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Prime 1

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## RESEARCH ABSTRACTS

### Prime 1 and Adaptogens:

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What follows is a summation of specific actions attributed to adaptogenic plants con Prime 1. These descriptions are taken from in-depth studies. Many of which are ide the following abstracts.

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#### STRESS-PROTECTIVE ACTION

Stress is a phenomenon that manifests itself in our bodies in many different ways. S common symptoms of stress include problems with sleep, depression, anxiety, irrita lethargy. Along with the physical symptoms, the body has a more fundamental biolc responses to stress. At the cellular level, stress effects our ability to properly transfo into energy. Beta-lipa-proteins build up and inhibit the passage of energy through th walls. This reduced energy level not only effects our ability to perform physical func inhibits the proper function of all the body's organs - including the brain. Perhaps th most important property of adaptogenic plants is their proven ability to combat stre: forms. Eleutherococcus, the strongest adaptogenic plants increases the body's resis: variety of stressors. Experiments have conclusively demonstrated that Eleutherococ changes the course of the primary physiological indicators of stress by reducing the of the adrenal cortex. Rhodiola rosea leads to an increase in the amount of basic B- in the blood plasma which inhibits the hormonal changes indicative of stress. Resear following scientists shows that adaptogens, which are an integral part of the Prime formulation, allow the body to more ably cope with stress, whether it is daily, extre or chronic.

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## **IMMUNE SYSTEM**

Studies show that the adaptogenic extracts in the unique formula for Prime 1 rende support to the immune system. For example, in one study of healthy volunteers, a ç enhancement of the activation state of T-lymphocytes was observed after administe Eleutherococcus. T-lymphocytes are also called "killer cells" because they attack and various viruses. Another study revealed that Eleutherococcus extract augments the activity of the peripheral blood leukocytes and favors reduction of pathological flora surface of the skin, indicating an increase in the body's non-specific resistance. The adaptogens, manifested by their ability to induce the formation of endogenic inferfe reveals essential aspects of their control over the immune and non-specific mechani protect the body from viruses. Adaptogens exert a strong immunomodulatory influe healthy test subjects and can be considered non-specific immunostimulants.

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## **PHYSICAL WORK CAPACITY**

Research institutions have discovered that this class of plants is vital for enhancing : capacity for physical workloads. Adaptogens have been widely used in studies with ı professions involving intense physical work strain. They significantly improve body fi by enhancing the body's ability of perform physical tasks and to recover after strenu activity. For example, in tests on 655 healthy men, all of whom were employed as fl personnel. Aralia and Schizandra accelerated recovery processes following tiresome schedules. The subjects' physiological state improved significantly within three hour: to levels even higher than prior to the flight. In one long-range study involving 60,0 conducted over a 10-year period at the Volzhsky Automobile Factory in Tolyatti, Rus absence and disability were reduced by 20-30% after taking Eleutherococcus. A 30- decrease in cases of influenza and a general improvement in health were also notec

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## MENTAL WORK CAPACITY

Along with the research which provided adaptogens' value for improving physical work capacity, research studies involving various tests of mental acuity have demonstrated that adaptogens also have the ability to increase a person's mental work capacity. That is, they increase the amount of mental exercise a person can carry out, as well as, the quality of that exercise. For example, Schizandra chinensis and Rhaponticum carthamoides exerted a strong stimulatory influence among the test subjects who displayed a great improvement in reading comprehension, aptitude and speed. Rhodiola rosea and Aralia manshurica enhance mental ability for memorization and prolonged concentration. In proofreading tests, after taking Rhodiola extract, a decrease in the quantity of mistakes was observed in 88% of the experimental group, while an increase in the quantity of mistakes was observed in 5% of the control group. Eleutherococcus senticosus, the "King" of the adaptogens, has been shown to increase mental capacity by improving reflex action, attention span, and the precision of performed work. Improvement in hearing, eyesight and motor coordination was also an additional benefit noted in these studies.

