

## Alimentary Profile of Football Players at the University of Buenos Aires

**Marcia Onzari\***

*Onzari. M. Lic. In nutrition. Professor of Nutrition and Sports Chair - Bachelor of Nutrition - UBA. Buenos Aires, Argentina*

**\*Corresponding Author:** Marcia Onzari, in nutrition. Professor of Nutrition and Sports Chair - Bachelor of Nutrition - UBA. Buenos Aires, Argentina.

**Received:** November 20, 2017; **Published:** November 24, 2017

### Abstract

L.N. (Licenciate in Nutrition) Marcia Onzari. Nutrition and Sports Class - Nutrition Degree – UBA Football is the most popular team sport in the world. There are many variables that must be optimized to achieve a good result, a proper alimentation is one of them and offers many benefits. Despite these advantages, many players do not meet their nutrition goals.

**Material and Method:** The research was descriptive and transversal. Male football players of the University of Buenos Aires (UBA) were registered for 4 days during the month of April of 2013.

**Results:** The sample consisted of 28 football players with an average age of 25.6 years (SD  $\pm$  3.12 years). The main results arising from the 4-day food record are: Table 1. Kcal and macronutrient intake of the selected college football players at the University of Buenos Aires (n: 28)

	Value relative to weight	Adequacy ratio reference the theoretical value
Energy	37,13 Kcal/Kg /d (DS 8,9 Kcal/Kg/d).	91,97 % (DS $\pm$ 21,8 %).
Carbohydrates	4,3 g/Kg/d (DS $\pm$ 1,3 g/Kg/d)	75,6 % (DS $\pm$ 18,46 % )
Proteins	1,66 g/Kg/día (DS $\pm$ 0,38 g/Kg/d).	103 % (DS $\pm$ 18,8%)

The average daily calorie intake (DCI) was 2853 Kcal (SD  $\pm$  612 kcal). The percentage contributed by each macronutrient regarding the DCI was: carbohydrates 46.79% (SD  $\pm$  7.8%), protein 18.9% (SD  $\pm$  4%) and fat 32.8% (SD  $\pm$  6, 23%).

Referring to the nutritional profile of the pre-workout meal, only 7 of the 28 athletes performed adequately. Taking into account the type and volume of beverage ingested, only 7 of the 28 athletes were properly hydrated during training.

We highly recommend educating this population with nutritional interventions from a young age, so as to enhance their alimentary profile and turning them into multipliers of healthy concepts.

L.N. (Licenciate in Nutrition) Marcia Onzari. Nutrition and Sports Class - Nutrition Degree – UBA

**Citation:** Marcia Onzari. "Alimentary Profile of Football Players at the University of Buenos Aires". *Nutrition and Food Toxicology* 2.2 (2017): 305-310.

**Keywords:** Football; Energy; carbohydrates; Pre-workout meal; Hydration

Volume 2 Issue 2 November 2017

© All Copy Rights are Reserved by Marcia Onzari.

*The main objective of this research was to describe the alimentary profile of selected football players of the UBA. As secondary objectives these were proposed:*

1. Estimating the daily intake of energy and macronutrients.
2. Determining the percentage of caloric and carbohydrates' intake adequacy.
3. Describing the nutritional profile of the last pre-workout meal and hydration.

## Introduction

Football is the most popular team sport in the world. Each team is confirmed by 11 players including a goalkeeper, defenders, mid-fielders and forwards, whose distribution in the field depends mainly on the adopted strategy. Every match is divided into 2 halves of 45 minutes and a half-time of 15 minutes in between. [1]

Despite de multiple advantages an accurate feeding behavior provides, several players fail to achieve their nutritional goals. Possible reasons might be:

- Scarce knowledge about the convenient food and beverages
- Inaccurate decisions at the time of buying food
- Lack of knowledge about the importance of nutrition in health and sport performance
- Low economic resources
- Busy lifestyles that lead to the lack of time to organize meals properly
- Poor variety of accurate food and beverage options outside home. Ex: workplaces, university, clubs, etc.
- Travelling frequently (because of sports)
- Incorrect use of sport supplements

The intake of carbohydrates and liquid among football players is generally insufficient. Instead, the consumption of lipids is excessive. [2]

*The main objective of this research was to describe the alimentary profile of selected football players of the UBA. As secondary objectives, these were proposed:*

- Estimating the daily intake of energy and macronutrients.
- Determining the percentage of caloric intake adequacy and carbohydrates.
- Describing the nutritional profile of the last pre-workout meal (PWM) and hydration
- Determining the existence of a relationship between the amount of training hours and:
  - The percentage of adequacy of caloric intake
  - The percentage of adequacy of carbohydrates and proteins
  - Grams per kilo of carbohydrates in the last pre-workout meal

## Material and Method

The research was descriptive and transversal. Male football players of the University of Buenos Aires (UBA) were registered during the month of April of 2013.

