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## TO STUDY ABOUT THE DIETARY HABITS, NUTRIENT INTAKE AND HEALTH AILMENTS OF ATHLETES

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### ABSTRACT

A supplement can first aid in muscle development, weight loss, and overall health improvement by filling in gaps. Numerous dieticians, nutritionists, physicians, and others have interpreted supplements in this light as a way to safeguard the body against vitamin and mineral deficiency. Vitamin supplements have been used to prevent severe, and sometimes fatal, nutritional deficiency diseases for decades. It has generally recognised the high demand for various nutrients by healthy individuals such as bodybuilders and other athletes, which makes it far more likely that we will experience a shortage if we do not supply them. Furthermore, if a person is deficient in one or more nutrients, his or her body will be unable to properly produce muscle or lose weight. Protein supplementation is critical for all lifters. Athletes who lift weights require more protein than people who are sedentary. Whatever type of diet you follow – low in complex carbohydrates or fats or in calories – no muscle can develop without protein (which the body breaks down into amino acids). Whey protein is more biologically active (which means that it can produce more amino acids than other protein supplements). Lactose content is minimal (the nasty milk sugar that causes stomach distress in many people).

**KEY WORDS:** *Dietary habits, Nutrient intake, Health Ailments, Athletes*

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### INTRODUCTION

This supplement helps to avoid sports-related injuries and maintain a healthy nitrogen balance. Muscle and liver proteins are broken down into amino acids after exercise. Therefore, it will be used as an energy source either directly or indirectly. Carbohydrate consumption before or during exercise prevents protein breakdown and keeps protein intact. Athletes should consume 1.2 to 2.0 grams of protein per kilogram of body weight each day (ACSM, 2000, Phillips, 2006). Daily protein consumption ensures that skeletal muscle amino acids give vital support for tissue growth, which helps

sustain muscular anabolism. Whey protein, milk, or milkshake an hour before and after challenging exercise, according to a study published in the *Annals of Nutrition and Metabolism*, is advantageous for athletes who engage in strenuous physical activity (2007). This lowers protein breakdown while also promoting protein synthesis, hastening the healing process. Vegetarian athletes require extra protein (1.3–1.8 g/kg of body weight) due to the lower quality of protein supplied from herbs (Pameela, 2015). During rest, stored fat is the most important source of energy. During prolonged activity, aerobic metabolism offers a significant energy source, emphasizing accomplishing tasks that are only moderately challenging. Essential fatty acids make you feel full for a long time. Because muscle glycogen is spared, the release of fatty acids from lipid stores further maintains muscle glycogen. As a result, athletes should consume no more than 1 gram of fat per kilogram of body weight. According to research, athletes should consume 30 percent fat, 10% polyunsaturated fats, 10% monounsaturated fats, and 10% saturated fats in their diet. Because testosterone levels usually are lower on a low-fat diet, it is intrinsically connected to weight loss and physical exercise (Lowery, 2011). A high-fat diet should not be offered to athletes who are training for competition, according to current recommendations, because it can produce acidosis and poor athletic performance. Vitamins and minerals are necessary for small amounts for growth, tissue repair, metabolic processes, and immunological activities, as well as the removal of free radicals during exercise. However, they are insufficient to sustain overall health. B-group vitamin insufficiency can cause long-term weariness and a loss of vitality. Vitamin B12 and folic acid are required for cell development. The body's cells are protected from oxidative stress by antioxidants such as vitamin C, vitamin E, and selenium. The role of vitamins in blood clotting and bone metabolism is a good example of their relevance. Vitamin A is required for a more efficient immune system and higher antioxidant levels. Iron is a trace mineral that is necessary for athletic aerobic endurance and is a component of haemoglobin. Iron supplementation improves optimum aerobic capacity without rising red blood cell volume in athletes with low ferritin and normal haemoglobin levels (Young, 2009). Zinc is needed for the production of enzymes and proteins. Two important electrolytes are sodium and potassium. It is desirable to replace electrolytes for more than two hours during continuous exercise in a hot environment.

