II. THE STORY OF LERA®

A) LERA - BIOLOGICAL ACTIONS AND INGREDIENTS

Lera consists of ten Siberian "adaptogenic" herbs extracted from virgin Eastern Siberian forests and formulated as a liquid elixir to be taken daily. The primary herb is Eleutherococcus Senticosus (Siberian Ginseng).

Eleutherococcus senticosus (Siberian Ginseng) is known as the "King of Adaptogens" and well known for increasing endurance, stamina, and work capacity as well as increasing the ability for mental concentration. The Siberian Ginseng combats and reduces fatigue and exhaustion and heightens the body's resistance to various stressors, such as toxins, radiation, ultraviolet light, etc.

Lera is a special combination of adaptogenic plants that produce increased mental and physical performance and health. The adaptogens also are stress protective and render stimulative, normalizing and antioxidant actions. The blend of herbs was found to be significantly more effective than any of the single herbs taken alone. The formulation of Lera was studied with numerous clinical studies and resulted in published research papers.

Over the years, millions of dollars in Soviet-sponsored research was used for studies to validate the effectiveness of the biological responses and usefulness of Adaptogens.

The studies of Brekhman and associates in humans and animals have demonstrated that the blend of "Adaptogens" has effectively induced the following physiological responses and biological actions:

1. Uplift physical work capacity along with performance and endurance
2. Enhance mental work capacity
3. Heighten the body's nonspecific resistance to various stressors such as toxins, excess cooling, overheating, altered barometric pressure, ultraviolet, ionizing, and cosmic radiation and too much motor activity.
4. Offer beneficial effects in cardiovascular and respiratory system
5. Improve eyesight, color perception, hearing, and vestibular functions.
6. Promote longevity
7. Increase protein biosynthesis
8. Raise antibodies at immunization
9. Elevate the body's enzyme synthesis by means of general endocrine stimulation
10. Quench free radicals so as to prevent oxidizing pathology

The following is a summary of the findings of an independent study conducted by Merrill Research & Associates (MRA), a research company based in San Mateo, California.

In October of 1994, MRA conducted telephone interviews with more than 200 consumers who had used the adaptogens found in Lera for one year or more.

The Independent Researcher's Key Finding:

1. "The effect of Adaptogens on long-term users appears to be extremely beneficial".
2. 97% had noticed a positive change or at least one benefit commonly associated with the adaptogens in Lera.
3. 90% had noticed improvements in at least five areas.
4. 68% reported a positive change in at least 10 areas.

Specific Findings:

- Less tension or anxiety - 88%
- Better able to cope with stress - 87%
- More energy - 87%
- Improved relationship with spouse - 71%
- Improved relationship with children - 68%
- Lost weight - 57%"

A significant number of adaptogen users reported improvements rather than declines in the following areas:

Effects that a person will feel after taking adaptogens:

- Better sleep
- More energy
- Better focus and concentration
- Less compulsive eating
- Sick less often
- Less tension and anxiety
- Better job performance
- Less jet lag
- Better mood
- Better overall attitude
- More positive attitude
- More patience
- More productive
- Better control of temper
- Better organized
- Less procrastination

Ingredients in Lera:

1. Aralia Mandshurica (Manchurian Thorn Tree)
2. Chaga
3. Crataegus Oxycantha
4. Eleutherococcus Senticosus (Acantho Root)
5. Glycyrrhiza Uralensis (Ural Licorice Root)
6. Rhaponticum Carthamoides (Maral Root)
7. Rhodiola Rosea (Golden Root)
8. Schisandra Chinensis (Chinese Magnolia Vine)
9. Sorbus Aucuparia (Mountain Ash)
10. Viburnum

B) ADAPTOGEN HERBS IN LERA

1. ARALIA MANDSHURICA

The Manchurian Aralia is a short, handsome tree found in the Far East taiga, and an extract from its roots was thought to be a general strengthening tonic that promotes increased physical capacity and mental acuity.

These two plants, Rhodiola and Aralia, work in synergy with all the others; they touch all the body systems and softly adapt, coordinate and harmonize them to cope with the internal and external stresses of life.

COMMON NAME(S): Manchurian thorn tree, Chinese angelica tree; Japanese angelica tree
DISTRIBUTION: Grows only in the Soviet Far East: Primorye, Primorye, Southern Khabarovsk region. A close relative, Aralia cordata, is distributed in North Eastern China, Japan, Russia (Kuril Islands).

APPEARANCE: Not a tall tree (up to 6m). The root system is on the surface. The bark is wrinkled, with large thorns. The leaves are large (up to 1m), brought closer together at the end of the sprout, making the tree look like a palm tree. It blooms in the fifth year. The flowers are small, tassels; the fruits are spherical (3-5mm in diameter).

USABLE PARTS: Leaves, stems, roots with rhizomes. The root system is located in the top layers of dirt. It is a strongly extensive rhizome with dependent roots. In well-developed bushes, the total length of the rhizomes with roots reaches

30m. The rhizome is cylindrical elastic, about 2cm in diameter. The leaves are on long (up to 10cm) petioles, palmatipartite; the leaves are elliptic with a wedge-shaped base. The flowers are small, on long peduncles, gathered in spherical, flabby umbels. Usually the fruits are formed only on the upper, large umbel, fruit, 7-10mm in diameter, with 5 pits. It blooms in July-August; the fruits are ripe in September-October.

2. ICONOTUS OBLIQUUS

Chaga is a non-toxic mushroom. Chaga has been researched as an antiviral, anti-tumor for breast and uterine and other cancers, diabetes, immunity/longevity (increasing vital force and strengthen the immune system), as an immune Amphoteric, for reducing the blood pressure, and slowing down heart rate. In Russia, Chaga has been used for centuries for its effects on good health, immunity, metabolism, tumor growth, blood pressure, cholesterol, uterine cancer and gastric cancer. In Asia, its folklore applications are diverse, including building up the immune system, combating viruses and bacteria; detoxifying the liver, kidney and spleen; stimulating the central nervous system; improving skin color and elasticity and a restoring youthful look. Siberian Chaga has many similar functions as Ungzhi.

COMMON NAME(S): Chaga, Siberian Chaga

DISTRIBUTION: Russia, Korea, Eastern and Northern Europe, Northern areas of the United States, in the North Carolina mountains and in Canada.

APPEARANCE: Skin is black, strongly cracked. The core is dark brown with fine yellow veins. Its tissue is dense and solid.

