

A Powerful Adaptogen That Boosts Vitality and Performance

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✓ Fact Checked

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STORY AT-A-GLANCE

- › Rhodiola rosea, sometimes called “golden root,” “roseroot” or “arctic root,” is a powerful adaptogen known to enhance vitality by helping your body adapt to physical, chemical and environmental stress
- › Rhodiola rosea extract has been shown to have antidepressant and anti-anxiety effects, and helps improve symptoms associated with burnout
- › The bioactive compounds rosavin and salidroside in rhodiola rosea have been shown to improve passage of serotonin precursors through the blood-brain barrier, and help preserve serotonin, thereby boosting mood
- › Extract of rhodiola rosea not only may also enhance cognitive functions, modulate immune function, enhance cardiovascular, nervous system and reproductive health, but also has antiviral effects and enhances physical performance

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The perennial plant rhodiola rosea, sometimes called "golden root," "roseroot" or "arctic root," is a powerful adaptogen known to enhance vitality by helping your body adapt to physical, chemical and environmental stress. In other words, it helps your body maintain homeostasis. The plant has a long history of use in traditional folk medicine in Russia and Scandinavian countries,¹ and modern science has shown rhodiola:^{2,3,4,5,6}

Has antidepressant and anti-anxiety benefits ⁷ and helps improve symptoms of burnout	Enhances cognitive function, improving mental clarity, thought formation and focus
Helps modulate immune function (raising low immune function and reducing overactive function)	Enhances nervous system health
Enhances cardiovascular health	Improves male and female sexual functioning, reproductive health and fertility
Improves blood sugar control in diabetics when combined with cinnamon	Has anticancer benefits
Helps protect against viral infections ⁸	Enhances athletic performance and shortens recovery time between workouts

Exercise Benefits of Rhodiola

A 2004 study⁹ found extract of rhodiola rosea radix had an anti-inflammatory effect on healthy untrained volunteers, before and after bouts of exhausting exercise. It also protected muscle tissue during exercise. According to the abstract:

"Professional athletes effectively use rhodiola rosea ('golden radix') extract as a safe nonsteroid food additive improving endurance and rapid recovery of muscles during several decades. Rhodiola rosea extract improves muscle work due to mobilization and more economic expenditure of energy resources of muscles.

The use of adaptogens including R. rosea improved physical endurance of male athletes, reducing blood lactate level and accelerating recovery after exhausting

exercise."

Other studies have similarly found that rhodiola can significantly increase time to exhaustion during exercise,¹⁰ reduce C reactive protein levels and improve neuromotoric fitness. For example, a 2003 animal study¹¹ found that rats given 50 milligrams per kilo (mg/kg) of rhodiola rosea extract along with the same amount of rhodiola crenulata root, prolonged the duration of exhaustive swimming the rats were capable of by nearly 25%.

This improvement was found to be due to the extracts' ability to activate the synthesis or resynthesis of ATP in mitochondria. The extracts also stimulated reparative energy processes that take place post-exercise. Rhodiola rosea was determined to be the most effective of the two extracts for improving physical working capacity.

Antiviral Effects of Rhodiola

Rhodiola extract has also been shown to protect athletes from viral infections. In one study,¹² 48 marathon runners randomly received either 600 mg of rhodiola rosea or a placebo for four weeks prior to a race.

Blood samples were collected at three intervals: before the start of the race, and 15 minutes and 1.5 hours after the race ended. Follow-up studies using in vitro assays concluded that rhodiola was able to protect cells against the vesicular stomatitis virus for 12 hours after physical exertion.

David Nieman, director of the Appalachian State University Human Performance Laboratory, discovered that marathon runners are particularly prone to viral illnesses, especially upper respiratory tract illnesses, after competing. Rhodiola, he found, could help with this – in addition to providing athletes with enhanced performance and recovery benefits.

Antidepressant Benefits

It's not yet entirely clear how rhodiola rosea actually works, but some studies have shown it helps slow enzymatic breakdown of neurotransmitters such as serotonin by inhibiting monoamine oxidase.^{13,14} As such, it's classified as an herbal monoamine oxidase inhibitor (MAOI). The bioactive phytochemical risiridin in rhodiola rosea has been shown to inhibit MAO-B by more than 80%. This helps explain some of its antidepressive and cognitive effects.

