

# Nutrition Knowledge of Football Players and Formulation of an Effective Nutrition Communication Package

Priyam Ahuja\*, Vandana Bharti\*\*

---

## Abstract

**Background:** Football is a sport characterized by periods of moderate intensity activity interspersed by short periods of high intensity sprinting activity. A high level of energy expenditure, coupled with fluid loss owing to the hot and humid climate, and injuries, means sound nutritional and hydration strategies are required to optimize performance. Although the players and the coaches usually understand the principles of physical training, they often neglect the equally well developed Principles of Nutrition. **Aim:** To assess the Nutrition Knowledge of Football Players and formulate an effective Nutrition Communication Package for Indian Football team. **Methods and Materials:** Two Hundred Football players from all over India were selected and their Knowledge about nutrition and health were elicited using a pretested validated questionnaire which included questions on various aspects of nutrition including healthy balanced diet, macronutrients, micronutrients, fluid and electrolyte, pre competition, during and post competition meals and nutrition labeling, at baseline and based on their knowledge and extensive literature review on sports nutrition, the nutrition education program was formulated. The Nutrition Knowledge questionnaire was scored, each correct answer was given a score of one and each wrong answer, a score of zero. Statistical analysis was done using Mean, Standard deviation and Percentages. **Results:** The mean nutrition knowledge of football players was observed to be low. Based on the gaps of knowledge after analysis of the data a Nutrition Communication Package was formulated. The “benchmark principles to victory” included healthy balanced diet-selecting carbohydrates the healthy way, proteins for healthy muscles, Good fat-omega 3, immunity enhancers, pre event fuelling, competition drinks and post competition recovery food and rehydration solutions. This Nutrition communication package was transformed into power point presentations, leaflets and fact sheets and can be delivered through Individual Counseling and focus group discussions. **Conclusion:** This comprehensive Nutrition Communication Package including “Benchmark principles to victory” can be an ideal training material for our Football team and can be modified based on the requirement of individual sport in India.

**Keywords:** Nutrition communication package; Football; Football players; Nutrition knowledge.

---

## Introduction

Football is one of the world’s oldest known, widely played and enjoyed team sports. The contemporary history of the world’s favourite

game spans more than 100 years. Football is played in almost all schools of India. Indian football was largely neglected in preference to Cricket in which the national team is among the top three teams in the world however, with the Under-17 Football FIFA championship scheduled to be played in India in 2017 and with the fresh approach of Indian super league championship, Football is gaining momentum in India. Yet, the standard of Indian football, when compared globally, is poor. Part of this has been put down to the lack of opportunities for proper training and development of players in the country. The requirements of a sports player are very different from rest of the population, hours of

---

**Author’s affiliation:** \*Research Scholar, \*\*Assistant Professor, Dept. of Foods and Nutrition, Maharani Lakshmi Bai Government Girls Post Graduate College, D.A.V.V. University, Indore, M.P., India.

**Corresponding Author: Priyam Ahuja,** Research Scholar, Dept. of Foods and Nutrition, Maharani Lakshmi Bai Government Girls Post Graduate College, D.A.V.V. University, Indore, M.P., India.

E-mail: priyamahuja@yahoo.com

practice and discipline towards their goal undoubtedly assures 90% success but to make it 100% there has to be some extra effort added to it, adequate nutrition ensures this extra boost of energy. It's the combination of right kind of food at the right time in right amounts that ensures Victory.

Football is a sport characterised by periods of moderate intensity activity interspersed by short periods of high intensity (sprinting) activity. The game is played at a fast pace with short bursts of high intensity sprints, with many changes in direction, sprinting, accelerating, decelerating, tackling, dribbling and passing interspersed. Energy expenditure can be 60 – 80 kilojoules/min, with the higher end of the range for midfield positions. Injuries often occur from ball accidents, or joint and muscular damage. A high level of energy expenditure, coupled with fluid loss owing to the hot and humid climate, and injuries, means sound nutritional and hydration strategies are required to optimize performance. The sports players often lack the nutrition knowledge to make wise dietary choices and rely on other sources like friends, magazines, doctors for advice on diet and nutrition related issues. Current research indicates that the nutritional knowledge of athletes is minimal. Dietary behaviors may hinder health status and athletic performance. As the athlete's knowledge increases, nutritional quality of food choices improves. *Elliot (2006)* suggests the need for effective tools and interventions, such as sport-specific nutrition workshops and instructional materials, to educate athletes, coaches and trainers and to encourage them to consult qualified professionals to provide team members with accurate guidelines on sports nutrition fundamentals. Several Nutrition Education Programmes are being conducted worldwide for increasing the efficiency of the Sports players. Australia has a vast panel of sports nutritionists who ensure proper nutrition of the players, providing them with guidelines on nutrition especially competition meals. Sports Nutrition Association of Canada in association with the Gatorade Sports Science Institute too provides the most up to

date information on nutrition and physical performance to the coaches and the sports players of Canada. Adequate and Authentic Nutrition Education is very essential to provide the young Sports players with the correct fuel for having the winning edge. Hence, Nutrition Education is essential for Indian Football players to enhance their nutritional knowledge and help them select healthier and nutritious dietary choices to enhance their abilities and improve their match performance.

### **Aims**

To assess the Nutrition Knowledge of Football Players and formulate an effective Nutrition Communication Package for Indian Football team.