## **RESEARCH METHODOLOGY**

All the 530 sports persons and athletes from the selected three colleges who fulfilled the inclusion/exclusion criteria were selected for the study. The entire list of subjects was thus completely enumerated. The socioeconomic situation and nutritional status of all 530 athletes were assessed. From this 530, a subsample of 100 athletes were selected by Judgment sampling method for evaluating the

endurance capabilities and to test the efficacy of pregame sports supplements .These athletes were divided into three groups.

**RESULTS AND DISCUSSION**

**Dietary habits**

Young adulthood is the stage when a person's bodily composition is most transformed when it comes to sexual maturity. The need for nutrients is higher during sports and athletic performances. Therefore, your food must be balanced because it significantly impacts your activity levels, sporting ability, and post-workout recuperation. To put it another way, the results of the researchers' examination are shown in the tables below and discussed to assess the food habits of the athletes chosen.

**Type of diet**

The selected athletes' dietary patterns are laid out in Table 4.18 and shown in figure 4.10.

**Table- 1Type of diet consumed by the selected athletes**

Type of diet	Number of subjects	Per cent
Vegetarian	116	22%
Non vegetarian	352	68%
Lacto-ova vegetarian	52	10%
Total	520	100%

**Figure- 1 Type of Diet consumed**

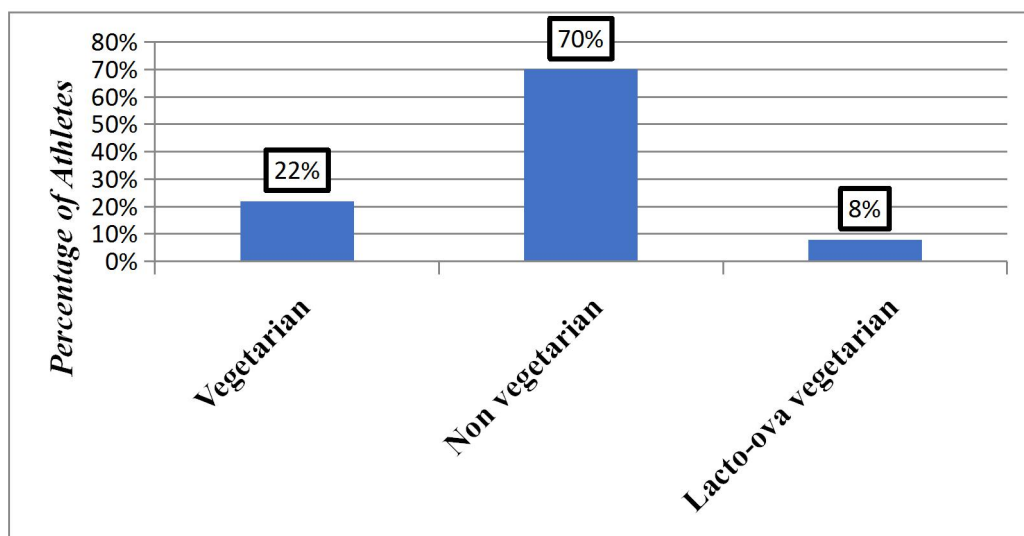


Table 1 shows that 78 percent of the athletes recruited were either non-vegetarians or lacto-ovo vegetarians. Only 22% of those polled said they ate a vegetarian diet. When participating in physical activity and competition, it is necessary to promote muscle mass, increase endurance capacity, and maintain alertness. A high-quality protein is required to achieve this during athletic performance. Because animal-based proteins supply more high-biological-value proteins than vegetable-based proteins, 68 percent of the participants described themselves as non-vegetarians. Vegetarians made up only 20% of the population. Twenty-two percent of vegetarians are members of families whose traditions and practises prohibit them from eating non-vegetarian foods. Protein is a crucial energy substrate for athletes who engage in prolonged exercise or hard training, according to Subangani (2008), because it provides rapid energy for fuel. It was also observed that 22% of vegetarians belong to teams and are unable to tolerate a lot of exercise.

