INTERNATIONAL JOURNAL OF RESEARCH CULTURE SOCIETY ISSN: 2456-6683 Volume - 4, Issue - 6, June – 2020
Monthly, Peer-Reviewed, Refereed, Indexed Journal Scientific Journal Impact Factor: 5.245
Received on : 26/05/2020 Accepted on : 12/06/2020 Publication Date: 30/06/2020

IMPACT OF DIET AND NUTRITION ON SPORTS PERFORMANCE

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Abstract: *Nutrition can play a very important role in the performance of a player. The winning of the gold medal or failing to get it can depend to a great extent on the nutrition pattern being followed. However, this is not only restricted to professional players but nowadays, a large number of amateur players also practice daily to keep them physically fit. Therefore, it is essential for the professional players to follow a guided and planned nutritional diet and training sessions. In addition, other advantages of adequate food intake in sports are related to changes in body composition, reduction of injuries, and prolongation of professional career length.*

Key Words: *Diet, Nutrition, Sports Performance, Athletes, Nutritious Meal.*

1. NUTRITION AND DIET:

Since childhood days we have studied that we should eat a balanced diet so that our body gets all the energy it needs to function correctly. The number of calories in a food is actually the amount of energy stored in that food. Our body uses calories from food for out day to day activities like walking, talking, breathing and many other important functions. The person on an average needs to take in about 2,000 calories every day to maintain their weight. However, an individual's specific daily calorie intake can change depending on their gender, their age and the amount of physical activity they do. Men in general need more calories than women do and people who work out need more calories than other people who don't. Thus a person who is specifically interested in sports and a person who has some fixed goals which he wants to achieve, feel the need of particular diet and nutrition which can help him achieve his objective.

2. WHAT IS SPORTS NUTRITION?

Dietetics or Nutrition is a special study which is concerned with the scientific and practical knowledge of diet and food habits of human beings in general. Sports nutrition is a special study in the field of nutrition that helps to study the human body and how it can be used for exercise. Here sports nutrition can be defined as the study and application of knowledge of nutrition to a daily eating plan focused on providing the fuel for physical activity, which can help in the repair and rebuilding of the body which is required after hard physical workouts. It is also used for gaining the best performance from an athlete in any competitive event in addition to improving his overall health and physical wellness. Sometimes sports nutrition is often considered to be only for "sportspersons," which is often considered as just being available only for those individuals who are performing at the highest level in a particular sport. But we should not forget that sport does not relate only to the elite players but it also refers to any individual who is regularly active, whether it is a fitness enthusiast or the young amateur player or the professional sportsman, everybody needs a planned diet for a healthy performance. However, the diet that will be best for an individual will depend on the amount and the intensity of work done by an individual. This can range from those who are just starting to get more active, those meeting the activity guidelines (of 150 minutes moderate activity per week), those who are active at higher levels (such as those training for an endurance event such as a marathon or doing organized team sports) or professional athletes. For professional players, getting diet advice from a qualified sports nutritionist or dietitian is likely to be an important part of their training support.

3. ATHLETES AND NUTRITION:

Athletes are very devoted to their sport. They exercise daily, train with professionals, raise weights, have interaction in team practices and compare against each other. All this commitment is created in an attempt to form the material body work with a lot of efficiency. Continuous exercise and coaching, conditions the muscles in such a way that a basketball player would need to coach the muscles within the arm to throw a basket with pinpoint accuracy, hockey and football players would like their respiratory system to function in depth as per demand of the need for endurance and importantly for outrunning their opposition teams. In this generation the players have set a benchmark in each competition in sports which has already reached unprecedented levels. Even then it remains to be answered whether athletes are gaining the proper diet to perform their activities?

4. FOOD THAT ACT AS FUEL FOR EXERCISE:

CARBOHYDRATES: Carbohydrates are compounds that are made up of carbon, hydrogen and oxygen. Carbohydrates contain sugar, starch and cellulose which can be broken down to provide energy to the body. For players, if their food does not contain enough of these compounds, it is likely that their output will slow down as carbohydrate is the main fuel needed for the brain and muscles during workouts. The body will store carbohydrates within the muscles and liver as glycogen. These glycogen stores are restricted hence for those who are doing workouts and training at a high level, it's necessary for them to keep it completely fuelled at the beginning of any exercise. If glycogen levels are not maintained properly then while pursuing high intensity training for long periods an athlete may feel too tired, experience lack of energy and not be able to give their best. So, regular intake of carbohydrate-rich food is necessary to keep the energy levels to the fullest. The proper choice of food will facilitate and make sure that the body has enough energy for all the activity as well as help in recovery at times. Wholegrain varieties provide fibre, and a range of vitamins and minerals including vitamin B, iron, and calcium are an important source of carbohydrates in our diet. For athletes and individuals who enjoy being active to a higher level, taking in additional carbohydrate may be helpful for increased performance. Where athletes practice for long hours at a stretch like training for a marathon or playing at a national level, consuming some carbohydrate while exercising in the form of a sports drink, can also improve an athlete's performance.