USABLE PARTS:

3. CRATAEGUS OXYCANTHA

It is established that Crataegus oligomeric procyanidins and flavonoids increase myocardial and coronary blood flow and that it is positively inotropic and hypotensive. Hawthorn (*Crataegus* species) has long been regarded as a digestive and cardiotonic in traditional Chinese medicine and European herbal practice.

COMMON NAME(S): Hawthorne

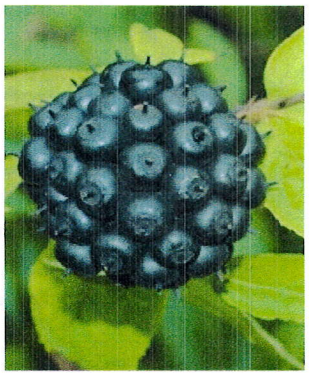
DISTRIBUTION: Europe, North Africa, Western Asia, India, China and North America. Has also been introduced to Australia.

USABLE PARTS: Berries, flowers, leaves.

APPEARANCE: A deciduous Shrub growing to 6 m (19ft) by 6 m (19ft) at a medium rate. It is in flower from May to June, and the seeds ripen from September to November.

USABLE PARTS: Berries, flowers, leaves.

4. ELEUTHEROCOCCUS SENTICOSUS



Dr. Brekhman's early research on Eleutherococcus extract convinced him that he had discovered a kind of portable gold and he named it the "King of Adaptogens". The ingredients of the widely used and ancient nutritional plant, according to the legends of the Far East, were "a tonic to the five viscera, allaying the soul, brightening the eye and opening the heart". Eleutherococcus works with the body to normalize body systems,

reduce stress caused by physical and psychological overload, and increase endurance, stamina and work capacity.

COMMON NAME(S): Siberian Ginseng, Acantho root, Ussurian thorny pepperbush
DISTRIBUTION: In Russia: Primorye, Khabarovsk region, Amurian district. Southern Sakhalin, Korea, Japan, North Eastern China.
CULTIVATED: E. Asia - China, Japan, and Siberia.
APPEARANCE: Bush with many stems, height 2-2.5m. The sprouts are straight with bark of a light-gray color. Thickset, directed with their thorns slantwise downward.
USABLE PARTS: Root, rhizome.

5. GLYZYRRHIZA URALENSIS

The Glycyrrhiza root, an elementary food, is one of the most ancient plants and has been widely used in China, India, Tibet and many other lands and, according to Tibetan lore, it nourishes and contributes to the performance of the six senses." It works with the body to increase circulation, enhance skin tone and protect against stress.

COMMON NAME(S): Chinese licorice, Ural licorice
DISTRIBUTION: Western Russia, North Caucasus, Zakavkazye, Western Siberia, Central Asia, Kazakhstan, Mediterranean, Iran, and Afghanistan.
APPEARANCE: Perennial herbaceous plant with a powerful root system. Horizontal sprouts in length 1-2m, extend from the rhizome, 40-50 cm deep. The leaves are alternate and imparipinnate; the flowers are gathered in a raceme and are light violet in color. It blooms from June-August.
USABLE PARTS: Root with rhizome.

6. RHAPONTICUM CARTHAMOIDES (Wild)

The first settlers in the Altai Mountains observed that in springtime spotted deer consumed Rhaponticum, also known as Leusea, in great quantities, and in folk literature, it was thought to be a nutrient, which eases "fatigue and weakness". Its biologically active nutrients work with the body to improve circulation and mental acuity.

COMMON NAME(S): Maral Root
DISTRIBUTION: Southern Siberia, Eastern Kazakhstan, Altai Mountain and Western Sinai.
APPEARANCE: Perennial herbaceous plant, height 50-100 cm. Rhizome is horizontal, brownish color, with many branches and hard roots. The leaves are alternate and large. The flowers are gathered in solitary apical heads, violet in color.
USABLE PARTS: Rhizome with roots of all kinds and forms that are 3-4 years old.

7. RHODIOLA ROSEA

Known as "Golden Root," Rhodiola Rosea is found in the Altai Mountains, among other areas of the world, where it has been known for more than 400 years. According to legend, one who finds the golden root "will be happy, healthy and live for two centuries." It contains a broad spectrum of nutritional elements, which work with the body to increase stamina for prolonged mental activity and enhanced endurance.

COMMON NAME(S): Golden Root, Roseroot, and Aaron's Rod
DISTRIBUTION: All Far East, Altai, Ural, Irkutsk region, Zabaikalye.

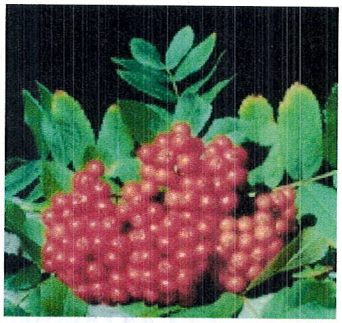
APPEARANCE: Perennial herbaceous plant reaching a height of 50cm. Roots are thick, with a golden outside and pink inside color. It is in flower from May to August, and the seeds ripen from July to August.
USABLE PARTS: Rhizome, leaves, stem, roots.

8. SCHISANDRA CHINENSIS

This ancient plant has been used for centuries throughout the Far East, China, Japan, and Russia and according to the ancient lore was a general tonic in times of fatigue and exhaustion. The complex nutritional makeup of this plant works with the body to increase physical productivity, attention and work capacity and to speed recuperation from fatigue.

COMMON NAME(S): Chinese magnolia vine, Chinese mock barberry, lemonwood
DISTRIBUTION: Primorye, Southern Khabarovsk Region, Amurian District, Southern Sakhalin Island, Northern China, Korea, Northern China, Japan.
APEARANCE: A deciduous climber. Perennial woody liana, with strong branching stems reaching 10-15m in length and 1-2cm thickness. Leaves are alternate and stalked; flowers are unisexual, yellowish in color. It blooms from mid May to the beginning of June. The fruits ripen in August-September.
USABLE PARTS: Seeds, fruit, gum, leaves

9. SORBUS AUCUPARIA



Berries of Sorbus aucuparia are rich in vitamins, thus the main purpose of this raw material as a food ingredient and component of Biologically Active food supplements is as a source of natural Vitamin C.

