O-12 Effects of carbohydrate gel ingestion with different timing on blood glucose response and subjective fatigue during prolonged exercise

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\textbf{Purpose}: The purpose of the present study was to compare the effects of carbohydrate gel at different times before exercise on the metabolic response and exercise performance during 80 min of high-intensity intermittent cycling. \textbf{Methods}: Seven male triathletes completed four different trials in a randomized, placebo-controlled, double-blinded design [placebo ingestion immediately before the exercise (P0), carbohydrate ingestion immediately before exercise (C0), 45 min before the exercise (C45) or 120 min before the exercise (C120)].

\textbf{Results and Discussion}: Immediately before exercise, the serum insulin concentration was significantly higher in the C45 than in the other trials. Blood glucose concentration was significantly lower in the C45 than in the P0 and the C0 during the initial part of the exercise. During the exercise, the C0 showed the highest glucose concentration. During the latter half of the exercise period, the C0 and C120 revealed a significantly lower average rating of perceived exertion (RPE) compared with the P0. There was no difference in RPE between P0 and C45. These findings indicate that carbohydrate gel ingestion immediately before exercise resulted in a maintained higher glucose concentration and lower subjective fatigue, especially during the latter half of the 80-min exercise period. \textbf{Key words}: carbohydrate gel ingestion, prolonged exercise, blood glucose, subjective fatigue

O-13 Mitigating effect of branched-chain amino acid supplemations on the muscle soreness after swimming competition and marathon race

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\textbf{Purpose}: Although a lot of previous studies have approved the effectiveness of branched-chain amino acid (BCAA) supplementation on delayed onset muscle soreness in experimental resistance exercise using squat and dumbbell procedures, it has not been established in the scene of field. The present study investigated the effect of BCAA supplementation on the muscle soreness after the swimming competition and marathon race in placebo controlled double blind study. \textbf{Methods}: Thirty-two university competitive swimmers and 22 civil marathon runners were randomly assigned to BCAA or placebo that ingested with or without 3.2g BCAA (Aminofeel\textsuperscript{\textregistered}), respectively, three times a day, before the day (Pre), on the events day (Post), after one day (1st day) and after two days (2nd days). The muscle soreness and systemic fatigue were subjectively evaluated using visual analogue scale (VAS) on Pre, Post, 1st day and 2nd days. The VAS was used to measure muscle soreness at seven and six regions in the swimming competition and marathon race, respectively. \textbf{Results}: In the swimming event, the VAS scores of neck, brachial, back, buttocks, loin, femur and systemic fatigue were significantly decreased on the 2nd days under the BCAA supplementation, whereas the mitigating effects on the VAS scores were not observed under the placebo group. In the marathon race, the VAS scores in all examined parts were significantly increased on Post compared to those on Pre, and BCAA supplementation significantly decreased the VAS score of the anterior surfaces of thigh and leg, loin and systemic fatigue increased by marathon by the 2nd day. \textbf{Discussion}: In addition to the experimental resistance exercises, the mitigated effect of BCAA supplementation on the muscle soreness and systemic fatigue after swimming competition and marathon race was also confirmed. \textbf{Key words}: BCAA, DOMS, muscle soreness, resistance exercise