

The hydro-nutritional practices of junior players during the pre-season preparatory period.

Background: Physical activity during childhood and adolescence is widely recommended; however, the quantity and quality of food and fluid intake is a key determinant of performance in both football training and match-play. Analysis of teenage eating habits within the general population shows areas of concern - meal skipping, imbalanced diets and high intakes of sugary foods and drinks; these factors combined with a lack of exercise can lead to health problems in non-active youngsters. However, if such dietary habits are present in adolescents regularly engaging in football training and match-play, the quality of performance during exercise will be compromised. Consequently, dietary analysis data is presented for a group of junior football players (under 16's) who recorded their 7-day food and fluid intake during a normal training week in the period of pre-season preparations.

Results: Table 1 outlines the results of the hydration (pre-exercise urine osmolality prior to a team training session) and nutritional analyses that were completed. The players analysed were aged 14.8 ± 3.3 years old.

Table 1: Results of the hydration and nutritional analysis

Pre-exercise hydration (osmol/kg)	Total Calories	Energy contribution		
		% Carbohydrates	% Protein	% Fat
523.0 ± 295.7	3110.2 ± 1424.5	50.8 ± 7.9	19.0 ± 4.7	30.3 ± 6.3

Discussion: Information concerning the amount of calories that junior football players should consume is limited, nevertheless, previous research has identified that players may expend between 4000 and 5000 kcal per day. Using these values as a reference, it is evident that the players sampled in this study are consuming considerably less than what is expended during training (between ≈ 1000 and 2000 kcal deficit per day).

Although the recommended proportions of carbohydrates in football players is between 60-70% of the total energy intake, it appears that the players in this study were not consuming adequate energy in the form of carbohydrates to meet such recommendations whereas elevated proportions of energy from the other macro-nutrients (i.e., protein and fats) was observed. The demands of football training and match-play have consistently been found to deplete the bodies stored carbohydrate reserves, and that the failure to restore these carbohydrate reserves has been associated with impaired performance in subsequent exercise. Consequently, efforts should be made by junior players to consume adequate amounts of carbohydrates during periods of sustained training and match-play such as in the pre-season preparatory period and during the season; especially considering the limited time that tends to exist between matches in junior players who may belong to multiple teams that play during midweek and again at the weekends.

A 2% drop in body mass has been found to impair the performance of both skilled and physical actions in football. During match-play, it is not uncommon for players to lose in excess of 2-3 kg in body mass; with a large proportion of this loss, but not all, due to sweating. A 1.4 kg loss of mass in a typical 70 kg player would represent the crucial 2% body mass loss threshold associated with reduced quality of performance. Results from this study appear to demonstrate that the hydration practices of the current squad are adequate as measures of hydration status taken pre-exercise fall within the category for hydration that is recommended in scientific research (i.e., less than 600 osmol/kg).

Conclusion: This sample of junior football players was not characterised by optimised nutritional intake; specifically consuming too few calories, excessive proportions of protein and fats and inadequate energy from carbohydrate sources. However, it does appear that the hydration practices of these junior players were sufficient for preparedness for exercise.