







Category: Health Sciences and Medicine

ORIGINAL

## An umbrella view on food habits in the context of health and sustainability for sports persons

### Una visión global de los hábitos alimentarios en el contexto de la salud y la sostenibilidad de los deportistas

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#### ABSTRACT

Food and nutrition play a vital role in the health of sportspersons. They are responsible for their stamina, performance and optimal growth in their respective sport. A diet with proper nutrition and good eating habits will help the sportsperson optimize energy for excellent performance. Dietary advice from a competent dietitian and Chef daily, before and after each performance or during practice or competition, is very much needed. In the present scenario of the sports world, most countries debut special dietary Chefs for the well-being of their sportspersons. Diet rich in carbs and proteins at different levels are the base for good food habit.

**Keywords:** Dietary; Chef; Nutrition; Optimizing; Performance; Food Habits.

#### RESUMEN

La alimentación y la nutrición desempeñan un papel fundamental en la salud de los deportistas. Son responsables de su resistencia, rendimiento y crecimiento óptimo en su respectivo deporte. Una dieta con una nutrición adecuada y unos buenos hábitos alimentarios ayudarán al deportista a optimizar su energía para obtener un rendimiento excelente. Es muy necesario el asesoramiento dietético de un dietista competente y de un chef a diario, antes y después de cada actuación o durante los entrenamientos o competiciones. En el escenario actual del mundo del deporte, la mayoría de los países estrenan Chefs dietéticos especiales para el bienestar de sus deportistas. Una dieta rica en carbohidratos y proteínas a diferentes niveles es la base de un buen hábito alimentario.

**Palabras clave:** Dieta; Chef; Nutrición; Optimización; Rendimiento; Hábitos Alimentarios.

#### INTRODUCTION

A balanced diet and daily physical activities play a vital role not only in sports persons but also for each and every human being. Success in sports depends mainly on genetic foundation, excellent training by the government and nutritional dietary habits.<sup>(1)</sup> The geographical factors also has to be kept in mind for a good food habit. Nutrition<sup>(2)</sup> is the study where the food intake and its effect on the health and growth of a sports person enunciating in maximizing the performance.<sup>(3)</sup> There are about 45 essential nutrients that need to be obtained from the food habits which are to be followed by the sports person. Nutrition helps to enhance and

enrich the performance of sports persons along with an active lifestyle. Eating a good diet makes you improve in energy which is needed to compete and increase your stamina. Poor performance and, more likely to be exhausted are the effects of not following a balanced nutritional food habit. The essentials of a good diet are i) Calories ii) Carbohydrates iii) Fluids iv) Iron, Vitamins and other minerals v) Proteins. Main supplements can improve performance by increasing mental health, stamina, and strength. Sports-related fitness involves skills necessary for good performance, such as agility, timing, accuracy, balance, speed, strength and power.<sup>(4)</sup> The above components develop by consuming good and healthy food daily. Diet history plays an important role in the life of a sports person, which shows the food habits for a specified period and makes ideas for changing the diet plan. To achieve good health and desirable body strength and weight, a sports person must focus on how you eat and what nutrients your body needs for better performance. Categorizing the nutrients by their calorific value and maintaining food choices by reading the labels and evaluating the food is the best way to better food intake.<sup>(15)</sup> The nutrients in the food help in four basic functions of the body, ie. Energy for cells, growth and repairing of tissues, regulation of metabolism and provision for the supply of water to the needed organs. Food and beverages are composed of basic nutrients that work inside the body's metabolism, creating energy, preventing deficiency, and fighting against disease.

## METHOD

### General Nutritional Concepts

A calorie is a nutritional measurement of the evolved energy. The amount of heat which is needed to raise the temperature is called a calorie. Nutritional Measurement Concepts shown in table 1. What to eat the meal shown in figure 1.

