

## Food and Nutrition

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### Abstract

There are numerous things required for the existence of the individual; food and nutrition is considered as one of the imperative aspects that are essential for the survival of the human being. An individual in his life implements number of tasks and duties, all the functions are effectively carried out by obtaining energy, vigor and strength and that one obtains through acquiring food and proper nutrition. Food is not only vital to carry out ones job duties, performing well academically or putting into operation the household chores and rendering an effective contribution in other activities such as physical exercises, music, dance, arts and crafts, sports and so forth; food is considered to be an essential requirement for ones normal growth and development. The intake of certain foods called nutrients influence the functions of the body, protect the body against diseases or illnesses, reinstate health and establish people's responses to changes that occur within an environment. Food and nutrition assists an individual in forming a holistic and an integrated understanding of this composite, comprehensive and methodical area. Human nutrition takes into account the processes whereby cellular organelles, cells, tissues, organs, systems and the functioning of the human body make use of the required materials obtained from the foods to sustain structural and efficient uprightness. The main purpose of this research paper is to understand the concepts of food and nutrition and the relationship that they form with the health of the individual; the main areas are, understanding food and nutrition, functions of food, the essentials of the nutrients, food and nutrition in India, the relationship between food and nutrition and health, and the connection between food, nutrition, diet and non-communicable diseases. This research paper highlights the understanding that how an individual is able to acquire and make use of foods and nutrients from the molecular to the community level and the factors that are necessary in determining and influencing these processes; proper foods and nutrients contribute in the effective growth and development of the human body and enhances the quality of living standards.

**Keywords:** Food; Nutrition; Health; Diet; Malnutrition; Nutrients

### Understanding food and nutrition

Food has been considered to be an imperative part for the existence of a human being or any other living organism; in order to obtain a good health, to accomplish ones jobs and duties in an effective manner, to recover from illnesses, to implement adequate growth and development of the children and to survive, food is a basic necessity that is required to get fulfilled. Food is considered to be an extremely important topic in the articles, magazines, conversations and advertisements. Within a household, early in the morning when individuals wake up, they always seek what food to prepare for the day; when a person feels depressed or angry and he consumes his desirable food items, he feels relaxed, because relaxation of the mind takes place through consumption of comfort food; well prepared, delicious meals soothes the mindset of the person. Food, nutrition and health are considered to be crucial aspects of an individual's life; food is that which nourishes the body, it can be anything which one can either eat or drink, which meets the requirements of energy, structure, directive and safeguarding of the body. Food is considered to be the raw material which makes

up the bodies, food items are of different types and consumption of healthy and nutritious food ensures good health, personal appearance, effectiveness and emotional well being; the mindset of the individual remains peaceful and pacified when he consumes healthy and nutritious food [1].

Nutrition is defined as when food performs its work within the body; nutrition includes everything that happens to the food from the time it is consumed until it is utilized for the performance of various functions within the body. Nutrients are constituents of food that are required by the body in sufficient amounts in order to nurture, reproduce and lead a standard, healthy life. Nutrients include water, proteins, fats, carbohydrates, minerals and vitamins. There are several nutrients in each of the groups, these are proteins, fats, carbohydrates, minerals and vitamins; hence the plural form of these words have been stated. Therefore, there are more than 40 essential nutrients supplied by food, which are used to produce accurately thousands of materials needed for an energetic living and good physical health [1].

Nutritional status is the condition of the human body as an outcome of the foods consumed and their utilization by the body; nutritional status can be good quality, moderate or deprived. The features of a good quality nutritional status lead to a prepared, pleasant individuality and behavior, a strong and a robust body, and maintenance of normal body weight. An individual when obtains good nutritional status, always feels happy and is in a good mood, he becomes good natured and always treats others with respect and courtesy. General good health is apparent by determination for work, regular meal timings, sound regular sleep, regular eradication and struggle against any kinds of weaknesses and illnesses. Deprived and weak nutritional status is supported by a lethargic, uninterested and short-tempered personality traits, undersized inadequately developed body, the body weight is not normal, either it is too thin or fat or a sagging body, muscles become undersized and out of condition, with a pale skin color; obesity is one of the most severe problems that occur due to inadequate nutritional status and it leads to disfigurement, when an individual consumes unhealthy food items then it results in weight gain and in turn lead to obesity. Deprived nutritional status may be the effect of inappropriate selection of food items, consumption of food during inappropriate timings, working for long hours without eating, and having inadequate sleep [1].

