Macronutrients Intake Among Table Tennis National Players

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The present study's aim was to assess the anthropometric data and macronutrient intake of Table Tennis National players. Height and weight of the players was collected by the anthropologist. The mean height and weight of the subjects were 165.7±9.28cm and 62.43±6.3kg, respectively. The dietary assessment was done using the 24 hour dietary recall method which revealed that the mean energy intake was 3035.5±591.2 kcal; protein intake was 134±36.79 g; fat intake was 116.5±29g; and carbohydrate intake was 3035.5±591.2 kcal; protein intake was 134±36.79 g; fat intake was 116.5±29g and carbohydrate intake was 352.5±99.23g. The percent adequacy of carbohydrate was only 69% in male players which is quite low in comparison to the recommended levels of carbohydrates. Protein and fat intake was optimal in comparison to the recommendations levels of carbohydrates. Protein and fat intake was optimal in comparison to the recommendations which could be due to the take of chicken, milk and supplements. On the contrary, all macronutrient intake and per cent adequacy was less than the recommended levels, in case of female Table Tennis national players. So, adequate nutritional counseling is required to address the nutrient intake to the players for optimizing their performance.

Keywords : 24 hour dietary recall, macronutrient intake, Anthropometricmeasurements

INTRODUCTION

An Olympic sport since 1988, Table Tennis is becoming fasted and largest indoor sport in the world. A true "sport of all" Ttable Tennis is good for young and old, male or female. It is a sport of combining concentration of the mind with co-ordination of the body.

Table Tennis is mainly an aerobic sport with short bursts of high intensity. Eating well all the time is important. The correct died won't make an average Table Tennis player elite but a poor diet can make an elite Table Tennis player average. Everyday food patterns are more important than focusing on what you eat in the meal before a big game. Eating well

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the night before you compete won't compensate for poor eating patterns in the previous weeks or months.

Whether preparing for the indoor, state championship of Olympic a "healthy diet and body can clearly contribute to the player to reach the peak performance. So, taken into account the importance of nutrition, the energy requirement for Table Tennis players vary greatly depending on the standard of play (Allen & Unwin, 1998).

Overall the training diet for a Table Tennis player needs to be based on macro nutrients which should be rich in carbohydrates with moderate levels of protein and smaller amount of fats.

Carbohydrate

Carbohydrates are the major source of fuel for everyone especially athletes. Carbohydrate is a key nutrient for active Table Tennis players. The critical source of energy for exercising muscles is the body's carbohy rate stores - a little from blood glucose and a larger amount from glycogen stored in the muscles. The body can only store a limited amount of glycogen; so, it is essential to eat carbohydrate every day. Carbohydrate should contribute 50-60% of energy needs (M.Howe, 2002).

Protein

Protein is essential for growth and repair of all body tissues including muscle and bone. It is involved in carrying oxygen around the body, production of hormones and other enzymes, and in supporting the immune system. Protein can also provided energy if glycogen stores in muscles and the liver are low; but, if it is used this way, it is then not available for the important job of muscle growth, repair and recovery. Coaches and athletes should be wary of low carbohydrate/high protein diets for this reason. Generally, athletes can obtain all the protein they require from a good mixed diet with approximately 15% of the energy coming from protein (Phillips & Van loon, 2011)

Fat

Dietary fat plays an important role in the body including insulation from the cold and aiding in the absorption from the cold and aiding in the absorption and transportation of the fat-soluble vitamins A,D,E and K. Fat has over twice the energy value of carbohydrates or protein. It is a concentrated form of energy; so, it is easy to eat more than is needed. Excess fat contributes to weight gain (Stellingwerff, 2011).

So, this study will make an account in assessing the macronutrient intake of the players.

METHODOLOGY

The present study was conducted on 12 Table Tennis players who were preparing for various competitions at SAI, NSNIS, Patiala. The standard testing procedure was applied to measure the height and weight.

A quantitative approach of dietary assessment was done using 24 recall, estimated food records and weighed food records methods for calculations of macro nutrients.

STATISTICAL ANALYSIS

Date coding, entry and validation

was done and percentage were calculated. 24 hour dietary recall questionnaire were used to determine energy and macronutrient intake/of national Table Tennis players. Their daily intake was compared to recommended NIN guidelines. Nutrient Adequacy and Nutrient Adequacy Ratio was calculated.

RESULTS & DISCUSSION

The mean height and weight of Table Tennis players was recorded. The mean height and weight of the players were 165.7= 9.28cm and 62.43= 6.3 kg, respectively. The individual weight of player was used to calculate their individual energy requirement.

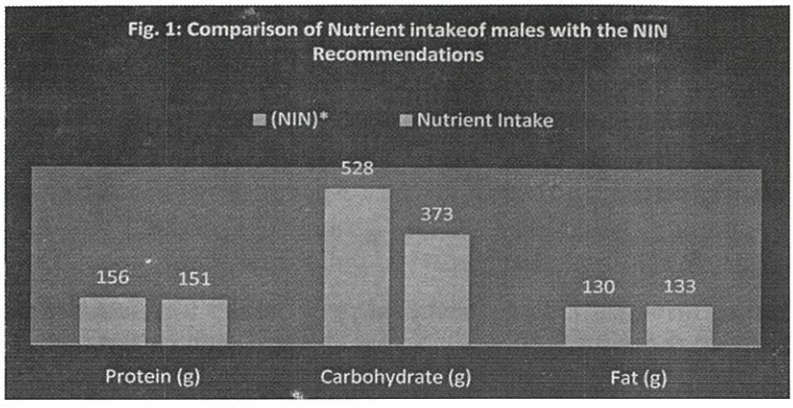
Table-1: Comparative Table of Nutrient intake of males and females with the NIN Recommendations and their Nutrient Adequacy ration

