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## Growing significance of sports nutrition in contemporary world of sports championships

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### Abstract

**Introduction:** Sports nutrition is the study and practice of nutrition and diet with regards to improving anyone's athletic performance. Nutrition is an important part of many sports training regimens, being popular in strength sports (such as weightlifting and bodybuilding) and endurance sports (e.g. cycling, running, swimming, rowing).

**Methodology:** Survey of primary and secondary literature is the prime methodology used for preparing this research article.

**Research Findings:** Developing an individualized sports nutrition plan for athletes involves considering the individual's health history, the bioenergetics and logistics of the athlete's sport, total weekly training, and competition time, living arrangements, access to food, and travel schedules. Sports nutrition professionals should listen closely to the goals, questions, and concerns of athletes and then build an individualized nutrition plan that is mutually acceptable and productive.

**Conclusion:** It is essential to carry out a nutritional approach adapted to the athlete 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. The objective of sports nutrition studies is to determine the nutritional requirements of the athlete population that allow achieving their sporting goals. Nutritional strategies need to be addressed in terms of macronutrient consumption, hydration, and timing depending on the type and intensity of exercise.

**Keywords:** Sports nutrition, athlete, sports nutrition studies, athletic diet, healthy diet

### Introduction

Over recent years, important developments both in the science and practice of sports nutrition have flourished. Studies from the 1960s demonstrated the importance of carbohydrate usage, the manipulation of fat as a substrate for energy. Fluids and electrolytes are regularly consumed to maintain optimal hydration before, during, and after sports competition. Sports drinks can also be used to recover energy and fluid reserves quickly after a weigh-in and before a competition in weight-category sports. Today, the use of dietary supplements is widespread among athletes. Various recent research findings have also supported the earlier findings that athletes are at higher risk of having an eating disorder than nonathletic controls. Treatment of low energy availability should involve an increase in energy intake, reduction in exercise or a combination of both.<sup>[1]</sup>

Diet is of great importance to athletes, the key to achieving an optimal sports diet in relationship to peak performance and good health is balance. Athletes must fuel their bodies with the appropriate nutritional foods to meet their energy requirements in competition, training, and recovery. If these nutritional needs are not met, there is an increased risk of poor performance and health issues. The use of a nutritional supplement within established guidelines is safe, effective, and ethical. Capacity strength and lean body mass in conjunction with training, but still there is sports specific variation in the food fads and practices indicating the strong influence on coaches and peers. It is vital to educate the sportsmen about the dietary pattern. Failure to consume right diet during competition due to false belief in markets and constant fear of eating prohibited foods may hamper performance. Today, more effective bespoke approaches in weight control, sports performance and healthcare, fitness enthusiasts and professionals are keen to update and enhance their understanding and practice<sup>[2]</sup>.

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### Understanding the Significance of Sports Nutrition

Sports nutrition is the study and practice of nutrition and diet with regards to improving anyone's athletic performance. Nutrition is an important part of many sports training regimens, being popular in strength sports (such as weightlifting and bodybuilding) and endurance sports (e.g. cycling, running, swimming, rowing). Sports nutrition focuses its studies on the type, as well as the number of fluids and food taken by an athlete. Also, it deals with the consumption of nutrients such as vitamins, minerals, supplements, and organic substances that include carbohydrates, proteins, and fats.

Athletes and professional coaches are more aware than ever before of the importance of nutrition in sport. While there is an array of factors that contribute to an athlete's overall performance in their chosen sport, food is a critical piece to the puzzle, providing the energy needed. The approach to nutrition in sports is different from that of nutrition for overall health. Sports nutrition is the study and practice of hydrating and fueling your body to improve athletic performance. The ultimate goal is improving performance, realizing true potential and when executed properly, a scientific, person-centered nutrition plan can help you do just that. Over the years, sports nutrition has changed and morphed in parallel with the growing awareness of the role that exercise plays in overall health and awareness. Today, with the help of more science and research, nutrition in sport is now rapidly growing, developing ever more new ways to help people run longer, lift more, swim further or do whatever sport they want to do just that bit better.