COMMON NAME (S): Rowan, Mountain Ash
DISTRIBUTION: Native to most of Europe except for the far south, and northern Asia. In the south of its range in the Mediterranean region is confined to high altitudes in mountains.
APPEARANCE: A deciduous tree growing to 15 m (49ft) by 7 m (23ft) at a medium rate. The fruit is apple-shaped and ranges from reddish to brownish-red in color. It is in flower from May to June, and the seeds ripen from August to September.
USABLE PARTS: Fruit, leaves, oil, bark, seeds

10. VIBURNUM OPULUS

Traditionally used as a vitamin agent, tonic, anti-diarrheal, diuretic and antispasmodic.

COMMON NAME(S): Guelder Rose, Cramp bark, Seargent's Viburnum
DISTRIBUTION: Native to Europe and Asia, but also found in the United States.
APPEARANCE: A deciduous shrub growing to 5 m (16ft) by 5 m (16ft) at a medium rate. It is in flower from Jun to July, and the seeds ripen from September to October.
USABLE PARTS: Fruit, berries, bark.

C) THE BREKHMAN STANDARDS OF QUALITY ASSURANCE

As a result of his 45 years of research and experience, Dr. Brekhman defined standards for each plant used in the Brekhman formulas - standards that cover the time of year for harvesting, shipping and storage techniques and extraction techniques, temperature ranges during processing, and technology of the secret blending process of the formula.

Comprehensive Testing - Dr. Brekhman has defined stringent standards for quality and effectiveness. Each plant, after harvesting, must be pristine, unbroken, and free of all contaminants. Tests are run on the raw material as well as on the final blend of extracts, to determine if the complete spectrum of bioactive substances, including a full measure for stress protection, is present in the first stage and maintained and enhanced by the anticipated factor in the second stage.

III. SPECIAL BIOLOGICAL PROPERTIES OF ADAPTOGEN HERBS

A) ARALIA MANDSHURICA (MANCHURIAN THORN TREE)

Aralia stimulates the central nervous system and helps the body rid itself of toxins. In folk medicine, Aralia is used to treat influenza and colds.

1. Increases stamina for prolonged and intense mental activity
2. Increases endurance for static and dynamic workloads
3. Increases physical work output with less use of energy
4. Improves memory and attention span
5. Increases resistance to painful stress
6. Improves hearing acuity

B) CHAGA

For nearly 5,000 years Chaga, a non-toxic mushroom, has been used to treat ailments of digestion and to ward off infections. In the Primorye birch forests, Chaga grows in a fissure of a birch tree's trunk and erupts through the bark as a large black growth. Chaga was used by the ancient Chinese to enhance immunity and is found throughout homes in the Primorye region of Russia to treat many common maladies.

1. Anti-bacterial
2. Anti-allergic
3. Anti-inflammatory
4. Antioxidant

C) CRATAEGUS OXYCANTHA

Hawthorne seems to work in two main ways. For one, it dilates the blood vessels, especially the coronary arteries that nourish the heart muscle. By this action, it may help lower blood pressure and reduce angina. As the arteries dilate, or open wider, pressure throughout the blood vessel system is lowered. Hawthorne berry has been described as the "cardio herb" secondary to the following positive effects exerted on the cardiovascular system:

1. Decreases cholesterol levels
2. Decreases angina (chest pain) by dilating the cardiac blood vessels
3. Prevents congestive heart failure by improving the contractions of the cardiac muscles, very similar to the prescription medication Digitalis.
4. Lowers blood pressure
5. Promotes a regular cardiac rate and rhythm
6. Improves general circulation.

Extract form Hawthorne berries contain a variety of flavonoids and proanthocyanidins that are powerful antioxidants, which exert a beneficial effect on the entire cardiovascular system. The herb is also responsible for a dilating effect on the blood vessels that results in a lower blood pressure and a decrease incidence of angina. Recent clinical studies have shown promise in the use of Hawthorne for the treatment of Congestive Heart Failure (CHF).

D) ELEUTHEROCOCCUS SENTICOSUS (ACANTHOROOT)

Eleutherococcus senticosus is only distantly related to the true ginseng species (*Panax ginseng* and *P. quinquefolius*) and possesses entirely different, unrelated chemical constituents. However, it is popularly called Russian or Siberian ginseng. The origin of this misnomer lies in the work of a Soviet scientist, I.I. Brekhman, who believed that Eleutherococcus has the same properties as ginseng, and popularized it as a less-expensive alternative herb.

1. Increases physical capacity, endurance, and stamina
2. Increases attention span
3. Increases muscle tone and strength
4. Improves vision and sharpness of hearing
5. Sustains energy levels during prolonged work and exercise periods
6. Provides resistance to all levels of stress and strengthen the adrenal gland. Reduces stress caused by physical and psychological overloads, including changes in temperature, altitude, time zone, shift-work and environmental pollution
7. Enhancement of immune system increases activation of T-lymphocytes
8. It is an adaptogenic herb with anabolic characteristics and has many other beneficial biological properties

Siberian ginseng is a powerful tonic herb with an impressive range of health benefits. Unlike many herbs with a medicinal use, it is more useful for maintaining good health than treating ill health. Research has shown that it stimulates resistance to stress, so it is now widely used as a tonic in times of stress and pressure. In an alarming situation, the adrenal glands release corticosteroids and adrenaline that prepare the organism for the fight-or-flight reaction. When these hormones are depleted, the organism reaches an exhaustive phase. Eleutherococcus delays the exhaustive phase, and allows a more economical and efficient release of these hormones.

Siberian Ginseng has immunoprotective effects against breast (mammary gland) carcinoma, stomach carcinoma, oral cavity carcinoma, skin melanoma and ovarian carcinoma. It was found to have a pronounced effect on T-lymphocytes, predominately of the helper/inducer type, but also on cytotoxic and natural killer cells.

E) GLYCYRRHIZA URALENSIS (URAL LICORICE ROOT)

Apart from its flavoring capabilities, licorice has potent endocrine activities. It assists with the management of adrenal insufficiency and inhibits liver cell injury caused by the exposure to so many of the chemicals in our environment.

1. Aids digestive, respiratory, urinary and intestinal systems
2. Provides effective, restorative action on all internal membranes and tissues by a soothing and lubricating function
3. Neutralizes and modifies the taste of the other bitter herbs

F) RHAPONTICUM CARTHAMOIDES (MARAL ROOT)

Found in the Primorye region of Russia, Rhaponticum has been used in tea for hundreds of years. This plant is a natural stimulant and can restore the body to health after illness. Rhaponticum has also been discovered to promote protein production and energize the body.

