



The effect of acute taurine ingestion on repeat sprint performance

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Many field based sports include bouts of maximal or sub-maximal sprinting with short recovery periods known as repeated sprint ability (RSA). RSA is defined as sprints short in duration (less than 10 seconds) with brief recovery periods (<60 seconds) usually resulting in a substantial decrease in performance⁽¹⁾. It is an important characteristic of performance in numerous intermittent sports such as soccer, rugby, tennis and GAA. Taurine (TA) is a sulfonic amino acid commonly found in energy drinks. The effect of acute TA supplementation has been investigated in endurance performance. One study has investigated acute TA supplementation in team sports players, demonstrating performance improvements across 3 Wingate tests compared with a placebo (PLA)⁽²⁾, however no studies have yet investigated the effect of acute TA supplementation on RSA which is the aim of this study.

A total of 7 young, healthy, recreationally active males and females (5 male, 2 female; age 21.3 ± 1.9 ; body mass, 75.4 ± 10.5 kg) were recruited and undertook 3 RSA trials using a 40 m multiple shuttle test. This incorporated 10 x 40 m sprints with two 180° changes in direction, with 30 s recovery between each sprint. Sprint times (s) were recorded using photoelectric timing gates (WITTY). Each participant completed a familiarisation session⁽³⁾, followed by TA (50 mg/kg body weight) or PLA trials in a randomised, double blind, crossover design with a washout period of 7 days between each trial. Analysis of sprint performance decrement (S_{dec}), fastest time (FT), slowest time (ST) and mean time (MT) of sprint performance were conducted using SPSS to compare across conditions using a paired samples t-test.

RSA measured by S_{dec} did not differ between TA and PLA (TA: $4.4 \pm 2\%$; PLA: $5.7 \pm 2.4\%$; $p = .301$). There was no significant difference observed between TA and PLA trials for FT (TA: 8.68 ± 0.36 s; PLA: 8.53 ± 0.45 s; $p = .423$), ST: (TA: 9.32 ± 0.43 s; PLA: 9.44 ± 0.55 s; $p = .558$) or MT: (TA: 9.06 ± 0.39 s; PLA: 9.02 ± 0.46 s; $p = .731$).

The findings of this study suggest that an oral acute dose of TA offers no performance advantage in short duration high intensity RSA such as the 40 m multiple shuttle test when compared to PLA.

1. Girard O, Mendez-Villanueva A & Bishop D (2011) *Sports Med* **41**, 673–94.
2. Warnock R *et al.* (2017) *IJSPP* **12**, 1341–1347.
3. Glaister M *et al.* (2009) *JSSM* **8**, 77–82.