



1. It must contain all the essential food constituents in adequate amount.
2. There definite proportion between the different food constituents.
3. The food should be easily digestible
4. Cook the food correctly.

#### **Benefits of Healthy Diet-**

1. They fulfill our need for energy.
2. Makes us feel fuller for longer.
3. Help digestive track to keep clean and healthy.
4. Protect us from diseases.
5. Keeps body temperature stable.
6. Maintains healthy skin and hair.
7. Provide protection from disease and regulate body metabolism.
8. Regulate the water balance between and within cells.
9. Helps to increase performance.
10. Maintaining never functions.

#### **Components of Healthy diet-**

1. Carbohydrates- Carbohydrates are the major and most economical source of energy. The very first part of the name 'carbo' means that they contain carbon. The second part of the name 'hydr' means that they contain hydrogen and the last third part of the name 'ate' means that they contain oxygen and they are found in monosaccharide, oligosaccharide and polysaccharide groups. Sugars, starch and glucose are food. While starch has no taste and is insoluble in water, glucose is the simplest form of carbohydrate and is the instant source of energy. Carbohydrate complete combustion of 1gm of carbohydrate (glucose) in the body yields 4-2 kilocalories of energy.
2. Fats- Its also known as lipids. Fats contain carbon, oxygen and hydrogen. They are divided into (i) Simple lipids (oils, fats and waxes) and (ii) Compound lipids (Phospholipids, glycolipids and sterols.) further we say some fats like ghee, butter, vanaspati etc. are called saturated fats as they remain solid at room temperature and unsaturated fats like groundnut oil, linseed oil, cotton-seed oil, olive oil etc. they are remaining in liquid form at room temperature fats are the richest source of energy of our body when completely combusted one gram of fat release 9.3 kcal which is 2.25 time more than the energy given out by one gram of glucose.
3. Proteins- Proteins contain carbon, hydrogen, oxygen, nitrogen and sometimes sulphur. Proteins they are very large molecules. They are turned into amino-acids by our digestive system. These amino-acids are used by the body to create blood muscles, nails, skin, hair and internal organs. Proteins repair the broken tissues, regulate balance of water and acids, transport oxygen and nutrients and make antibodies. The hormone proteins like insulin secreted by pancreas regulate blood sugar. The transport proteins such as hemoglobin carry oxygen to cell and transport back carbon-dioxide. Proteins like contractile proteins like myosin and actin help the muscles to contract and the protective proteins such as gamma globulins present in the blood act as antibody to help fight infection.
4. Vitamins and Minerals- Vitamins and Minerals are known as protective foods. Vitamins are organic substance of which the body needs, in small quantities for its normal metabolism and growth vitamins are a group of fifteen substances; they are mostly synthesized by plants and bacteria and supplied by diet. Our body synthesizes only vitamins D and K a healthy diet must essentially contain all kinds of vitamins in required quantity. These are two groups of vitamins (1) Fat soluble vitamins are- A vitamin, D vitamin, E vitamin and vitamin K. (2) water soluble vitamins are- vitamin B and C.

#### **Fat soluble vitamins:**

- (a) Vitamin A- It is helpful for normal vision and also helpful in the formation of bones and teeth. Its deficiency leads to night blindness. It is found in cod liver oil, animal liver, egg yolk, milk, milk products, mango, papaya and yellow vegetables.

- (b) Vitamin D- It is helpful in the absorption of calcium and phosphorus. It also maintain the function of parathormone hormone secreted by parathyroid gland. It's always maintain the level of calcium and phosphorus. Its deficiency may cause rickets, osteomalacia, dental cavities and osteoporosis and its sources are- Sun rays, milk, butter and fish liver oils.
- (c) Vitamin E- It is strengthens the cell membrane. Its keep skin healthy. It also helps in curing cancer. It is essential for blood coagulation. It is also prevent us from heart attacks. Its deficiency may cause degeneration of muscles, paralysis and slow growth. It is found in green leafy vegetables, pulses, liver and eggs.
- (d) Vitamin K- It is essential for blood clot the blood. It also helps in the prevention from hemorrhage and excessive bleeding in wounds. Its deficiency may cause anemia. It is mainly found in tomato, potato, spinach, cabbage, soya bean, fish, cauliflower, wheat, egg and meat.

#### **Water Soluble Vitamins:**

Vitamin B complex- This vitamin consists eight soluble vitamins the study showed that they were chemically distinct vitamins. Now they indicate as vitamin B complex.

Vitamin B1- This is a colourless vitamin and its taste is salty. It helps us in metabolizing carbohydrates. Its also maintain the health of liver kidneys, intestine, stomach and brain. It is useful for assimilation of vitamin A in our body. Its deficiency causes as skin diseases, headache, lack of concentration, sleeplessness indigestion lower heart beat and retards the muscular efficiency. The acute shortage of vitamin B1 causes disease beriberi. Its deficiency may cause constipation, irritates and anger. In short we can say that if there is a shortage of vitamin B1 in our body the development in the body also stops.