**Number of meals consumed per day**

Enquiry regarding the number of meals consumed per day by the athletes revealed that three meals per day was the normal practice among the selected athletes. All the three meals were rice based with occasionally one meal containing wheat. As the athletes started their practice early in the morning breakfast was consumed only after the practice was over. Normally breakfast consisted of tiffin items namely Idli or Dosai, which were prepared out of rice and black gram dhal batter. Afternoon lunch and night dinner consisted of boiled rice with the vegetable sambar and one vegetable accompaniment. Some athletes consumed deep fried snacks in the evening along with coffee or tea which were purchased from nearby canteens.

**a. Odd dietary habits**

Some of the odd dietary habits prevailed among the selected athletes are presented in Table-2 and figure 2.

**Table- 2: Odd dietary habits of selected athletes**

Habits	No. of athletes	Per cent
Skipping of meals	388	75%
Fasting	170	34%
Eating away from home	320	62%
Snacking habit	315	63%

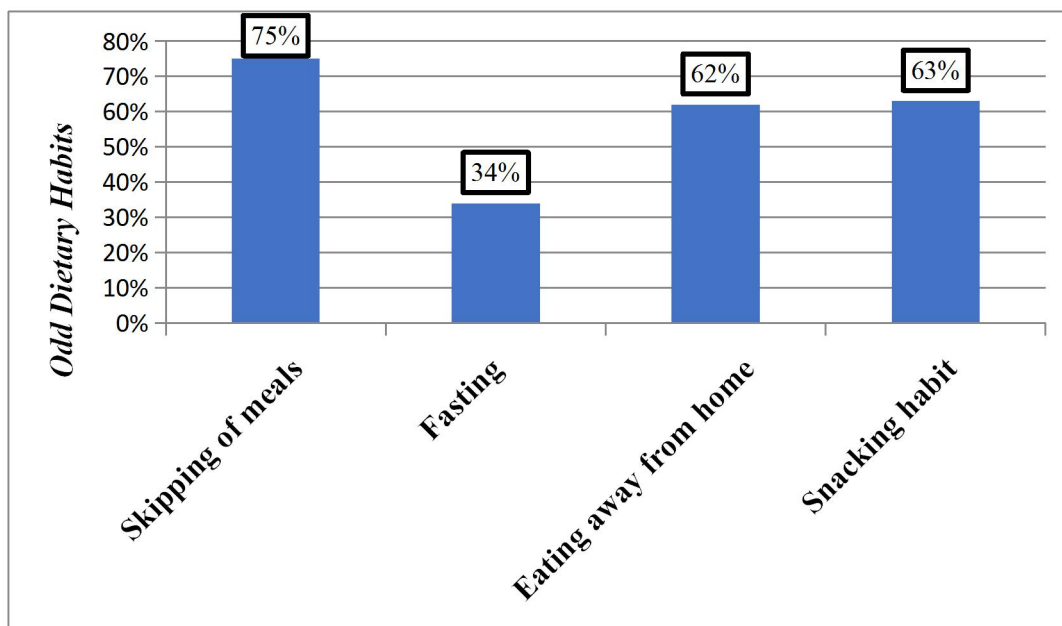
It is evident from Table 2 that skipping of meals namely either breakfast or lunch was rampant among 75 per cent of the athletes. Hurry in getting ready to catch the bus, busy morning schedule, early morning practice, dislike for the food were some of the reasons given for skipping of meals. These athletes were advised to follow correct eating habits and avoid unhealthy snacks and to follow right

dietary habits. This was followed by another 62 per cent who had the habit of eating food away from home. Unhealthy food items such as parotta and other fast foods which consisted of only maida were selected by the athletes while eating away from home. Thirty four per cent of the athletes were skipping their meals due to fasting.

Sixty three per cent of the athletes had the habit of consuming deep fried snacks often bought from outside eateries. Fried ground nuts, potato chips and processed snacks were some of the snacks preferred by the selected athletes. Drinking tea or cola drinks were also common among them which provided empty calories. But the quantity consumed was limited because of the financial constraints.

Figure -2 shows the odd dietary habits prevailed among the selected athletes.

