

SUPPLEMENTS AND SPORT DRINKS

Morton J

School of Sport and Exercise Sciences, Liverpool John Moores University, and Liverpool FC, Liverpool, United Kingdom



The sports supplement industry is a multi-billion dollar business that is one of the most rapidly growing and dynamic components of the sports nutrition profession. At present, there are thousands of commercially available supplements that are all purported to improve muscle strength, power, speed and endurance as well as prevent (and promote recovery from) illness and injury.

Given that all of the aforementioned indices of physical fitness are relevant to the professional footballer, it is unsurprising that elite players, coaches and sport science staff are often overwhelmed when faced with the challenge of developing a practical and evidence-based supplement strategy that is ergogenic for football match play and training. Additionally, many of the sports supplements commonly used by professional players are also commercially driven (as opposed to evidence based) and are based on lucrative sponsorship deals to the individual player, club and/or the governing body of the professional league in question. Most importantly, the chosen approach to supplementation should adhere to the World Anti Doping Association (WADA) code of conduct in that all supplements are free from contamination with prohibited substances. In this presentation, I review potential supplements that may be used to promote match day physical performance, training adaptations and recovery.

Players may experience progressive fatigue during match play, apparent as a gradual decline in the capacity to perform physical and technical skills. To reduce symptoms of progressive fatigue, pre-game and in-game carbohydrate and caffeine ingestion may improve cognitive, physical and technical performance. Players may also experience temporary fatigue during match play, evident as a transient reduction in physical performance in the minutes following a particularly physically demanding period of the game.

To improve the capacity to perform repeated bouts of high-intensity activity in close proximity to one another, players may benefit from prior loading with β -alanine, creatine and nitrate.

Whey protein supplements consumed post-match and post-training facilitate recovery and training adaptations by promoting muscle protein synthesis.

Vitamin D supplementation is likely necessary during the winter months (to account for the natural reduction in UV-B exposure) so as to promote immune function and bone health as well as potentially maintaining skeletal muscle function.

Supplements should not be administered as a one-size-fits-all approach, given that many players are training for different goals (e.g., body composition issues, injury rehabilitation, etc.) and have different training loads.

Finally, in the context of training situations it is noteworthy that traditional carbohydrate drinking strategies may actually attenuate training adaptations given that high carbohydrate availability reduces the activation of the molecular pathways known to regulate training adaptation. As such, supplement strategies for match and training days should be considered differently.

Additionally, players should initially experiment with non-familiar supplement strategies in training or simulated games (so as to evaluate any potential negative side-effects) prior to implementing during elite level competition.