### **Methods and Materials**

Two Hundred Football players from all over India were selected during an all India Youth Football tournament, Under-17 category. Their Knowledge about nutrition and health were elicited using a pretested validated 32 -item questionnaire, based on scientific literature and knowledge in sport nutrition. The questionnaire was divided into six parts that included sport nutritional knowledge and need for nutrition education. The first part sought information about the knowledge on healthy balanced diet, the second part included knowledge about macronutrients; carbohydrates, proteins and fats and its sources. The third part elicited information on micronutrients and antioxidants. The fourth part included sports specific questions pertaining to pre, during and post competition meal knowledge, fifth part had questions on nutrition labeling, and lastly the sixth part elicited information on their perception towards nutrition. The questionnaire had multiple choice questions, "yes, no, can't say" checklist options, true or false, and open ended questions. A score key was developed and

used by the investigator to assign score; each correct answer was given a score of one and each wrong answer, a score of zero. Statistical analysis was done using Mean, Standard deviation and Percentages. Based on their knowledge and extensive literature review on sports nutrition, the nutrition communication package was formulated.

## Results

The mean age of twohundred Football players from all over India, selected during an all India Youth Football tournament, Under-17 category was 15+1 years and had an experience of playing a minimum of two tournaments at a national level. Based on the gaps of knowledge after analysis of the data on the knowledge of the team players a Nutrition Communication Package was formulated. The “benchmark principles to victory” included healthy balanced diet-selecting carbohydrates the healthy way, proteins for healthy muscles, Good fat-omega 3, immunity enhancers, pre event fuelling, competition drinks and post competition recovery food. The last sessions of the program included muscle relaxation and rehydration solutions. This Nutrition communication package was transformed into power point presentations, activities, leaflets and fact sheets and was delivered through Individual Counseling and focus group discussions. The program was conducted in English as well as Hindi to ensure effectiveness.

The overall nutrition knowledge of the football players was 37%. The nutrition knowledge score of the football players was observed to be 9.7 +2.74 . Though the concept of healthy balanced diet was fairly understood by 65% of the players, their knowledge on macronutrients was low. 80% of the players could not differentiate the sources of fibre and starch, 30% of the team players felt non vegetarian foods are a better source of proteins compared to vegetarian food options. 85% of the players were seen to be ignorant about fats especially Trans fat. Only a minority, 12% of

the team players have well understood principles of fluid and electrolyte consumption. 20% of the players could correctly list the preference for match day competition meal: pre competition, during competition and post competition. The players revealed coaches and parents as their source of knowledge along with magazines, internet and newspaper articles. Players agreed that they require specialized nutrition strategies and supported the need for nutrition communication package to help them achieve success.

Similar results were suggested by Wali (2013), Supriya and Ramasawami (2013), Torres-McGehee *et al* (2012). The overall mean nutrition knowledge score was 7.63+ 1.69 (Wali, 2013). The subjects lacked basic knowledge regarding the role of macro nutrients and micro-nutrients in the body and efficacy of supplements, but had adequate information regarding strategies for detecting thirst, fluid replenishment, and the negative effect of dehydration on performance at baseline. Lack of basic nutritional knowledge may have profound implications on food choices, performance, and overall health of athletes. Overall, the change in nutrition knowledge scores indicated that nutrition education delivered in a small group setting and reinforced at the training table meal significantly increased the nutrition knowledge scores of collegiate football players (Wali, 2013). Supriya and Ramasawami (2013) suggested the main source of nutrition information was from coaches (56%) and magazines (30%). Carbohydrate loading was under reported by the athletes (22%). KAP score demands nutrition education to be implemented for the athletes to have a better physical performance. In a study by Torres-McGehee *et al*, 2012. The participants were asked to answer questions on basic nutrition knowledge, supplements and their relationship to performance, weight management, and hydration. To have adequate nutrition knowledge, the participants needed to score at least a 75% in all domains (with the highest possible score being 100%). This study found that the participants had an

average score of 68.5% in all domains. football players did not have complete knowledge regarding the role of macro-nutrients for performance and that nutrition education improved their understanding.

Adequate Nutrition Education is very essential to provide the young Indian football players with the correct fuel for having the winning edge. Hence, certain key considerations were made for *improving the overall performance*: Awareness about nutrition needs to be created, Authority should organize nutrition education workshops for football players on regular intervals, nutrition camps can be organized along with tournaments when all the teams of different regions participate, a sports nutritionist should be appointed as a consultant for all nutrition related queries, players should be asked to frequently visit and get their individualized dietary meal pattern from the nutritionist, a canteen with healthy foods for pre competition, during the competition and post competition should be made available to avoid junk food consumption, a provision of sports drink or water should be done to make sure there is no drop in the level of performance of the players when they practice or compete in hot and humid climate. We perceive that on prioritizing the implementation of these suggestions the football players will give the finest performance.

## Conclusion

This comprehensive Nutrition

Communication Package including “Benchmark principles to victory” can be an ideal training material for Football team and can be modified based on the requirement of individual sport in India.

## References

1. Elliot DL, Moe EL, Goldberg L, DeFrancesco CA, Durham MB, Hix-Small H. Definition and Outcome of a Curriculum to Prevent Disordered Eating and Body-Shaping Drug Use. *J School Health*. 2006; 76: 67-73.
2. Wali Rida. A Pilot Program To Evaluate the Effect of Training Table-Based Nutrition Education and Menu Modification on the Nutrition Knowledge and Dietary Intake of Collegiate Football Players at a NCAA Division I University. *Proc SNAC Sports Nutrition Conference*; 2013: 78-79.
3. Supriya V and Ramaswami L. Knowledge, Attitude And Dietary Practices Of Track And Field Athletic Men And Women Aged 18-22 Years. *International Journal of Innovative Research & Development*. 2013; 2(11): 399-404. ISSN: 2278 - 0211.
4. Torres-McGehee TM, Pritchett KL, Zippel D, Minton DM, Cellamare A, & Sibilina M. Sports Nutrition Knowledge Among Collegiate Athletes, Coaches, Athletic Trainers, and Strength and Conditioning Specialists. *Journal of Athletic Training*. 2012; 47(2): 205-211.