

## A STUDY OF DIETARY PROFILE OF NORTH AND SOUTH INDIAN HOCKEY PLAYERS

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### Abstract

To analyze the nutrient, micronutrient, food intake pattern of the boys and girls of north and South Indian Hockey players, compare it with the nutrient profile. This was a cross-sectional and survey study. Dietary intake was assessed of 200 subjects (100 males, 100 females) aged 18 to 24 years from colleges and university students. Seven day diet status of every students was taken for dietary analyze by the researcher herself with the help of experts. The data related to dietary profile and calorie value of diet was collected through observation. The average of calories taken by north and south male players was 3829 and 3653 respectively, and average of calories taken by north and south female players was 2641 and 2545 calories respectively. The mean daily total energy contributed from Proteins, Carbohydrates, total fat, Saturated fatty acids (SFAs), and Unsaturated fatty acids (USFAs), of northern male and female were different from southern male and female as well as their distribution also different from each other's. On comparison with South Indian hockey Players, North Indian Players inappropriately intake more calories, and while comparing the boys and girls, boys intake more calories than girls. The calories intake by the Players of South Indian as well as north Indian is not sufficient and their distribution is also not appropriate as per different expert committee of nutrition and diet.

**Keywords:** Carbohydrates, Protein, Fat and Calorie.

### Introduction

It is the fact that the scientific training, high quality of equipments and facilities, and well and high calories balance diet is very much required for achieving good performance in sports and games. Without good nutrient and high calorie intake diet, one can't work hard during training. If we burn more calories instead intake it will be harmful for health. By Monica Emerich and Elizabeth Bertani studied, whether you're an athlete in training or a lunch-hour walker, vitamins and other dietary supplements may improve your performance, if they're incorporated into a balanced diet and used with common sense. Most health professionals agree that the foundation for optimal athletic performance of any

degree is a well-balanced and varied diet, along with adequate sleep and proper training techniques. Once this regimen is in place, dietary supplements may help some people enhance their performance. Although the wrong ones can interfere with nutrient absorption, the proper dietary supplements can help the body to recover quickly from exercise. The relationship between nutrient diet and performance in sports is as certain as the connection between physical training and sports success. The physical demands of all sports necessitate the consumption of healthy balanced diet, with the correct proportion of carbohydrates, proteins, fats, vitamins and minerals. As per ICMR nutrition expert committee India, the average adult needs 2.2 grams carbohydrate per kilogram of body weight per day. Strength training athletes need about 3.4 to 3.7 grams per kilogram of body weight per day. Endurance athletes need about 3.7 to 3.9 grams carbohydrate per kilogram of body weight per day. The average adult needs 0.4 grams fat per kilogram of body weight per day. Strength training athletes need about .5 to .6 grams per kilogram of body weight per day. And Endurance athletes need about .8 to .9 grams fat per kilogram of body weight per day. Whereas the Protein is not easily stored by the body so that Adequate, regular protein intake is essential. Most of complete proteins (those containing 8 essential amino acids) coming mostly from animal products such as meat, fish, and eggs and incomplete protein (lacking one or more essential amino acid) coming from sources like vegetables, fruit and nuts. Vegetarian athletes may have trouble getting adequate protein if they aren't aware of how to combine foods. The average adult needs 0.7 grams protein per kilogram of body weight per day. Strength training athletes need about 1.2 to 1.6 grams per kilogram of body weight per day. Endurance athletes need about 1.2 to 1.3 protein grams per kilogram of body weight per day

### Objective

To analyse and compare dietary profile of boys and girls of North and South Indian Hockey Players.

## Methods

Diet status was analysed with one weak diet taken by the players was used for the study. The questionnaire cum survey interview was prepared by the researcher herself with the help of experts. Total 200 hundred players at National level participations (100 boys and 100 girls) of North and South were taken for the study. The mean age of subjects of study was 21.7 years (range 18 to 24 years). The average, S.D and t-test method was used for analysing of data.

## Findings

**Table-I**  
DISTRIBUTION OF CALORIES TAKEN BY NORTH AND SOUTH INDIAN MALE AND FEMALE HOCKEY PLAYERS.

Comp.	Carbo.	Protein	Fat	SFA	USFA	Total
North Indian Male	2322 60.65%	638 16.66%	870 22.79%	663 17.65%	197 5.14%	3829 100
South Indian Male	2118 58%	687 25.16%	578 16.84%	150 4.11%	428 12.73%	3653 100
North Indian Female	1682 63.69%	425 16.9%	534 20.21%	376 14.23%	158 5.98%	2641 100
South Indian Female	1503 59.59%	654 22.16%	388 15.25%	133 5.23%	255 10.02%	2545 100

**Table-II**  
COMPARISON OF TOTAL CALORIES TAKEN BY NORTH AND SOUTH INDIAN MALE HOCKEY PLAYERS

	Mean (North Indian)	Mean (South Indian)	SD (North Indian)	SD (South Indian)	SED	t-value
Protein	638	687	32.27	38.76	7.13	6.87*
Carbohyd	2322	2118	63.50	57.88	32.15	8.35*
Fat	870	578	32.70	28.07	6.15	47.45*
SFA	663	150	28.54	11.94	4.37	11.25*
USFA	197	428	13.82	26.48	4.33	54.68*
Total	3829	3653	79.30	83.42	16.27	10.81

\*Significant at 0.05 level of significance.