### Functions of food

The food has been classified in accordance with the performance of their functions within the body, the functions of the food are considered to be important in the acceptance and planning of ones meals which are not only adequate in a nutritional manner but they are agreeable and make an individual feel comfortable: [2].

### Physiological functions of foods

The physiological functions of food are classified into three categories such as the energy yielding foods, body building foods and protective and regulatory foods.

- **Energy Yielding Foods:** Foods that are rich in carbohydrates and fats are termed as energy yielding foods, they make provision of energy to sustain the involuntary processes that are necessary for the existence of the human being. In order to carry out the daily life activities, an individual needs his adequate food consumption, for instance the activities and functions regarding the performance of professional, household and recreational activities requires energy and liveliness, therefore, in order to effectively accomplish these activities, one requires carbohydrate and fat enriched foods. The energy needed is supplied by the oxidation of the foods consumed; the foods that are considered to be good sources of energy are wheat, pulses, cereals, roots, tubers, dried fruits, oils, butter and ghee.
- **Body Building Foods:** Foods that are rich in protein are known as body building foods. Foods such as milk, meat, eggs and fish are rich in proteins of superior quality. Pulses and

nuts are regarded to be good sources of protein but the protein is not of enhanced quality. These foods assist the individual in the maintenance of a good life and encourage effective growth and development; they also provide energy to the human body which is required for the performance of daily life activities.

- **Protective and Regulatory Foods:** Foods that are rich in protein, minerals and vitamins are known as protective and regulatory foods. They are vital for health and for regulation of activities and functions such as maintenance of the body temperature, muscle contraction, control of water balance, clotting of blood, removal of waste products from the body and maintaining heartbeat. Milk, egg, liver, fruits and vegetables are known as protective foods.

### Social functions of food

Food has always been an imperative part of the community, social, cultural and religious life; during the organization of any occasions or events such as marriages, religious functions or ceremonies, food is considered to be a vital aspect. It has been significance and an indication of togetherness, camaraderie and contentment at religious, community and family gatherings, occasions and festivals. Food is an integral part of an individual's social existence, when friends and relatives make a visit then also the presence of food creates a jovial and a friendly atmosphere; during the occurrence of any festival, mostly food items are given to friends and relatives in the form of gifts such as cakes during Christmas.

### Psychological functions of food

Foods are considered vital in satisfying the emotional needs of the individuals as well, these include the sense of security, love and acceptance; for example, preparation of appetizing and delicious meals for the family members indicates admiration and warmth. Sharing of food with others is considered to be an indication of friendship and acceptance, for example, when children go to school, their mothers provide them delectable meals and always tell them to share their meals with their friends so that they are socially accepted and recognized; familiar and known foods provide security to an individual, whereas unfamiliar foods may be distasteful to an individual and he may not feel satisfied on consumption of unfamiliar foods, that he is not aware of.

### The essentials of the nutrients

There is a strong and a direct correlation between health and nutrition of an individual; in order to maintain good health and incur a good lifestyle, an individual is required to possess the knowledge and the information regarding the essential nutrients; for instance, parents who have small children at home, they should provide the essential knowledge to their children regarding the consumption of healthy foods, preschools and kindergartens lay extreme emphasis upon the dietary aspects of the young students, because consumption of a healthy and a nutritious diet will enable them to learn effectively and form good eating habits. The study of nutrients and the appropriate knowledge regarding the nutritional aspects should include the following: [3].

