

University of Chester

MSc Exercise and Nutrition Science

**Effects of HGI and LGI pre-exercise meal on
skill and aerobic performance in
Badminton players**

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Abstract

This study aimed to explore the effects of pre-exercise ingestion of foods with high and low glycemic indices on aerobic performance and skill maintenance in badminton players. Six trained badminton players (age 20.5 ± 4.6 yrs, weight 67.33 ± 7.99 kg) two male and four females participated in two trials in a randomised crossover design. Following an overnight fast subjects ingested a low glycemic index (LGI) (GI: 37) or high glycemic index (HGI) (GI: 65) meal 60 minutes prior to the experimental tests. Participants remained rested during the 60 minute postprandial period before performing a multistage fitness test to exhaustion, an on court simulated badminton performance test at maximal effort and an on court badminton skills test (long serve, clear and drop). No differences were found for $\dot{V}O_2\text{max}$ for LGI (42.59 ± 7.62 ml·kg⁻¹·min⁻¹) and HGI (43.30 ± 6.44 ml·kg⁻¹·min⁻¹) trial for the multistage fitness test ($P = 0.404$), similarly no differences were found in the number of repetitions performed during simulated badminton performance test for LGI (18.19 ± 2.67 reps) and HGI trial (17.47 ± 2.24 reps) ($P = 0.431$). The mean total score combining all tests (long serve, clear and drop) was 101.67 ± 22.29 pts and 89.17 ± 27.46 pts for LGI and HGI respectively ($P = 0.078$). Although these differences were not significant subjects in the LGI trial tended to score more points than those during the HGI trial. These results indicate that pre-exercise ingestion of CHO with differing glycemic indices 60 minutes prior to exercise does not significantly affect aerobic performance or skill in badminton players. However, these results provide some support to the potential beneficial effect of LGI ingestion prior to playing badminton on skill performance.

Key Words: Glycemic Index, pre-exercise meal, skill, aerobic performance

Declaration

"This work is original and has not been submitted previously in support of a degree qualification or other course."

Signed: _____
(Rachel Ormrod)

Date: _____ / _____ / _____

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