

Importance of Food & Nutrition in Sports: A Detailed Study

Anurag

Assistant Prof. of Physical Edu.
DAV College, Sadhaura
Distt. Yamunanagar (Haryana)

Abstract: *All beings experience hunger and for satisfaction of which they consume food. But food plays even greater role in the life of a sports person. A healthy and balanced diet plays very vital role in the life of a sports person. It has been proven in many researches that an athlete is deeply connected to balanced diet. There is no denying to the fact that an athlete's performance greatly depends on the kind of diet he takes because the kind of vitamins and minerals that are present in the diet improves his endurance and strength. Importance of nutrition has been a topic of research among various nutritionists. In this paper we will discuss about various kind of nutrition and their importance in the life of a sportsperson.*

Keywords: Balanced Diet, Nutrition, Vitamins, Minerals, Endurance.

Introduction: Food is source of energy and provides strength to do work. The amount of energy required by a normal person depends on the fact that how much of efforts he put into the work and in case of a sportsperson it depends on the kind of physical activity he is involved in. The energy obtained from food is needed in respiration, to build physical strength, to maintain temperature of the body, to maintain flow of blood in the body, build muscles and also helps in many other functions in the body. Human body is a complex machine in which various kinds of

functions take place and for the proper functioning in the body it's important to consume various kinds of nutrition.

Research Methodology: The present research paper is based on the secondary sources of data collection. Most of the study material has been taken from the reference books and official websites. The research is exploratory in nature. To pace the study, the researcher has also used some observational facts.

Research Objective: The present paper highlights the basic need of some nutrients

for a sports person and it also includes their importance for the physical performance during sports activities and thereafter.

The Concept of Nutrition: Nutrition - “Science that investigates the relationship existing in between the physiological function and the essential elements found in the food items consumed by living organisms”. It is important for a sportsperson to take a balanced diet that has all the vital nutrients as deficiency of any nutrient may lead to various kinds of diseases which deteriorates his performance.

Unit of measurement that indicates the amount of energy one obtains from a particular food is “Calorie”. When a person does some rigorous physical activity he burns more calories. It is very important for a sportsperson to know the right amount of calories he needs in order to perform well in the field. For example: When someone is involved in light physical activity like sitting on a table-chair and study, it uses only 30% of his total energy. When we do some office work then we use 50% of our energy. A normal person who does not do any sports, according to his weight and amount of work

he does, needs 24 calorie per gram. Similar kind if parameters are applied to sportsperson also.

Since more energy is utilized in doing sports, a sportsperson needs more calories. It depends on the duration of physical activity he is involved in. For an athlete who takes part in cross-country, needs 10.6 calorie per minute and for the one who takes part in a marathon needs 20.7 calorie. Amount of calorie needed by an athlete also depends on the air friction and the kind of track he is running on. It has been proven in research that an athlete who is running on a fan even track needs to spend less amount of calories as compared to the one who is running on uneven track.

Essential Nutrients: As said earlier that it is very important for a sportsperson to have some of the essential nutrients in desirable quantities for better performance. As these nutrients are of such importance, thus, it is necessary to discuss them at length, mention of which are as follows:-

- 1) Proteins:** This nutrient is the most abundance substance in our body. They are considered to be complex nitrogenous compounds. Experts

have found that proteins are body builders as they play important role in developing and repairing bone, muscle skin and blood cells. Human body is made up of various muscles and cells, which may get damaged during playing any sports. Thus, proteins are very essential for a sportsperson as they help in building and repairing damaged cells and muscles.

Also, proteins help in making antibodies which helps in protecting us from diseases. A sportsperson need to take proteins in proper amount as it'll improve his immunity against diseases and he will be able to practice and perform well.

Proteins consumed by us are broken into smaller units by amino acids. Dietary-proteins by which body gets all of the essential amino acids are termed as complete protein (it is generally obtained from animals). Proteins obtained from plant sources are found to be incomplete in nature. Experts have divided plant sources into three categories, namely- legumes, grains and nuts.

First category includes food items like beans and corn. In the second category come the various kinds of nuts. And the last category includes various seeds. A sportsperson should include all of these in his diet.

Although a sportsperson should consume enough protein but excess of it can place added stress on the liver and kidneys. By it calcium excretion in urine can also be increased, which increases the risks of bone fractures. So, it's very important for a sportsperson to take proper amount of proteins in his diet as it avoids bone injuries and to repair the damaged bones and cells.

2) Vitamins: These are considered as one of the most potent and essential organic compounds in human body. Vitamins are required by the human body in small amounts. No energy is being provided by this nutrient, but it helps in making proper utilization of other nutrients in the food. Vitamins cannot be synthesized by the body so it's important to provide it to the

body through food. Vitamins help in maintaining the nerves and skin, in developing the blood cells and to heal the wounds. So, it is essential for an athlete to include vitamins in his diet.

Categories of Vitamins: 1) Fat soluble vitamins (vitamins A, D, E and K). They get absorbed by the intestinal tract with the help of fats. 2) Water soluble vitamins (vitamin B and C). They get easily dissolved in water.

Importance of various kinds of vitamins:

Vitamin A: It helps in production of retinal pigments (that helps a sportsperson to see the things in dim light), in saves from various infections, helps in the development of the skeletal system. If there is deficiency of vitamin A, it can cause serious diseases like night blindness, bitot's spots and keratosis. Carrot, spinach, green vegetables, mangoes and various dairy products like milk, butter and cheese are good sources of vitamin A and therefore should be

included in the diet of a sportsperson.

