

A Carbohydrate/Protein Energy Gel Improves Swimming Performance in Collegiate Swimmers

Seifert, John G.; McKenzie, Rochelle

Saint Cloud State University, Saint Cloud, MN

In practical settings, most athletes drink about 400 mL/hr during exercise. It is questionable whether they would gain performance benefits from liquid carbohydrate (CHO) feeding with such small volumes. It also has been well established that energy supplementation during exercise improves endurance performance. Yet, little is known about the role of energy supplementation and high intensity exercise performance.

PURPOSE: The purpose of this study was to investigate if ingestion of an energy gel with a 4:1 CHO/Protein ratio will confer performance benefits during high intensity swim training.

METHODS: Twelve NCAA Division II collegiate swimmers participated in this high intensity swim study (6 male, 6 female). Testing protocol was as follows: 15 minute warm up, timed 200y swim, 3 sets of 8 x 100y sprints starting at 2:00 intervals, and then a timed 200y swim. Performance was assessed by timing the 1st, 4th, and 8th 100y interval of each set. Swimmers received either the gel (AccelGel®) +120 mL water or 120 mL flavored water after the first 200y swim and then after each set of 100y sprints (total: 80 g CHO, 20 g protein). Venous blood samples were collected for the measurement of CK before training and 24 hrs post training.

RESULTS: Every timed 100y sprint from the 4th sprint to the 24th sprint was significantly faster for the gel condition compared to PL. Swimmers maintained their times through 21 sprints while ingesting the gel, with the 24th sprint slower than baseline (1.6 +/-1.5 s). Swimmers on PL slowed significantly by the 4th sprint in the first set and continued slowing through the 24th sprint (3.6 +/- 1.8 s). Swimmers also demonstrated less CK change with gel than PL. NSD was observed for the 200y swim time change.

CONCLUSIONS: These results demonstrate that swimmers can improve performance during short duration (about 60 sec), high intensity training when ingesting a carbohydrate/protein gel. Swimming velocity decreased significantly from the 4th to the 24th sprint during PL, but not for the gel. Swimmers on the gel treatment completed the 24th sprint 2 seconds faster than when they were on the placebo. Results indicate that ingesting a carbohydrate/protein gel may be beneficial to maintain swimming intensity and minimizing muscular stress.

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