

Guidelines of Sports Nutrition Especially For Female Athletes

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ABSTRACT:-

The present study is based on the sports nutrition, which is mainly focus on the female athletes. As the sports become the passion or hobby for the youth whether they are male or female. In sports nutrition we mainly study the type of nutrition that we need to take after and before workout, the diet chart of a sports person, meal planning, quality and quantity of fluid, type of supplements, nutritive value of food product that they are taking. The study of sports nutrition is very essential part for a sports person because their physical fitness is based on the food product that he or she taken. It is necessary to understand and differentiate between general nutrition and sports nutrition because adequate amount of nutrition provide strength and power to the body. In this study we also add the physiology of the female athlete and their supplements so that it is easy to understand that what type of foods should be consumed at what time and also awareness of dietary guidelines for sports person.

Keywords: supplements, sports nutrition, female athlete, strength, physiology, physical fitness, meal planning.

I. INTRODUCTION:

Health and sports are closely related to each other. Any dietary deficiency that adversely affects the health of the individual is probably going to impair his or her physical performance capability. Sports nutrition is basically the study of overall nutrition and diet of an individual related to any type of sports activity, exercise, workout for enhancing the performance of an athlete. The nutrition could be vary from person to person because of many factors like type of sports, exercise, sex, age, weight, body composition, physiology and also the pre-existing disease such as diabetes, hypertension, thyroid etc. By the help of the nutrition they are gaining the strength as well as endurance for their activities and performance. For enhancing the performance one has to be

maintain his or her diet and exercise and right choice of supplement.

Success in sports depends on three factors –

- 1.Genetic endowments
- 2.The state of training
3. Proper nutrition.

Genetic make-up cannot be modified. Specialized exercise training is that the major means that to boost athletic performance and correct nutrition is a crucial part of the entire educational program because a healthy body lead to a success life as well as in better performance in sports.

Nutrients that include glucose, 2 essential fatty acids, 9 essential amino acids, 13 vitamins, about 21 minerals, and water. The classification categories are carbohydrates, fats (lipids), protein, vitamins, minerals, and water. All of these are essential for every cell in the body and for human life to exist. The nutrients in foods offer four general functions: energy for each cell within the body, growth and repair of tissue, regulation of metabolism, and provision of water for every cell. Persons who are physically active and athletes should consume a majority (65-75%) of their calories from carbohydrates. Lipids (fat) which gives 9 kcal per gram and it is generally classified as unsaturated or saturated when considering the fatty acid make-up of triglycerides. It is generally recommended to consume less than 30% of calories from lipids Proteins give 4 kcal per gram and will be approximately 10-15% of one's total calorie needs, if the appropriate grams for amount of calories are chosen. A fourth contributor to energy is alcohol that gives 7 kcal per gram, but can impair athletic performance. Organic fat and water-soluble vitamins and inorganic trace and major minerals do not contribute to energy, but they facilitate in the vital metabolic functioning responsible for energy release in the body. Water, sixth category of nutrient and vital to the lifetime of every cell within the body. Protein, carbohydrate, and lots of vitamin and mineral needs could also be increased for

physically active people, but these should be easily attainable through the rise in calories that active people need.

Objective :

- To study about the basic physiology of athlete.
- To study about the supplement foods given to athletes for strength and power.
- To organize nutrition training program for the athletes.

II. METHODOLOGY:

Selection of subjects: One hundred twenty athletes, including 60 male and 60 female (30 are vegetarian and other 30 are non-vegetarian in both the cases) ,belonging to 18-25 years of age group were selected from Babasaheb Bhimrao Ambedkar University, Lucknow.

Dietary Survey: It was carried out to obtain the information regarding the dietary pattern and food habits. Detailed information on the food intake was obtained using 24 hour recall method for three consecutive days.

Anthropometric Measurements: Various anthropometric measurements that is height, weight, waist & hip circumference and triceps skinfold thickness were collected using standard methods. Based on the measurements, Body Mass Index (BMI) and Waist/Hip ratio was calculated.

Statistical analysis: Collected data was statistically analyzed by calculation of means, standard deviation and percentage distribution.

Materials for supplement: Making energy bar by using honey,oats, salt, cardamom powder, pumpkin seeds, sunflower seeds,sesame seeds,dates and some dry fruits like almonds, cashew, coconut powder are purchased from the local grocery shop of Lucknow which is easily available.

Energy bar preparation:Soaked 1 cup dates for 2 hours then blend the date. In a pan roast oats and make it fine powder. Keep them aside. Now roast all dry fruits and seeds in low flame until it turns crispy and golden brown. Moving on another pan cook the blended date for 5 minute. Add roasted dry fruits, cardamom powder, honey, salt and oats powder then mix well. Transfer in into a tray and spread uniformly. Refrigerate it for 1 hour. After this cut into the pieces of bar.

Results and Discussion:

General profile of athletes: Majority of the athlete (males as well as females) belonged to the nuclear family. It was found that 58.4 percent males and 63.4 percent females belonged to the high income group. Junk food was being consumed by 48.4 percent of males and 70 percent of females. It was further discovered that skipping of meals was more prevalent among females as compared to that among males i.e. 51.6 percent of females used to skip their meals as compared to 38.4 percent of males which might be due to the reason that female athletes are more conscious about their body looks.

