to learn about non-communicable diseases when learning about food and nutrition (The relationship between food, nutrition, diet and non-communicable diseases, 2014).

1. Diabetes, certain forms of cardiac issues, and cardiovascular disorders can all be influenced by an individual's diet and nutritional state. In addition to raising blood pressure and cholesterol, foods, diet, and nutritional status—including being overweight or obese—also work against the effects of insulin. These circumstances are important contributors to poor health in and of themselves, as well as risk factors for NCDs.
2. Eating a diet high in plant-based foods, such green leafy vegetables, lowers the chance of developing diabetes, obesity, cardiovascular disease, and certain deficiencies and issues with

the human body, like deficiency Inadequate iron intake can lead to many health issues, including anemia, a condition that typically affects women. As a result, doctors advise people to eat spinach in moderation to obtain iron for their bodies. Foods like meat, eggs, and dairy products should be consumed in moderation. Plant-based diets are high in fruits and vegetables, high in whole grains, pulses, nuts, and seeds, and high in dietary fibre. They can also help people achieve and maintain a healthy body weight, lower blood pressure, feel more energized and vigorous, and provide a wealth of dietary fibre. When a person reaches the age of 60 and beyond, and experiences any of the following conditions, fruits and vegetables can help avoid cardiovascular diseases on their own. Dieticians and medical professionals advise people suffering from a variety of health issues, such as joint pain, high or low blood pressure, toothaches, or deficiencies in certain minerals, like low calcium or potassium, to follow a healthy diet as it may positively impact their conditions and reduce anxiety about their mental and physical well-being. It's likely that some fruits and vegetables, such as cruciferous vegetables like broccoli and cabbage, as well as many fruits and vegetables high in folate, also guard against certain health issues; it's advised that someone who avoids breads and carbohydrates regularly eat fruits enhanced with vital nutrients. Like the abundantly calcium- and potassium-rich bananas.

3. It is well known that the body needs to consume certain nutrients in order to function properly during growth and development. Medical professionals, dietitians, and researchers all advise people to eat a nutritious, healthful diet that includes foods high in iron, folic acid, calcium, potassium, vitamins, carbohydrates, and proteins, as well as some fat. Healthy and nutritious diets are always good to an individual's health, personal growth, mindset, and quality of life. Unhealthy foods should not be fully avoided, but rather consumed in moderation.

Discussion:

Food and nutrition is a vital area for the effective growth and development of the human body, in his life an individual accomplishes a variety of functions and roles such as roles within the family, society, his job, his academic performance, his participation in other areas such as sports, competitions and so forth, for rendering an effective participation and achieving success an individual is required to possess certain attributes and skills; he needs the energy and the vigor to accomplish success and these attributes and skills he acquires through hard work and dedication and this diligence

and commitment, he is able to implement through consumption of a balanced nutritious diet. A balanced diet provides all the essential nutrients that are required to put into practice the essential roles and functions. Research indicated that when a person works on his computer for long hours, sometimes he consumes tea at frequent intervals to stimulate his mindset; therefore, it is food and drink that makes the individual carry out his job duties.

The lifestyle and the environmental factors do render an influence upon the person's life in addition to nutrition; but Nutrition is regarded as the main, regulating and a prevailing factor in promoting the health, development, growth, safeguarding the body from different kinds of weaknesses, diseases and improving the eminence of life. Individuals consume food and not nutrients, but the nutrients are present in the foods that determine the health of the individuals. The consumption of different kinds of foods have different kinds of influences upon the health of the individuals, for example, if an individual consumes a healthy diet enriched with fruits and vegetables then his body weight would be normal and he would maintain his good health. On the other hand, consumption of too many sweets and fast foods, fried foods without getting engaged in any physical activity causes an increase in the body weight and an individual becomes obese. Malnutrition is the state when there is an undesirable kind of nutrition, leading to ill health; it results from the lack, excess or imbalanced nutrients within the diet. There have been physiological, social and psychological functions of food, in any kinds of social occasions, gatherings, meeting with friends and relatives, food is considered to be the most imperative aspect that truly enhances the conversation and the communication that is carried out. When a person is angry, frustrated or depressed, then he is always offered a glass of water so that he feels relaxed and his worries get minimized. A young child for instance, when feels frustrated, his mother offers him some food so that he gets pacified; therefore, food not just performs the functions of growth and development, but it also relieves, pacifies, comforts and soothes an individual. Food and nutrition is required to be effectively understood not just by the educated and wealthy people who reside in urban areas but also by the isolated communities residing in rural areas and those who belong to socio-economically backward sections of the society. Utilization of food and nutrients within the body should be in such a manner that the maximum level of physical and mental health is maintained throughout the life of an individual.

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