Role Of Nutrition In Sports

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ABSTRACT

Nutrition plays a major role in sports. It can help enhance athletic performance, improve exercise, recovery and make reaching your goals possible. Sports nutrition is a highly regarded field of modern sports medicine, which helps players to keep their good body condition so as to achieve the optimal performance. The certain type of nutrition and dietary combinations enhance sports performance. Mainly six basic substances are required in the food : Carbohydrates, Proteins, Fats, Vitamins, Minerals and Water. Each of these has specific function in providing nourishment to the body. The player's diet should be high in carbohydrates, moderate in proteins and low in fats.

KEYWORDS : Nutrition, Sports, Performance, Exercise

INTRODUCTION

Sports nutrition is the foundation for any type of player. It is a well designed nutrition plan that allows active adults and athletes to perform at their best. Sports nutrition and energy intake has been established as the cornerstone of the athlete's diet. Nutrition in field of sports is a topic of constant change and has grown as dynamic field of the clinical study. Research continues to advise improved nutritional guidelines and support for both adults and competitive athletes. Eating for goals is what sports nutrition is all about. Different nutrient have been explored for their potential to optimize athletic performance, especially when engaged in high intensity sports which involves repetitive activity. Therefore a competent sports nutritionist must have adequate command over nutrition, including the biochemistry of the nutrients and the way they are metabolized during intensive physical activity, exercise physiology and how an athlete's body differs from others in terms of functional performance, resting metabolism as well as psychological aspects of sports.

Sports performance is directly related to the awareness about the nutrition. Many factors can impact the performance of a sports person during competition which may be related to different domains. The most commonly encountered nutrition related problem among the sports person is their failure to consume sufficient total of food energy.

Macronutrients - The Basic Of Sports Nutrition :

Carbohydrates : They can be simple or complex and are most important energy source for the human body. Simple carbohydrates include sugars naturally occurring in foods like fruits, vegetables and milk. Complex carbs are whole grains, bread, potatoes, most vegetables and oats. Carbohydrates are broken down into glucose which gives energy to body. They consist 45 to 65 percent of the total food intake depending physical demand.

Proteins : Proteins are known as the building blocks of the body which are made up of amino acid chains. Proteins are essential for muscle growth and recovery. There are two types of proteins ; Complete proteins, consist of all amino acids and are found in animal sources like meat, fish, poultry and milk. Incomplete proteins are plant based and lack some of the amino acids. Average protein requirement varies from 1 to 2mg/ Kg body weight. Majority of Indian population is protein deficient.

Fats : Fats play a vital role in human body by maintaining energy balance, regulating hormones and restoring muscle tissue. Fats can be Saturated, which are found in animal products like red meat and high fat dairy .Their more intake increase the risk of diseases. Unsaturated fats are healthy and derived from plant sources like olive oil and nuts. Omega 3 and omega 6 are essential fatty acids that are important for sports nutrition. Healthy fat should comprise of 30% of their total daily calorie intake.

Micronutrients : The deficiency of micronutrients is of great concern to players. Exercise stresses important body functions where micronutrients are required. Moreover, some athletes restrict calories and certain foods which lead to deficiency of micronutrients. Most common deficiency is Iron deficiency, which can impair muscle function and

respiration because of hemoglobin deficiency. Vitamin D and Calcium deficiency , resulting in weakness of bones, impaired regulation of muscle contraction and reduced nerve conduction. Vitamin A deficiency leading to impaired vision.

For the sportsman ,it is necessary to recognize which of the nutrients are required under the physical, mental and emotional strains of competition. The duration and the intensity of the exercise involved in a given sports will determine the principal source of energy used in meeting the work demands of that particular sports.

Eating Disorders : Many athletes require to maintain lean bodies and low body weight and exhibit muscular development. Chronic competitive pressure can create psychological and physical stress leading to disordered eating habits which eventually lead to adverse health effects. The nutritional needs of these individuals differ from other active players . The primary focus should be on treating and managing the eating disorder and consuming the nutrition needed to achieve and maintain good health rather than athletic performance.

Active adults and competitive athletes turn to sports nutrition to help them achieve their goals. The sports specific scenarios require different nutritional programs. Research finding indicate that the right food type , calorie intake, nutrition timing, fluids and supplementation are essential and specific to each individual. The following are some of the states of training and sports which benefit from sports nutrition:

Athletic performance : A balanced nutrition plan should include sufficient calories and healthy macronutrients to optimize athletic performance. Carbohydrates or fats can be used as main energy source depending on intensity and duration of exercise. Inadequate calorie intake can impede athletic training and performance. A normal healthy diet can take care of normal exercising regimen. Intense training will require significantly more nutrients to support energy demands.

Endurance : It includes moderate to high intensity exercise. High requirement of carbohydrates for high energy is needed. Fat is secondary source. Endurance athletes are more at risk of dehydration , thereby increasing the demand of fluids and electrolytes.

Strength : Resistance training programs are designed to gradually build the strength of skeletal muscles. Since it is a high intensity work, it requires sufficient amount of all macronutrients for muscle development. Protein intake is also vital to increase and maintain lean body mass.

Competition : Athletic goals will determine the best sports nutrition strategy. Pre and post workout meal planning are unique for each athlete and essential for optimal performance. Adequate hydration and electrolytes are required for athletic health and athletic performance. Rehydration with water and sports drinks containing sodium are often consumed depending on athlete and sporting event.

Supplements in sports nutrition : Sports supplements and foods are unregulated products marketed to enhance athletic performance. The Australian institute of sport has provided a general guide ranking sports performance supplements and foods according to significance of scientific evidence : Sports foods like sports drinks, Bars, and gels, electrolyte supplements, protein supplements, and liquid meal supplements. Medical supplements like iron , calcium, vitamin D, multivitamin/multimineral, and omega 3 fatty acids. Performance supplements like creatinine , caffeine, sodium bicarbonate, beta alanine and nitrate.

Specified Nutrition : Sports nutrition covers a wide spectrum of the need for athletes as per specific population and environment. Vegetarian athlete diet contains high intake of plant proteins , fruits, vegetables, whole grains and nuts. High altitude sports require iron rich foods more in diet as more oxygen is required by the cells. Hot environment trainings require more of the hydration therapy.

Role of sports dietician : Athlete and active adults are seeking guidance from sports professionals to enhance athletic performance. Sports dieticians are hired to develop nutrition and fluid programs catered to the individual athletes or teams. Sports dietician should have knowledge of all types of nutrition and its relation with health and fitness.

CONCLUSION

Sports nutrition is a topic of constant change and has grown as a dynamic field of the clinical study. Sports nutrition plays a major role in success of any type of the player. Certain nutrition and the dietary approaches are helpful in good performance of an athlete and should vary in accordance to the type and the intensity of training, type of sports event, environmental factors, eating habits and other specific requirements.

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