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## PERFORMANCE, ENDURANCE AND REHABILITATION

Adaptogens provide the basis through which people can build up an energy reserve that is tapped when the body needs it most - under extreme physical tension and during recovery from fatigue. Test subjects administered adaptogenic extracts rapidly displayed improved indicators of energy and endurance, and athletes were able to improve greatly the results of their athletic endeavors. In one study, under exhaustive muscular workloads, it was found that Rhodiola extract increased the activity of proteolytic enzymes and also significantly increased the level of protein and RNA in the skeletal muscles. In another study involving a college basketball team, it was revealed that all four parameters of work capacity (i.e.,  $\dot{V}O_2$  max,  $\dot{V}O_2$  pulse max, total work out, exhaustion time) showed significantly larger increases when Eleutherococcus was administered than when the subjects were given a placebo. In an experiment administering Schizandra in an experiment on 140 athletes, 74% of the test subjects achieved their best results in a 3,000 meter run. Observations were also conducted on weightlifters and gymnasts. Based on the data obtained, it was concluded that Eleutherococcus extract increased physical work capacity, decreased fatigue and improved the general health and physical state of the test subjects. In an experiment on healthy male athletes, Eleutherococcus administration induced a 64% increase in work endurance, while a higher rate of carbohydrate oxidation, reduced blood lactate and consistently lower blood pressure was also recorded. A study of people performing physical labor revealed that when Eleutherococcus, Rhaponticum carthamoides and Rhodiola were administered, all test subjects showed an improvement in their general physical and mental states. There was also an improvement in functional indicators (pulse, arterial pressure, vital capacity, back muscle strength, hand endurance, static tension, coordination of movement) and a reduction in the duration of the recovery period.

period in all test subjects. Through extensive experiments on swimmers, skiers and athletes, scientists around the world have reliably demonstrated the value of adaptogens for increasing stamina and accelerating the recovery processes after physical exertion.

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## **ANTI OXIDANT, ANTI-AGING ACTION**

As a part of their normal function, body cells make toxic molecules called free radicals. A free radical molecule is missing an electron. Because the free-radical molecule "wants" its full complement, it reacts with any molecule from which it can take an electron. When a free radical takes an electron from certain key components in the cell, such as fat, protein, or DNA molecules, it damages the cell in a process known as oxidation. In addition to free radicals that occur naturally in the body, they also occur as the result of environmental influences. These influences may include ultraviolet radiation or air-borne pollutants such as cigarette smoke - both of which contribute to cell oxidation and may accelerate the aging process. Antioxidants or oxidation inhibitors, that occur naturally in the human body and in certain foods may block some of this damage by donating electrons to stabilize and neutralize the harmful effects of the free radicals. Adaptogens also possess an antioxidant action. In biochemical analyses, adaptogens cause a reliable decrease in total cholesterol and lipoproteins, and increase the level of hydrophilic and lipid antioxidants in the blood. In studies by Japanese scientists, it was found that Gomisin N (a component isolated from Schizandra fruit) is a more active antioxidant than dl- $\alpha$  tocopherol (vitamin E).

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## **CARDIOVASCULAR SYSTEM**

Adaptogenic extracts have a favorable influence on the cardiovascular and respiratory systems, providing important support for people carrying out physical work loads. For example, subjects receiving *Aralia mandshurica* and working out heavily experienced a lower demand on their cardiovascular system. In another observation of shift workers in the Siberian gas industry, the favorable influence of *Eleutherococcus* on the dynamics of the cardiovascular system was noted. Protective effects during severe climatic and working conditions were also registered. Adaptogens render a marked cardioprotective effect during painful emotional stress, contributing to a reduction in the adrenergic reactivity of the heart and the degree of structural damage to the myocardium.

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**Notes:**

As illustrated, adaptogens offer an important and completely natural means to achieve improved health in both daily life and under extreme conditions. Moreover, these studies showed adaptogens to be entirely safe for consumption. The most recent work by Brekhman and his colleagues, along with Prime products has provided an important supplement to daily nutrition by combining the most important properties of each into one formula. That formula is Prime 1.