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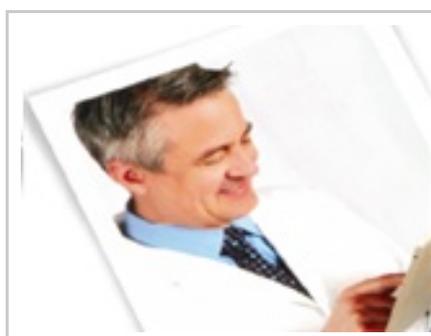
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## Caffeine Ingestion Prior to Incremental Cycling to Exhaustion in Recreational Cyclists

S. Flinn, J. Gregory, L. R. Mc Naughton, S. Tristram, P. Davies

Centre for Physical Education, Tasmanian State Institute of Technology, P. O. Box 1214, Launceston, Tasmania 7250 (Australia)

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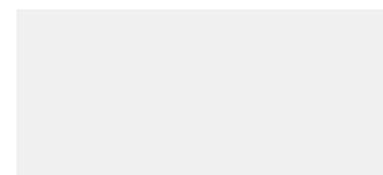
Abstract

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### Abstract

Nine male recreational cyclist served as subjects in this experiment which included a control, placebo and caffeine trial. The aim of the experiment was to determine whether a 10 mg·kg<sup>-1</sup> dose of caffeine



given three hours prior to an incremental cycle ergometer exercise test, for caffeine naive subjects, would increase the time to exhaustion and therefore increase the amount of work undertaken by the cyclists. The cyclists initially worked at 100 watts for three minutes and then increased the workload by 50 watts every three minutes until exhaustion. Blood was drawn at the beginning of the test and every three minutes from an ante-cubital vein and was analysed for blood lactate, glucose and free fatty acids (FFA). Respiratory analysis was also undertaken and heart rate was monitored throughout the test. Subjects in the caffeine trial worked significantly longer and performed more work ( $p < 0.05$ ) than they did in either the control or placebo trials. FFA's were also significantly higher in this trial ( $p < 0.05$ ) and the lactate threshold was moved to the right as a percentage of the  $VO_2$ max, which suggests less acidity and a decreased bicarbonate flushing. The respiratory exchange ratio data was significantly lowered ( $p < 0.05$ ) during workloads between 250 and 450 watts. No changes were seen in blood glucose or heart rates during the experiment. In conclusion, we feel that a  $10 \text{ mg}\cdot\text{kg}^{-1}$  dose of caffeine is an ergogenic aid during incremental exercise when it is taken 3-4 hours prior to the exercise in fasting subjects who have diets low in caffeine.



## Key words

Caffeine - incremental exercise - free fatty acids - lactate - respiratory exchange ratio

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