Vitamin B2- This vitamin is usually destroyed in sunlight and cooking the food for a longer time. It is essential to keep the eyes, nose, mouth, lips and tongue in healthy state. The deficiency of this vitamin causes unhealthy skin, inflamed eyes and decreases immunity power of white bloodcorpuscles.

Vitamins B3- Vitamin B3 is helpful in the growth of body. Deficiency of this vitamin causes grey hair.

Vitamin B5- This vitamin help in maintaining the body weight of an individual and its deficiency causes pellagra.

Vitamin B6- This vitamin keeps skin healthy. It is helpful for formation of hemoglobin.

Vitamin B12- This vitamin is usually destroyed in cooking for a longer time. Its deficiency may cause anemia.

Vitamin B9- This vitamin also destroyed in cooking. It is essential for reproduction, growth and development of body and helpful in blood formation. Deficiency of folic acid may cause loss of leucocytes.

Vitamin B7- The deficiency of this vitamin causes of growth, depression and muscle strain.

Vitamin C- It is a white crystalline substance. This vitamin helps in healing the wounds. It increases metabolic rate and helpful in absorbing calcium. It is a highly effective antioxidant. The deficiency of vitamin C causes scurvy and adults may feel tired, weak and irritable. This vitamin find in lemons, pineapples, guava, amla, bean, oranges, tomato, green chilies and apples.

Minerals- Minerals are very essential in our diet as like vitamins. Our four percent of body weight is made of minerals. Minerals are required for healthy teeth, bones and muscles. Minerals can be classified into macro-major minerals and micro-elements or trace minerals.

#### **Macronutrients-**

Calcium- Calcium is macro-minerals in terms of growth and development of our bones and teeth. It helps in blood clotting. Its deficiency may cause rickets. Its found in various products such as cheese, milk, orange juice, eggs, yogurt and green leafy vegetables.

Potassium- Potassium helpful in keeps the nervous system and muscular system fit and active. It also helps in maintaining the amount of water in blood and tissues. Its sources are – banana, tomatoes, green leafy vegetables, peanuts, citrus fruits and beans.

Sodium- Sodium helps in muscular activities. It also helps in transmission of nerve impulses. Its sources are – salts, pickles and butter.

Magnesium-Magnesium repairs and maintains body cells. Its sources are- meat, brown rice, beans and whole grains.

Phosphorous- It helps in formation of bones and teeth. It keeps muscles and nerve activities normal and sources are- egg, fish, milk and unpolished rice.

### Micro Minerals-

**Iodine-** Iodine useful for the thyroid gland lack of iodine can cause goiter and mineral retardation. It is found in iodized salt, fish and seafood.

**Iron-** Iron is essential for production of hemoglobin. Its deficiency causes anemia its sources are- meat, egg, dry fruits, spinach, banana and green leafy vegetables.

**Chromium-** It stimulates insulin activity. Its deficiency causes diabetes. It is found in soya bean, black gram, carrot, tomato, groundnuts.

**Copper-** Its help Iron, in the formation of hemoglobin. Its sources are – eggs, pulses and green leafy vegetables.

**Cobalt-** It protects from anemia and found in green leafy vegetables, milk and meat.

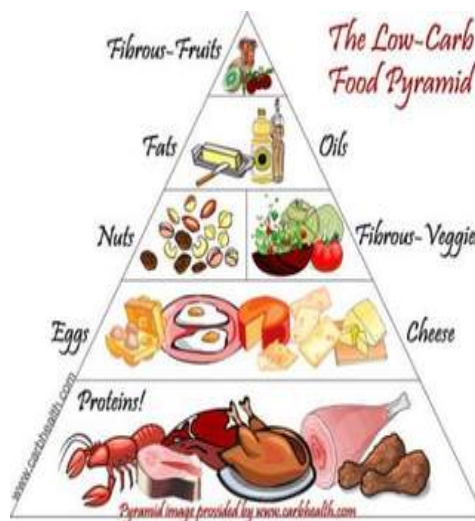
**Water-** Water is not a food but an inorganic compound of the atoms of hydrogen and oxygen. This liquid helps preparing food for assimilation by the body. About 75 percent of human body is all water. It regulates the body temperature through sweating and evaporation. Helps for carrying out essential biochemical reactions. It reduces the impact of friction among various organs and bones during movement because it is an excellent lubricant.

Requirement for water depends on age, type of activity season and climatic conditions. The deficiency of water causes dehydration, constipation, rough skin and dry skin.

### Source of Nutritive Components of Diet:

**Proteins-** Animal protein- (i). Eggs. (ii). Milk and milk Products (iii). Meat and fish.

**Vegetable protein-** (i).Pulses (ii).Soya bean (iii). Mustard (iv). Groundnuts (v).Dry fruits and food grains.



**Carbohydrates-** (i). Rice (ii).Jawar (iii). Bajra (iv).Pulses (v).Gram (vi).Dry pea (vii).Date (viii). Grapes (ix).Potato (x). Banana (xi).Sugar

**Fats-** Animal sources and Vegetable sources.

**Animal sources-**(i).Ghee (ii).Butter (iii). Curd (iv). Fish oil (v). Milk (vi). Meat and eggs

**Vegetable Sources-** (i).Dry fruits (ii).Coconut (iii).Soya bean (iv). Food grains (v). Mustard

**Oil (vi).** Cotton seed.

**Vitamins-**

**Vitamin A –** (i).Ghee (ii).Milk (iii). Curd (iv). Egg (v). Fish (vi). Tomato (vii).Papaya

(viii). Green Vegetables (ix). Orange (x).Carrot and pumpkin.

