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PHYSICAL ACTIVITY AS THE MOST CRUCIAL ASPECT OF THE BODY'S RESERVE AND ADAPTIVE CAPACITIES

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Abstract: Today, the world faces pressing issues, such as improving physical and functional capabilities through exercise, developing wellness programs for extreme conditions, and researching their theoretical and scientific foundations. Therefore, developing measures to enhance morphofunctional, physical, and functional development in extreme conditions is of great practical importance.

Keywords: public health, young generation, functional reserves of the body, internal reserves, health quality, physical development, disharmony, morphofunctional indicators, interrelationship.

In recent years, researchers around the world have studied the adaptive capabilities of individuals who regularly engage in sports and the level of their functional motor activity in rapidly changing natural and climatic conditions.

In recent years, our republic has paid special attention to developing large-scale programs to The influence of the level of physical activity on the physical development and vegetative indicators of students is studied.athletes, , as well as the implementation of positive results in practice. In this regard, the region of Priaral in our country has achieved certain results in improving the adaptation of student athletes to the impact of adverse environmental factors and their physical development.athletes to the effects of adverse environmental factors and their physical development. The Strategy for Further Development of the Republic of Uzbekistan sets out tasks to "mitigate the negative consequences of global climate change and the Aral Sea catastrophe" [1]. Based on these tasks, The scientific importance lies in the comparative analysis of morphofunctional and physical indicators.The practical significance of a comparative analysis of morphofunctional and physical indicators is important for the scientific development of students at higher educational institutions in the Republic of Karakalpakstan in connection with the influence of the environment. development of students at higher education institutions in the Republic of Karakalpakstan in relation to the influence of the environment.

Currently, one of the most important tasks of normal physiology is preserving and strengthening the health of the population, especially the younger generation, and maintaining high professional results among athletes. Including public health issues among the priority tasks of social development highlights the importance of its theoretical and practical development, the necessity of relevant scientific research, and the development of methodological and organizational approaches to protecting, forming, and developing health. Concurrently, the deterioration of social and environmental conditions in our country strongly impacts the health of the younger generation, serving as an objective indicator of environmental health.

According to existing concepts, all of the body's adaptive reserves that increase human activity can be defined as a functional state. Early researchers who developed general ideas about the functional reserves of the body considered the hidden capabilities of the body to be "vital forces." Well-known scientists who researched the body's

reserves and their role in facilitating interaction between the body and the environment include K. Bernard, V. Cannon, D. Barcroft, and H. Selye.

The concept of "functional reserves of the body" was first introduced in the 1930s by Academician L.A. Orbel. Orbel noted that every human body has hidden capabilities that are activated when exposed to negative factors.

Academician N.A. Agadzhanyan proposed a new term for measuring the body's functional reserves: "health quantity" [2]. He emphasized that the quantitative characteristic of human health is the sum of the reserve capacities of the body's primary functional systems, especially the oxygen transport system. "Quality of health" is defined as the body's ability to adapt to environmental conditions using its functional reserves [9].

The Dictionary of Physiological Terms provides the following definition: "Functional reserves are the degree to which the body's active mechanisms can change the functional activity of physiological systems."

Functional reserves may be associated with changes in the energy metabolism of tissues and organs. The body's functional reserves are formed by incorporating new auxiliary structures into the control and functional systems or by replacing one form of reaction with another. First and foremost, functional reserves are reserves of control mechanisms [8].

The level of physical development depends on the manifestation, correspondence, and interaction of anthropometric characteristics that determine balance and harmony, as well as functional indicators that determine vital bodily functions [6]. Studies have shown that functional changes and health disorders are more prevalent in children with physical development disorders.

An increase in developmental defects has been identified in areas with anthropogenic environmental pollution. From an ontogenetic perspective, age determines the completion period of human biological development and the transformation of morphofunctional indicators into definitive criteria. In such cases, the development of interrelationships between various physiological systems and organs is characteristic.

Therefore, during this period, we can monitor the effectiveness of the hygiene measures implemented in the existing lifestyle at earlier stages of ontogenesis and regulate subsequent efforts to improve the health of the younger generation by making the necessary changes. During the student period, social formation of personality, personal motivation for behavior, and formation and strengthening of attitudes toward healthy lifestyle principles continue.

Physical education and sports are important for promoting health. However, according to experts, physical education for young students still does not meet certain requirements.

In higher education institutions, cyclic sports training, strength competitions, and active games are widespread, as are martial arts such as athletics and judo. Scientific data mainly contains information on the methodology of physical training and the tactical and technical training of student-athletes.

Regarding cardiohemodynamics, one of the vital systems, most of the research has focused on the central parts of the circulatory system. However, very little research has been conducted on the peripheral circulation.

Effective and rational management of physical education and sports training processes is impossible without understanding the changes that occur in the body when developing certain physical qualities.

In literature, human health is often defined by the number of diseases rather than by indicators that characterize the quality of life of an organism. Since most studies did not

evaluate the somatic health of students, it is difficult to objectively assess the situation and effectively manage the health promotion process through physical exercise during higher education. At the same time, there are no data on the comprehensive evaluation of the somatic health of students who participate in various sports.

This problem is particularly important when assessing athletes' functional capabilities in adapting to specific muscle activity. Sports training should aim to increase functional reserves, readiness, and efficiency.

From this point of view, understanding the functional readiness of athletes' constitutions, considered a fundamental, multifaceted quality of the organism, requires ensuring the timely manifestation of all qualities necessary for a particular activity. This is achieved by directly or indirectly determining the level of development of physiological mechanisms and physical activity.

At the same time, the structure of functional readiness and all its components - informational-emotional, regulatory, mental, energetic, and motor - are mandatory for all types of activity. However, the role and importance of these components, control mechanisms, functional characteristics, and their combinations and interrelationships can differ for each type of activity and at different stages of adaptation.

As is well known, the perfection of physiological mechanisms is mainly determined by indicators such as strength, mobility, efficiency, stability, and functionality. At the same time, the functioning of physiological systems reflects a sufficient level of physical activity. This is considered an integrative indicator of an athlete's functional fitness.

Considering that sports activities today are characterized by limited training volume and intensity, growth is limited by the physiological capabilities of the human body.

Concurrently, increasing the efficiency of preparing for specific intensive activity is paramount, as doing so can significantly expand the range of adaptive changes in humans. Systematic physical activity purposefully affects the organism by strengthening changes in functional systems that have an adaptogenic effect and increasing resistance to various influences, as well as physical strength.

It is believed that using specific ergogenic aids can help solve the problem. The efficiency of adaptation can be significantly increased through additional functional loads on the entire organism or its separate physiological systems, including the respiratory system. Currently, the use of ergogenic aids is a necessary element of modern sports training technologies. This is because it strengthens adaptation processes to educational impact factors.

Having said that, significant stresses on the musculoskeletal system and control mechanisms can be prevented.

Thus, many issues related to improving the physiological mechanisms that determine high functional capabilities, especially the peculiarities of how the human organism functions, remain unstudied or outside the scope of researchers.

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