1. Improves muscular performance, endurance, strength and coordination.
2. Shortens recovery period after physical, mental or sexual fatigue
3. Increases resistance to stress
4. Stimulates primary immune reactions and biosynthesis of proteins
5. Possesses anti-inflammatory properties
6. Has a unique bacterial cell binding activity with specificity for terminal n-acetyl-lactosamine residues

(i) RHAPONTICUM CARTHAMOIDES (MARAL ROOT) - STUDIES ON MENTAL AND PHYSICAL PERFORMANCE IN ATHLETES

Carthamoides extract significantly improves the physical and mental states of patients, enhances body weight. Its anabolic properties caused a normalization of body weight. Moreover, Rhaponticum Carthamoides extract had a positive influence on the metabolic indicators of the cardiac muscle.

Rhaponticum Carthamoides extract has been extensively studied on athletes to better understand its important effect on physical performance. In experiments with 112 athletes, 89% of those receiving Rhaponticum Carthamoides extract show decreased fatigue, less apathy after physical work, and improved performance in sports, such as track and field athletics, swimming, speed skating and ski racing. The speed and strength qualities of the tested athletes were all significantly improved in comparison with the control group, which received a placebo. The study confirmed the effectiveness of Rhaponticum Carthamoides extract on physical rehabilitative processes in that a more rapid normalization of lactic and uric acid occurred in the tested subjects.

After taking Rhaponticum Carthamoides extract, 69% of the subjects displayed accelerated adaptation to climactic and social conditions, 86% displayed an improved appetite, and 73% registered a significant increase in adaptation to intense physical workloads.

Additionally, a comparison experiment was conducted with commonly known anabolic steroids. The Rhaponticum Carthamoides' effect was comparable to that of steroid compounds, yet the former had no negative effects. The androgenic effects of anabolic steroids and their accompanying side effects were not revealed in the Rhaponticum Carthamoides extract.

Based on in-depth study, Russian scientists, researchers and trainers have recommended Rhaponticum Carthamoides in many areas of athletics for improving speed through strength abilities, as well as for enhancing the muscular functions. Since it actively influences the metabolic processes in the organs and tissues, the Rhaponticum Carthamoides extract is effective for preventing and eliminating the myocardial overload associated with physical exercise. This contributes to the rapid recovery process after physical work.

Many laboratory studies have shown the anabolic effects of Rhaponticum Carthamoides, including the capacity to increase body weight by improving the muscle-fat ratio, to increase hemoglobin and erythrocyte levels. This leads to greater fitness, endurance and performance.

One important study was conducted at the National Research Institute of Sports in Moscow, which is the primary organization providing sports research and development support to the Soviet and now Russian Olympic teams. A natural protein sub- stance was used in combination with Rhaponticum Carthamoides extract. The protein preparation was known from previous in-depth studies to favorably influence the muscle-fat ratio as well as work capacity among athletes.

G) RHODIOLA ROSEA (GOLDEN ROOT)

Rhodiola increases the body's resistance to pathogens and stressors. Rhodiola rosea has been used throughout Eastern Europe and Asia for generations as a remedy to improve sleep, prevent altitude sickness and reduced fatigue.

1. Increases work ability
2. Improves physical and mental state
3. Improves quality of sleep and appetite
4. Shortens recovery time after prolonged work loads

5. Increases cardiovascular, respiratory and muscular strength
6. Aids in lowering lipids and triglycerides
7. Possesses anti-stress action

H) SCHISANDRA CHINENSIS (CHINESE MAGNOLIA VINE)

As a regular fixture in Chinese medicine, Schisandra is used as a tonic to adapt to stress and power the nervous system. As the world's most popular herbal tonic, it has been used to treat chronic fatigue, to moisten the skin, and improve memory.

1. Increases physical and mental work capacity
2. Increases physical strength
3. Speeds recovery from fatigue or exhaustion
4. Improves night vision
5. Produces anti-oxidant activities against oxygen free radicals
6. Helps in carbohydrate metabolism under workload
7. Increases resistance to stress

I) SORBUS AUCUPARIA (MOUNTAIN ASH)

Berries of Sorbus aucuparia are rich in vitamins, especially ascorbic acid, thus the main purpose of this raw material as a food ingredient and component of Biologically Active food supplements is as a source of natural Vitamin C. It has been used traditionally as a diuretic and anti-inflammatory.

- Contains high levels of natural antioxidants and carotenoids
- Reduces blood pressure
- Helps to remove cholesterol from the blood

J) VIBURNUM

Viburnum is rich in vitamin C and bioflavonoids. It has proven very effective in detoxifying the body and restoring the liver. In addition, Viburnum has the ability to regulate the metabolism.

1. Used as a vitamin agent, tonic, anti-diarrheal, diuretic, antispasmodic
2. Used as an intensifying reduction of a cardiac mussel, diuretic and sudorific
3. Weak antimicrobial effect
4. Acts as a sedative on the nervous system
5. Possesses spasmolytic properties
6. Introduction in a stomach denaturizes the proteins covering mucosa and form the monolayer file that protects the stomach from irritation, reducing inflammatory reaction
7. A rich source of OPC (Olygomeric proanthocyanidins) with a broad spectrum of biological activity
8. OPC from Viburnum possesses high antioxidant and antiradical activity OPC from Viburnum shows strong antitoxic action
9. OPC from Viburnum protects metabolic processes of carbohydrate and lipid metabolism in conditions of alcohol carbone tetrachloride intoxication
10. OPC from Viburnum shows the ability to regulate the metabolism of ethanol in humans, allowing its use as an agent for preventing alcoholic dependence formation
11. OPC from Viburnum shows strong stress-protective activity

IV. STUDIES AND SAFETY OF THE ADAPTOGENS IN LERA

A) STUDIES

A series of testing has been conducted on the ingredients in Lera. The results of these studies and all of the extensive studies on Lera ingredients confirm the complete safety of the product and its actions.

