

Corina TIFREA,
Sidi Hassan CHERKAOUI

National University of Physical Education and Sports of Bucharest

THE PARTICULARITIES OF SUPPORTING THE PHYSICAL TRAINING OF MOROCCAN SENIOR FOOTBALL PLAYERS WITH NUTRITIONAL SUPPLEMENTS

Case
Study

Keywords

*Particularities;
Football players;
Nutritional supplements;
Physical training*

Abstract

Powders or liquids, which have in their composition nutrients (macro and micro) and/or other edible substances, which are consumed in defined quantities, in addition to the usual dietary intake. The categories of nutritional supplements produced and approved by order 282 of the Ministry of Health can be found in the table no. 1, either they are produced in the country or imported and can be marketed for human consumption only after they have been endorsed by the MSF "ensuring the protection of the population's health by selling products that meet the characteristics of their quality and safety on the market." Vitamins and mineral elements, pure protein or in the form of protein concentrates, protein isolates and protein hydrolysates, amino acids, and mixtures thereof, aliment food oils considered dietary (for example: germ oils of cereal seeds, fish liver oils,) and essential polyunsaturated acids.

According to the Ministry of Health, nutritional supplements are conditioned preparations in the form of tablets, capsules, sprinkles.

Powders or liquids, which have in their composition nutrients (macro and micro) and/or other edible substances, which are consumed in defined quantities, in addition to the usual dietary intake (Jacobs, Westlin, Karlson, 1982). The categories of nutritional supplements produced and approved by order 282 of the Ministry of Health can be found in the table no. 1, either they are produced in the country or imported and can be marketed for human consumption only after they have been endorsed by the MSF "ensuring the protection of the population's health by selling products that meet the characteristics of their quality and safety on the market."

Categories of nutritional supplements:

- Vitamins and mineral elements, pure protein or in the form of protein concentrates, protein isolates and protein hydrolysates, amino acids, and mixtures thereof, aliment food oils considered dietary (for example: germ oils of cereal seeds, fish liver oils,) and essential polyunsaturated acids,
- Phospholipids - lecithins, cephalins, serinfosfatides, inositol-phosphatides,
- Food fibres up to 24 g / day,
- Milk for children (Hugues & Kuhn, 2012).
- Synthetic food sweeteners,
- Weight loss and weight loss products without indications therapeutics.
- Products for athletes that contain vitamins, minerals, proteins, hydrolyzed proteins, amino acids, easily assimilated carbohydrates, essentials fatty acids, and other nutrients to support the sporting effort, in the recovery post-exercise, in developing and maintaining muscle mass.

The supplement is defined as a product for ingestion that contains a food ingredient that is meant to add nutritional value, to supplement the diet.

Nutritional supplements should be consumed to supplement a balanced diet, not as a substitute. Nutritional supplements should not be administered by approaching the "Same for All" system, considering that athletes train for different goals (problems with body composition, recovery after injuries) and train with different loads. Sports nutrition products such as sports drinks and protein refreshments are not considered nutritional supplements. The approach to nutritional supplements must adhere to the WADA Code (World Anti-Doping Agency), which stipulates that all supplements used do not contain prohibited substances in sports. Nutrient supplements are preparations that contain macronutrients, micronutrients and other edible substances (Leatt and Jacob, 1988).

Implications of carbohydrates in football

The importance of CHO in football has been known since the 1970s. The innovative researches identified, through the information resulting from muscle biopsy, that at the end of the game the glycogen deposits in the muscles were depleted and at the same time a decline of the performance and efficiency on the playing field was observed. Players who started the match with glycogen reserves in muscles, $\sim 400 \text{ mmol kg}^{-1}$, managed to achieve maximum intensity movements and were able to run the same distances both times, compared to the players who started the game with reserves of $\sim 200 \text{ mmol kg}^{-1}$. The specialists identified that after 90 minutes of play 50% of the players' fibres were empty or almost empty, resulting in the hindrance of the production power even if the glycogen in the muscle was not substantially reduced. It is not surprising that football players are advised to consume $30\text{-}60 \text{ g h}^{-1}$ of exogenous CHO during the competition to maintain blood glucose levels and maintain glycogen reserves in the muscles.

As the possibilities of supplementation with CHO during the match are limited, the consumption of electrolyte liquids (eg sodium, potassium, calcium, magnesium, etc.) with CHO concentrations ($>10\%$) during the break between halves, could help the players to manage to consume as much as necessary without creating abdominal discomfort. A 12% CHO-electrolyte solution provided to players for ingestion, in a bolus (one pill larger in volume) of 250 mL at the break between rounds, improved the speed of the dribbling and the performance of the exercises in the stages from the end of a simulation game. Commercially available sports drinks are consumed before and during the match (including the break between halves, generally contain CHO in a concentration of 6-10%; in which there are sources of GI (Glycemic Index) CHO such as glucose and maltodextrin, are the constituents of the solution - see Table no1 (Arnauld, 2004).

CONCLUSIONS

- The team, regarding the role of each "actor" (athlete-trainer-doctor-physical trainer), must know the steps of the protocol in order to achieve the proposed objectives with regard to recovering for the competitive activity in a short time.
- It is important to evaluate/apply complex recovery programs by administering nutritional supplements and by means of kinetotherapy in order to regain the functional parameters post-effort.
- The introduction of nutritional supplements during the preparatory and competitive period in

the medication of footballers has had as a consequence the increase of self-confidence and in the physical, technical-tactical possibilities acquired during the preliminary research.

- Selecting and carrying out both physical and laboratory tests, regarding the preparation of football players for competition, can be a starting point in formulating hypotheses for the final research.
- Introducing in preparation, respectively in all stages, but especially during the post-effort recovery period of nutritional supplements, we consider that they can help to shorten the period of restarting the efforts with maximum intensities and increasing the individual performances.

REFERENCES

- [1] Arnauld, H. (2004). *La preparation phisique et sa dimension prophilactique, nr.83*, Paris.
- [2] Hugues D., Kuhn F., (2012). *Nutritions d'endurance*, Editura Quercy A'Mercues
- [3] Jacobs, I, Westlin, N., Karlson, J. (1982). *Muscle glycogen and diet in elite soccer player*. Ed. Eur. J. Appl. Physiol
- [4] Leatt, P.B., Jacob, I., (1988). *Effects on a liquid glucose supplement on muscle glycogen resynthesis after a soccer match*, Ed. In Science and Football

List of tables

Table no. 1

The values obtained at running speed / agility and vertical expansion

Name and surname	Agility/speed tests			Vertical expansion (cm)
	5m	10m	4x 10m	
VA	1.23	1.94	8.63	54.5
TA	1.08	1.70	8.90	49.0
LC	1.01	1.75	9.30	49.8
LA	1.02	1.69	8.58	49.8
GV	1.05	1.74	8.64	49.5
IA	1.06	1.84	8.75	46.2
GR	1.28	2.04	9.56	42.2
CT	0.98	1.71	8.83	53.0
DG	1.08	1.84	8.81	53.1
CC	1.05	1.83	8.78	50.4
BN	1.07	1.76	8.46	48.5
AI	1.04	1.76	9.00	47.3
MG	1.15	1.80	9.15	48.2
MD	0.99	1.69	8.65	52.1
PA	1.16	1.89	9.05	51.6
RI	1.05	1.77	9.04	49.1
BA	1.00	1.67	8.81	50.2
BA	1.23	1.99	8.96	45.0
Average	1.08	1.81	8.83	49.41