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# A Prime Concern on Good Nutrition versus Good Health

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#### **Abstract**

Right from ancient time's food is of prime concern and vital interest to everyone in the world. The emphasis of this article is to reveal how nutrition plays a vital role for good health and also describes the elements required by the body. Nutrition is the ultimate key to good health. Balanced diet is known to be a part and parcel of good health and also different kinds of foods consumed make an individual healthy. It is always recommended to follow natural modes of food preparation and be keen while consuming various kinds of foods. Certain foods may cause health related problems if taken improperly or more than required quantities.

**Keywords:** Healthy food; good nutrition; Good health; Essential nutrients; Vitamins; Minerals; proteins; Carbohydrates; Fats; Balanced diet

Abbreviations: FDA: Food and drug authority

#### Introduction

Food is of prime concern and vital interest of everyone in the world [1]. Any nutritious substance that people or animals eat or drink, or that plant absorbs, in order to maintain life and growth is known to be food. Nutrition significantly promotes man's development, his health and welfare. Hence just consuming food does not render good health. Food is a complex substance when consumed provides nutritional support and energy to the body. Usually food is of plant or animal origin, and contains necessary nutrients, such as carbohydrates, fats, proteins, vitamins, or minerals [2]. Other sources of food include edible fungi, ambient bacteria, mushrooms etc.

Just taking food doesn't alone mean that an individual is healthy. There is a lot of difference between food and healthy food. A healthy food is the diet that contains all the essential nutrients and provides body with good nutrition, health and energy [3]. Also Good nutrition provides the body with antioxidants and phytochemicals lowers the risk of many health problems. Based on the life style, eating habits [4] alter accordingly.

Health is a condition of body to function properly. Health includes both physical and mental health. Good nutritious food for attaining physical health, yoga [5] and other practices for wellbeing and peace of mind i.e. mental health are essential.

### Essential nutrients for good health

Essential nutrients include water, vitamins, minerals, proteins, carbohydrates, fats, and enzymes [6]. Some of them should be taken in required quantities, as many essential nutrients are toxic in large doses of intake.

Water: Water is considered to be the fundamental and nutrient required for the body. Generally human body should consist of about 70 percent of water. Water is known to regulate the temperature of the body. Water aids in digestion and protects the overall health. Less intake of water may lead to Dehydration and also other health issues [7]. Recent studies show that drinking more water can reduce the risk of cancers i.e. colon cancer, bladder cancer and breast cancer. Considering all the benefits of water, its consumption should also be more.

Vitamins: Vitamins are organic compounds found in food which are essential for growth and maintenance of life. They are categorized into two groups- Fat soluble vitamins (i.e. vitamins A, D, E, and K) and water soluble (vitamins B&C). Fat soluble vitamins are absorbed by the body and intestinal tract whereas water soluble vitamins can be obtained from food. Vitamins are essentially required by human body for the metabolism and to stay healthy [8]. They can be readily available through the diet or synthesized by the body. Sources of vitamins include a variety of foods. Some foods in particular contain large amounts of specific vitamins. Intake of large doses of vitamins is dangerous to the body. Accumulation of high levels of fat soluble vitamins cause toxic effects.

- Vitamin A- This is essential for healthy eyes, development and formation of bones. Sources include Carrots, pumpkins, yellow or orange fruits, beet greens, fish, eggs, and tuna etc.
- Vitamin D- Helps in the growth of bone and tooth function.
   It also aids in the absorption of calcium and phosphorus.
   This vitamin is naturally synthesized from sun; other sources include sea foods, sardines, salmon, liver, cod liver oil fortified milk and cereals.
- Vitamin E- This vitamin, as an antioxidant protects body cells; helps maintain normal red blood cells. It is available in whole grains, wheat germ, nuts, spinach, and sunflower seeds etc.
- Vitamin K- It is used in the blood clotting process. Sources include Green leafy vegetables like spinach, broccoli and cauliflower etc.
- Vitamin B- These are complex vitamins including B1, B2, B6, B12, niacin, folic acid, pantothenic acid and biotin. Vitamin

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B12 is found in animal sources [9]. They are involved in several functions such as metabolism of carbohydrates, proteins and fats; Production of energy; production of antibodies; formation of red blood cells and also strengthens immune system etc.

• Vitamin C- This vitamin plays a vital role in the protection of teeth, gums, and bones. It is richly available from citrus fruits, Kiwi fruits [10], Guava [11], dark green vegetables etc. Vitamins C, E and Carotenoids [12] help in preventing heart, age related eye diseases, cardiovascular diseases [13] and also cancers. Antioxidant nutrients [14], also vitamin E and C, and carotenoids, are involved among body's natural defense mechanisms against oxidative stress and related problems.