### Athletic Diet vs Healthy Diet

The ideal diet for an athlete is not very different from the diet recommended for any healthy person. And while certain sports require the athlete to fit a certain weight group or body fat, the benefits to nutrition in sports spans beyond just aesthetics:<sup>[3]</sup>

- Enables you to train longer and harder
- Delays onset of fatigue
- Maintains a healthy immune system
- Enhances performance
- Improves recovery
- Improves body composition
- Reduces potential of injury
- Helps with focus and concentration

It is well established that what an athlete eats can affect his/her ability to train, recover and compete. What we eat and drink provides us with energy. How we train and the type of sport we choose to compete in places certain energy demands on the body. The amount, composition and timing of food intake can profoundly affect sports performance. An individual's needs will vary depending on a multitude of factors – age, genetics, gender, sport, lifestyle. This is where combining bespoke training for weight-loss/performance with a personalized nutrition and lifestyle plan vastly improves client outcomes and satisfaction.

### Optimal Nutrition Pattern for Athletes

Following is the order of importance when it comes to optimal nutrition pattern:

- **Nutrition in Sports – the foundation is behaviour and lifestyle**

The core, the root and foundation of any nutrition and training programme are what happens outside of the gym/pitch/court,

etc. Balancing stress and sleep, mobility, social relationships, recovery, and lifestyle to match your sports goals lays the groundwork and sets you up for success in all subsequent elements. Yet, it is often the most under-appreciated or neglected. Think about it – the average amateur athlete might spend 1-2 hours in the gym at 5x per week. What happens for the other 158 hours?

- **Nutrition in Sports – Macronutrients & hydration**

Food is made up of three macronutrients – fat, carbohydrate, and protein. The ultimate goal of nutrition in sport is to balance these macro and micronutrients to achieve optimal energy output and at times body composition for the intended sport. The split of how many of each a person needs will depend on personal and sports-specific factors. For example, the ketogenic is probably not the best approach for a Cross Fitter but there are anomalies in the sport who thrive on a higher fat diet. Not only that, but the macronutrient requirements will also shift with the phases of training – a conditioning phase may require more carbohydrate compared to a structural rebuild and so on. The average sedentary person needs about 2-3 liters per day. However, for the athlete, hydration needs can increase significantly depending on sweat and training demands. Specific fluid needs will vary from athlete to athlete depending on body weight, exercise, and environmental conditions. However, hydration becomes not only just water intake but also electrolyte balance.

- **Nutrition in Sports – Micronutrients**

In addition to balancing these macros, the goal is to also obtain optimal micronutrient intake i.e. vitamins, minerals, phytonutrients, etc. This is of critical importance to mention and again far too often neglected. Micronutrients help support a healthy body, managing a host of factors such as injury prevention, muscle building, immune support, recovery and more. Again, it's not uncommon to see individuals neglect this in favor of empty calories – whether for simply getting in enough calories (remember some might require quite a lot of food over the course of a day) or the opposite cutting calories (to make weight).

- **Nutrition in Sports – Nutrient Timing**

When it comes to nutrition in sports, nutrient timing begins to play a role for the purpose of performance. To maximize the training session, it is important to look at pre, during and post nutrition. Not only that, but there might also be other nutrient timing demands to align in time for game day/competition. Again, the requirement will depend on the individual and the sport. This is also where at times, it might result in having to look at packaged sources of energy i.e. energy gels, protein shake, etc. While this should be avoided where possible, at the end of the day training for sport is different than training for health. You want to isolate and maximize nutrients at certain specific times which is not always possible with whole food.

- **Nutrition in Sports – Supplements**

The basis of a good diet is rooted in whole food and proper hydration. However, when it comes to sports nutrition, the physical demands of training may require additional support. Again, the specific detail around this will depend on individual needs and requirements. A note to remember to always check what is allowed/banned in your particular sport. As a final note, you get what you pay for. The supplement industry is a huge multi-billion dollar enterprise, but it is also

highly unregulated. Choose your supplements wisely, look to independent third-party research and ask questions!