Age/Years	For Male	For female
4 - 6	1800	1800
7 - 10	2000	2000
11 - 14	2500	2200
15 - 18	3000	2200
Recommended energy requirements - Kcal/Day		

Three basic energy nutrients provide calories to fuel the cells of the body. Carbohydrates provide 4 kcal per gram and are generally classified as "complex O".

1. Most of the energy needed for a sports person is given by these carbohydrates as there is more physical activity. Upto 65 to 75 per cent of carbohydrate intake is needed for a normal sports person to perform well.
2. Lipids/Fats provide 9 kcal per gram and are classified as saturated and unsaturated in connection to the fatty acids present in them. Less than 30 per cent of intake of lipids is more than enough.
3. Organic fat, water-soluble vitamins, and other minerals do not contribute to energy, but they help in body metabolism and other functioning.
4. Proteins, vitamins and other minerals help build body and fitness.
5. Water is a good form of nutrient essential to maintaining the body's fluid levels.

## RESULTS AND DISCUSSION

### The Meal Plan

Planning the meal is one of the difficult tasks and is an art. Consuming a balanced meal that carries fresh fruits, good meat and dairy product before 2 hours of the competition/game is highly recommended. During the competition/game, sports energy drinks and a minimum carbohydrate would help a good performance. Intake of bananas adds stamina and energy, which is needed for the sport. Water intake helps to develop and balance fluid levels during the performance. After the event /game/competition, protein intake is vital to regaining energy and stamina. The meal plan is shown in table 2.<sup>(7)</sup>

### Classification of Sports and its Energy Expenditures

A survey was conducted regarding the energy levels needed for different sports as per the categorized set of sports. The Sports Authority of India in coordination with the National<sup>(14)</sup> Institution of Nutrition shown in table 3.<sup>(6)</sup>



Figure 1. What to eat?

Table 2. Meal Plan

Morning Event: The meal at night should be a high carbohydrate meal. The breakfast should be light consisting of, for example, cereals with non-fat milk, fresh fruit or juice, toast, low fat yoghurt, etc.

Afternoon Event: The dinner at night and the breakfast in the morning should be high carbohydrate meals. The lunch should be light and consist of salads, sandwiches, fruits, juices etc.

Evening Event: The breakfast and the lunch should be high carbohydrate meals followed by light meal or snacks like pasta, soup, baked potatoes, yogurt, etc.

Table 3. Sports and its Energy Expenditures

Group-I power events of higher weight category weight lifting, boxing, wrestling, judo, throwing events.

Group-II endurance events: marathon, long distance running, and walking road cycling, rowing middle and long distance swimming.

Group-III team events, athletics and power events of middle weight category hockey, foot ball volley ball, basketball, tennis, sprints, jumpers, boxing wrestling weight lifting, judo and swimming

Group-IV events of light weight category: gymnastics, table tennis, yatching, boxing, wrestling, weight lifting and judo.

Group-V skill games shooting, archery and equestrian

**Methodology**

For this research a group of 50 sports hostel students and players under sports authority of India were surveyed with a questionnaire with proper instruction to answer.<sup>(8)</sup> All the data were collected and formulated in Excel data sheet and statistical analysis was made.