Vitamin D- (i).Egg yolk (ii).Fish. (iii). Sunlight (iv). Liver oil (v).Vegetable (vi). Milk (vii). Cream (viii). Butter (ix). Tomato (x).Carrot.

Vitamin E- (i) Green vegetables (ii).Sprouts seeds (iii).Coconut oil (iv). Dry and fresh fruits (v). Milk (vi). Meat. (vii). Butter and Maize are rich source of Vitamin E

Vitamin K- (i).Cauliflower (ii).Spinach (iii).Cabbage (iv). Tomato (v).Potato (vi). Green Vegetables(vii).Wheat (viii).Egg and Meat.

Vitamin B1- (i).Egg yolk (ii).Fish (iii). Pulses and peas (iv). Rice (v). Wheat (vi). Green Vegetables.

Vitamins B2- (i).Eggs (ii).Rice (iii).Sprouts seeds are rich sources of vitamin B2.

Vitamin B3- (i).Milk (ii). Egg Yolk (iii).Dry fruits.

Vitamin B5- (i).Polished Rice (ii).Milk (iii). Nuts.

Vitamins B6- (i).Meat and fish (ii).Egg Yolk (iii).Rice (iv). Wheat and peas.

Vitamin B12- (i). Green Vegetables (ii). It is usually destroyed in cooking.

Vitamin C- (i).Lemons (ii).Grapes (iii). Pineapples (iv). Oranges (v). Tomatoes (vi). Amla (vii). Green Chilies (viii). Sprouty Pulses.

Minerals-

Calcium- (i). Milk (ii). Cheese (iii). Yolk (iv). Green Vegetables.

Phosphorus- (i). Egg (ii). Fish (iii). Meat (iv). Milk (v). Unpolished Rice.

Iron- (i).Meat (ii). Egg (iii). Dry Fruits (iv). Green Vegetables.

Iodine- (i).Iodized Salt (ii).Sea Food.

Sodium- (i).Milk and Milk Products (ii).Meat (iii).Eggs.

Potassium- (i).Carrot (ii).Onion (iii). Tomato (iv). Orange (v). Mango (vi) Banana (vii). Apple.

Sulphur- (i). Egg (ii). Pulses (iii) Carrot (iv) Peas (v) Tomato and Cabbage.

Fiber or Roughage- (i).Wheat (ii). Fresh Fruits (iii) Vegetables (iv). Oats (v). Connective tissues of meat and fish are very good sources of roughage.

Water- Generally about 20% of water intake comes from food and remaining intake comes from food and remaining intake comes from food and remaining intake comes from drinking water.

### **Impact of Healthy food on Sports Performance-**

A healthy diet which has all the constituents of food required for the maintenance and growth of human body in sufficient amount is necessary for all the individuals whether they perform simple work or engage in highly competitive sports. The requirement of healthy diet varies person to person. Generally the daily requirement for an active person should be 3000 calories to 8000 calories. A number of studies indicate that a particular diet can improve the sports performance. As a matter of fact, a well-balanced diet may not guarantee to success in sports but it is sure that imbalanced diet definitely affects the performance adversely whether in sports or in other type of work. To know the role of healthy diet it would be better to know the role of nutrients on sports performance. Some role and important impact on performance mentioned bellow-

1. Good amount of fat helps to increase their performance to runner, swimmers, high jumper and gymnast.
2. Carbohydrate is helpful in increasing the endurance of sports person.
3. Extra fat or weight diminished the performance of the runner.
4. Enable the athlete to achieve optimal body weight and body fat levels for performance.
5. Promote the short and long-term health of athlete.
6. Low level of carbohydrate usually results of low energy.

7. Studies shown and suggested that protein helps in the growth of tissues but does not have any significant impact on performance.
8. Vitamins are essential in the normal diet for good performance in work and sports but there is no clear cut evidence that extra amount of vitamins improves the sports performance.
9. Most of the excess amount of vitamins is excreted through the Urine. There are mainly three vitamins which mostly researched by the researchers these are vitamin C, E and B complex.
10. Research shown that deficiency of minerals can decrease the performance specially during the exercises in hot climate. Sweating reduce the sodium and chloride from the body.
11. The deficiency of water in body decreased performance on the other hand excess amount of water intake does not have any improvement in performance because it has no calorific value

**Conclusion-** Now it can be concluded that a general person and a successful sports person require a well-balanced and healthy diet to perform their task and performance in sports. All necessary nutrients in food are required for the proper development of body and healthy. A healthy diet provides all the essential nutrients in adequate amounts plus enough calories to meet body's energy needs.

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