**Citation:** Marcia Onzari. "Alimentary Profile of Football Players at the University of Buenos Aires". *Nutrition and Food Toxicology* 2.2 (2017): 305-310.

### Sampling frame

#### Inclusion criterion

- Male football players who practice in competitions in first division representing the UBA training at least 2 times a week (each one of 90 minutes minimum), plus a match every weekend.
- Exclusion criterion
- Athletes under nutritional treatment with the intention of improving their nutritional performance

### Description of the used variables

- **Age:** expressed in years.
- **Daily caloric intake:** Recording every meal in a food diary for 4 days the result thrown was a sample of the regularly consumed food and beverages. At the moment of analyzing, a chemist composition database was used to obtain the daily caloric intake. [3] This was expressed in the following ways:
  - a) kcal/day
  - b) kcal/kg body weight/day
- **Macronutrients intake:** The same procedure was used to obtain macronutrients' intake (carbohydrates, proteins and lipids), which was expressed in the following ways:
  - a) Percentage of lipids' daily caloric intake
  - b) grams/kg body weight/day
- **Adequacy of caloric intake:** To estimate the daily energy expenditure the adopted method was the factorial one proposed by FAO-OMS.

Once the former was calculated, the next step was to calculate the percentage of adequacy intake using the following formula:

$\% \text{ of adequacy} = \text{intake (kcal, carbohydrates, proteins)} \times 100 / \text{daily energy expenditure or macronutrients recommended intake [4]}$

### Adequacy criterion

Insufficient: less than 90%

Accurate: between 90% and 110%

Excessive: more than 110%

- **Alimentary profile:** It was confirmed by the following variables:
  1. Pre-Workout Carbohydrates Intake: The consumption was considered "absent" if the athletes have consumed no beverages or food between 1 to 4 hours before their workout; "inaccurate" if the intake was < of 1g carbohydrate/kg bodyweight in this period; "accurate" if the intake was of 1g carbohydrate/kg bodyweight or more in this period.
  2. Pre-workout hydration: The athletes were considered to hydrate accurately if their consumption of liquid 4 hours before training was between the suggested amount of 5 to 7 ml/kg bodyweight or more. In cases of scarce, darken or no urine 2 hours before training, consuming also 3-5 ml/kg bodyweight is recommended.
  3. Hydration during workout: Athletes who consumed 500cc or more of water per hour of training were considered to hydrate accurately. Although given the high intensity and duration of these workouts the intake of isotonic beverages is justified, due to the practical and economic restrictions of the sample, the exclusive consumption of water was also accepted.

The chosen methodology was the following; the Nutrition and Sports class of the Bachelor's degree in Nutrition at UBA and the Activities Coordination Department co-worked to improve nourishment in athletes who frequent the UBA sports field at. During a 4 days' training course, students analyzed and evaluated each player and later, supervised by a (professor/tutor), designed a personal meal plan based on the results.

The rest of the trimester, students had already achieved enough practical skills and theoretical knowledge to analyze all the data and design the meal plan handed to each player at the end of the course. Data presented on this research arises from this experience.

For the analysis of the different statistic variables, mean and standard deviation (SD) were used. As for the structuring, percentile was used. To analyze correlation between data, the chosen method was Spearman's Coefficient.

## Result

The sample was composed of 28 football players with an average age of 25.6 years (SD  $\pm$  3.12 years). Players' average weight was 77.8 kg (SD  $\pm$  8.5 kg) and size 1.77 m. (SD  $\pm$  0.05 m). The average of daily training hours (including games) was 1.26hs (SD  $\pm$  0.66hs).

