Think India (Quarterly Journal)
ISSN: 0971-1260 Vol-22, Special Issue-13
National Conference on
Psychological Contributions in Sustainable Human Development in Sports, Organizations and Community Health
Date of Conference**:** December 20-21, 2019,
Organised by **Department of Psychology, Physical Education & Sports and Home Science V.P.S.P.M.S. Arts, Commerce & Science College, Kannad,** Aurangabad, Maharashtra 431103 India

Nutrition and Balanced Diet in Sports Performance

Dr. Leela S.Bansode

Dept. of Physical Education,

Vinayakrao patil college, vaijapur Dist.Aurangabad

Abstract:

The awareness of nutrition plays an important role in sports performance. Many factors can impact the performance of a sports person during competition which may be related to different domains. Nutrition, physical performance and the level of functional capacity of the human beings are interrelated. Any dietary deficiency that adversely affects the health of the individual is likely to impair his or her physical performance capacity and thus nutrition and well being assumes a vital role in the field of sports. The consequence of extremely prolonged exercise is huge energy expenditure and the subsequent nutrient loss and therefore athletes must be continuously supplied with adequate nutrients, to maintain their optimum nutritional well being.

Keywords: Nutrition, Balanced Diet, Sports performance.

Introduction:

Successful athletic performance is a combination of proper training and a sensible approach to nutrition. During the past 20 years there have been greater developments in health and physical performance. Sports nutrition has many goals to enhance performance. First, it improves performance by improving body composition, which increases speed, quickness, mobility, and strength. Second, it will help the speed of recovery, which will in turn create more capacity for practicing and competition as the body is becoming more fit and adjusted to the coupling of the good nutrition incorporated into the workout regimen. Third, it will allow one to increase energy for both practice and competition, which will definitely help one's performance.

Strategic diet will also increase immunity, allowing one to stay healthy and be able to continue and intensify practice and training. Thus nutritional status is a critical determinant of athletic performance.

Nutrition intake is undoubtedly an important component that has an impact on physical performance of athletes both men & women. Many sports scientists agree on the fact that sports, health and invariably the nutritional status are inter related. Reports both from western countries and India have strongly supported this view that at the very basic level, good nutrition plays an important role in the maintenance of health allowing the athlete to train and compete. In countries such as India where malnutrition is of a public health dimension, poor athletic performance could be partly due to poor physique and unsatisfactory physical fitness resulting from under nourishment. Nutritional status refers to the health of an individual and has a direct bearing on their physical performance and work capacity.

Good nutrition must be a key part of training programmes if one has to succeed. The nutrients are the distinct chemical components in the food. The six major nutrients present in the food are mainly carbohydrates, protein, fats or lipids, vitamins, minerals and water. They are like team mates that work together to provide good nutrition. Just as each team member carries out different tasks during a game each nutrient performs specific functions in your body. A lack of even one nutrient is a disadvantage to your body. Nutritional deficiencies can result in decreased performance.

CARBOHYDRATES

Carbohydrates are the most important source of energy. It is the most preferred fuel for sports performance. Glucose is the simplest form of carbohydrate and starch is example of complex carbohydrates. Different forms of carbohydrates which we consume in the diet are converted into glucose in our body which is then metabolized to produce energy. 1 gm of carbohydrate gives 4 Kilo calories of energy. Foods rich in carbohydrates are Cereals like rice, wheat & wheat products. (broken wheat rava, pasta etc.) and millets like maize, bajra, jowar, oats, ragi, and roots & tubers like potatoes, sweet potatoes, carrots etc. Carbohydrates contribute 50 to 60% of total energy requirement in a day.

PROTEINS

Primary role of proteins is body building and growth. Every organ, tissue and cells in our body is made up of proteins. Proteins help in muscle development and maintenance and repair of all tissues. Protein requirement for normal people is 1 gm per kg ideal body wt but for athletes it can be increased to 1.2 to 1.5 grams per kg body wt in a day. About 60 to 80 grams of protein is sufficient for a day which can be obtained from milk egg, meat, fish, dhal, pulses, cereals etc but excess consumption of protein foods is not advisable as it can increase the work load on kidneys and can cause kidney damage in the later stage. It is a misconception that excess consumption of meat, milk, eggs etc will give energy & stamina.

FATS

Fats are concentrated source of energy. 1gm of fat will give 9 kilo calories which is double the amount produced by carbohydrates. For example 2 teaspoon of butter and 1 cup of rice gives 100 kilo calories. 20 to 30% of the total energy required in a day should come from fats. It is not good to consume excess amount of fat in the diet as it will lead to obesity and heart diseases in the later part of life. It is better to avoid lot of butter and ghee and take more of vegetable oils like sunflower oil, soya bean oil or rice bran oil.

ENERGY REQUIREMENTS

Carbohydrates, fats and proteins are known as energy yielding nutrients. But carbohydrates are the major source of energy, then fats and least from proteins. Approximately the caloric need of an athlete is around 3000 k calories per day. During heavy training and competition the requirement may go up to 5000Kcals per day.