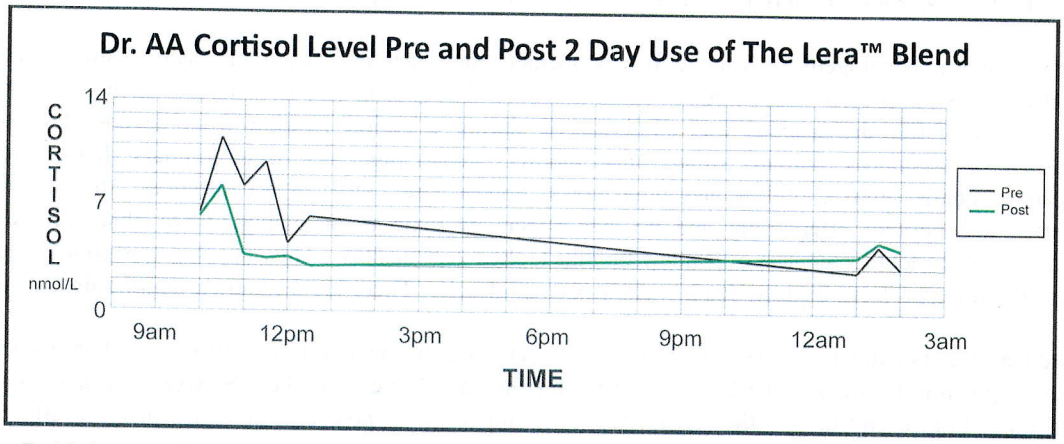
1. DR. BREKHMAN STUDIES - Several studies conducted on the adaptogens in Lera by Dr. Brekhman at the Far East Branch of the Russian Academy of Sciences (Vladivostok, Russia), demonstrate the following results:

Test Name	Date Complete	Results
Toxicity	May 1992	The adaptogen in Lera are non-toxic and can be used as food supplement for various purposes.
Stress-protective	June 16, 1992	The adaptogens in Lera possesses a very high stress-protective action in a dose of 0.2 ml/kg, exceeding by 3-4 times the activity of Eleutherococcus, Rantarin, and Haurantin.
Stimulative	July 17, 1992	The adaptogens in Lera renders an expressed and simulative action. In doses of 0.1, 0.15, and 0.22ml (2% concentrate) per 20g of weight. The adaptogen blend increases work capacity by 18%, 19% and 45% respectively. Its activity is two times higher than the activity of Eleutherococcus extract (root
Anti-toxic	January 1993	The adaptogens in Lera, in a dose of 0.2ml/100g of animal's weight, reliably increases their survival during acute intoxication caused by ethanol, giving evidence to its expressed anti-toxic action.
Anti-narcotic (anti-alcoholic)	January 1993	The adaptogens in Lera shortens the duration of narcotic sleep by 10% in the studied dose (0.2ml per 100g of animal's weight), giving evidence to its mild anti-narcotic action.
Anti-oxidant	February 1993	The adaptogens in Lera possesses high antioxidant activity in a dose of 0.3ml/kg of animal's weight, exceeding the Eleutherococcus root extract and the widely used synthetic antioxidant, eonol. The adaptogen blend significantly decreases the level of lipid peroxide oxidation in the liver under the influence
Immunomodulating	July 5, 1993	Under conditions of stress, the adaptogens in Lera have a stimulating influence on the formation of antibody-forming cells in mice spleen.
Gonadotrophic	June 1993	The adaptogens in Lera possesses an expressed gonadotrophic activity. The adaptogens in Lera effectively contributes to an increase in the mass of seminal bubbles and the prostate gland. These qualities allow for its recommendation as a remedy possessing a soft, correcting action on the sexual maturation in
Hepatoprotective	August 1993	The adaptogens in Lera possesses an expressed hepatoprotective activity (dose 0.2ml/kg and 0.4ml/kg), activating the microsomal monoxygenase system of the liver cells (displayed by a decrease in the duration of hexane sleep), stabilizing the liver cell membranes and protecting them from the damaging influence of exogenous poison and activating the detoxicating function of the liver.
Embryotoxic	August 1993	The adaptogens in Lera increases the mass of the fetus during the first stages of pregnancy. It does not have a negative influence on the development of the implanted embryos (during pregnancy). The adaptogen blend does not possess a toxic action on the embryo.
Stress	August 2009	Pilot stress protective study by NEMA Research Group on Adaptogen Blend. Double blind cross over study showed reduction of cortisol output measured at CAR (cortisol awakening response) by as much as 27% in healthy adults.
Stress	Incomplete	NEMA Research Group currently performing a clinical trial on effects of Lera

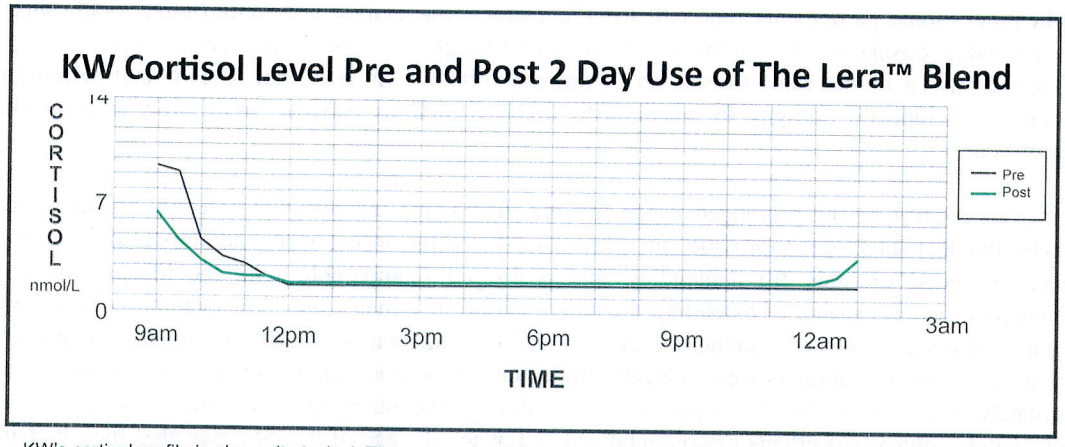
2. LABRIX LABORATORY STUDIES - Studies have been conducted on Lera by Labrix Laboratories, demonstrating the following results:

Cortisol Testing Results Before and After Using the Lera™ Blend

Adrenal cortisol syntheses in the human body follows a diurnal pattern. In most people, cortisol production rises rapidly before awakening and peaks thirty minutes later. This Cortisol Awakening Response (CAR) is under control of the hypothalamus-pituitary-adrenal axis. Cortisol production generally declines throughout the rest of the day. Reaching its low point around midnight. There is a gradual increase in production once again, leading up to the CAR the next day. The scientific literature demonstrates a person's stress level is directly related to their output of cortisol. Below are the test results of two Lera™ users.



