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Herbs to Enhance Mental and Physical Performance

Bacopa

Bacopa monnieri aerial parts are used in traditional Ayurvedic medicine as a nervine tonic for the treatment of nervous disorders such as epilepsy, insanity, nervous breakdown and debility.[1,2] Major constituents of Bacopa herb include triterpenoid saponins of the dammarane type. Pharmacological literature and many commercial extracts refer to extracts standardised for bacoside A and bacoside B content, however, the structures of these compounds have not been conclusively established. Bacosides may be calculated as bacoside A using HPTLC and UV methods.[3]

Bacopa has been investigated in a number of clinical studies. No effect was observed on cognitive function after acute administration (single dose of herb) in trials with healthy volunteers.[4,5] In a well-designed trial of 12 week's duration, also with healthy volunteers (aged between 18 and 60 years), Bacopa significantly improved early information processing and improved verbal learning and memory consolidation. The most striking finding was the highly significant reduction in anxiety in volunteers receiving Bacopa. The daily dose of enriched extract provided 165 mg of bacosides.[6] In another trial of similar design and duration a significant effect was demonstrated for retention of new information. No effect was observed for attention, verbal and visual short-term memory, retrieval of pre-experimental knowledge, everyday memory and anxiety level. (The volunteers were aged between 40 and 65 years and received an enriched extract at a daily dose of 165 mg of bacosides for those under 90 kg, and 247.5 mg for those over 90 kg.)[7]

A number of trials have also been conducted in India. Bacopa had a positive effect on concentration, but not on short-term memory, in a small number of human volunteers tested in the mid-1960s.[8] Bacopa (1 g/day, for 3 months) improved intellectual functions such as visual motor function, short-term memory and mental reaction times in children. Unlike those treated with Bacopa, the placebo group did not improve from baseline values.[9] In a more recent, randomised, double-blind, placebo-controlled trial, treatment with Bacopa significantly enhanced the results from a number of memory tests in children with attention deficit hyperactivity disorder (mean age of the Bacopa group was 8.3 years, and for the placebo group 9.3 years).[10]

In uncontrolled trials also conducted in India, Bacopa was beneficial for the treatment of anxiety and epilepsy. Anxiety was significantly reduced and mental performance and memory improved in patients treated with the equivalent of 12 g/day of dried Bacopa for 1 month. Patients also experienced a reduction in mental fatigue, a general feeling of well being, improved sleep and appetite and an increase in body weight.[11] The frequency of fitting was reduced over 2 to 5 months in epilepsy patients treated with a defatted, ethanolic extract of Bacopa (2-4 mg/kg per day). The onset of epileptic fits was completely checked in 5 cases.[12]

Schisandra

Schisandra chinensis fruit is adaptogenic, nervine tonic, mildly antidepressant, hepatoprotective and oxytocic. It has been used in traditional Chinese medicine (TCM) for amnesia and insomnia.[13]

Schisandra increased endurance and physical efficiency in volunteers and decreased sickness in factory workers and children in early, uncontrolled Russian trials.[14] In a placebo-controlled trial, physical work capacity was increased in athletes receiving Schisandra. Increases in heart rate and blood pressure were prevented in flight attendants working on non-stop 7 to 9 hour flights by treatment with Schisandra in a controlled trial.[15]

Uncontrolled trials indicate that Schisandra might increase mental efficiency in humans.[14] Schisandrin (a lignan constituent, 5–10 mg) improved concentration, fine co-ordination and endurance in healthy young male volunteers. Schisandra is reported to improve vision and hearing, enlarge the visual field, improve adaptation to the dark and increase the discrimination of skin receptors.[16]

Siberian Ginseng

Eleutherococcus senticosus root is used in TCM to reinforce *qi*, to invigorate *spleen* and *kidney* function, to calm the nerves and for insomnia. Poor functioning of the *spleen* and *kidney* is marked by general weakness, fatigue and

anorexia.[17] As an adaptogen and tonic it is used in Western herbal medicine for temporary fatigue and general debility.[18]

Acute administration of Siberian Ginseng extract improved short-term memory in healthy volunteers.[19] Siberian Ginseng extract improved maximal work capacity by 23.3% in male athletes compared to a 7.5% increase in the placebo group in a double-blind study.[20] In randomised, double-blind, placebo-controlled trials Siberian Ginseng did not increase work capacity in highly trained distance runners[21] and produced an adverse impact on stress in endurance athletes engaged in training.[22] A 40% reduction in lost work days and a 50% reduction in general illness over a one-year period was observed in a controlled study of 1000 workers in a Siberian factory who received Siberian Ginseng extract for 30 days.[23]

In uncontrolled trials Siberian Ginseng extract has:

- improved the mental and physical performance and stamina of workers;[14,23]
- increased endurance and concentration in athletes;[14,23]
- improved wellbeing in patients with chronic illness;[23]
- minimised the side effects from radiation, chemotherapy and surgery in cancer patients;[14]
- lengthened survival time in patients with terminal disease;[14]
- lowered blood pressure in hypertensive patients and raised it in those with low blood pressure;[23]
- assisted refugees to adapt to their new and harsh environment (the Mongolian desert).[24]

Rosemary Oil

As a stimulant, *Rosmarinus officinalis* leaf has been traditionally indicated for depressive states with general debility[25] and chronic circulatory weakness, particularly in the elderly.[26] Rosemary leaf is also regarded in ancient writings to stimulate the mind, memory and the senses.[27]

In aromatherapy Rosemary oil is regarded as a great tonic for the central nervous system, strengthening mental clarity and improving memory.[28] Inhalation of Rosemary oil by volunteers in a randomised, controlled trial, produced effects suggestive of increased alertness. Anxiety scores were lowered, volunteers felt more relaxed and alert and were faster (but not more accurate) at mathematical calculations.[29]

Synergistic Formulation

These herbs and essential oil would complement each other in a very potent formulation for improving mental and physical performance and counteracting the effects of stress.

Indications

- Improving mental performance, concentration and memory.
- Improving physical performance and endurance.
- Improving the response to stress.
- Anxiety, nervous disorders, mild depression.
- Insomnia, exhaustion and debility.

Contraindications and Cautions

Discontinue use during the acute phase of infectious illnesses. Schisandra is contraindicated in pregnancy, except at birth.

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