Thus, sports nutrition is a broad interdisciplinary field that involves dietitians, biochemists, exercise physiologists, cell, and molecular biologists, and occasionally psychotherapists. It has both a basic science aspect that includes such concerns as understanding the body's use of nutrients during athletic competition and the need for nutritional supplements among athletes; and an application aspect, which is concerned with the use of proper nutrition and dietary supplements to enhance an athlete's performance. The psychological or psychiatric dimension of sports nutrition is concerned with eating and other mental disorders related to nutrition among athletes. Sports nutrition has several purposes:<sup>[4]</sup>

- To prepare athletes before performance or training
- To maintain an acceptable level of performance during competition or training
- To help the athlete's body recover after training or athletic competition
- To provide sound information about healthy dietary practices and use of supplements
- To monitor athletes for signs of eating disorders, doping, supplement abuse, or other unhealthful nutritional practices
- To provide specialized nutritional advice to athletes following vegetarian, vegan, or other special diets
- To monitor the special nutritional needs of persons with disabilities who participate in athletic activities and programmes.

#### **Guidelines for Coaches regarding Sports Nutrition**

Meeting energy requirements through whole food sources is essential to function and perform at your peak! Anyone can benefit from looking at nutrition for sports, not just elite athletes. Certainly, we are seeing more and more people take training to the next level, competing in triathlons, marathons, and obstacle races.

In the past, athletes and coaches often worked in a parallel universe to their expert groups (e.g., governing bodies of sport) and service teams (e.g., sports scientists, dietitian, and physicians) concerning performance supplements, with the former favoring supplement use based on their interest in performance gains and the latter being risk-averse and dismissive of such products. The modern landscape, at least for high-performance athletes, has seen a unification of effort and intent, with many parties now working together to take a pragmatic approach to manage a risk-benefit audit around the use of sports foods, therapeutic/prophylactic supplements, and performance supplements. This has been led by organizations such as the International Olympic Committee and the Australian Institute of Sport, that have produced expert statements and education resources to guide a proactive but evidence-based consideration of the use of these products. In the case of sports foods, track-and-field athletes are guided to seek the expertise of an appropriately qualified sports nutrition professional who can help them balance the expense of using these specialized products with the scenarios in which they offer genuine performance benefits. Therapeutic/prophylactic supplements should involve the expertise of a sports physician, especially when a diagnosis of medical issues and nutrient deficiencies is needed. A decision-tree approach to the use of performance supplements, especially in collaboration with sports science/nutrition experts, will help to ensure that any products that are used are appropriate to the athlete's age and

maturation in their event, integrated into the athlete's plan according to evidence-based protocols and appropriate scenarios and chosen based on being at low risk of contamination with banned or harmful ingredients. Ultimately, it is pertinent that sports foods and nutritional supplements should only be considered where a strong evidence base supports their use as safe, legal, and effective and that such supplements are trialed thoroughly by the individual before committing to use in a competition setting.

Developing an individualized sports nutrition plan for athletes involves considering the individual's health history, the bioenergetics and logistics of the athlete's sport, total weekly training, and competition time, living arrangements, access to food, and travel schedules. Sports nutrition professionals should listen closely to the goals, questions, and concerns of athletes and then build an individualized nutrition plan that is mutually acceptable and productive. Athletes should be active participants in their meal planning and goal setting.

In addition to this, in advanced modern sports nutrition, nutrition goals and requirements change for the same athlete, over their career, over their competition year and even within a week. It is important to recognize and address needs changing from day to day according to the exercise load. Also, the timing of nutrition within the day is also important keeping into account the nutrition needs prior to training; during the training; and after the training to maximize the results and recovery. Therefore, to ensure this continuous support and guidance for nutrition and hydration inputs to athletes should be an ongoing process<sup>[5]</sup>. Sports nutritionists should continuously assess and evaluate changing nutritional requirement so that excellence in sports is maintained.