Dr. AA shows a typical cortisol profile. The effects of the Lera Blend can be seen after using the product for only two days. By calculating the area under the curve of the Cortisol profile, the Lēra Blend reduced Dr. AA's cortisol production by 27.4% on the test day. This includes the CAR, which is a of measure chronic stress, as well as the response to acute stressors later in the day.



KW's cortisol profile is also quite typical. The area under the cortisol profile after using of the Lera Blend is 17.8% smaller than the profile before the use of the product. In both of the above examples, the physiological effects of the Lera Blend were observed almost immediately.

3. DR. PORTOUGALOV STUDIES - Results of the study on the adaptogens in Lera conducted by Dr. Portougalov at the National Research Institute of Sports (Moscow, Russia):

Thirty qualified middle distance runners (17-26 years old) and 10 recreational runners (45-52 years old), systematically involved in running (no less than two training sessions per week, 8-12 km), participated in the study. A double-blind method was employed in order to rule out the possibility of placebo effect. The adaptogen blend increased work capacity (work performed in the test per 1kg of body weight) in comparison with the control group. The adaptogen blend rendered a stress-protective action. No side effects were found during medical observation of the test subjects, nor in the data from their questionnaires. A significant percentage of the interviewed people noted that the use of the adaptogenic products caused an improvement of subjective indicators such as sleep, desire for training (despite increased workloads) and improvement in their physical and mental state.

B) SAFETY AND PROLONGED USE OF ADAPTOGEN PRODUCTS

How safe are adaptogens? Science has confirmed that they are absolutely safe. Since Eleutherococcus Senticosus is the primary ingredient of Lera, it is advisable to look into its attributes in detail. In various tests, the extract of Eleutherococcus was administered during a period ranging from several days to the entire lifespan of laboratory animals (mice, rats, rabbits, guinea pigs) and from animals (hens, ducks, turkeys, Japanese quails, minks, piglets and pigs, cows, horses, deer, etc). In all instances, the extract invariably exerted a beneficial effect only and no side effects or toxic manifestations were observed. Animals given large doses of Eleutherococcus over many months looked very healthy. Their appetite was good. Eleutherococcus was administered from birth to death without any ill effects. There are no known major side effects.

Eleutherococcus extract (Siberian Ginseng) has been used in the USSR for 30 years. The Soviet Union has been exporting the extract of Eleutherococcus for the past 20 years to the US, West Germany, Japan, Austria, Australia, France and many other countries. It is important to note that no cases of toxic effects have been recorded.

Even mild Eleutherococcus extract poisoning is totally excluded. In numerous cases during wide consumer applications, some participants reported that Eleutherococcus extract self-administered orally well beyond the recommended dosage in the amount of one or even two glasses (1ml of the extract contains the sum total of extractives in 1g of the root) caused no detrimental effects. It is further known that long-term (10 years minimum) therapeutic dosages, for example by diabetes mellitus patients, were likewise not accompanied by side effects.

Numerous studies on the prolonged usage of Lera ingredients indicate that not only are there no detrimental effects, but that adaptogens provide an even more favorable effect when administered over a long period. There are good grounds for contending that prolonged (comparable with the lifespan) administration of Eleutherococcus is capable of extending the active period of a man's life. For example, one study (Brekhman, On the Antitoxic Action of Eleutherococcus, Moscow, 1982) was conducted on mongrel white rats (male), in which half of the test animals were subjected from the age of nine months onwards to various stressors applied alternately every other day for a period of 250 days. The other half was used as controls (no stressing). Immediately after stress effects discontinuations, i.e. when the age of the rats exceeded their half lifetime, each group was divided into two subgroups: the first group consisted of controls, while the second and third groups received Eleutherococcus extract daily in a dose of 0.5ml/100g body weight with drinking water over a period of 320 days.

The Eleutherococcus extract increased the lifetime of rats in terms of both the half survival time and the average longevity. The administration of Eleutherococcus also resulted in improving a variety of physiological and biochemical characteristics of the health of test rats. Similar findings have been reported in studies on humans.

In one study at the Volzhsky Automobile Factory, 13,000-15,000 workers received Eleutherococcus extract over a period of 10 years, resulting in a 30-50% decrease in cases of flu and a 20-30% reduction in lost work

time due to absence or disability. In another study on miners from Vortuka who received Eleutherococcus extract over a period of eight years on a regular basis, the total number of cases of common cold was 23.5% lower than that for the miners of Inta, and there was a decrease in lost work time of 90%. No side effects were reported in either of these trials.

Hence, experimental data and experience gained in the course of prolonged use of Eleutherococcus by human beings point to the absence of toxic action of Eleutherococcus extract, as well as to the safety of the long-term use or overdose of this extract.

(C) TOXICITY STUDIES ON LERA ADAPTOGEN PRODUCTS.

Studies were conducted June 2001, by:

Immune Institute, Inc.
Daryl See, M.D., Director
18800 Delaware Street, Suite 900
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Assay Methods for Toxicity Evaluation

1) Trypan blue toxicity assay for peripheral blood mononuclear cells (PBMC)
2) Trypan blue toxicity assay to murine hepatocytes
3) Natural killer (NK) lymphocyte function by 51CR (chain reaction) release assay
4) Cytochrome p450 activity by competitive inhibition
5) Glutathione assay by spectrophotometry
6) Anti-viral assay by semi-quantitative PCR (polymerase chain reaction) assay to EBV (Epstein-Barr Virus)

Results:

1) The adaptogen blend showed evidence of toxicity to marine hepatocytes only at very high concentrations. However, no toxicity to marine hepatocytes was seen at concentrations up to 10 times the recommended amount to be taken daily.
2) The adaptogen blend showed no toxic effects on cytochrome p450 isoforms (2A and 4A). Cytochrome p450 2A and 4A are involved in the most common drug metabolic pathways.
3) The adaptogen blend exhibited moderate NK (natural killer lymphocyte cell) function increases at physiologic concentrations.
4) The adaptogen blend demonstrated pronounced anti-viral activity against the EBV (Epstein-Barr Virus).
5) Glutathione: a potent inducer of anti-toxicity enzymes; most important intracellular anti-oxidant and immune system modulator. At physiologic doses, The adaptogen blend was a potent inducer of glutathione.

Conclusions:

1) The adaptogen blend was safe in the above in vitro testing studies at up to 10 times expected physiologic concentrations.
2) No interference of The adaptogen blend was noted with cytochrome p450, which is a liver enzyme involved in the metabolism and excretion of organic drugs (xenobiotics).
3) This study provides some assurance that adverse drug interactions may not be seen in vivo.