1. The chemical and the physical structure and characteristics of the nutrients have to be adequately understood; one should be aware of all the advantages of food consumption.
2. The food sources of the nutrients, including food composition, the way in which different foods are grown, harvested, stored, processed and prepared should also be known; an individual within the household should be able to develop adequate knowledge regarding the preparation of food; food should be prepared with proper cooking materials to make available the nutritional value to the consumers.
3. Drinks such as milk, tea or coffee should be prepared after boiling the milk, because boiling of the milk eliminates the fat particles and makes the milk easily digestible. The digestion, absorption, circulatory transportation and cellular uptake of nutrients as well as regulation of these processes are vital to be aware of in order to utilize the nutrients in an effective manner.
4. Optimum nutrition is the nutrition that makes the individuals food secure, with adequate, well balanced and cautious diets; this kind of nutrition enables an individual maintain good health, well being, proper growth and development and high quality of life with adequate performance in ones study, work, job duties and other activities.
5. Under nutrition is a situation when an individual suffers from the scarcity of essential nutrients; this state makes individuals feel insecure regarding the consumption of food, these individuals reside in the conditions of poverty, backwardness, isolation, instability, they are unemployed or underemployed, possess decreased physical and mental development and suffer from deprived health conditions.
6. Over nutrition is the condition when an individual consumes excessive calories then what is required; when an individual consumes excessive calories and does not get engaged in any physical activity then excessive nutrients get stored within the body in the form of fat, hence resulting in obesity. Over nutrition results in many health problems such as obesity, high blood pressure, metabolic syndrome, cardiovascular diseases, diabetes and so forth.
7. Malnutrition is the state of undernourishment, when an individual either consumes less, inadequate or extreme amount of nutrients; it is often characterized by the over nutrition of macronutrients and the under nutrition of micronutrients; deficient, extreme and disproportion consumption of nutrients is termed as malnutrition.

### Food and nutrition in India

The Indian economy has in recent times developed at traditionally exceptional rates and is now one of the fastest-growing economies in the world; genuine GDP per head increased at 3.95% a year from 1980 to 2005, and at 5.4% a year from 2000 to 2005. Calculated at international prices, real per capita income in India, which was two-thirds of that of Kenya's in 1950, and about the same as Nigeria's, is in the present existence two and a half times as large

as per capita income in both the countries. Real per capita utilization has also increased at a fast pace, at 2.2% a year in the 1980s, at 2.5% a year in the 1990s, and at 3.9% a year from 2000 to 2005. Though the household survey data show much slower rates of per capita consumption growth than do these national accounts estimations, even these slower growth rates are correlated with a considerable decline in poverty since the early 1980s. Yet, per capita calorie consumption is reducing, as is the consumption of many other nutrients; indeed fats are the only main nutrient group whose per capita consumption is explicitly growing. In the present existence, more than three quarters of the population reside in households with per capita calorie consumption below 2,100 per day in the urban areas and below 2,400 per day in the rural areas; these numbers are frequently stated as the minimum requirements in India [4].

A related concern is that anthropometric signs of nutrition in India, for both adults and children, are in a deprived state, there has been prevalence of the problem of malnutrition within the country. Furthermore, the development of these measures of nutrition appears to be slow comparative to what may be anticipated in the beam of the worldwide understanding and experience and of India's current high rates of economic development. Indeed, in accordance to the National Family Health Survey, the percentage of underweight children remained virtually unchanged between 1998-99 and 2005-06 these ranged from 47% to 46 % for the age group of 0-3 years [4]. The levels of under nutrition in India still remains high in the present existence, the problem of malnutrition has been severe, it is regarded as the insufficient, excessive and imbalanced consumption of nutrients; this problem has been prevalent more amongst women and children as compared to men. Individuals are malnourished or suffer from under nutrition when their diet does not make available adequate calories and protein that are required for their growth and development. Individuals are malnourished or suffer from over nutrition when they consume too many calories then what is required.

### The relationship between food and nutrition and health

An individual's childhood stage and adolescence are considered to be crucial periods for health and development as during this period the physiological needs for nutrients increases and the diet that is enriched with proper essential nutrients is predominantly significant. During this stage, the behavior patterns, lifestyles and eating behaviors that are established may continue to exist throughout adulthood. Eating behaviors do have an influence upon the person's health, mindset and well being. Consumption of a healthy and a nutritious diet during childhood and adolescence reduces the risk of immediate nutrition relating to health problems such as obesity, dental problems and lack of physical activity. There is a direct relationship between food and nutrition and the health of the individuals; the consumption of nutritional food affects the health and well being of the individuals; for example, if an individual consumes unhealthy food items on a frequent basis such as sweets, fast foods or excess of fats, without getting involved in any

physical activities, he may likely put on weight, on the other hand, consumption of healthy foods such as fruits, vegetables etc. may enable an individual to maintain adequate body weight and mental balance [5].

