Journal of the International Society of Sports Nutrition

Poster presentation

The effects of an acute dose of *Rhodiola rosea* on exercise performance and cognitive function

Eric Noreen*, James Buckley and Stephanie Lewis

Address: The Department of Health Sciences, Gettysburg College, Gettysburg, PA 17325, USA

Email: Eric Noreen* - enoreen@gettysburg.edu

* Corresponding author

from 2009 International Society of Sports Nutrition Conference and Expo
New Orleans, LA, USA. 14–15 June 2009

Published: 31 July 2009

Journal of the International Society of Sports Nutrition 2009, **6**(Suppl 1):P14 doi:10.1186/1550-2783-6-S1-P14

This abstract is available from: http://www.jissn.com/content/6/S1/P14

Background

The purpose of this study was to determine the effects of an acute oral dose of 3 mg/kg of *Rhodiola rosea* (*R. rosea*) on endurance exercise performance, mood, and cognitive function.

Methods

A total of 15 recreationally active college women (21.3 ± 0.09 y, 56.1 ± 6.3 kg; mean ± SD) participated in this study. 2–7 d after a familiarization trial subjects ingested in a double blind, random crossover manner, either *R. rosea* or a carbohydrate placebo 1 h prior to testing. Exercise testing consisted of a 10 minute warm-up, standardized to 80% of the average watts produced during the familiarization trial, followed by a 6 mile simulated indoor time trial on a Velotron electronic bicycle ergometer. Every 5 min during the time trial, subjects rated their level of perceived exertion using a BORG 10 pt scale. A blood sample was taken pre warm-up, 2 minutes post warm-up, and 2 minutes following completion of the time trial, and was analyzed for lactate concentration. Subjects also completed a Profile of Mood States (POMS) questionnaire and a Stroop's color test pre-warm up and following the completion of the time trial. Subjects returned to the lab 2–7 d later to repeat the testing with the other condition.

Results

A 3 mg/kg acute does of *R. rosea* resulted in a shorter time to completion of the 6 mile time trial course (*R. rosea* 1544.7 ± 155.2 s, Placebo 1569.5 ± 179.4 s; mean ± SD; p = 0.06) as well as a lower average heart rate during the standardized warm up (*R. rosea* 138.6 ± 13.3 bpm, Placebo 143.7 ± 12.4 bpm; mean ± SD; p = 0.001). There were no significant differences between treatment conditions for rating of perceived exertion during the time trial. Both treatments resulted in a significant increase in the POMS fatigue score following exercise (p = 0.001), as well as a significant improvement following exercise for the Stroop's test of incongruent words (p = 0.001). No other significant differences between treatments were observed.

Conclusion

Acute *Rhodiola rosea* ingestion decreases the heart rate response to sub-maximal exercise, and appears to improve endurance exercise performance.