V. RESEARCH BEHIND THE BENEFITS OF LERA AND ADAPTOGENS

A) THE IMMUNE SYSTEM

Studies show that the adaptogenic extracts included in the unique formula of Lera render vital support to the immune system. For example, in one study of healthy volunteers, a general enhancement of the activation state of T-lymphocytes was observed after administering Eleutherococcus. T-lymphocyte cells are also called "killer cells," because they attack and destroy various viruses. Another study revealed that Eleutherococcus extract augments the phagocytic activity of the peripheral blood leukocytes and favors the reduction of pathological flora on the surface of the skin, indicating an increase in the body's non-specific resistance. The effect of adaptogens, manifested by their ability to induce the formation of endogenic interferon (intracellular development of basic anti-viral proteins), reveals essential aspects of their control over the immune and non-specific mechanisms, which protect the body from viruses. Adaptogens exert a strong immunomodulatory influence in healthy test subjects and can be considered non-specific immunostimulants.

Researchers	Institutes
E. Lodemann Wacker	University of Frankfort on Main, A. Germany
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V. M. Elkin Zakharova Leonov	All-Union Research N.G. Institute of Influenza V.M. Leningrad, Russia
J.N. Fang	Shanghai Institute of Materia Medical Ch. Academy of Sciences Shanghai, China
B. Bohn	Dept. of Skin & Venereology Vinnitsa, Ukraine
V. I. Kupin E.V. Polcvaya A.M. Sorokin	USSR Academy of Medical Sciences Moscow, Russia
M.S. Kim N.G. Lee	College of Pharmacology Seoul National University Seoul, South Korea
H. Wagner A. Proksch	Institute of Pharmacology & Biology University of Munich, Munich, Germany

B) PHYSICAL WORK CAPACITY

Research institutions have discovered that adaptogens are vital for enhancing a person's capacity for physical workloads. Adaptogens have been widely used in studies with workers in professions involving intense physical work strain. They significantly improve bodily functions, by enhancing the body's ability to perform physical tasks and to recover after strenuous physical activity. In tests on 655 healthy men, (all of whom were employed as flight personnel, pilots, navigators, radio operators), Eleutherococcus, Aralia and Schisandra accelerated recovery processes following tiresome flight schedules. The subjects' physiological state improved significantly within three hours of a flight to levels even higher than prior to

the flight.

In one long-range study involving 60,000 people conducted over a 10-year period at the Volzksky Automobile Factory in Tolyatti, Russia, absence and disability were reduced by 20-80% after taking Eleutherococcus. A 30-50% decrease in cases of influenza and a general improvement in health were also noted.

Researchers	Institutes
J. Hancke G. Wikman	Swedish Herbal Institute Goteborg, Sweden
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P.P. Gubchenko N.K. Fruentov	Khabarovsk Medical Institute Khabarovsk, Russia

C) MENTAL WORK CAPACITY

Along with the research, which proved adaptogens' value for improving physical work, 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 both the amount of mental exercise a person can carry out, as well as the quality of that work.

For example, *Schisandra Chinensis* and *Rhaponticum Carthamoides* exerted a strong simulative influence among test subjects who displayed a great improvement in reading comprehension, aptitude and speed.

Rhodiola Rosea and *Aralia Mandshurica* enhance a person's ability for memorization and prolonged concentration. In proof- reading 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 54% 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.

Researchers	Institutes
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M.A. Gerasyuta T.N. Kival	Scientific-Research Institute of Sea Transport Hygiene Leningrad, Russia
A.S. Saratikov E.A. Drasnov	Tomsk Medical Institute Tomsk, Russia

P.P. Gubchenko N.K. Fruentov	Khabarovsk Medical Institute Khabarovsk, Russia
R.Yu. Illuchenok S.R. Chaplygina	Institute of Physiology Novosibirsk, Russia

D) PERFORMANCE, END TABBED ENDURANCE AND REHABILITATION

Adaptogens provide the basis through which people can build up an energy reserve to be 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 greatly improve the results of their athletic endeavors.

In one study, under exhaustive muscle workloads, it was revealed 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 baseball team, it was revealed that all four parameters of work capacity (including VO2 max, 02 pulse max, total work and exhaustion time) showed significantly larger increases when Eleutherococcus was administered than when the subjects were given a placebo. After administering Schisandra in an experiment on 140 athletes, 74% of the test subjects obtained their best results in a 3,000-meter run.

Observations were also conducted on weightlifters, wrestlers and gymnasts. Based on the data obtained, it was concluded that Eleutherococcus extract increased physical work capacity, decreased fatigue and improved the general mental and physical state of the test subjects.

In an experiment on healthy male athletes, adaptogen administration induced a 64% increase in work endurance, while a higher rate of cases with reduced blood lactate and consistently lower blood pressure were 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 under static tension, coordination of movement) and a reduction in the duration of the recovery period in all test subjects.

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

Researchers	**Institutes**
E. Ahumada J. Hermosilla	Laboratorio de Farmacolgia Universidad Austral de Chile Valdivia, Chile
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K. Asano T. Takahashi M. Miayshita	Institute of Health & Sports Sciences Tsukaba University Ibaraki, Japan
M. Kuboyama H. Kuo	Medical Research Laboratories Tokyo, Japan
B.N. Blokhin	Institute of Physical Culture Moscow, Russia
L. McNaughton G. Egan G. Caelli	Tasmanian State Inst. of Technology Center for Physical Education Australia

E) STRESS PROTECTIVE

Stress is a phenomenon that manifests itself in our bodies in many different ways. Some of the more common symptoms of stress include problems with sleep, depression, anxiety, irritability and lethargy. Along with the physical symptoms, the body also has more fundamental, biological responses to stress. At the cellular level, stress affects our ability to properly transform glucose into energy. Beta-lipa-proteins build up and inhibit the passage of energy through the cell walls. This reduced energy level not only affects our ability to perform physical functions, but also inhibits the proper function of all the body's organs, including the brain.

Perhaps the single most important property of adaptogenic plants is their proven ability to combat stress in all forms. Eleutherococcus, the strongest of the adaptogenic plants, increases the body's resistance to a variety of stressors. Experiments have conclusively demonstrated that Eleutherococcus changes the course of the primary physiological indicators of stress by reducing the activation of the adrenal cortex.

