ROLE OF NUTRITION IN SPORTS: A REVIEW

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ABSTRACT

In modern world one has to be proactive, and to be proactive one must be fit. By word “FITNESS” we mean both physical as well as mental. Our basic concentration in this review paper will be on athletes. Athletes are the one from whom everyone demands extra be it physically on the field or mentally coping with ups and downs of the games. An athlete is built with proper exercise as well as proper diet. By diet we mean Nutrition. The purpose of this review paper is to represent how nutrition plays an important role in life of an athlete during participation in physical activities and games.

KEYWORDS: Physical Activity, Nutrition, Diet and health (Physical & Mental)

Survival is the most important aspect of any individual be it a human or an animal, and for one to survive, the body has to be fit and respond to every change that occurs around it. Further the following graphics will make it simple to understand that how any individual fights for its survival and what are the main aspects that influence its survival.

Fitness plays an important role in life and performance of any athletes. Fitness further depends upon what our body intakes be it carbohydrates, proteins or fats, and the sum of all these things constitute a nutrient. Thus process of intake of nutrient by an individual is known as Nutrition. And study of the similar in sports background is known as SPORTS NUTRITION. The world is advancing day by day be it in technology or other field thus modern methods are to be adopted by fitness coaches and athletes so as to improve the performance index that is why the study of SPORTS NUTRITION becomes so important. If applied properly to one athlete’s schedule it could result in enhanced performance both mentally as well as physically.
NEED OF SPORTS NUTRITION?

An athlete has to prepare his/her body to cope with the current demands of competition, thus have to challenge his/her body. Not only physically but mentally too. Injuries plays an important role in sporting career of an athlete, and recovery of our body mainly depends upon our immunity as well as nutritional quotient of body. Adequate levels have to be maintained if one has to succeed in field of sports. Thus the study of sports nutrition becomes of great interest. Athletes should be made aware how nutritional levels could help in faster recovery from injuries as well as in increasing performance levels.

WHAT ARE BASIC NUTRIENTS?

A nutrient consists of various constituents like fats, proteins, minerals and vitamins, water and carbohydrates. Below is discussed the benefits of above mentioned

CARBOHYDRATES:

They are also known as macro nutrients as these are body’s main source of energy. They are sugar, fibre present in fruits, grains, milk products, vegetables. Carbohydrates provide fuel for our central nervous system and energy for working muscles. As sugars form main part of carbohydrates thus it also helps to maintain glucose level in blood while exercising or performing physical activities.

FATS:

Moderate amount of fats are necessary for our body as these helps in building of nerve tissues as well as enhancing hormones. Excess amount of fats can cause many health problems. Fats are great source of energy but they also have double the amount of calories as compared to carbohydrates. Thus excess fats in body should be burnt by doing exercises.

PROTEINS:

Proteins are macronutrients that helps in building muscle mass, proteins are mainly found in animal products but are also found in nuts and soya products. They help in transfer of nutrients in blood so that excess nutrients could flow while recovering from an injury.

MINERALS & VITAMINS:

Vitamins and minerals are of great importance as they helps in making bones stronger, healing wounds, and also helps in increasing the immunity of our body. Thus main function of minerals is to release energy, produce energy, build proteins and cells. Vitamins helps for maintaining vision power too.

WATER:

Our body loses water through breathing, sweating and digestion, thus it is important to stay hydrated every time. As++++ athletes have to perform activities that demand a lot of effort from the body so staying hydrated always help. Water helps to regulate body temperature when surrounding environment is
too harsh for our body like in summers. Water helps athletes to prevent muscle cramps. Staying hydrated helps to maintain blood pressure during exercise and improves blood circulation, it also helps in lubrication of joints.

WHY SPORTS NUTRITION IS IMPORTANT?

Nutrition needs for an athlete who wants to perform at the best level and get best results includes sufficient calorie intake, schedule of meal intake as well as keeping the hydration levels of the body at par the demand of the event that one is participating in.

As discussed above study of proper nutrition not only impacts performance, but also helps in overall growth and development of an individual. One of the main aim of sports nutrition is to provide support to the training regime. Every athlete has his or her different training regime according to the demand of sports that they are participating in thus each one of them should of different nutritional demand according to their body demand as well as sports they are participating in.

Elite athletes have a very high training intensities so the energy demand of the body is equivalent too, to recover from fatigue or any injury and in such situation nutritional efficiency of body plays an important role.

FUEL FOR EXERCISE

We all know that our body is like a machine the more we take care of it, the more it will perform lifelong. Similar to a car which needs fuel in form of petrol or diesel to run, our body too needs a fuel for it’s proper running and performing every activity efficiently.

