

Rhodiola: A New Weapon Against Fatigue

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There are a number of well-known tonic and adaptogenic herbs. (Adaptogens help the body cope with any form of stress). Chinese or Korean ginseng (*Panax ginseng*) and ashwaganda (*Withania somnifera*), from India, are now commonly used in the Western world to increase endurance and fight fatigue.

There also is the eleutherococcus plant from Siberia (*Eleutherococcus senticosus*, formerly known as Siberian ginseng), which was developed by Russian researchers. But not every herb suits everyone. In my clinical experience, patients who don't respond to one herb might find great benefit from another. In this context, it's good to see the growing popularity of a new herb (at least in the West) in the battle against stress and fatigue. This is the arctic root or rhodiola.

Rhodiola rosea (also known botanically as *Sedum roseum*) is an herb that grows in the Arctic regions, including Alaska, northeastern Siberia and northern parts of Europe. The fresh rootstock smells like roses; hence its name. Of course, this herb is not really new. It has been used by the Russians, among others, for centuries as a tonic and stimulant, and to increase physical endurance and mental capacity. In fact, rhodiola has been listed in the Russian Pharmacopeia for more than 30 years.



There has been a wealth of laboratory and clinical research on rhodiola that has allowed us to identify the important quality markers for this herb. These mainly are the phytochemicals (plant chemicals) salidroside and the rosavins (rosavin, rosin and rosarin). Quality product should be standardized for both these markers. In fact, if the extract of rhodiola is only standardized for salidroside, it might come from the wrong species, since salidroside also occurs in other species. In the 1980s, Russians found that products manufactured with rhodiola root that did not contain rosavins were therapeutically inferior.¹

Clinical Studies

There are many laboratory studies on rhodiola that have shown it has adaptogenic and tonic activity; improves memory, motor function and heart function; and enhances the anticancer effects of chemotherapy. But of greater interest are the clinical trials, many of which were conducted in Russia.

Standardized rhodiola extract produced significant improvement ($p < 0.01$) in physical fitness, mental fatigue and performance tests (maze test, measuring accuracy versus speed) compared to placebo in students during exams in a pilot trial of randomized, double-blind design. General well-being (self-assessed) also was significantly better in the rhodiola group ($p < 0.05$). The average

exam marks at the end of the study were higher in the rhodiola group.²

A significant antifatigue effect, measured as improved mental work quantity and quality, was demonstrated after single-dose administration of standardized rhodiola extract in young cadets under stress. In this randomized, double-blind design, two doses of rhodiola (extract containing 9 mg/day salidroside [standard dose] and the higher dose of 13.5 mg/day salidroside) were tested against a placebo group and an untreated control group.³ Both rhodiola groups demonstrated a significantly higher antifatigue effect compared to the placebo group ($p < 0.001$). There was no significant difference between the two dosage groups, although a trend in favor of the lower dose group was suggested. The untreated controls were not significantly different from the placebo group.

A formula containing standardized extracts of rhodiola, eleutherococcus and schisandra improved physical work capacity in healthy but sedentary men (ages 20-31 years) evaluated over seven days. Their heart function also improved.⁴ In a placebo-controlled trial, this formula also assisted students and engineers in maintaining high mental performance under extreme stress (24 hours of continuous work). It also reduced fatigue, prolonged working time and assisted cosmonauts to endure the reduced atmosphere in their spaceship.⁵

Many earlier clinical studies were published in Russia or Sweden. The following results were found regarding the efficacy of rhodiola:

- Increased physical and mental efficiency.⁶
- Relieved symptoms of weakness due to psychiatric and physical causes, including fatigue, decline in work capacity, sleeplessness, poor appetite, irritability, headache.^{1,4}
- Improved amount and quality of intellectual work, and no loss of work capacity due to fatigue, in healthy students, doctors and scientists with a history of poor endurance and tiredness at work.¹
- Increased physical work capacity, coordination, general well-being and decreased mental fatigue and situational anxiety in a study involving 60 foreign students at a Russian high school.⁴
- Improved symptoms of depression in 64 percent of patients with depression and neurasthenia; improved intellectual workload by the fourth day of treatment.¹
- Improved energy levels, daytime sleepiness and mood in a majority of patients with depression.¹
- Improved sleep in 67 percent of patients with chronic sleep-related problems.¹
- Improved anxiety and mood in patients with depressive disorders who were medicated with tricyclic antidepressants, but intensified symptoms in patients with hysterical-depressive and depressive-phobic symptoms.⁷
- Improved sexual function in men with erectile dysfunction and/or premature ejaculation.⁴
- Facilitated normal menstruation in more than 60 percent of women with amenorrhoea (oral rhodiola or salidroside by injection).⁴
- Reduced frequency of recurrence of superficial cancer of the bladder, improved characteristics of the urothelial tissue integration and improved T-cell immunity in patients who had undergone removal of the primary tumor.⁸
- Accelerated the recovery of patients with acute infections of the mouth (as an adjunctive treatment).⁵
- Did not influence nausea-induced stress hormone release or prevent motion sickness.⁹
- Did not improve blood oxygenation, but demonstrated the potential to decrease oxidative stress in simulated altitude-induced hypoxia.¹⁰

Clinical Summary

Actions: Adaptogen, tonic, anti-tumor, hepatoprotective, hepatotrophorestorative.

Therapeutic indications: Fatigue, mental and/or physical exhaustion; to improve mental performance, concentration and memory, especially when under stress; to enhance physical performance and endurance; may assist sexual function in men; adjunctive treatment of cancer.

Dosage and administration: Typical doses in tablet form are 150-600 mg/day of extract corresponding to 6-12 g of original root, ideally standardized to 2 percent rosavins (6-12 mg/day) and 3 percent salidroside (9-18 mg/day).

The usual adult dosage of a 2:1 liquid extract is 3-6 mL per day. Extracts providing quantified levels of rosavins and salidroside are recommended, ideally containing not less than 3 mg/mL of rosavins and 1 mg/mL of salidroside.

Suggested combinations: Rhodiola combines well with other adaptogens and tonics (in appropriate dosages): Panax ginseng, Eleutherococcus senticosus, Withania somnifera, Astragalus membranaceus, shatavari (*Asparagus racemosus*) and damiana (*Turnera diffusa*). It also would combine well with cat's claw (*Uncaria tomentosa*) and pau d'arco (*Tabebuia avellanedae*) for the adjunct treatment of cancer; and with hepatoprotective and hepatotrophorestorative herbs (*Schisandra chinensis*, St. Mary's thistle [*Silybum marianum*]).

Adverse reactions: Very few side effects have been reported. A small clinical study found an increase in symptoms in a subgroup of depressed patients with hysteric and phobic symptoms.

Contraindications/cautions: As with all strong adaptogenic and tonic herbs, concurrent use with stimulants (such as caffeine) is best avoided.

References

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