#### **Brand Value in Sports Nutrition**

Sports nutrition is a constantly evolving field. While consumer-awareness of sports nutrition has improved, partly as a result of growing interest in fitness and increasing participation in regular exercise, it is still primarily restricted to gyms and urban areas. Apart from Muscle Blaze and Big Muscles Nutrition, no brands have invested significantly in advertising campaigns. Internet retailing platforms, including Health kart and Amazon, are seeking to expand their sports nutrition ranges by offering products from licensed distributors. The licensed status can be confirmed by a label on the product container and verified by calling the distributor. Increasing consumer engagement in sport and physical exercise, supported by increasing interest in professional sports leagues such as the Indian Premier League in cricket and the Pro-Kabaddi League, is set to provide an increasingly solid platform for the development of sports nutrition over the forecast period. As the coverage of professional sports expands, growing numbers of people are encouraged to take up sports, leading to an increase in demand for products that fight post workout fatigue, help to prevent, or recover from injuries, or help to build muscle.

Glanbia Performance Nutrition (India) retained the lead in sports nutrition at the end of the review period through its Optimum Nutrition brand. Targeting gym-goers and fitness enthusiasts, Optimum Nutrition is amongst the global leaders in sports nutrition. Looking to take advantage of the healthy living trend and tap into the expansion of sports nutrition, major domestic and international players are launching their own sports protein products. Domestic company, Himalaya Wellness launched the whey protein product, Himalaya Quista Pro, containing "naturally rich amino acids", in 2018. Through a combination of competitive pricing and a level of

investment in marketing activity that is unusual for the category, Bright Life care Pvt Ltd.'s Muscle Blaze brand has continued to deepen its penetration of the Indian market. Towards the end of the review period, Muscle Blaze's Naam Hai Ziddi advertising campaign focusing on the relentless determination of successful athletes was well-received, helping the brand to maintain a trend of value share growth in 2020.

### Conclusion

Nutrition plays an essential role in sports performance. Following adequate nutrition, pattern determines to win the gold medal or failing in the attempt. That is why it is commonly referred to as "invisible training." However, regarding food and performance, it is not only referred to like professional athletes. Nowadays, a large number of amateur athletes perform daily physical activity both recreationally and semiprofessionally. That population also seeks to achieve an improvement in their personal brands, which can be reached following proper nutritional guidelines. In the athlete population, nutrient requirements are incremented compared with the non-athlete population. Therefore, it is essential to carry out a nutritional approach adapted to the athlete 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. The objective of sports nutrition studies is to determine the nutritional requirements of the athlete population that allow achieving their sporting goals. Nutritional strategies need to be addressed in terms of macronutrient consumption, hydration, and timing depending on the type and intensity of exercise.

Globally, sports nutrition is roughly around 20 to 25 billion dollars and it is still at a nascent stage in India. We are still at around 1 to 1.5 billion dollars in terms of sports nutrition but when it comes to general wellness and dietary supplements, we should be around 3 to 5 billion dollars. The significant thing today is that even in India you have close to around 80 to 90 million dollars' worth of products being marketed in the fitness industry and this has been tremendous growth in the last 10 years. Nutrition will play a role in that as we proceed, it is growing at around 15 to 20 percent which is good for everyone who is into this segment.

Also, planning for proper allocation of resources is important. The foundation of sports nutrition should be established on natural, fresh, and quality food products. Reliance on overpriced supplements is not necessary, the world's fastest runner, Usain Bolt from Jamaica, is said to have obtained his strength from calorie rich yams. Australian Institute of Sports has developed the AIS Sports Supplement Framework to educate athletes about different types of supplements and sports foods, and general issues around their use. Such resources specific to Indian food products, their nutrient profile, therapeutic herbs, and supplements should be available for reference.

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