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The Influence of a Carbohydrate/Protein Sports Drink on Soccer Sprint Performance

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Introduction

Numerous factors play a profound role in endurance performance. Athletes require a constant supply of fuel and fluids in order to maintain performance during a given race, game, or training. Substrate availability is crucial in maintaining, or even increasing, intensity. Previous laboratory research indicated that cycling high intensity/intermittent endurance performance was improved when subjects ingested a carbohydrate/protein beverage during exercise. The purpose of this study was to observe the effects of sports drink ingestion on sprint performance in collegiate soccer players during on field testing.

Methods

Fifteen female soccer players, NCAA Division II level, participated in this blinded study using a placebo treatment in a crossover design. All players either received the sports drink (Accelerade, PacificHealth Laboratories, Woodbridge, NJ) that contained 26g of carbohydrates, 6.5 g of protein, sodium (190 mg) and potassium (64 mg) in 12 oz or a placebo that was similar in taste, texture, and electrolytes, but lacked the carbohydrate and protein. Practices consisted of 75 minutes of a brief warm-up, skill development, and high intensity scrimmage. Six-5 oz drinks were ingested over the 75 minute practice. Immediately following practice, players completed 4 sprints through a 308 yard course. Each sprint was separated by a 5 minute recovery period. The course was made of 158 yards of a zigzag sprinting with 150 yards of hard sprinting.

Results

Average sprint times for the Accelerade trial were 92.6, 94.4, 95.0, and 91.5 seconds. Average times for the placebo trial were 92.7, 94.5, 96.1, and 95.5 seconds. Statistical analysis revealed that times for the last sprint were significantly different ($p < 0.05$) between treatments. This difference amounted to 4.2% between treatments. No adverse effects of drinking either beverage were reported.

Conclusions

Results of this study demonstrate that when trained soccer players ingested a carbohydrate/protein beverage during high intensity practice, fatigue was minimized and sprint performance enhanced.