Minerals: Minerals are the elements formed by geological processes and are essential for good health. Minerals are required for chemical processes. There are 14 essential minerals such as Calcium, Chloride, Magnesium, Phosphorus, Potassium, Sodium, Sulfur, Iron, Manganese, Copper, Iodine, Zinc, Fluoride, and Selenium. Other four elements such as carbon, hydrogen, nitrogen, and oxygen are present in common organic molecules. Dietary minerals are classified into macro minerals (Calcium, Chloride, Magnesium, Phosphorus, Potassium, Sodium, and Sulfur) and microminerals or trace minerals (Iron, Manganese, Copper, Chromium, Iodine, Zinc, Fluoride, and Selenium) where macro minerals are essential in larger quantities and microminerals in minute quantities.

**Macrominerals:** Calcium- It is essential for muscle and bone strength and digestive system health. Calcium is available from milk and dairy products [15], also nutrients like potassium and other macroand micronutrients are available from milk. K, Ca, Mg and P are richly found in pineapple [16].

- Chloride It is a very common electrolyte required.
- Potassium It is a very common electrolyte essential for heart and nerve health.
- Sodium- It is a very common electrolyte required in large quantities. Common salt or sodium chloride is the best source.
   Excessive intake of sodium can deplete calcium and magnesium leading to high blood pressure and osteoporosis.
- Magnesium- It is essential for processing ATP. Also required for the development of bones, causes strong peristalsis, increases flexibility, increases alkalinity.
- Phosphorous- It is also required for development of bones and essential for energy processing.
- Sulphur- It is required for three essential amino acids and therefore many proteins of skin, hair, nails, liver, and pancreas. Sulphur is obtained from sulphur containing amino acids.

**Trace minerals:** These are required about < 200 mg per a day. They are needed in small amounts but play a vital role. Each of them has their own significance. They are known for their catalytic role in various enzymes and also some metabolic activities.

**Proteins:** Proteins are the building blocks of life. Amino acids are the basic functional units [17] of proteins. The body needs protein to repair cells and generate new cells. Protein is found in major parts of the skin, muscles, organs, glands, and all most all body fluids except bile and urine. Proteins are very important for growth and development during childhood, adolescence, and pregnancy. When proteins are

digested, amino acids are left. The human body needs a number of amino acids to break down food. Amino acids need to be eaten in large enough amounts for optimal health. Sources of amino acids include animal sources such as meats, milk, fish, soy, and eggs, also plant sources such as beans, legumes, and nut butters. People with restrictions [18] for food mainly meat etc. should take plant foods to substitute proteins in the body.

Amino acids are classified into three groups namely, Essential, Nonessential, and Conditional amino acids. Essential amino acids cannot be made by the body, and must be supplied by food. They do not need to be eaten at one meal. The balance over the whole day is more important. The nine essential amino acids are Histidine, Isoleucine, Leucine, Lycine, Methionine, Phenylalanine, Threonine, Tryptophan, and Valine. Nonessential amino acids are made by the body from essential amino acids or in the normal breakdown of proteins. They include: Alanine, Asparagine, Aspartic acid, Glutamic acid. Conditional amino acids are usually not essential, except in times of illness and stress. They include: Arginine, Cysteine, Glutamine, Glycine, Ornithine, Proline, Serine, and Tyrosine.

Carbohydrates: Carbohydrates are an ideal source of energy for the body. They are classified as complex and simple carbohydrates. Complex carbohydrates are often referred to as starch or starchy foods. Starch is the largest source of carbohydrates in human food [19]. They are found naturally in foods and also refined in processed foods. Simple carbohydrates are also known as sugars. They also exist in either a natural or refined form. Natural sugars are found in fruits and vegetables. Dextrose, commonly known as glucose [20] is a very good source of energy. Carbohydrates are the ultimate source of energy for sports people in order to exercise muscles. Carbohydrate diet gives high energy leading to obesity [21] which may be considered as risk factor for type2 diabetes [22], also cardiovascular disease risk factors in obese women [23].

Fats: Fats are also nutrient source of calories. Fats are of many different kinds like saturated and unsaturated fats. All fats are derivatives of fatty acids and glycerol. Dairy products and meat products were the main sources of saturated fatty acids. Unsaturated fatty acids are mainly found in vegetable products and oils. N-3 fatty acids cannot be synthesized in human body and must be supplied through diet containing fish [24]. Fish should be consumed twice or thrice as they are beneficial to health [25].

High intake of fatty acids [26] may cause risk of heart diseases and also metabolic syndrome [27]. Fats are essential for the body in various ways:

- Energy yielding
- Aids in the absorption of fat soluble vitamins.
- Regulates the production of hormones.
- Development of Brain Especially Omega-3 and omega-6 fatty acids [28] are involved.
- Healthier skin
- Protective cushion for vital organs.

**Staple food:** Staple food is the main food we consume daily and supply a major proportion of energy and nutrient needs. Staple foods do not alone supply all the nutrients hence other foods have to be taken to prevent malnutrition. Staple food varies from place to place and also

from different fields of work. Rice and roti are staple foods in India. Chapaties also form a major component of the staple diet in Armed forces and many states of India [29]. In some Asian countries like China, noodles [30] are popular staple foods. Chick pea (Pulse) [31] is a staple food crop in some tropical and subtropical countries. Pulses are important in human nutrition and diet [32].