Vitamin B: It is found in peas, beans, oatmeal, vegetables and fruits, milk, egg, liver, meat, poultry fish, ground nuts, etc. Deficiency of this vitamin can lead to diseases like beriberi, loss of body weight, shortage of blood cells, defective maturation of red blood cells and anemia.

Vitamin C: it is obtained from citrus fruits, tomatoes, green vegetables, guava etc. Deficiency of vitamin C can lead to scurvy, which makes the muscles and joints of the body very weak and person feels fatigue within very short period of time. Also the person with deficiency of vitamin C will suffer from bleeding gums.

Vitamin D: It can be obtained from fish liver oils. Also, exposure to sunlight (and hence to UV rays) can help our body to build it. Vitamin D helps in formation of bones and teeth. Its deficiency leads to a disease called rickets.

Vitamin E: Its important function in an athlete's body is to prevent vitamin A from getting destroyed.

Vitamin K: It can be obtained from green leafy vegetables, cow's milk and spinach. Its deficiency will lead to defective blood clotting mechanism, as a result if the sportsperson suffers from any injury causing bleeding, then lot of blood will flow from his body.

So, as seen in the above mentioned lines it is clear that it is very important to include various kinds of vitamins in the diet of a sportsperson.

3) Carbohydrates: The energy by which human beings become able to sustain various activities is obtained through nutrient known as carbohydrate. As compared to other nutrients carbohydrates can be metabolized more easily as it get converted into glucose very easily. Through this a sportsperson quickly gets the fuel required to perform. Since carbohydrate provides both an immediate and a time-released energy source because of which they are considered to be best fuel for endurance athletics. Experts

have divided carbohydrate into two categories:

1. Simple Sugars: found in fruits and honey and the most common form of which is glucose.
2. Complex carbohydrates: found in grains, cereals and yellow fruits. Fibre is one of the major forms of complex carbohydrates and it is the ingestible portion of plant foods that helps move food through the digestive system and softens stools by absorbing water. These also help in controlling body weight as feeling of fullness of stomach is developed by them.

Athletes who want to increase intake of dietary fibre should eat more complex carbohydrates, however this should not be done without due planning, as sudden increase in dietary fibre can cause various kinds of problems like cramps and intestinal gas. Such side effects can be reduced by consuming plenty of water or other liquids in higher amounts. Experts have found that

sportspersons should include carbohydrates in their diet as they provide protection against problems like constipation, diabetes, heart diseases and obesity.

4) Fats: These are also known as lipids and form one of the basic nutrients required by human body for development and growth. Fats insulate a person against shock and also maintain the body temperature. But a sportsperson should be very careful about the amount of fats he intake and it should not be more than 20% of total energy intake in the body. High intake of fat can cause heart diseases by blocking the arteries. A sportsperson can keep following points in the mind to reduce intake of fats in his diet:

1. Read food labels and remember that not more than 10% of his total calorie should come from saturated fat and no more than 30% should come from all forms of fat.
2. Use olive oil for baking purposes as it does not raise cholesterol or increase the

growth of tumors in the body.

3. Eat fat free or low fat containing cakes and cookies.
4. Whenever possible, he should use liquids in his diet as they have far less trans-fatty acid as compared to solid fatty food items.

Fats should be included in the diet of a sportsperson as energy is provided by them in maximum quantity.

5) Minerals: These are the inorganic and indestructible elements that provide help and assistance for various physiological processes taking place within the body. Some examples are sodium, calcium, phosphorous, potassium, zinc, iron and copper. Around 1/20th part of body weight is made up by the minerals. A sportsperson should include minerals in his diet because: Minerals are the major constituents of bone and teeth of human being. Various body tissues are made up of minerals, in absence of which, these

tissues will become weak. Tone and functions of body muscles are maintained by various minerals. Digestive secretions are being stimulated by minerals present in the body. Helps in proper growth of body.

Sodium is necessary for regulation of blood and body fluids. Sodium can be obtained from table salt. But high intake of sodium may lead to high blood pressure and also may lead to loss of calcium in urine and increases the risks of fractures in the sportsperson. So, it is very important to maintain proper intake of minerals in the diet of a sportsperson.

- 6) Iron:** it is considered to be one of the most important nutrients required by human body. Large proportion of which exists in the hemoglobin present in the blood. When the body is not able to produce hemoglobin, then a disease called anemia gets developed in the body. In people affected with iron deficiency anemia, a condition known as pica can also get

developed which is appetite for ice, clay and other non-food substances that do not contain iron and in fact may inhibit iron absorption to considerable extent. A sportsperson should include green leafy vegetables and fruits like guava in his diet to get iron.

CONCLUSION: This is very important for a sportsperson to include various kinds of nutrients in his diet as it provides him the strength and endurance to perform well in the sports. Also, it provides him shield against various kind of diseases. If he does not take a healthy diet, he will not have enough strength and will feel tired easily even during practices which will adversely affect his performance at bigger platforms. If there is deficiency of any nutrient in his body it may make him suffer from disease which will affect his performance. Therefore, a sportsperson should have a proper diet plan and should follow it strictly in order to perform well and for this he may consult an expert.

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