**Figure- 2: Odd dietary habits of athletes**



**Foods avoided during events**

Foods like spicy, fried, and oily cuisine and milk were avoided before starting an event, as shown in Tables 3 and 4. The athletes provided the following statements about foods and their impact on stomach heaviness and discomfort, which resulted in nausea, vomiting, and dizziness during the competition. It is often considered that their feeding habits begin with liquids and end with meals following an event. While participating in an athletic event, 40% of athletes choose to avoid iced water or other liquids. They believed that abrupt temperature changes might cause a spike in body temperature. These athletes must receive correct guidance on the consequences of various meals on their health. Removing dairy items from one's diet too soon can lead to a loss of high-quality proteins and calcium, which can negatively influence bone health and body composition. According to their findings, a dairy-based pre-workout breakfast does not affect the rider's gastrointestinal comfort or a

race-time time trial. Dairy items that do not negatively impact gut comfort but do not hamper performance should be included in meals before hard cycling.

**Table- 3: Foods avoided before and during events by the selected athletes**

Foods avoided	Before an event		During an event	
	No. of athletes	Per cent	No. of athletes	Per cent
Heavy meals	361	71	-	-
Spicy foods	334	64	-	-
Fried foods	328	60	-	-
Rice	211	40	-	-
Milk	42	8	-	-
Non vegetarian foods	60	11	-	-
Chilled water/beverages	-	-	212	40

**Mean food intake of the selected subjects**

Rather than physiological or training notions, the major factors to sports excellence are the athlete's body and food intake. The average food intake of the selected subjects is shown in Table 4.

**Table- 4: Mean food intake of the athletes**

Foods(g)	SDA(g)	Meanintake(g)	Intake(%)
Cereals	540	520	93
Pulses	41	27	70
Green leafy vegetables	152	111	73
Other vegetables	220	22	10
Roots & Tubers	155	100	67
Fruits	152	33	20
Nuts& oil seeds	30*	40	133

Milk and its products	750ml	152	20
Fats and oils	50	61	120
Sugars	80	62	75
Egg	100	55	50
Animal foods	250	52	20

**SDA - Suggested Dietary Allowances by Sathyanarayana et al.,(1985).**

**\*Pasricha and Thimmayamma (2005).**

The data in this table demonstrates that vegetables, fruits, milk, and eggs are consumed more frequently than other items (milk and milk products, eggs, and animal meals). In contrast, cereals, pulses, green leafy vegetables, roots and tubers, and sugar are consumed less frequently (70 percent ). an increase of 20% The athletes' diets were deficient in these nutrients. Consumption of nuts and oilseeds, fats, and oils is higher than previously thought, according to Sathyanarayana et al. (1985). People who eat fatty, oily fried snacks and other junk meals may have contributed to this person's high fat intake. The rich rice dishes, such as biriyani or congealed rice, and deep-frozen meat-based dishes were favorites among the athletes. Homemade snacks were shown to be less popular than ready-to-eat snacks (cookies, pretzels, popcorn, crackers, and potato chips).

**Mean nutrient intake of the selected subjects**

**Table- 5: Mean nutrient intake of the selected athletes**

<b>Nutrients</b>	<b>RDA(SAI)*</b>	<b>Mean intake</b>	<b>Intake(%)</b>
Energy( kcal)	4000	2350	57
Protein( g)	147	48	33
Fat (g)	145	100	68
Calcium (mg)	2000	988	48
Iron (mg)	21	15	72
Carotene (ug)	4800	2600	55
Riboflavin (mg)	1.1	07	73
Thiamine (mg)	0.9	0.7	87
Vitamin C (mg)	50	40	80

## **RDA suggested by \*Sports Authority of India (2001)**

The recommended dietary allowance (RDA) for energy consumption was just 57 percent of the energy need as advised by the Sports Authority of India, according to a nutrient intake analysis of the athletes. Protein was taken in extremely little amounts (33 percent ). The problem could have been caused by improper meal times, irregular meal patterns, or skipping meals. Fat consumption accounted for 68 percent of total daily calorie intake. This corresponds to Table 4.24's frequent consumption of fat and oil. Calcium was barely 48 percent of a person's daily calcium intake. Given the data, Table 4.23 shows that milk and milk products were likewise low. Carotene made up 55 percent of all carotenoids, and iron made up 72 percent of all minerals. According to a study conducted by Zapolska et al., professional volleyball players' diets were deficient in energy, carbohydrate, fibre, vitamins, and minerals such as iron and calcium (2015).

