

Effect of whey protein hydrolysate on performance and recovery of top-class orienteering runners

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Abstract

This trial aimed to examine the effect of whey protein hydrolysate intake before and after exercise sessions on endurance performance and recovery in elite orienteers during a training camp. Eighteen elite orienteers participated in a randomized controlled intervention trial during a 1-week training camp (13 exercise sessions). Half of the runners (PRO-CHO) ingested a protein drink before (0.3 g kg⁻¹) and a protein-carbohydrate drink after (0.3 g protein kg⁻¹ and 1 g carbohydrate kg⁻¹) each exercise session. The others ingested energy and time-matched carbohydrate drinks (CHO). A 4-km run-test with 20 control points was performed before and on the last day of the intervention. Blood and saliva were obtained in the mornings, before and after run-tests, and after the last training session. During the intervention, questionnaires were fulfilled regarding psychological sense of performance capacity and motivation. PRO-CHO and not CHO improved performance in the 4-km run-test (interaction $p < .05$). An increase in serum creatine kinase was observed during the week, which was greater in CHO than PRO-CHO (interaction $p < .01$). Lactate dehydrogenase ($p < .001$) and cortisol ($p = .057$) increased during the week, but the change did not differ between groups. Reduction in sense of performance capacity during the intervention was greater in CHO ($p < .05$) than PRO-CHO. In conclusion, ingestion of whey protein hydrolysate before and after each exercise session improves performance and reduces markers of muscle damage during a strenuous 1-week training camp. The results indicate that protein supplementation in conjunction with each exercise session facilitates the recovery from strenuous training in elite orienteers.

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