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# The Effects of an Acute Dose of Rhodiola rosea on Exercise Performance and Cognitive Function

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**Abstract**

**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.

**Keywords**

Sports Science, Rhodiola rosea, Herbal Supplement

**Disciplines**

Other Medicine and Health Sciences | Sports Sciences

**Comments**

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Poster presentation



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

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