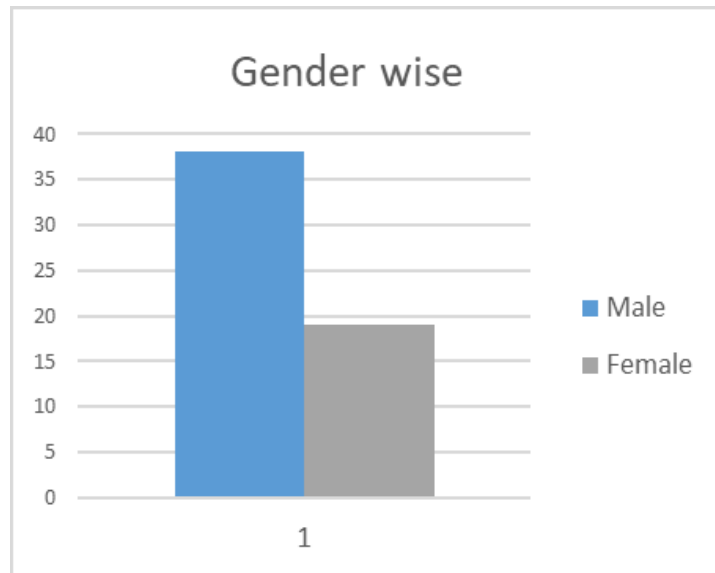


Figure 2. Male / female contribution in survey

A test was carried out for the national and International level sports persons to study the energy expenditure of different sports groups. Energy intake and energy expenditure during the sports were examined, and with the arrived data, the calories needed for each sports category were decided and formulated. The derived structure of energy levels is given to sports person in the form of a well-balanced diet.<sup>(10)</sup>

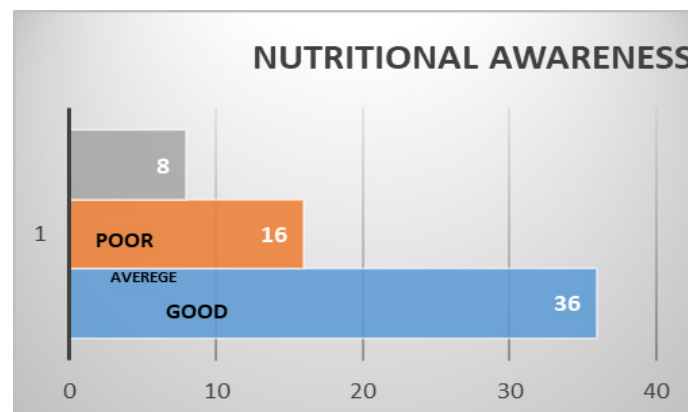


Figure 3. Knowledge on nutrition with sports persons

### Dietary Supplements

Dietary supplements are available very much in the market for the easy intake of the nutrients which is needed for the sports persons. Sports energy drinks, protein powders and sugar substitutes, fibre substitutes are the commonly used Dietary supplements shown in table 4.<sup>(11,12)</sup>

Group	Body weight	Calories intake
Group I	85 kg	6000
Group II	65kg	5200
Group III	65kg	4500
Group IV	60kg	3600
Group V	60kg	3000

Although dietary supplements are allowed to use, it has a certain level of usage as permitted by the Government Authorities. Some Dietary supplements contain caffeine which is not good for health. Some increase hormone secretion to a higher level and the slats present in the dietary supplements are harmful and have many side effects. Hence the usage of dietary supplements should be under supervision and control.<sup>(13)</sup>

## RECOMMENDATIONS

The ideal food habit for a sports person is not very much different from that of a healthy living person. Anyway, the amount of food intake will vary and differ according to the activity or the sports category.<sup>(9)</sup>

1. Special supplementary food to be introduced for sports person.
2. Specialized dieticians shall be appointed for the planning of high-quality menus.
3. Chefs preparing food shall be of good knowledge about the nutrient contents of every food.<sup>(5)</sup>
4. Time management of every beverage and meal intake should be monitored properly.
5. In-house doctors can check the intake of fats and proteins and the blood sugar level of the sportspeople at any time.

## CONCLUSIONS

Diet and healthy food habits are vital for a sports person in consideration with the elements of healthy food comprising carbohydrates, vitamins, proteins, fats and minerals. The usage of nutritional supplements as per the allowed levels also helps sports persons perform more. The effectiveness of the food supplements as per the category of sports should be monitored with the help of dieticians/nutritionists or well-learned Chefs. Appointments of Chefs and dieticians may help collaborate on a nutritious menu for the sports person on time and on a day-to-day basis to retain their energy levels. Failure to consume the correct diet before, during and after the competition may lead to poor performance and underperformance of the sports persons. The deficiency of nutrients should be monitored at regular intervals, and checking the diet history is mandatory.

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