ISSN 2277 - 5730

AN INTERNATIONAL MULTIDISCIPLINARY
QUARTERLY RESEARCH JOURNAL

AJANTA

Volume - IX Issue - IV OCTOBER - DECEMBER - 2020

ENGLISH PART - I

Peer Reviewed Refereed and UGC Listed Journal

Journal No. 40776

ज्ञान-विज्ञान विमुक्तये

IMPACT FACTOR / INDEXING
2019 - 6.399
www.sjifactor.com

❖ EDITOR ❖
Asst. Prof. Vinay Shankarrao Hatole
M.Sc (Maths), M.B.A. (Mktg.), M.B.A. (H.R.),
M.Drama (Acting), M.Drama (Prod. & Dir.), M.Ed.

❖ PUBLISHED BY ❖

Ajanta Prakashan
Aurangabad. (M.S.)

CONTENTS OF ENGLISH PART - I

16. Sports Nutrition for Optimal Performance of Athletes

Priya A. Sangole
Manisha P. Kale
Assistant Professor, D. K. Mahila Mahavidyalaya Kurkheda, Gadchiroli, Maharashtra.

Abstract

Nutrition is the study of foods and nutrients and their effect on health, growth and development of the individual .The aim of the study is to be nutritional requirement for optimal performance of athletes. The descriptive and reviewed literature method used for the study .The information that will help athletes to make informed choice s to meet their nutritional needs in pre during and post activity and different situation for the better performance.

Keyword- Nutrition, Athletes, Pre and Post.

Introduction nutrients

Nutrition is the study of foods and their effect on health, growth, and development of the individual, sports nutrition applies nutrition principles to sport with the intent of maximizing performance. (ILSI 2007).Very few studies are conducted in India in the field of sports and nutrition and its impact on the performance level. Nutrition plays a key role in determining the physique of a person. Optimal body dimensions are one of the most important pre-requisites of physical fitness and performance .The athletic performance can be improved by consumption of adequate nutrition. Nutritional requirement in an active person is based on the level of activity performed.

"According to American dietetic Association and dietitians of Canada, American College of Sport Medicine, reported that "physical activity, athletic performance and recovery from exercise are enhanced by optimal nutrition."

The objective of the study is to be nutritional requirement for optimal performance of athletes.

Methodology

The descriptive and reviewed literature method used for the study.

Result and Discussion

The nutritional requirement of athletes based on their age, sex, type of sports, activity level. According to the nutrition and hydration guidelines of ILSI NIN (2007) and ICMR (2010) the requirement of nutrients of sport persons, and active individuals, there are 3 energy nutrients that provide calories to fuel the cells. Athletes should consume majority (65-75%) of their calories from Carbohydrates, Proteins (10-15%), Fats (30%) of calories. Vitamins and inorganic trace and major minerals do not contribute to energy, but they facilitate in the vital metabolic function responsible for energy release in the body. Water is the sixth category of nutrient and vital to the life of every cell in the body. It is a solvent , lubricant ,medium for transport, and temperature regulator that makes up the majority of our body and yields no energy. All physically active individuals or athletes increased the need of protein ,carbohydrates vitamin and minerals. However, too much or too little of a nutrient can be dangerous to one's health.

Protein:- The primary function of protein are growth and maintenance of tissue, enzyme and hormone development, making antibodies to fight infection, fluid and electrolyte and acid-base balancing and energy.

The recommended daily allowance (RDA) for protein for most people is 0.8 grams per kilogram of bodyweight and it is 1.0 to 1.5 grams per kilograms of bodyweight for endurance athletes and bodybuilders. Too much protein dangers for health

Carbohydrate:- Carbohydrates are the preferred source of energy for all body functions and muscular exertions and are necessary to assist other foods in digestions assimilation and elimination carbohydrates differ greatly from one to the other. It's a primary brain fuel, eating enough carbohydrate before during and after exercise to maintain blood glucose level.

Carbohydrate loading:- Carbohydrate loading is as it sounds loading the muscles with carbohydrate to maximize glycogen levels to ensure adequate energy reserves for competition. If you meet 60% of your daily energy needs with carbohydrate you can increase your carbohydrate allowance to 65% or 70% of your total energy to maximize glycogen stores.