## **HEALTH AILMENTS**

Because they are both intertwined, many people associate health with sports. Because only the best athletes would be chosen, it was necessary to learn about their overall health as well as the prevalence of minor ailments and overtraining syndrome. To discover more, follow the links below.

### **The dimensions of wellness**

Sport is a noble art that promotes self-improvement as well as that of one's colleagues. The sport has a visually appealing creative quality that inspires everyone. Athletes will feel better, work harder, and be better positioned on the playing field and sports if they retain good health. It is no surprise that almost 80% of athletes reported they were emotionally satisfied. Approximately 68% of people who engaged in sports and games had a reasonable opinion toward their participation. In comparison, 44% of those who participated in sports and games negatively viewed their participation. Many sportsmen reported that participating in sports and activities helped their general physical health and expanded their social network. Athletes that were chosen said they were satisfied, enjoyed playing, and were able to focus more on their schoolwork due to their participation. Their feelings would be largely negative if they did not receive an award or trophy for their performance. They stated that they were depressed. Twenty-two percent of persons considered themselves inadequate because of minor health difficulties.

### **Ailments confronted**

Nutrition is just as important for keeping you healthy and injury-free as it is for performance. In athletes who are relatively powerful, good eating habits can be a deciding factor in who wins. The numerous health difficulties that the participants faced were uncovered in this way, as shown in Tables 6 and Figure 3.