PROTEINS: Proteins are mixture of amino acids that join together in various ways to make up, bones, muscle, tendons, skin and many other tissues. When a person eats food during ingestion, proteins are broken down by the body and amino acids are formed. Protein is one of the main part of the body tissues which is necessary for cellular growth and repair. Athletes want protein mainly to repair and makeup the muscle which is broken down during physical exertion. Doing physical work out breaks down the fibres in the muscle and the body has to quickly rebuild those fibres in order to support performance by the athlete in future. When the body does not have enough quantity of carbohydrates, the body looks for protein as a source of fuel for all kind of physical activity. In case of high intensity physical activity being carried out the muscle tissue becomes an energy source because there is an insufficient amount of fat and carbohydrates consumed. Therefore it is necessary to maintain an adequate protein intake every day, to make up for the protein lost in the muscle tissue.

FATS: Fat is the most important source of fuel during prolonged exercise. The body has an unlimited storage capacity for fat, making it the largest reserve of energy in the body. It is integral for many metabolic processes such as energy production, synthesis of vitamin D, cholesterol, hormones, and transporters of lipid soluble vitamins. Fats are of .two types saturated and unsaturated. Where saturated fats are gained from plants they do not pose a risk and can be eaten by the athletes but unsaturated fats should be avoided by athletes as it can lead to heart related diseases. However, fats do hold a place in sports nutrition. Fats are not rich in oxygen, and they can release a large amount of energy at a faster speed than other nutrients. This can provide an athlete with a concentrated source of energy. Fat is important for endurance exercises and for sportsman who practice for longer duration of time. Fats also help in and protecting the main and important organs of the body. Sportsman can get fat from food such as milk, butter, meat and oils. They need carefully keep a record of the type and the amount of fats they eat.

BODY HYDRATION: As water is important for life same way hydration is important for health, especially in athletes and those people who are physically active. Drinking enough fluid is important for maximizing exercise performance. When we exercise our body temperature also rises. The body tries to cool down by sweating which causes the loss of water and salts. Generally, the more a person sweats, the more they need to drink fluids to maintain their body hydration. Dehydration can cause tiredness and affect performance by reducing strength and aerobic capacity. So, especially when exercising at higher levels or in warmer conditions, it is important to try and stay hydrated before, during and after exercise to prevent dehydration and drinking water is the best option. If an athlete is doing more intense exercise they may gain more by having drinks containing some carbohydrates, and other electrolytes including sodium. For e.g. in long distance running or competitive swimming when carbohydrate stores may substantially reduce leading to sodium losses most athletes benefit from developing a personal hydration plan. A general rule for training is to consume a minimum of:

- Two cups of fluid prior to training
- Four to six ounces of fluid every 15 minutes of exercise

SUPPLEMENTS: Supplements are only a small part of a nutrition programme for training. Athletes are often advised to follow a 'food first' approach and avoid using supplements. For most people who are active, a balanced diet can provide all the energy and nutrients the body needs without the need for supplements. Sports supplements can include substances that may have been associated with increasing athletic performance example creatine, sodium bicarbonate or nitrate. The main reasons people take supplements are to correct or prevent nutrient deficiencies or to achieve a direct performance benefit.

PLANNING A NUTRITIOUS MEAL: Without adequate calories from the healthiest food sources, we will struggle to achieve our performance goals. We should plan a nutritious meal by choosing at least one food from each category.

Carbohydrates	Protein	Healthy Fat
Fruit	Whole eggs (white and yolk)	Avocado
Oatmeal	Greek yogurt	Peanut butter
Starchy vegetables (sweet/white potatoes, squash)	Milk	Nuts and seeds
Non-starchy vegetables (broccoli, leafy greens)	String cheese	Olive or canola oil (the latter, if baking)
Whole-grain bread or crackers	Lean red meats	Coconut oil
High-fiber, non-sugary cereals	Poultry	Flax seed (add to baking or cooking)
Quinoa	Fish	
Brown or wild rice	Hummus	

NUTRITION TO BE TAKEN ON GAME DAY:

There are a few golden rules when it comes to eating on the day of the game:

We need to remember, proper nutrition for the "big tournament/race/meet" does not happen on the day of the event alone. It happens on the days, weeks, and months leading up to the competition

We should never experiment with a new dietary/supplement protocol on the day of the big game we should first, try it out prior to a practice or training session to make sure that we can tolerate it well.

As we get closer to the game or competition we should make our meals smaller. Additionally, we may want to limit dairy, fat and fibrous carbohydrate sources during the last one to one and one-half hours before the event or practice, as these may cause **gastrointestinal** disorders.

4. CONCLUSION:

The main concept that underlies healthy eating and enhancing sports performance is maintaining a balance between the amount of food consumed and the amount of energy that is to be used for work. Since athletes take part regularly in physical exercise, they will need to absorb more energy from the kind of food they eat. The body of the athlete is trained in such a way that with long hours of practice and training it is made fit to excel in sports performances. It is important for the athlete to maintain their body by eating proper and nourished food for pursuit of such athletic expectations. Athletes need to focus on maintaining a proper diet and fix a proper time for physical training and proper rest together. Good eating habits are important to achieve the maximum output in physical performance but this does not mean that we should place food in different categories of good or bad. To achieve a healthy lifestyle an athlete should eat food from various food groups and make better food choices at the same time. Daily food choices should include food of all types' carbohydrates, proteins, fats, vitamins and minerals and most importantly fluids, example water. Athletes are best equipped to gain their maximum potential only when they take the right amount of food at the right time. Thus we can say that Nutrition does have an impact on athletic accomplishments.

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