

Innovations for Global Sustainability in Home Science

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Role of nutrition in enhancing women sports performance in India

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Abstract

In India optimal nutrition has become crucial to attain peak performance as now a number of Indian women participate in competitive sports. Now a days Indian female athlete not only participating but also bringing laurels to the nation at various international sports tournaments. This become essential at this stage to provide them with proper sports nutrition. A healthy diet reduces the chance of injury, improves recovery, and supports energy requirements. However our socio-cultural set up, a lack of knowledge about nutrition, and availability of the resources for healthy diet is a great challenge for Indian female athletes. This paper highlights the effect of nutrition on the sports performance of Indian female athlete and also discuss the difficulties Indian female athletes encounter to get the specific nutrition according to their daily requirement as well it also suggest how to improve their eating habits and the role of society and the families for providing knowledge about nutrition and health for Indian female sports participants.

Introduction

Now a days Indian female athletes participate in a wide range of sports, from weightlifting and wrestling to cricket and athletics, female participation has increased dramatically. A greater awareness of the significance of sports science, particularly nutrition, in attaining athletic performance has coincided with this expansion. The knowledge of sports training, sports nutrition is essential for

promoting physical activity and sports participation among Indian females Till date little is known about how diet affects Indian female athletes, who have particular physiological requirements as well as certain cultural and financial difficulties.

With an emphasis on the nutritional requirements, the obstacles Indian female athletes encounter in fulfilling those needs, and the effects of dietary deficiencies on both performance and health, this research attempts to investigate the role of nutrition in women's sports performance in India.

Nutritional Needs of Female Athletes

1. Energy Requirements

Energy Needs Particularly in endurance and strength-based sports, athletes need to consume enough energy to correspond with their level of exertion. Female athletes' energy requirements vary depending on their age, sport, level of training, and body composition objectives. Low energy availability (LEA) from inadequate calorie intake might affect menstruation function, bone health, and performance.

2. Needs for Macronutrients

- **Carbohydrates:** The main energy source, particularly for endurance and high-intensity sports. Compared to males, women often rely more on fat oxidation for energy, but proper car
- **Protein:** Consuming enough protein is essential for maintaining lean muscle mass as well as for muscle repair and recovery. Female athletes need more protein than inactive people, particularly those who participate in high-intensity sports or strength training.
- **Fats:** The generation of hormones, such as estrogen, which is important for bone health, depends on dietary fats. Additionally, fats offer sustained energy, which is crucial for endurance activities.

Needs for Micronutrients

- **Iron:** Because of menstruation losses, women need more iron than men do. Indian female athletes frequently suffer
- **Vitamin D and calcium** are essential for bone health, especially for female athletes who are more susceptible to fractures and

osteoporosis. Due to cultural customs, Indian women frequently do not receive enough sunlight exposure, which is the main source of vitamin D.

- **B-Vitamins:** Vital for energy metabolism, B-vitamins are especially important for athletes who train hard from iron deficiency anemia, which impairs their stamina and causes exhaustion.

Limitations to optimal nutrition for Female Athletes

Cultural and Socio-cultural Limitations Particularly in rural areas, the range of foods consumed is frequently restricted by traditional Indian diets and social expectations. The consumption of vital nutrients may be impacted by dietary limitations brought on by cultural or religious convictions. Furthermore, inadequate nutrition may arise from a lack of knowledge on the dietary requirements unique to female athletes.

Budgetary Restrictions Since many Indian female athletes originate from low-income families, they have less access to wholesome diets and vitamins. Athletes' performance may suffer as a result of this financial obstacle, which may keep them from getting the energy and nutrition they need.

A lack of education and knowledge about nutrition Sports nutrition education is not widely available in India, particularly for female athletes. It's possible that athletes, coaches, and their families are unaware of how crucial proper nutrition is to athletic success. This lack of understanding can result in unhealthy eating habits, dehydration, and other avoidable problems.

Social and Psychological Pressures Social pressures over body image are common for female athletes, and they can lead to restricted dietary habits. Disordered eating patterns, nutritional deficits, and eventually subpar athletic performance might result from such activities.

The Impact of Nutrition on Sports Performance in Indian Female Athletes

1. Energy Levels and Endurance

Deficiency in nutrition can lead to poor performance .it can cause to lower physical as well as mental capability which results in early fatigue and cognitive malfunction . For long distance runners in

sufficient nutrition and lack of calories reduce their endurance as well lower the performance of athlete .

2. Nutrition for Recovery and Injury Prevention

Nutrition plays an important role in muscle recovery and injury prevention. Sufficient protein and micronutrient intake, especially calcium and vitamin D, helps bone health and reduces the risk of fractures. For an athlete in different climatic conditions, proper hydration and electrolyte balances essential to prevent muscle cramps and fatigue.

3. Mental Capability

Sufficient nutrition intake leads to enhance cognitive and mental capability, which is required in sports requiring focus and strategy, like shooting, Archery or Table tennis etc. Lack of Nutrients can lead to poor concentration and increased anxiety .

Techniques to Improve Nutritional Intake

1. Nutrition Education

Education about nutrition to the Indian female athletes, coaches and families can help to get the knowledge of specific dietary needs according to their daily requirements. Government must take initiatives to Collaborate with sports organizations and nutritionists to spread the knowledge of these programs.

2. Economics Nutrition Plans

Athlete must be provided with the diet plans which include local food choices according to their geographical conditions as well it must be very expensive. Subsidy must be given on good quality food and supplements so they it will become affordable for the female athlete from all strata of life.

3. Mental toughness regarding body image

Body compositions and requirement of a specific sports is crucial for preventing restrictive eating behaviors. Athletes should concentrate on health and their sports performance over societal standards of body shame .

4. Employment of Sports Nutritionists

In India sports nutritionists are not engaged at lower level of

competitions. Appointment of sports nutritionists in training camps and teams could provide female athletes with wise dietary advice. Which will fulfill all the dietary requirements of an athlete for a specific sport.

Conclusion

The foundation of athletic performance is nutrition, particularly for Indian women athletes who face particular socio-cultural, financial, and physiological obstacles. In addition to meeting energy requirements, a healthy diet is essential for brain function, injury prevention. There is an urgent need for improved access to sports nutrition instruction, resources, and policies that address the cultural and financial obstacles Indian female athletes have in order to maximize their athletic performance. The advancement of women's sports in India depends on funding female athletes' nutrition, which gives them the tools and encouragement they need to succeed in their chosen disciplines.

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