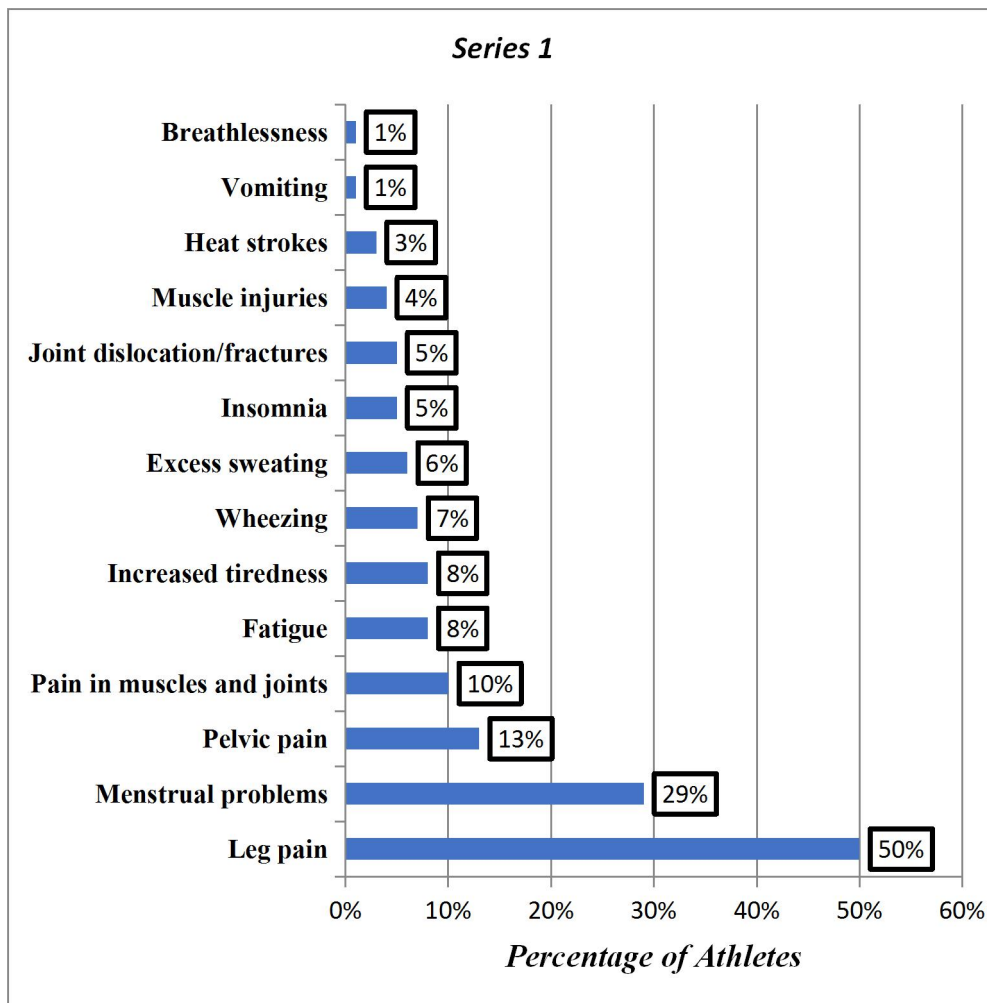


**Table- 6: Ailments confronted by the selected athletes**

<b>Ailments</b>	<b>Number</b>	<b>Per cent</b>
Leg pain	264	50%
Menstrual problems	155	29%
Pelvic pain	68	13%
Pain in muscles and joints	54	10%
Fatigue	41	8%
Increased tiredness	41	8%
Wheezing	38	7%
Excess sweating	31	6%
Insomnia	28	5%
Joint dislocation/fractures	28	5%
Muscle injuries	20	4%
Heat strokes	16	3%
Vomiting	8	1%
Breathlessness	7	1%

Table 6 shows that 50 percent of the athletes had leg pain, and 29 percent of the athletes had menstrual issues. Sixty percent (92) of the athletes who had menstrual difficulties had irregular periods, thirty percent (46) had PMS, and sixteen percent (25) had amenorrhea. Pelvic pain, muscle and joint pain, weariness, restlessness, increased respiration, joint dislocation, heat stroke, and shortness of breath, to name a few, were all prevalent. An imbalanced diet could be the root of many of their ailments. Athletes will not suffer from nutrient deficiencies if they consume a well-balanced diet, and their athletic talents will improve.

Figure- 4: Health ailments of athletes



**CONCLUSION**

Phase III evaluates the skill abilities of a subset of 100 athletes. People's health-related physical fitness is measured by how well they do on various physical tests, such as the Harvard step test, treadmill test, 2000 metre brisk walking, 1500 metre medium distance running, and stability tests. Workout tests, such as push-ups, were used to estimate the athletes' performance potential. In the 100-meter dash and the shuttle run, speed and agility, two skills that were tested, were used (4x10 m). Supplements were created and standardised at the end of the research phase for use in the fourth phase. Following numerous tests of some of the athletes' nutritional status and physical capacity, it was concluded that the players' health and stamina needed to be improved. Three varieties of Nutri mix powders were created by combining a variety of grains and pulses, resulting in a variety of permutations and combinations. These versions included Niger seeds, Gingelly seeds, Noltheria abyssinica, and peanuts

as components (*Arachis hypogaea*). Three new millet types were generated by changing the millet type. In Variation 1, three different instances of wheat ragi, corn jowar, and bajra are employed. (Typhoid Pennisetum) A fine powder was made from toasty spices with a strong aroma. A five-point hedonic assessment scale was used to determine how tasty and acceptable the Nutri mix powders were. The Nutri mix powders' organoleptic quality was evaluated by twenty-five expert judges. The colour, flavour, taste, mouthfeel, and texture of the Nutri mix powder were all examined. Each criterion was scored on a five-point scale, and products received a total of 25 points. The ragi-based version received an 80 percentile ranking (V1). As a result, the pregame supplements are made from a blend of Nutri mix powder with an interesting variant. Until three pregame supplements were produced, one recipe used V1 of the Nutri mix powder. Following the product evaluations of liquid, bar, and softball, the finalists for the product evaluation were nutridrink, a liquid, nutribar, a chewable strip, and nutriball, a softball. The same assessment procedure was utilised to evaluate the content, nutritional value, and acceptability of these three supplements. Many individuals found nutridrink and nutribar to be acceptable, however nutriball was not as well received. As a result, Nutridrink and Nutribar were chosen for supplementation and assessment.

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