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# Effect of Omega-3 Polyunsaturated Fatty Acid Supplementation on Running Economy: A Pilot Investigation

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# EFFECT OF OMEGA-3 POLYUNSATURATED FATTY ACID SUPPLEMENTATION ON RUNNING ECONOMY: A PILOT INVESTIGATION

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Faculty Sponsor: Beau Greer

**PURPOSE:** Research has demonstrated an ergogenic benefit from  $\Omega$ -3 fatty acid supplementation. The present investigation was designed to further investigate the role  $\Omega$ -3 ingestion plays in aerobic performance, specifically running economy (RE). **METHODS:** Twelve subjects (5 M; 7 F) were matched for weekly running mileage and divided into supplement (SUPP) and placebo (PLAC) groups. Subjects ran on a Woodway treadmill at 2.7 meters/second (6.0 miles per hour) for 2 minutes to determine preferred stride frequency. After a 5 minute rest, subjects again ran at 2.7 m/s for 8 minutes while their oxygen utilization ( $VO_2$ ) and energy expenditure (EE) were monitored via indirect calorimetry in order to determine RE. Only the last four minutes of the test were used for data analysis to ensure steady-state conditions were present. Following the RE test for a three week duration, the SUPP group ingested 2.0 grams/day of  $\Omega$ -3 fatty acids while the PLAC group ingested 2.0 grams/day of olive oil. Subjects then returned to the laboratory and performed an identical RE test as previously performed with the same stride frequency. A 2x2 repeated measures ANOVA was used to analyze the data. **RESULTS:** Two subjects ingested less than 90% of the prescribed dosage and therefore were excluded from the analysis. There were no significant ( $p > 0.05$ ) within or between-group differences for  $VO_2$  or EE. **CONCLUSIONS:** This investigation indicates that three weeks of  $\Omega$ -3 fatty acid supplementation has no ergogenic effect as it relates to RE.