Rhodiola Rosea leads to an increase in the amount of basic b-endorphin in the blood plasma, which inhibits the hormonal changes indicative of stress.

Research by the following scientists shows that adaptogens, which are an integral part of the ingredients of Lera, have been shown through product formulation, allow the body to more ably cope with stress, whether it is daily, extreme, acute, or chronic.

Researchers	**Institutes**
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S. Sanada Y. Ida J.Shoji	Dept. of Pharmacology Showa University Tokyo, Japan

F) NORMALIZING EFFECT

The adaptogenic ingredients in Lera have an important normalizing effect on all bodily functions. In studies of an ice- breaker's crew on an extended Arctic voyage after four months of sailing, Rhaponticum extract had a normalizing effect on the central nervous and cardiovascular systems, leading to improved sleep, appetite, mood, general mental and physical state and general enhancement of the functional ability of humans under working conditions.

In experiments simulating the effects of extreme changes in altitude on mountain rescue workers, the normalizing action of adaptogens on metabolic disorders occurring under such conditions was revealed. According to the data, adaptogens also con- tribute to the normalization of protein, vitamin and water-salt metabolism. Extremes in bodily function like high cholesterol, low hemoglobin levels, irregular sugar contents and abnormal blood pressure may be normalized with the support of adaptogens, which activate and regulate normal and efficient blood circulation. At the same time, the use of adaptogens in no way disrupts the function of these bodily systems.

Researchers	**Institutes**
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M.A. Gerasyuta T.N. Koval S.A. Keyzer	Scientific-Research Institute of Sea Transport Hygiene Leningrad, Russia
S. A. Brandis V. N. Pilovitskaya	Mountain Rescue Laboratory Donetsk, Ukraine

G) RESISTANCE TO ENVIRONMENTAL TOXINS, CHEMICALS, RADIATION & INFECTIONS

Adaptogens increase the body's resistance to the harmful influence of various physical factors, such as cooling, over heating, enhanced motor activity, increased or decreased barometric pressure and ultraviolet on ionizing radiation. Adaptogens have also been shown to increase the body's resistance to the harmful influence of both chemical and biological natures (various toxins, narcotics, hormones, foreign serums, bacteria, etc).

Many facts concerning this kind of universal defense action have been obtained for adaptogens. In observations on sailors in the tropics, it was revealed that in 70-75% of the test subjects, Eleutherococcus decreased the manifestation of unfavorable change in the central nervous system, thermoregulation and hemodynamics (changes associated with the process of adaptation to an environment for which the human body is unaccustomed). Eleutherococcus also contributed to an increase in physical and mental work capacity, alleviation of tension in the function of the adrenal glands and improvement in the functional state of the cardiovascular and respiratory systems.

In another study on female vegetable farmers, the body's resistance to harmful environmental factors increased, the general physical and mental state improved, and work productivity increased by 23.5% after taking Eleutherococcus. Eleutherococcus also contributed to better recovery after intense physical work.

Adaptogens also possess an anti-alcoholic action, decreasing the desire for alcohol. In one observation involving 148 people, the favorable anti-alcoholic action of Eleutherococcus was noted in 73% of the test subjects in the experimental group.

Researchers	**Institutes**
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Ehud Ben-Hur	Nuclear Research Center Beer-Sheva, Israel

H) ANTI-OXIDANT, ANTI-AGING ACTION

As a part of their normal function, body cells make toxic molecules called free radicals-each molecule is missing an electron. Because the free-radical molecule "wants" its full electron complement, it reacts with any molecule from which it can take an electron. When the 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 airborne pollutants such as cigarette smoke - both of which contribute to cell oxidation and may accelerate the aging process.

Anti-oxidants, 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 anti-oxidant action. Based on biochemical analysis, adaptogens cause a reliable decrease in total cholesterol and b-lipo-proteins and increase the level of hydrophilic and lipid anti-oxidants in

the blood. In studies by Japanese scientists, it was found that Gomisin N (a component isolated from Schisandra fruit) is a more active anti-oxidant than dl-a tocopherol (Vitamin E).

Researchers	Institutes
S. Toda M. Kimura M. Ohnishi	Laboratory of Chemistry Kansai College of Acupuncture Med. Japan
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S. I. Chemysh	Inst. of Biology of the Leningrad Univ. Leningrad, Russia
O.N. Voskresensky T.A. Devyatkina	Poltava Medical Institute Poltava, Ukraine

I) CARDIOVASCULAR SYSTEM

Adaptogenic extracts have a favorable influence on the cardiovascular and respiratory systems, providing important support for people carrying out physical workloads. For example, athletes receiving Aralia Mandshurica and working out heavily experienced a lower demand on the 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 and its protective effects during severe climactic and working conditions were also registered.

Adaptogens render a marked cardio-protective effect, during painful, emotional stress, contributing to a reduction in the adrenore-activity of the heart and the degree damage to the myocardium.

Researchers	Institutes
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D. I. Dyakov	Khabarovsk Medical Institute Khabarovsk, Russia
A.P. Shornikov S.V. Sokolov	Laboratory of Medical-Biological Problems of the Far North Surgut, Russia

J) EYESIGHT, COLOR PERCEPTION, HEARING AND VESTIBULAR FUNCTIONS

The adaptogenic plants, which compromise the fundamental ingredients of Lera, have been shown through extensive laboratory study and clinical trials to support and improve the function of the sensory organs.

In one study, 111,205 physiological tests were conducted to reveal the influence of Eleutherococcus on members of railroad locomotive brigades. The test subjects experienced improved general physical and mental states, increased endurance, improved headache alleviation and prevention and decreased irritability, which is often associated with this high stress occupation.

In another study on 156 people exposed to industrial noise, after taking Eleutherococcus, all the participants reported a marked improvement in their general physical and mental condition, an increase in productivity, an alleviation or complete elimination of ringing in the ears and an improvement in their general hearing ability.

In yet another study, 65 healthy individuals using Eleutherococcus extract (mainly air, sea, rail and automobile commuters or employees) experienced an alleviation or elimination of discomfort from motion sickness and the general discomforts associated with travel.

Schisandra proves particularly valuable for sharpening the eyesight, while Aralia reliably improves perceptual acuity in skill tests. In wide trials, these natural substances have proven to be extremely valuable for professionals whose occupations bring heavy demand on the eyes, ears and other senses. In every study, the sensory functions have shown significant improvement under the influence of the various adaptogens.

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