Characteristics	Male athlete (n= 60)	Female athlete (n=60)
Family size		
Nuclear	48	43
Joint	12	17
Family income		
Low	1	0
Medium	24	22
High	35	38
Junk food		
Yes	29	42
No	31	18
Skipping meals		
Yes	23	31
No	37	29

Table 1. General profile of athlete

Anthropometric Measurement: The anthropometrical characteristics are one of most influential factors in determining good athletic performance besides other physiological characteristics. which revealed that there was not

any significant difference in the height, weight and body mass index (BMI) of vegetarian and non-vegetarian subjects of both the genders. Similarly, no significant differences in height, weight and lean body mass in vegetarian and non-vegetarian subjects

has been reported. However, a statistically non-significant difference was observed in the waist and hip circumference of vegetarian and non-vegetarian males as well as females. The Body Mass Index (BMI) defined as weight (kg) / height (m²) is used to assess the nutritional status of adults. The findings revealed that only 6.7 percent and 3.4% of vegetarian and non-vegetarian males were underweight having BMI less than 18.5 Kg/m², whereas 40% and 30% of vegetarian and non-vegetarian females were in the category of being underweight. Among vegetarian males 36.6 percent and 46.7% of non-vegetarian males were in the normal category (18.5-22.9) while 43.3% of vegetarian and 66.6% of non-vegetarian females

was in the normal category of BMI. Among female subjects of vegetarian and non-vegetarian category, the prevalence of risk of obesity was very less when compared to the male athlete, which might be due to the reason that the females are more figure conscious. The BMI of the athletes with good fitness was found to be closer to normal levels but higher than the ones with average or poor status, as higher weight among the athletes with good fitness indicates more lean muscle mass and not necessarily body fat. Observational studies indicate that the weight or body mass index of prevalence of obesity ranged from 0-6 percent of vegetarian and from 5.45 percent in non-vegetarians.

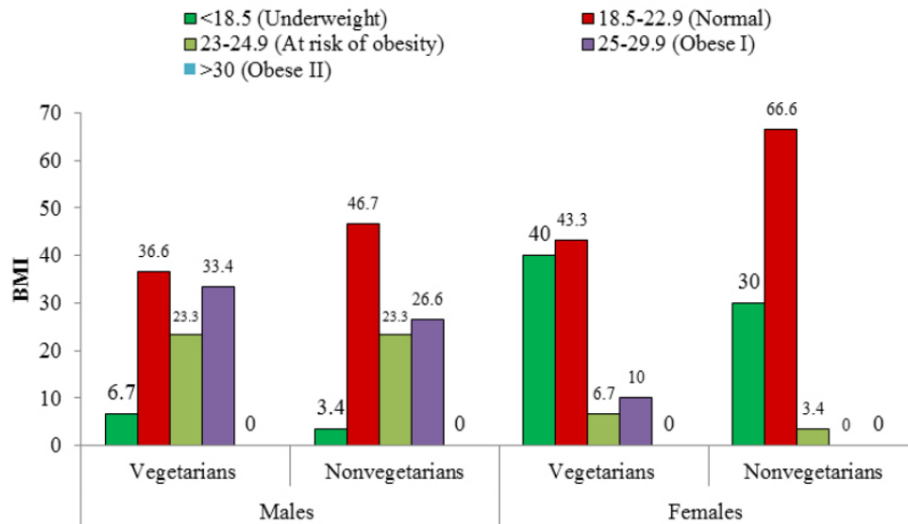


Fig 1. Classification of athlete according to BMI

Parameters	Males			Females		
	Veg (n=30)	Non-veg (n=30)	t-value	Veg (n=30)	Non-veg (n=30)	t-value
Height (mts)	1.7±0.05	1.7±0.07	1.6NS	1.6±0.04	1.6±0.06	0.9NS
Weight (kg)	69.8±11.3	73.2±9.4	1.2NS	50.2±4.7	52.7±6.6	1.6*
BMI	22.7±3.3	23.1±2.8	0.5NS	19.6±1.7	20.2±2.8	0.9NS
Waist (inch)	32.6±2.4	33.6±2.3	1.7*	28.1±2.1	29.3±2.7	1.9*
Hip (inch)	36.2±2.9	37.9±2.9	2.1*	32.2±2.5	33.9±2.8	2.5*
W/H ratio	0.9±0.02	0.9±0.03	0.6NS	0.9±0.04	0.9±0.02	0.4NS
Triceps skinfold	7.5±2.7	8.8±3.1	1.6NS	9.8±1.8	9.8±2.0	0.1NS

Values are Mean ± SD

*Significant at 5percent level NS – Non-significant

Table 2. Anthropometric measurements of athlete

After all this work I engage myself for my another objective, to develop a food product (energy bar) for the athletes and to organise the nutritional training program for the awareness of sports nutrition which is successfully held and praised by my supervisor and professor. The sensory evaluation of the food product was done by set of panellist expertise field of nutrition. For evaluation a 9- Hedonic scale which is one of the sensory evaluation methods used to evaluate any product. Many parameters where used to analysis the acceptability of developed product these are as taste, texture, appearance, aroma, colour, flavour, mouth feel, overall acceptance.

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