Nutrient	(NIN)* Recommendations	Nutrient Intake± S.D.	NAR	% Adequacy
Energy (Kcal)	372	3035± 591.2	0.81	81%
Protein (g)	150	134 ±36.8	0.89	89%
CHO (g)	505	353 ±99.2	0.69	69%
Fat (g)	125	116± 29	0.93	93%

Table 1 show the macronutrient intake which was compared with NIN recommendations. The mean energy intake was calculated 3035.5±591.2 kcal; protein intake was 134±36.79, fat intake was 116.5±29 and carbohydrate intake was 352.5±99.23. The percent adequacy of the energy intake is 81% which is highly adequate to the Table Tennis players. The percent adequacy of carbohydrate was only 69% which is quite low in comparison to the recommended levels of carbohydrates. The protein and fat intake was nearly optimal.

Table-2: Comparative Table of Nutrient intake of males with the NIN Recommendations and their Nutrient Adequacy ration

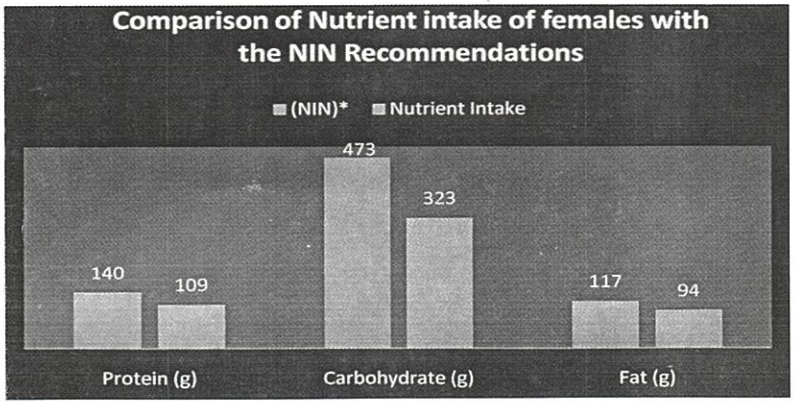
Nutrient	(NIN)* Recommendations	Nutrient Intake ±S.D.	NAR	% Adequacy
Energy (Kcal)	3912	3294± 585.1	0.84	84%
Protein (g)	156	151± 35.9	0.96	96%
CHO (g)	528	373± 72.2	0.70	70%
Fat (g)	130	133± 27.1	1.02	102%



The above table 2 revealed that the mean energy intake of male Table Tennis national players was 3294 ± 585.13 kcal. The mean protein and fat intake was 151±35.98g and 133±27.07g, respectively; showing adequate intake. Similar to the data of total players, carbohydrate percent adequacy of males was lower than the recommendations.

Table-3: Comparative Table of Nutrient intake of females with the NIN Recommendations and their Nutrient Adequacy ration

Nutrient	(NIN)* Recommendations	Nutrient Intake ±S.D.	NAR	% Adequacy
Energy (Kcal)	3504	3294±407.6	0.76	76%
Protein (g)	140	109±21.7	0.77	77%
CHO (g)	473	323±131.8	0.68	68%
Fat (g)	117	94±10.9	0.80	80%



From the Table 3 it was revealed that the mean macronutrient intake and percent adequacy was less than the recommended levels in case of female Table Tennis national players.

In the present study we have examined the macronutrient intake of Table Tennis players. The major findings of the study were that the intake of carbohydrate in the male player was low wheres in case of the female players requirement of all the macronutrient was not met sufficiently. Further, the requirement of protein and fat intake of male players was met adequately. Another finding was that there were sex difference in the observed vs. recommended macronutrient intake. Many energy/dietary intake assessment techniques exist. including food frequency questionnaries, self reported food record, dietary recall interviews, direct observation, and doubly-labeled water techniques (B. Baker, 2014). Here, in this present study, we chose to employ on subjects memory and estimated portion size. In fact, studies with adolescent athletes have found that carbohydrate intake during team sport-type activities can improve endurance capacity during intermittent high-intensity shuttle running (Phillips et al, 2010) and sport-specific skills (Doughterty et al, 2006). Previous finding corroborates the notion that inadequate energy intake my be more prevalent in female than male athletes (American Dietetic Associationet al, 2009; Sundgot-Borgen & Torstveit, 2004), including in team-sport athletes. Most of the under-eating by the female athletes occurred in Tennis, which may be related to the fact that they were competing in matches on the day of observations. Others have also reported that although energy expenditure tends to be higher on match days than training days (Burke et al, 2006), athletes tend to eat less on match days (possibly due in part to game stress; Holway & Spriet, 2011). In the present study, 24 hr. intake of carbohydrate of male players was not met significantly; whereas, there is a significant difference in the 24 hr. intake of all the macronutrient in case of female players. Furthermore, male athletes in the current study consumed significantly adequate or more nutrients than the upper limit of the recommended range which is consistent with previous studies (de Sousa et all, 2008; Juzwiak et all, 2008).

CONCLUSION

This study was aimed to determine the micronutrient intake of the Table Tennis national players. From this study, it was concluded that the intake of macronutrient was not adequately taken by the intake of Protein and fat was significantly met as per the NIN recommendations for male players. On the other hand, the intake of Protein and fat was significantly met as per the NIN recommendations for male players but the intake of carbohydrate was less than the recommendations. Poor intake of nutrients in the diet affects the nutritional status and thereby decreases the performance. The proper nutritional counseling and knowledge is advisable to the players.

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