### **Balanced diet**

A balanced diet is that which includes a wide variety of foods providing all the essential elements that body needs. Uptake of food and nutrition generally varies from individuals of different age groups, sex, different fields of works etc. Maintaining balanced diet is the indication of maintain good health. A well-balanced diet should also be complemented with plenty of exercise, a small intake of alcohol and no smoking whatsoever. Heavy consumption of alcohol [33] may also affect health and leads to cardiovascular diseases.

#### Nutrition

Nutrition is the intake of food and drink by the human body [34] and the subsequent chemical and physical processes that occur within the body when the food is broken down and the nutrients required to maintain the body and keep it in good working order are released. Food and the nutrients are vital to keep the body healthy and alive. Plant sources like Fruits are important sources of essential nutrients for the health [35]. In case of fruit consumption, acidity [36] is the major concern.

Nutrients are required in order to build and repair cells and tissues of the body, maintain the organs and bones in optimum working condition and to provide energy, fuel and warmth. The levels of nutrition change according to the age groups, sex, height and weight of the individuals and nature of nature of work. Nutritious diet helps to maintain healthy body mass index. A well balanced nutrition [37] can improve quality of life and healthy aging. Several food additives can be added to foods, For instance Rice bran [38] which is highly nutritious can be used as food additive.

Nowadays facts about nutrition are made aware of everyone to let them know how important it is to stay healthy. Good nutrition not only gives good health but also prevent common ailments and life threatening illnesses or diseases. Diet plays an important role in most of the cancers [39], arthritis [40] and also heart diseases i.e. due to the intake of poor diet. Several diseases occur due to nutritional habits and low physical activity such as obesity [41] and malnutrition is the cause for immune deficiencies [42], cirrhosis [43], and diabetes mellitus [44]. Obesity can lead to many other health issues hence it should be controlled following proper diet, yoga [45] etc. Obesity and diabetes are the main health challenges [46] related to diet.

Basics of Health Eating [47] include: Low Fat consumption, including lots of Starchy Carbohydrates, High Fiber, Vitamins, Minerals, and Anti-oxidants, and moderate Sugar and Sweets in the diet. Also drinking Plenty of Fluid, especially water gives good health. Deficiency diseases may be due to proteins (kwashiorkor and marasmus), minerals (Goitre and anaemia) or vitamins (xerophthalmia, beri-beri, pellagra, and rickets). Mixing pure food substances with cheaper, sub-standard, edible or inedible substances is called food adulteration.

#### Role of various kinds of foods and related issues on health

Fermented foods and beverages [48] are also known to be beneficial

to health in some cases. In some states few alcoholic beverages are recommended as health drinks.

Health is also affected due to consumption of improperly preserved food. Traditional preserving techniques include hot treatment, sun and vaccum drying. But recent uses of microwave treatment [49] and also upcoming ultrasound treatment [50] may affect health. Other treatments include non thermal pasteurization [51] incase of liquids.

#### Food borne illnesses

Several pathogens are known to cause food borne illnesses .Foods contaminated mainly with *E.coli*, *Salmonella* and other pathogenic bacteria should be avoided as they are responsible for causing many diseases [52]. Diseases can affect the health hence nutrition is most vital in such cases.

Food contaminated with mycotoxins [53] or aflatoxins are considered to show adverse effects on human health. Some foods may be allergic to some individuals i.e. children and also adults due to food sensitivity [54]. Food allergy is adverse immunological response to Food [55]. Antigens of certain foods like banana, avocado show cross reactions with substances like latex [56]. Certain foods such as almond, apricot, cassava, due to the presence of natural cyanogenic substances [57] may cause cyanide poisoning.

Transgenic foods are now arriving into the market; hence those should be well verified before consumption. Some transgenic foods such as soyabeans [58] are generated similar to traditional foods. Nowadays Food safety is a great issue and at present Microarrays holds a promise for food safety applications [59].

#### Proper medication for illnesses through traditional methods

It is better to follow traditional medications from plants to various diseases or illnesses. This can aid to be healthy though affected by diseases. Several studies reported that a plant like olive [60] has many medicinal uses and also olive oil has many health benefits [61].

In developed countries like US, Concern on food is more, several laws and rules are in act for food, nutrition and food safety authorised by FDA [62]. Also the government of US invests a lot on health care [63].

In the present era nutritional genomics [64] is into existence for the better understanding of specific nutritional requirements.

## Conclusion

In my present article I have discussed the nutritive facts of food for Good health as food is a prime concern of today's world. Human body can stay healthy with the balanced diet containing all the required elements such as vitamins, minerals, fatty acids, etc. All the mentioned elements are necessary for good health. Also food taken can create some illnesses due to certain factors where in preventing and treating such conditions should be of natural modes Nutrition is the base for good health and also if it not properly followed leads to many health disorders.

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