VITAMINS AND MINERALS

Vitamins and minerals are known as the micronutrients as they are found in less amounts in the body, but they play a major role in maintaining many important physiological functions. The main functions of micronutrients are to enable many chemical reactions to occur in the body. Foods rich in vitamins and minerals are also known as "**protective foods** "as it helps to build

body's resistance and immunity and helps in energy metabolism, strengthening of bones and muscles, good vision, blood formation etc .Fat soluble vitamins are Vi t A, D, E and K and rich sources are green leafy vegetables, orange yellow fruits and vegetables like carrot mango papaya etc. Important food sources are citrus fruits, milk ,eggs, nuts ,cereals etc .Vitamin deficiency of all kinds are damaging to work performance and can impair physical work capacity which is expected to have the most immediate effect.

Major minerals are calcium and phosphorus which is needed for the bones and teeth and for muscle functioning .Iron deficiency is associated with decreased work capacity, poor mental performance and reduced hemoglobin levels which will lead to decreased oxygen carrying capacity and cause anemia. Low calcium levels can cause irregular muscle contractions, bone density loss etc. foods like milk, egg, liver, meat, ragi ,oats, green leafy vegetables, dry fruits like dates etc should be included in the diet. Other important minerals are sodium potassium, zinc, magnesium, fluoride, iodine, copper etc which perform specific functions in the body.

WATER

Of all the nutrients water is probably the most essential for human life .Water constitutes 60-65% of the total body weight, 70% of the muscle composition, and 90% of the blood plasma. When you exercise your body loses water through perspiration which can lead to dehydration. Excess loss of water can lead to serious problem for sports people. It causes cramps, vomiting delirium and lead to unconsciousness similar to sunstroke.

RECOMMENDED DIETARY ALLOWANCE (RDA)

An adequate balanced diet is necessary for an effective performance. The nutritional requirements of the athlete are more than the normal persons. But excess consumption of any nutrient more than the recommended dietary allowance (RDA) will be harmful and dangerous. Following is the RDA for sports persons

NUTRIENTS	DAILY REQUIREMENTS
Energy	3000-5000KCals
Protein	60-90gms
Fat	80-150gms
Calcium	600-800mg
Iron	20-30mg
Vitamin A	750-1000mcg
Thiamine (B1)	2-3mg
Riboflavin (B2)	2-3.2mg
Niacin (B3)	26-36mg
Ascorbic acid (Vit C)	50-80mg

DIETARY GUIDELINES FOR SPORTS PERSONS

Follow a balanced diet and eat all types of food in moderation

- Never skip breakfast as it the most important meal of the day
- It is better to eat 3- 5 meals a day rather than eating three heavy meals
- Have milk at least 2-3 glasses per day.
- Have plenty of fruits like papaya, guava, citrus fruits, watermelon etc and fruit juices.
- Have sprouted pulses (chana or moong) and salads at least a bowl every day.
- Eat whole cereals like daliya (broken wheat upma) wheat and ragi porridge & Oats.
- Eat dry fruits like dates raisins and nuts like groundnuts almonds etc

*Copyrights © 2019 Author; Think India (Quarterly Journal) ISSN: 0971-1260 Vol-22, Special Issue-13

- Restrict nonvegetarian foods 2-3 times a week and reduce excess consumption of red meat.
- Have plenty of green leafy vegetables, carrots, beetroot and other vegetables.
- Avoid soft drinks, alcohol and too much of coffee, tea, fatty foods and other junk foods and too many sweets. Have only 1-2 eggs per day.
- Never exercise immediately after a meal, or else it can lead to nausea, vomiting, distension and cramping.

Conclusion:

It is concluded that the nutrients are very important for sports performance in order to improve their performance. A well balanced diet and effective training and coaching will be the winning combination and will help the athlete to build up strength and stamina. Hence systematized modification of diet with steady monitoring of the deficiencies if any, by a sport dietician, linked with skilled training programme and effective nutrition education can definitely lead to better performance.

References

ADA, (1987), "Nutrition for physical fitness and athletic performance in adults: ADA Technical Report", *Journal of American Dietetic Association*, Vol.87, No.7, Pp.933-93

Beals, K. and Manore, M. (2007), *"Nutritional considerations for the female athlete*. In: Advances in Sports and Exercise Science Series". Philadelphia, PA: Elsevier; Pp.187–206.

Brown, R.C. (2002), "*Nutrition for optimal performance during exercise: Carbohydrate and fa*t", Current Sports Medicine Reports 2002; Vol.1, No.4, P p.222-229.

Food and Nutrition Board (2000), "*Dietary Reference Intakes for Thiamine, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic acid, Biotin, and Choline*", Institute of Medicine, Washington, DC: National Academies Press;

Food and Nutrition Board (2005), "*Dietary Reference intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*", Institute of Medicine, Washington, DC: National Academies Press;

Lambert, C.P., Frank, L.L. and Evans, W.J. (2004), *"Macronutrient considerations for the sport of bodybuilding*", Sports Medicine, Vol.34, No.5, Pp. 317-327.