By boosting the concentration of important neurotransmitters in your brain, your neurons can communicate better. The bioactive compounds rosavin and salidroside in rhodiola rosea have also been shown to improve passage of serotonin precursors through the blood-brain barrier, and help preserve serotonin by dampening the activity of catechol-o-methyltransferase. Evidence suggests rhodiola also can raise serotonin levels significantly.¹⁵

Research published in 2015 compared rhodiola to the antidepressant sertraline, concluding it's a safer choice. While the drug was overall more effective, rhodiola did improve depressive symptoms and had far fewer side effects. According to psychiatrists who use rhodiola in their clinical practice, the plant extract is a "viable choice in many cases for the treatment of mild to moderate depression."¹⁶

According to a study published in the Journal of Alternative and Complementary Medicine, patients diagnosed with generalized anxiety disorder who received 340 mg of rhodiola rosea extract for 10 weeks also reported significant improvements in symptoms, based on the Hamilton anxiety rating scale, the four-dimensional anxiety and depression scale, and the clinical global impressions of severity/improvement scale.¹⁷

A number of other studies have also confirmed rhodiola's mood boosting effects. According to health reporter and "medicine hunter" Chris Kilham, who specializes in discovering natural remedies:¹⁸

"Over 300 human studies¹⁹ on rhodiola rosea show that the plant has anti-stress, anti-anxiety, and anti-depressant properties, and that taking the extract of the root produces no significant negative effects. This is in sharp contrast to

drugs for the same purposes, which typically cause sleep disorders, digestive upset, sexual dysfunction and a variety of mood disorders.

Unlike many other herbs, rhodiola rosea produces a palpable experience. When you take a preparation of this plant, you feel it. Typically, users report enhanced energy, improved mood, greatly reduced stress, better sleep and improved sexual vitality."

Rhodiola Safely Combats Chronic Fatigue

Rhodiola's energy- and vitality-boosting effects can have clear benefits for those struggling with chronic fatigue. A multicenter trial published last year found patients struggling with prolonged fatigue or chronic fatigue syndrome who received 400 mg of dry ethanol rhodiola extract per day for eight weeks experienced significant improvements within the first week.²⁰

Overall, the most significant improvement occurred for the complaint of "general fatigue," but scores for "impairment at work," "impairment in social life," and "impairment in family life" also significantly improved by the end of two months. In all, patients experienced a 42% reduction in total stress and a 39% reduction in fatigue. Eighty-three percent of them reported feeling "very much" or "much" improved by week eight. As reported by the American Botanical Council:²¹

"Nearly all outcome measures significantly improved over time and continued to decline to week eight, and the treatment was safe and well tolerated. Taken together, the authors conclude that the significant improvement in measures not only of core fatigue symptoms but a broad variety of symptoms and consequences of fatigue suggests a good potential for rhodiola to improve quality of life in chronic fatigue."

The mechanism behind these effects is thought to be related to rhodiola's ability to modulate catecholamine release and cAMP levels in your myocardium during stress.²² It also helps reduce the stress hormone cortisol. As noted by Mental Health Daily, "Other

proposed mechanisms include interactions with protein kinases p-JNK, nitric oxide, defense mechanism proteins (e.g., heat shock proteins), and regulation of beta-endorphins and opioid peptides."^{23,24}

Rhodiola Safely Lowers Impact of Daily Stress

Importantly, rhodiola has been shown to be particularly beneficial for your nervous system. Work stress can trigger burnout, and research published in 2000 and 2017 suggest rhodiola can offer significant protection against this kind of stress. As noted in Life Extension Magazine:²⁵

"A number of studies have shown that rhodiola can dramatically reduce mental and physical fatigue under stressful conditions, by increasing the body's energy levels. In one study,²⁶ a low dose (170 mg/day) of a R. rosea extract was given to 56 young physicians on night call, when there is notable decrease in physical and mental performance.

Using measures of cognitive and memory function, such as associative thinking, short-term memory, calculation, and speed of audiovisual perception, the researchers found a statistically significant reduction of stress-induced fatigue after just two weeks of supplementation with rhodiola. No side effects of rhodiola were reported."

In a follow-up study^{27,28} published last year, 118 men and women with symptoms of burnout were given 400 mg of rhodiola rosea extract for 12 weeks. Over the course of the study, levels of emotional exhaustion, fatigue, exhaustion, lack of joy, loss of zest of life and depersonalization symptoms significantly improved.

Improved sexual functioning was also noted. According to the authors, the findings suggest rhodiola rosea extract "might be an important first step toward a continuous alleviation of burnout symptoms, thus inhibiting the exacerbation of the syndrome and preventing the development of subsequent disorders such as depression or physical illness."

Rhodiola for Diabetic Control

While limited to animal research, evidence also suggests rhodiola may be helpful for diabetics when combined with cinnamomi cassia (cinnamon).²⁹ Both of these remedies have been extensively used in folk medicine for the treatment of diabetes.

Here, diabetic rats fed a mix of rhodiola and cinnamon extracts for 12 weeks experienced significant reductions in blood glucose, while reduced glutathione, glutathione reductase, glutathione S-transferase, glutathione peroxidase, catalase and superoxide dismutase were increased.

Based on these effects, the researchers concluded that rhodiola extract may be helpful for "correcting hyperglycemia and preventing diabetic complications."³⁰ As noted by Life Extension Magazine,³¹ "These ... results reaffirm earlier studies and anecdotal evidence demonstrating rhodiola as a comprehensive adaptogen that helps the body withstand the accumulating effects of stress and advancing age."

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