**Table-III**  
COMPARISON OF TOTAL CALORIES TAKEN BY NORTH AND SOUTH INDIAN FEMALE HOCKEY PLAYERS

	Mean (North Indian)	Mean (South Indian)	SD (North Indian)	SD (South Indian)	SED	t-value
Protein	425	654	29.30	33.14	6.25	41.408
Carbohyd	1682	1503	81.42	86.89	16.84	10.62*
Fat	534	388	47.86	39.68	8.79	16.60*
SFA	267	133	35.76	34.49	7.26	19.07*
USFA	158	255	23.85	32.21	5.67	17.11*
Total	2641	2545	160.82	132.39	29.49	3.25

\*Significant at 0.05 level of significance.

## Results:

The average total calories taken by North Indian Male Hockey player was 3829 while in case of South Indian, the average was 3653 calories and SD was 79.30, 83.42 respectively. Whereas t-value was which 10.81 was significant different at .05 level of significant. The average total Protein taken by North Indian Male Hockey player was 638 while in case of South Indian, the average was 687 calories and SD was 32.27, 38.76 respectively. Whereas t-value was 6.87 which was significant different at 0.05 level of significant.

The average total calories taken from Carbohydrates by North Indian Male Hockey player was 2322 while in case of South Indian, the average was 2118 calories and SD was 63.50, 57.88 respectively. Whereas t-value was 18.35 which was significant different at .05 level of significant. The average total calories taken from Fat by North Indian Male Hockey player was 870 while in case of South Indian, the average was 578 calories and SD was 32.70, 28.07 respectively. Whereas t-value was 47.45 which was significant different at .05 level of significant.

The average total calories taken from Saturated Fat by North Indian Male Hockey player was 663 while in case of South Indian, the average was 150 calories and SD was 28.54, 11.94 respectively. Whereas t-value was 54.68 which was significant different at .05 level of significant. The average total calories taken from unsaturated Fat by North Indian Male Hockey player was 197 while in case of South Indian, the average was 428 calories and SD was 13.82, 26.48 respectively. Whereas t-value was 1.7963 which was significant different at .05 level of significant.

The mean daily percentages of total energy contributed by carbohydrates, proteins, total fats, saturated fatty acids (SFAs), unsaturated fatty acids (USFAs), of north Indian male Hockey player were 60.65%, 16.66%, 22.79%, 17.65%, 5.14%, respectively, whereas the south Indian male Hockey player was 58%, 25.16% 16.84%, 4.11%, 12.73%, On comparison of North and South, it is found that North Indian Male Hockey player was (3829) intake more calories than south Indian male Hockey player (3653). In other hand, north Indian male Hockey player was taken more calories from fat particularly from saturated Fat, whereas south Indian male Hockey player was taken more calories from protein and unsaturated Fat.

The average total calories taken by North Indian Female Hockey player was 2641 while in case of South Indian, the average was 2545 calories and SD was 160.82, 132.39 respectively. Whereas t-value was 3.25 which was significant different at .05 level of significant. The average total Protein taken by North Indian Female Hockey player was 425 while in case of South Indian, the average was 654 calories and SD was 29.30, 33.14 respectively. Whereas t-value was 41.40 which was significant different at .05 level of significant. The average total calories taken from Carbohydrates by North Indian Female Hockey player was 1682 while in case of South Indian, the average was 1503 calories

and SD was 81.42, 86.79 respectively. Whereas t-value was 10.62 which was significant different at .05 level of significant. The average total calories taken from Fat by North Indian Female Hockey player was 534 while in case of South Indian, the average was 388 calories and SD was 47.86, 39.68 respectively. Whereas t-value was 16.60 which was significant different at .05 level of significant. The average total calories taken from Saturated Fat by North Indian Female Hockey player was 267 while in case of South Indian, the average was 133 calories and SD was 35.76, 34.49 respectively. Whereas t-value was 19.07 which was significant different at .05 level of significant. The average total calories taken from unsaturated Fat by North Indian Female Hockey player was 158 while in case of South Indian, the average was 255 calories and SD was 23.85, 32.21 respectively. Whereas t-value was 17.11 which was significant different at .05 level of significant. The mean daily percentages of total energy contributed by carbohydrates, proteins, total fats, saturated fatty acids (SFAs), unsaturated fatty acids (USFAs), of north Indian Female Hockey player were 63.69%, 16.09%, 20.21%, 14.23%, 5.98%, respectively, whereas the south Indian Female Hockey player was 59.59%, 22.16%, 15.25%, 5.23%, 10.02% On comparison of North and South, it is found that North Indian Female Hockey player was (2641) intake more calories than south Indian Female Hockey player (2545). In other hand, north Indian Female Hockey player was taken more calories from fat particularly from saturated Fat, whereas south Indian Female Hockey player was taken more calories from protein and unsaturated Fat. However, energy supply from sugar and sweetened beverages was within the recommended levels. Intake of micronutrient-rich foods, such as fruit and vegetable consumption (265 g/d), and fish and sea foods (20 g/d), was far below the FAO/WHO recommendation. Dairy and meat products intake was within the national recommended intake.

## Conclusions

The calories intake by Indian hockey players is not sufficient and their distribution also not appropriate as per different expert committee of nutrition and diet. Study showed that High total fat and SFA intake and a low intake of Carbohydrate by North Indian boys and High intake of Carbohydrate and a low intake of Protein by North Indian girls which is imbalanced nutrition. Study also showed that male and female South Indian players are taken more protein and low carbohydrate than recommended by different nutritional expert committee. For the better performance the nutritional strategies for boys and girls should be as per WHO and other diet expert committee. The strategy of reducing SFA intake and balancing the carbohydrate and protein ratio should be applied among Indian young sportspersons.

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