
Downloaded from: http://insight.cumbria.ac.uk/id/eprint/1224/

Usage of any items from the University of Cumbria’s institutional repository ‘Insight’ must conform to the following fair usage guidelines.

Any item and its associated metadata held in the University of Cumbria’s institutional repository Insight (unless stated otherwise on the metadata record) may be copied, displayed or performed, and stored in line with the JISC fair dealing guidelines (available here) for educational and not-for-profit activities provided that

- the authors, title and full bibliographic details of the item are cited clearly when any part of the work is referred to verbally or in the written form
- a hyperlink/URL to the original Insight record of that item is included in any citations of the work
- the content is not changed in any way
- all files required for usage of the item are kept together with the main item file.

You may not

- sell any part of an item
- refer to any part of an item without citation
- amend any item or contextualise it in a way that will impugn the creator’s reputation
- remove or alter the copyright statement on an item.

The full policy can be found here.

Alternatively contact the University of Cumbria Repository Editor by emailing insight@cumbria.ac.uk.
Acute effects of taurine ingestion on maximal middle-distance running performance

T. G. Balshaw1, T. M. Bampouras1, T. J. Barry1, & S. A. Sparks2

1 School of Sport, University of Cumbria, Lancaster and
2 School of Sport and Physical Activity, Edge Hill University, Ormskirk, UK

Although repeated taurine administration has been shown to benefit endurance performance in trained athletes (Lee et al., 2003: Korean Journal of Nutrition, 36, 711–719), little research exists on its acute effects. The present study aimed to investigate the acute effect of taurine on maximal 3 km performance in well-trained, middle-distance runners.

Eight male competitive middle-distance runners (age: mean 19.9, s = 1.2 years; 800 m personal best times: mean 121.74, s = 5.01 s) participated in a randomised, double blind, crossover study approved by the Institutional Ethics Committee. Taurine (1000 mg) or placebo was ingested 2 h prior to testing. Following a standardized warm-up, a self-paced maximal 3 km time trial on a treadmill was completed. Three kilometre time and 500 m split times were recorded. Capillary blood lactate was measured pre- and post-3 km. EMG activity of the right rectus femoris, biceps femoris and gastrocnemius was recorded at 500 m intervals. Pairwise comparisons were conducted for overall 3 km time. Repeated measures ANOVA examined for differences in 500 m split times, blood lactate and EMG activity, followed by pairwise comparisons where necessary.

No difference (P>0.05) in 3 km time (taurine mean 645.5, s = 52.9 s; placebo mean 653.38, s = 60.75 s) 500 m splits or blood lactate was found between conditions. EMG activity did not significantly increase with taurine (P>0.05) for rectus femoris (taurine collapsed data: mean 227.6, s = 15.7 μV; placebo mean 194.7, s = 11.4 μV) and GC (taurine collapsed data: mean 269.0, s = 13.9 μV; placebo mean 238.9, s = 31.7 μV). However, bicep femoris EMG activity was significantly greater at 500 m (P = 0.011; taurine mean 396.3, s = 163.4 μV; placebo mean 200.5, s = 103.4 μV), 1500 m (P = 0.016; taurine mean 320.8 s = 130.5 μV; placebo mean 177.6, s = 53.9 μV) and 2000 m (P = 0.015; taurine mean 315.0, s = 139.6 μV; placebo mean 166.4, s = 43.2 μV).

The current findings suggest that acute taurine ingestion in well-trained, middle-distance runners does not improve 3 km running performance. Despite the importance of the bicep femoris in running, increased EMG activity with taurine did not affect performance, suggesting unaffected muscle taurine concentration (Galloway et al., 2008: Journal of Applied Physiology, 105, 643–651). Further research is warranted to examine potential effects of different taurine dosages on endurance performance of different duration.