The average of daily caloric intake (DCI) had an absolute value of 2853 Kcal (SD  $\pm$  612 Kcal. and a relative value to weight of 37.13 kcal/kg bodyweight/day (SD 8.9 Kcal/kg bodyweight/day) (Table 1)

Daily caloric intake (n: 28)		
	kcal/day	kcal/kg BW/day
Average	2853	37,13
SD	612	8,9
Percentile 25		30,19
Percentile 75		43,58

**Table 1:** Daily caloric intake.

The kcal. Intake adequacy percentage regarding caloric expenditure was of 91.97% (SD  $\pm$  21.8% - percentile 25: 74% - percentile 75: 123.6%).

On average, carbohydrates were the 46.79% (SD  $\pm$  7.8%) of the daily intake of energy. The average intake of this macronutrient, expressed in relation to weight was 4.3g/kg bodyweight/day. (Table 2).

Carbohydrate intake (n: 28)		
	%	g/kg BW/day
Average	46,79	4,3
SD	7,8	1,3
Percentile 25		3,17
Percentile 75		5,18

**Table 2:** Carbohydrates' intake.

Carbohydrates' percentage of adequacy regarding this nutrient's recommended intake was 75.6% (SD  $\pm$  18.46% - percentile 25: 58.8% - percentile 90: 103.6%).

Proteins represented in average 18.9% of the daily caloric intake (SD  $\pm$  4%). The average intake of this nutrient, expressed in relation to weight was 1.66g/ kg bodyweight/day (SD  $\pm$  0.38 g/kg bodyweight/day).

Proteins' percentage of adequacy regarding this nutrient's recommended intake was 103% (SD  $\pm$  18.8%). The percentage of lipids regarding daily caloric intake was 32.8% (SD  $\pm$  6.23%).

More than half the players (1.7 out of 2) had the previously mentioned last pre-workout meal. The amount of carbohydrates in this meal was 0.73g/kg bodyweight (SD  $\pm$  0.49g). Only 7 of the 28 players did it correctly.

Only 8 of the 28 players hydrated accurately before starting their training. However, during the course of it, 7 of the 28 players did it correctly. In average, the beverage intake was 426cc (SD  $\pm$  249.8cc).

Skipping meals was a tendency in this sample. Fruits, vegetables and milk were the least consumed aliments. There was no statistic significant relationship relation in any of the objectives initially proposed. Neither between training hours and percentage of adequacy of the daily caloric intake (Spearman's Coefficient r: 0.0362 p: 0.8550), nor between training hours and carbohydrates' percentage of adequacy (Spearman's Coefficient r: -0.0362 - p: 0.8550). There was also no relation between training hours and grams of carbohydrates in the last pre-workout meal (Spearman's coefficient: r: -0.0923 p: 0.6404).

Regarding the relation between age and grams of carbohydrates in the last pre-workout meal, although is not statistic significant relationship (Spearman's Coefficient: r:0.3848 - p:0.1272), there was a tendency to consume more carbohydrates at older ages.

### Conclusion

Results thrown by the registered alimentary profiles were similar to the ones published in the national and international scientific documents. [5-8]

We can conclude that the adequacy percentage of consumed calories, lipids and proteins regarding the recommended intake was accurate, but the carbohydrates' value was inaccurate.

The number of players that had had a correct last pre-workout meal was low, as well as the hydration before and during trainings.

It is worrying that this population who generally have a job, study and do physical training, does not follow the basic nutritional recommendations.

We highly recommend educating this population with nutritional interventions from a young age, so as to enhance their alimentary profile and turning them into multipliers of healthy concepts.

### References

1. FIFA F- MARC. "Nutrition for Football-A practical guide to eating and drinking for health and performance". (2010).
2. Ruiz F, *et al.* "Nutritional intake in soccer players of different ages". *Journal of Sports Sciences* 23.3 (2005): 235-242.
3. Universidad Nacional de Luján. Tabla de composición de alimentos (2010).
4. Rodriguez NR., *et al.* "Position of the American Dietetic Association, Dietetians of Canada, and the American College of Sports Medicine: Nutrition and Athletic Performance". *Journal American Dietetic Association* 109.3 (2009): 509-527.
5. Bean A. "La Guía Completa de Nutrición del Deportista. 4ªedición". Editorial Paidotribo (2011).

**Submit your next manuscript to Scientia Ricerca Open Access and benefit from:**

- Prompt and fair double blinded peer review from experts
- Fast and efficient online submission
- Timely updates about your manuscript status
- Sharing Option: Social Networking Enabled
- Open access: articles available free online
- Global attainment for your research

Submit your manuscript at:

<https://scientiaricerca.com/submit-manuscript.php>