The fuel in case of human body is NUTRIENTS. Be it in form of carbohydrates, proteins, minerals, or fats. Each one of them should be stored in our body via intake of proper diet in adequate quantity. But of all the major fuel for any athletes is carbohydrates. Now we will discuss about the sources of carbohydrates and how carbohydrates acts as a major fuel for the body demands of an athletes.

Carbohydrates acts as the primary fuel for the body that provides fuel for brain as well as central nervous system. During any type of activity muscles use glucose from carbohydrate for fuel. One advantage of carbohydrates over fats and proteins is that they are easily digestible thus making them the first option for athletes prior to exercise or participating in sports activity. No glycogen is re-synthesized during training sessions when the athlete’s diet is low in carbohydrates, leaving individuals with low muscle glycogen and a condition of chronic fatigue. A carbohydrate-rich diet increases both stamina and sporadic high-intensity efficiency due to the extra carbohydrate store in the muscles and liver, called glycogen. When we ingest the carbohydrates in the food we consume, the end product in the form of glucose, or blood sugar, enters our bloodstream. That will then be transported to the cells for energy usage. Any glucose that isn’t immediately used can be transformed into a carbohydrate storage medium called glycogen. Glycogen gets stored away in your liver and muscles where it can be tapped into during activity. Runners need a lot of carbohydrate. Why? Because our muscles are fuelled primarily on carbohydrate when we run hard. Thus, sports nutrition experts generally recommend that runners get approximately 60 percent of their daily calories from carbohydrate.

Below are some sources from where an athlete can intake carbohydrates in proper amounts:
Endurance capacity of the body mainly depends upon the intake of carbohydrates. Carbohydrates are always preferred while doing intensive exercises thus main focus on nutrition planning for an athlete performing these exercises should be given on carbohydrates and the diet should always be prepared keeping these demands in mind.

Whereas training for power sports which also places physiological demand on an athlete’s body requires intake of protein diet, thus the nutrition chart for these type of event requires main addition of proteins to the diet. Athletes exert more time than the average individual, whether running sprints, swimming long distances, or lifting weights, and their bodies require extra nutrients to heal from heavy physical activity. Protein plays a significant role in the diet of an athlete, as it helps to regenerate and improve muscle tissue. The diet contains mainly eggs, chicken, shrimp, almonds, protein shakes, tofu, chickpeas. Protein is critical in building muscle mass. Muscle growth happens only when exercise and diet are combined. Athletes that do not include adequate proteins in daily diet have slower recovery from injuries. High quality proteins boost muscle recovery, increase strength, maintain healthy immune functioning, provides energy and contributes to feelings of fullness. In other words protein is critical for repair and rebuilding body tissue, which means less time on the sideline and a better ability to continue to work hard.

Ergogenic aids : These are substances or devices that enhance energy production, use or recovery and provide athletes with a competitive advantage. Athletes face intense training and fierce competition when working to get to the top of their game. With supplements claiming to improve strength, agility, speed and weight, it can be tempting to try something to help improve competitive edge. These aids includes various kinds of steroids but generally are harmful in long run of an athlete’s career, thus one should only focus on nutrition planning making the diet effective and efficient.

CONCLUSION :

Sports nutrition is the foundation of athletic success. It is a well-designed nutrition plan that allows active people and athletes to perform at their best. It supplies the right food type, energy, nutrients, and fluids to keep the body well hydrated and functioning at peak levels. Different sports have different sports specific nutritional needs. This covers the right food type, calories intake, nutrient timing, fluids and supplementation, specific to each individual. Purpose of athlete nutrition study is to provide adequate and balanced way to provide the energy and nutrients required by the athlete and adequate fluid intake are the basis of athlete nutrition level. It is also known that adequate and balanced nutrition does not guarantee the success of an athlete, but insufficient and unbalanced nutrition causes some health problems and poor performance. Also a well-fed athlete has some advantages over a poor-fed athlete. Although the energy and nutrient requirements of athletes vary in terms of age, gender and sports, the basic nutritional rules are similar for all athletes. In general, all athletes should pay attention to the main elements: To ensure health and performance, energy and nutrients to ensure adequate consumption, to create continuity in body fat and lean mass percentage, to provide optimal recovery and fluid balance after training. There is no miracle diet or nutrients recommended for athletes. In general, athletes are recommended to feed on
carbohydrate rich diet, protein, vitamins and minerals to consume enough, the energy provided from fat is recommended to be slightly lower than non-sports individuals. The amount of fluid consumed by athletes should be high. Exercise performance describes the efforts of the athlete to achieve a specific goal in the given time, thus study of sports nutrition is of great importance.

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