



THE NECESSITY FOR MODERNIZATION OF THE ADAPTOGENIC CONCEPT ON THE BASIS OF COMBINING THE APPLICATION OF ADAPTOGENS WITH THE OPTIMIZATION OF THE LIFESTYLE

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The development and implementation of a "healthy lifestyle" system must necessarily include a set of measures aimed at increasing the body's ability to adapt, which ultimately leads to high stress resistance and a low probability of pathology and death of the body. For thousands of years, people have been trying to defeat the disease, but they pay less attention to the problem of adaptation to living conditions. To enhance the adaptogenic effect of various exercises, it is proposed to combine them with the inclusion in the diet of miraculous plant products, called "adaptogens". "Adatogen" is a term that, according to the definition of Nikolai Vasilyevich Lazarev [1, 2], can be applied to plants that exert an action aimed "at increasing the non-specific resistance of the organism, its adaptability and stress resistance."

Doctor and scientific researcher N.V. Lazarev, working on the project, solved the problem of increasing the survival rate of military personnel in extreme conditions, the endurance of athletes, the working capacity and productivity of workers without the use of potentially dangerous psychotropic stimulants that cause a subsequent long depressive phase and harm to health. Initially, the search went in the direction of discovering plants containing miraculous chemical compounds. For example, one of these plants is *Eleutherococcus senticosus*, whose rhizomes contain glycosides (eleutheroside B; syringin; eleutheroside AM; fridilin and isofraxidin). *Rhodiola rosea* ("golden root, *Rhodiola rósea*) is known for its properties of inhibiting the growth and development of cancer cells. In addition, the idea of using effective drugs that could improve cognitive and physical activity of a person was developed during World War II for use by pilots and submarine crews [3-8]. The first publications of the results of a study of the stimulating and tonic properties of an extract from the *Schisandra chinensis* plant appeared in military journals [7, 8]. The results of V. Komarov (1895) naturalistic study of the Far East formed the basis of the three-volume work *The Flora of Manchuria*. A little later, another inquisitive explorer of the Far East, V. Arseniev in 1900-1930 after graduating from Infantry School and serving in the Warsaw Military District conducted 18 expeditions for a detailed study of Primorye, Priamurye, Kamchatka and the Okhotsk coast.

Having made a huge contribution to the development of the historical local history of the Far East, in his works and literary works translated into 36 languages of the World, V.K. Arseniev wrote about the importance of the "magic root of life" for



the life of the population of China, Korea and the Ussuriysk Territory of Russia, i.e. ginseng (*Panax ginseng*). Translated from the Chinese language, "zhen" is a person and "shen" is a body. In addition, it was found that various berries and seeds, which have long been used by Nanai hunters to quench thirst and hunger, prevent exhaustion and improve vision at night [9-12]. In 1950-60, the development of ideas on the use of adaptogenic herbal preparations to increase labor productivity and the ability to survive in extreme stressful conditions continued. The author of the adaptogenic concept, which proves the possibility of using certain chemical compounds of plant origin to "increase the body's nonspecific resistance under stress," is considered toxicologist N.V. Lazarev, who formulated it in 1947 [1, 2]. The adaptogenic concept is based on H. Selye's theory of the "general adaptation syndrome" [13]. In the early 1960s, the study of plants that have an adaptogenic effect became an independent field of biomedical science, and the copyright belongs to the Soviet scientific school. In the late 1960s I.I. Brekhman, N.V. Dardymov and N.K. Frumentov, continuing to develop the ideas of N.V. Lazarev, proclaimed that "adaptogens are safe agents that nonspecifically increase resistance to physically, chemically, biologically and psychologically harmful factors (stressors), providing a normalizing effect regardless of the pathological state" [14]. It is noteworthy that in the Soviet physiological school close attention was paid to the study of adaptation. Over the years, it has been possible to prove that adaptogens, in combination with exercises, make it possible to better adapt to heavy loads during preparation for and participation in the Olympic Games, in the course of the formation of military skills and flight into space, as well as to daily work activities.

The adaptogenic concept developed at the intersection of biomedical research areas. On the one hand, it is pharmacology based on the use of natural preparations, medicinal plants. On the other hand, the newly emerging teaching of G. Selye about the General Adaptation Syndrome or stress. The theory of stress quickly became popular because it provided a fundamental explanation for the body's non-specific reaction to the action of disturbing factors of any nature and that such a reaction can lead to the development of pathology, and even death. This means that a nonspecific stress response lies at the root of any pathology. How to "treat" a non-specific reaction if it is not a disease yet? For this, a system of balanced, coordinated adaptogenic effects on the body is urgently needed, which will prevent the onset of stress-induced morphological and functional disorders and prevent disease.

Conclusions. The use of plants of adaptogenic action is only an element of a whole system. In order for adaptogens to exert their effect, it is first necessary to induce a general adaptation syndrome in the body. An excellent model of the adaptation syndrome is the state of the body under the influence of physical, intellectual and psychoemotional efforts, which are sparing, positively motivated, and not exhausting and forced unmotivated. A modern person most often experiences social and emotional stress, which is difficult to dose, it is almost permanent in nature



and its action is directed to the higher nervous control centers. A typical consequence of the action of such a stressor is the pronounced manifestation of anxiety, frustration, depression and chronic fatigue. This syndrome is difficult to correct and stop. However, emotions are also a powerful adaptogen, but only positive emotions that provide modulation of higher regulatory activating centers, form motivation for action, stimulate the activity of centers of reward and satisfaction, etc.

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