

A Dietary, Hydration, and Supplementation Intake Proposal for High-Performance Elite Soccer Players During a Match Day

Haniel Fernandes* 

Estácio de Sá College, Nutrition Department, Fortaleza, Ceará, Brasil

Correspondence to: Haniel Fernandes, Estácio de Sá College, Nutrition Department, Fortaleza, Ceará, Brasil.

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ABSTRACT

Objective: Soccer is a highly demanding intermittent sport that involves fluctuations between low and high intensity activities. Therefore, soccer players are required to be adequately prepared both from the point of view of food, hydration, and supplementation to meet the match energy requirements.

Materials and Methods: For the construction of this review, the author used, in addition to the works to reference the introduction, five of his published articles on soccer.

Results: The carbohydrate prescription range from 5 to 10 gkg⁻¹ BW day⁻¹ and protein ingestion for improve Muscle Protein Synthesis (MPS) is 0.4 gkg⁻¹ BW meal⁻¹ using 4 meals day⁻¹. When the subject is hydration for elite soccer players, it becomes interesting offer before match 5 to 7 mlkg⁻¹ body weight 4 hours before and 3 to 5 ml kg⁻¹ BW 2 hours before match. And to improve the performance of elite soccer athletes, the most studied ergogenic and dietary supplements by the scientific community are creatine (3-5 gday⁻¹ or 0.075 gkg⁻¹ BW day⁻¹), caffeine (6 mgkg⁻¹ BW), sodium bicarbonate (0.4 gkg⁻¹ BW), beta-alanine (3.2-6.4 gday⁻¹), nitrate-rich beet juice (6 mmol of NO³⁻ L), taurine 50 mgkg⁻¹ BW day⁻¹), citrulline (1.2-3.4 gday⁻¹) and arginine (1.2-6 gday⁻¹).

Conclusion: In summary, the high-performance elite soccer players during a match day can use creatine, caffeine, sodium bicarbonate, beta-alanine, nitrate-rich beet juice, taurine, citrulline, arginine, including carbohydrate and protein prescription, and adjusted hydration.

Keywords

Soccer players, Hydration, Dietary intake, Ergogenic supplementation, Hydration

Introduction

Soccer is a highly demanding intermittent sport that involves fluctuations between low and high intensity activities where the soccer players typically cover around 11-13 km per match dependent on position and from an energy perspective, soccer places significant demand on both the aerobic and anaerobic systems in order to perform at the highest level [1]. Whence, players encounter temporary reductions in physical output following the most demanding 5-minutes period during match-play [2]. Therefore, soccer players are required to be adequately prepared both from the point of view of food, hydration, and supplementation to meet the match energy requirements. In this work, the author brings a practical summary of his main published articles on football to guide a possible decision-making by professionals involved with this type of athlete for an official match day.

Materials and Methods

For the construction of this review, the author used, in addition to the works to reference the introduction, five of his published articles on soccer. There are five review articles that cover the content of the title of this work addressing dietary intake, dietary supplementation and ergogenics, in addition to hydration.

There were no inclusion or exclusion criteria, as they were works chosen at the author's own convenience and no statistics were applied because there was no clinical calculation for data analysis. It was only exposed a summary in the form of an image authored by the author himself about the recommendations in which he had already published on what to do for a match day of a high-performance elite soccer player.

Results and Discussion

It's important the carbohydrate prescription that meet athlete's energy demands and are based on recommendations range from 5 to 10 gkg⁻¹ BW day⁻¹ [2], including the intake 1 to 1.5 gkg⁻¹ BW h⁻¹ within the first 4 h after a soccer game to maximize glycogen resynthesis [3]. Besides that, the protein ingestion for improve Muscle Protein Synthesis (MPS) is 0.4 gkg⁻¹ BW meal⁻¹ using 4 meals day⁻¹ [4]. When the subject is hydration for elite soccer players, it becomes interesting offer before match 5 to 7 mlkg⁻¹ body weight 4 hours before and 3 to 5 mlkg⁻¹ BW 2 hours before match. In half-time, the athlete should drink 0.5 to 0.7 g sodium L⁻¹ in 4 to 6% carbohydrates concentration. After match the recommendation is to drink around 1.5 L for every kg of body weight lost during the match and to use hypertonic drinks containing 1 to 1.5 g of sodium. L⁻¹ in 9 to 10% carbohydrates concentration, use of carb gels can be welcome during the break, including other alternatives that can deliver sodium and electrolytes [5]. And to improve the performance of elite soccer athletes, the most studied ergogenic and dietary supplements

by the scientific community are creatine (3-5 gday⁻¹ or 0.075 gkg⁻¹ BW day⁻¹), caffeine (6 mgkg⁻¹ BW), sodium bicarbonate (0.4 gkg⁻¹ BW), beta-alanine (3.2-6.4 gday⁻¹), nitrate-rich beet juice (6 mmol of NO³⁻ L), taurine 50 mgkg⁻¹ BW day⁻¹, citrulline (1.2-3.4 gday⁻¹) and arginine (1.2-6 gday⁻¹) [6]. A drawing with

all the recommendations brought by the author is illustrated by Figure 1, in which readers can have a summary contextualized by day moment to how to act in the prescription of the dietary, hydration, and supplementation intake recommendations to improve elite soccer players performance.