In some of the cases, individuals lack the awareness regarding what food items to consume, such as children feel that they should consume more sweets and fast foods, and hence it affects their health. Many children and adolescents grew up without learning about the basic skills and knowledge regarding the healthy diet; when individuals stay away from home, when they are pursuing their higher education, then they normally eat out and consume fast foods because they are convenient to consume and are available at reasonable rates; the consequences of consuming fast foods are detrimental, they may lead to obesity, makes an individual lethargic and are unhealthy. On the other hand, vegetables, fruits, low fat milk, proteins are the essential nutrients that make the individual feel healthy and active [5].

Meals should be consumed at appropriate timings and eating in between meals should normally be avoided, obese individuals should never skip meals or avoid the consumption of certain foods completely; fast foods should always be consumed in moderation. If an individual stays without food for a long time such as about 10 to 12 hours, the sugar levels of the brain begins to decline and he is likely to become more short tempered and petulant; thus, his health gets affected. Adolescents in particular and individuals of all age groups largely believe in skinniness, therefore, they sometimes skip meals or consume low calorie foods such as fruits and salads, in this case, they sometimes do not receive the essential nutrients required by the body, hence they lose their body weight and suffer from the deficiencies of essential nutrients such as proteins, carbohydrates and fats which may effect their health conditions. Factors such as obesity, skinniness, health conditions, mental balance, personal appearance, mindset and performance of an individual largely gets affected by the food that he consumes [5].

#### The connection between food, nutrition, diet and non-communicable diseases

When acquiring information and knowledge about food and nutrition, it is important to discuss about the non-communicable diseases: [6].

1. What an individual consumes and his nutritional status can affect the cardiovascular diseases, some types of heart problems and diabetes. Foods, diet and nutritional status, including overweight and obesity, are also associated with high blood pressure and blood cholesterol, and struggle against the action of insulin. These situations are not only risk factors for NCDs, but major causes of ill health themselves.
2. Consuming predominantly plant based diets such as green leafy vegetables reduces the risk of increasing obesity, diabetes, cardiovascular diseases, and some forms of deficiencies and problems within the human body, for example, deficiency of iron can cause many health problems such as

anemia, which normally women suffer from, hence it is recommended even by the physicians to consume spinach in moderate amounts to provide iron to the human body. Plant based diets are high in vegetables and fruits; whole grains, pulses, nuts and seeds are also largely recommended, and foods such as meat, eggs and dairy products should be consumed in moderate amounts; plant based diets can largely assist in attaining and maintaining a healthy body weight, reduce blood pressure, makes an individual feel energetic and vigorous and are also rich in sources of dietary fibre.

3. Fruits and vegetables on an independent basis render their contribution in the prevention of cardiovascular diseases; when an individual reaches the age of 60 and above, and suffers from any kinds of health problems such as pain in the joints, high or low blood pressure, tooth aches or deficiency of various minerals within the body such as low potassium or calcium, then they are advised by dieticians and medical practitioners to consume a healthy diet that may influence their health conditions in a positive way and make them feel less worried regarding their health and mindset. It is likely that certain vegetables and fruits, including cruciferous vegetables such as cabbage and broccoli, and many fruits or vegetables that are rich in folate, also protect from developing certain health problems; it is recommended that a person who does not consume breads and carbohydrates on a frequent basis should consume fruits enriched with essential nutrients such as bananas that are a rich source of calcium and potassium.
4. It has been understood that essential nutrients are vital for the human body to intake for its effective growth and development. It is recommended by the medical practitioners, dieticians and researchers that one should consume a healthy and a nutritious diet such as the diet that is rich in carbohydrates, proteins, vitamins, calcium, potassium, minerals, iron, folic acid, and some amount of fat. Unhealthy foods should not be completely avoided, but should be consumed in moderation, therefore, a healthy and a nutritious diet always proves to be beneficial to the health, personal development, mindset and the quality of life of the individual.

#### Discussion and Conclusion

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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