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FILE: ■ *Rhodiola rosea*
■ Adaptogens
■ Mental Performance
■ Anti-stress Actions

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RE: Anti-stress Effects of *Rhodiola rosea*

Shevtsov VA, Zholus BI, Shervarly VI, Vol'skij VB, Korovin YP, Khristich MP, Roslyakova NA, Wikman G. A randomized trial of two different doses of a SHR-5 *Rhodiola rosea* extract versus placebo and control of capacity for mental work. *Phytomedicine* 2003; 10:95-105.

Rhodiola (*Rhodiola rosea*) is an adaptogen that is used to reduce fatigue, increase resistance to stress, and improve mental and physical performance. SHR-5 (Swedish Herbal Institute, Sweden) is a standardized extract of rhodiola root that provides 4.5 mg of salidroside in 185 mg of extract. In previous clinical and pharmacological studies, SHR-5 has demonstrated antistress effects. The objectives of this study were to evaluate the antistress and stimulant effects of single dosages of rhodiola and to compare the efficacy of two different doses in healthy young men.

This randomized, double-blind trial was conducted in Moscow, Russia. The subjects were male military cadets ranging in age from 19 to 21 years. All subjects were in excellent physical health and were trained to cope with physical and mental stress. The subjects were randomly assigned to one of four groups: (1) 41 men received 2 capsules of rhodiola, (2) 20 men received 3 capsules of rhodiola, (3) 40 men received 2 placebo capsules, and (4) 20 men received no capsules (untreated control group). Each rhodiola capsule contained 185 mg of SHR-5. All subjects were on a 24-hour work shift. They were given a series of baseline medical exams, self-assessment questionnaires, and mental performance tests beginning at 5 pm. The subjects worked through the night and were given the placebo or rhodiola capsules at 4 am. One hour later, they repeated the series of tests and exams. The outcome measures included comparisons before treatment and after treatment for each test, an antifatigue index (AFI) for each test, and a total AFI combining the mean values for all tests.

No significant differences were found among the groups at baseline. Doctors conducting the medical exams found no impairment in health for subjects in any group following the treatment. Only one adverse event was reported by a subject in the placebo group. Subjects described their general well-being (feeling better, no change, or feeling worse than before the trial) 2 hours after treatment. Subjects in the rhodiola groups reported "feeling worse" no more often than subjects in the placebo or control groups; and, there was a nonsignificant trend toward "feeling better" in subjects in the rhodiola groups. The before and after comparisons of the mental performance tests (measuring speed, accuracy, and short-term memory) revealed that at least one of the rhodiola groups showed either: (1) significant improvement in performance after treatment or (2) no deterioration in performance, whereas the placebo and/or control groups showed deterioration after treatment. The total AFI was significantly different between the placebo group and both rhodiola groups, indicating reduced fatigue and increased performance in the rhodiola groups. There was no significant difference in the total AFI between the placebo group and the control group.

Rhodiola treatment significantly improved the total AFI, which combines a measurement of the amount of work per unit of time and the quality of work, compared to placebo treatment. There was no significant difference between the two rhodiola groups; however, there may have been greater efficacy in the low-dose group. Results of the individual performance tests indicate that rhodiola treatment had a stronger effect on the quality of work than on the quantity of work. This result is compatible with rhodiola's role as an adaptogen.

The authors conclude that single doses of rhodiola significantly improve performance in healthy, trained, young men under conditions of stress and fatigue. In addition, the lack of a statistically significant difference between the two rhodiola groups suggests that the optimum single dose of SHR-5 is close to those used in this study (370 mg or 555 mg).

—Heather S. Oliff, Ph.D.

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