The recommended daily amount of carbohydrates for an athlete is 300 grams if the total intake is 2000 k.cal.

Fats :- Fats are essential for good health. They constitute an important source of energy storage in the body, cushion and protect vital organs and carry fat-soluble vitamins like vitamins A , D, E, K. Excess consumption of fats can be injurious to health.

Moderate consumption of fat and a balance between saturated and unsaturated fats are desirable. For a balanced diet, reduce total dietary fat to less than 30 percent of total calories. Reduce saturated fats intake to 10 percent of total calories.

Micronutrients :- The body requires micronutrients in small quantities and includes minerals and vitamin for its proper functioning, i.e growth and repair of body tissues, metabolic reactions, immune functions ,elimination of free radicals.

Losses of minerals can occur from strenuous exercise. Losses of iron and magnesium are likely from sweat particularly in hot conditions. If dietary intake fails to compensate for these losses athletic performance will be adversely affected. Hence iron zinc and magnesium supplements may be necessary. But these should not exceed 1-2 times the RDA. Excessive intake can be toxic.

Dietary Fiber:- Dietary fiber reduced blood cholesterol and colon disease ,weight control benefit, slowing glucose absorption. Phytonutrients present in fruits and vegetables and whole grain . The recommendation for a healthy amount of dietary fiber varies between 25-48 grams a day for diet ranging from 3000 to 7000 k.cal per day.

Antioxidants:- "A substance that prevents oxidation," antioxidants act as a scavengers, interacting with free radicals to prevent cell and tissue damage. It's protect the body's tissues against the stresses of hard exercise. Some macronutrients working as an antioxidants and these are vitamin A, beta carotene, vitamin C, selenium, zinc, thiamine, riboflavin, pantothenic acid vitamin.

Water:- Water is used for proper functioning of body . It is important that the loss of water through sweat and urine is made up from adequate consumption of water and other fluids.

Body water balance is maintained when water intake is equal to water loss. It is observed that for athletes who are physically very active and exposed to hot environments , fluid requirements are increased considerably to the tune of 5 to 16 L per day.

Pre-event hydration

- Athletes should consume 1.5 to 3L of fluid above their normal intake the day before the event.
- Athletes should consume 0.5 L of water 1-2 hours prior to the event and 0.6 L of water or other fluids 10-15 minutes before event.
- Empty their bladder 15 minutes prior to the events is a must

- Athletes should drink cool water during the event as it is absorbed faster and cools the body better than water at room temperature

During event hydration

- Athletes should drink 150 ml to 250 ml every 10-15 minutes to maintain fluid balance.
- Athletes should sip the water, and not gulp it down.

Electrolytes

Electrolytes, like sodium and potassium,are important because they are used by the cells to maintain voltage across their cell membrane and carry electric impulses to other cells. Studies conducted by SAI have shown. Coconut water and sugarcane juices as good source for electrolyte supplementation.

Conclusion

The importance of nutrition in sports performance should be recognized and adequate facilities provided to ensure that athletes receive the right kind and amount of nutrition. Nutrition and dietary requirements for sporting events require careful programming. The body requires food not only for energy but also for anabolic and reparative processes. A poor or inadequate diet can lead to fatigue, irritability, and sometimes to eating disorders such as anorexia. Performance enhancing substances should be strictly avoided they are injurious to health.

References

1. Nutrition and Hydration Guidelines for Excellence in Sports Performance., www.ilsi.in
2. Gopalan,C.et.al.,(1989), Nutritive Value of Indian Foods, NIN, ICMR, Hydrabad, Indian, page no.47-95.
3. Joshi, S.A.,(2012), Nutrition and Dietetics with Indian case studies, Third Edition, Tata McGraw Hill Education Private, Ltd. New Delhi.
4. Priya Sangole, (2020),A Nutrition Guide For Athletes, Unpublished Booklet
5. Shruti Pandey and Vasudeva Singh, (2013),Nutritional Needs of Athletes, medical-biological problems of physical training and sports,doi:10.6084/m9.figshare.691079