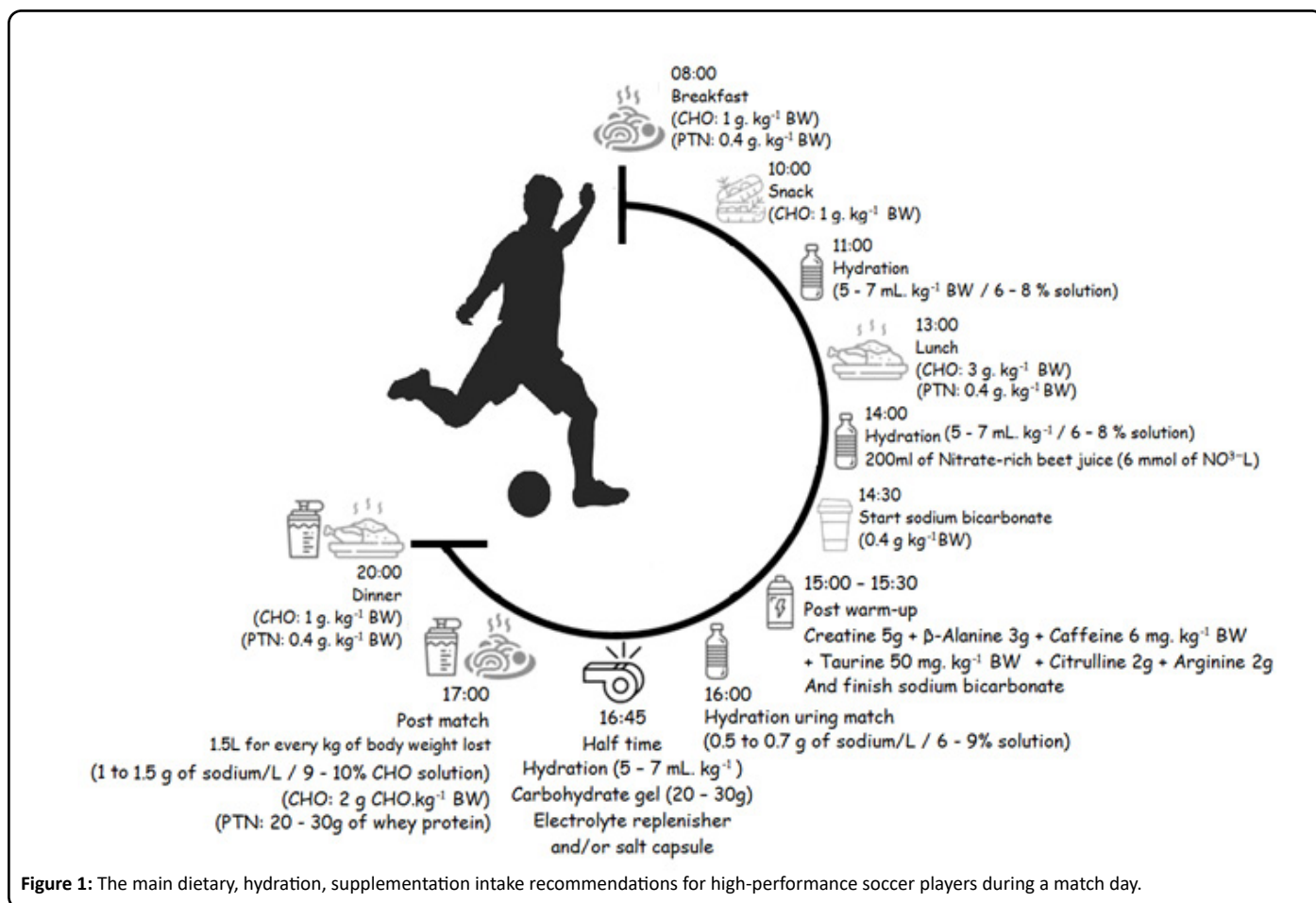


Figure 1: The main dietary, hydration, supplementation intake recommendations for high-performance soccer players during a match day.

Conclusion

In summary, the high-performance elite soccer players during a match day can use creatine (3-5 gday⁻¹ or 0.075 gkg⁻¹ BW day⁻¹), caffeine (6 mgkg⁻¹ BW), sodium bicarbonate (0.4 gkg⁻¹ BW), beta-alanine (3.2-6.4 gday⁻¹), nitrate-rich beet juice (6 mmol of NO³⁻ L), taurine 50 mgkg⁻¹ BW day⁻¹, citrulline (1.2-3.4 gday⁻¹), arginine (1.2-6 gday⁻¹), carbohydrate prescription ranging from 5 to 10 gkg⁻¹ BW day⁻¹, protein ingestion in 0.4 gkg⁻¹ BW meal⁻¹ using 4 meals day⁻¹, and hydration around 5 to 7 mlkg⁻¹ body weight 4 hours before and 3 to 5 mlkg⁻¹ BW 2 hours before match, with 1.5 L for every kg of body weight lost during the match and to use hypertonic drinks containing 1 to 1.5 g of sodium. L⁻¹ in 9 to 10% carbohydrates concentration.

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Conflict of Interest

The author declare that they have no competing interests.

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