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Short Communication

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Dietary and Supplementation Strategies for Recovery: A Proposal for Elite Soccer Players

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Recovering as quickly as possible, restoring pre-performance levels is considered a crucial element of success in almost every athletic discipline, including soccer. For this reason, coaches and athletes are always in a continuous search for the most effective strategies, that include supplementation or food, to speed up post-exercise recovery. However, precisely defining the concept of "recovery from exercise" is a challenging mission due to the number of variables affecting an optimal recovery [1]. That's why, the prescription of post-match or post-training recovery strategies in elite soccer players is a key point to optimize soccer performance.

Considering that the effectiveness of recovery strategies may present interindividual variability, scientific evidence-based recovery methods and protocols using nutritional strategies along with supplementation strategies can be important. And thinking about it, the proposal for a recommendation with supplements dosages and nutritional strategies aimed at the elite soccer players recovery is something important and seems to be little explored currently. This way, a recent systematic review and meta-analysis proved that the use of the recovery strategies for elite soccer players can offers positive effects on muscle damage [2]. Therefore, there are a lot of interest of post-competition recovery strategies to determine its effects on post-match performance outcomes. This letter brings a proposal of recovery supplements intakes for elite soccer players describing supplements and nutritional strategies to help these athletes on their recovery.

Firstly, before supplements, nutrition strategies have been proven through evidence-based guidelines regarding nutritional recovery strategies within the context of soccer. Following match-play, it is interesting the offer 1.2 $gkg^{-1}h^{-1}$ of Carbohydrate (CHO) to the restoration of liver and muscle glycogen stores and for augmentation of protein synthesis a dose around 40 g of protein should be prioritized in the first 20 minutes of recovery [3]. Due the oxidative stress in soccer players it may be necessary to supplement with antioxidants like vitamin C e vitamin E in co-administration (500 mg of vitamin C per day with 1200 IU of vitamin E per day) [4]. The 6 g/day of glutamine supplementation was able to induce decreases in adrenocorticotropic and cortisol hormone levels, indicate that supplement could help attenuate exercise-induced muscle damage in sport disciplines with predominantly eccentric actions like elite soccer [5]. A recent article investigated eight competitive matches the elite soccer players consumed two 60 mL drinks per day of Turmeric Original Shot each containing 1400 mg curcumin combined with 10 mg of piperine. On results, a decrease of both leg and whole-body soreness with a time interaction effect for plasma C-reactive protein reduction was observed [6].

Table 1. A proposal of dietary and supplementation strategies for elite soccer players recovery.

Element	Dosage	Effect	Reference
CHO	1.2 $gkg^{-1}h^{-1}$ post activity	Restoration of liver and muscle glycogen stores	[3]
Protein	40g prioritized in the first 20 minutes post activity	Augmentation of protein synthesis	[3]
Vitamin C	500 mgd^{-1}	Decrease oxidative stress by antioxidants	[4]
Vitamin E	1200 IUd^{-1}	Decrease oxidative stress by antioxidants	[4]
Glutamine	6 gd^{-1}	Decreases in adrenocorticotropic and cortisol hormone levels	[5]
Tumeric	1400 mg curcumin combined with 10 mg of piperine daily	Decrease of both leg and whole-body soreness	[6]
Magnesium	1000 mg magnesium citrate twice a day 90 min before activity daily	Delaying the fatigue during high-intensity exercise	[7]
Vitamin D	5000 IU cholecalciferol supplement daily	Lower risk of respiratory tract infections and lower rates of injury	[8]
CoQ10	100 mg twice daily	Reduction in the levels of the muscle-damage marker creatine kinase and stress marker cortisol	[9]
DHA/EPA	550 mg DHA and 550 mg EPA daily	Decrease in muscle soreness by decrease creatine kinase blood concentrations	[10]

Besides that, a chronic supplementation with 1000 mg magnesium citrate twice a day 90 min before each practice session improves repeated sprint ability in elite soccer players [7]. These results indicate a significant role of magnesium ions in delaying fatigue during high-intensity exercise. Elite soccer athletes were evaluated by blood vitamin D level, and was observed that athletes from the 25(OH)D-insufficient group (<30 ng/mL) may have a greater risk of respiratory tract infections and higher rates of injury, thus, the 25(OH)D-insufficient athletes group can be treated with 5000 IU (international units) cholecalciferol supplement daily [8]. Another study evaluated the coenzyme Q10 (CoQ10) supplementation on the hardest phase in 100 mg twice daily and proven a reduction in the levels of the muscle-damage marker creatine kinase and stress marker cortisol. Besides that, CoQ10 supplementation also was associated with higher muscle performance during matches into elite soccer players [9]. A recent study was offers n-3PUFA (fish oil supplement) beverage that contained 1100 mg DHA/EPA (approximately 550 mg DHA and 550 mg EPA) for elite soccer players. On the results can be evaluated the decrease in muscle soreness by decrease creatine kinase blood concentrations following the eccentric exercises [10]. As a conclusion to this letter, the author brings a proposal in table (Table 1) form with the dietary and supplementation strategies for elite soccer players recovery addressed in this study.

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