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ADAPTABILITY OF THE YOUNG ATHLETES'S BODY TO DIFFERENT PHYSICAL EXERCISES

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Abstract. *The study was conducted at the Nukus State Pedagogical Institute named after Ajiniyaz. The article presents the results of a study of the processes of adaptation of the organism of young athletes to various physical loads. The relevance of this problem is undeniable, since physical culture and sports are becoming the norm of life and an integral attribute of personal success for many young people and adolescents in our country. It has been established that regular physical activity accelerates the processes of body growth, changes in the functional state of organs and systems in the form of respiration, increases muscle strength and endurance, and increases vitality. However, physical activity that does not correspond to individual characteristics or occurs in adverse environmental conditions can lead to various diseases and injuries.*

Key words: *physical development, physical activity, adaptation.*

It is known that physical activity directly affects the functional state of the human body. During physical exercises, the body needs to adapt to a new state. The definition of adaptation to physical activity is that the body adapts not only to the volume of lifting heavy loads, high or slow speed, but also to changes in functions, biochemical processes and the humoral reactions they cause. In addition, the psychological and emotional appearance of the competition will change. A characteristic feature of flexible functional systems is their flexibility and stability to achieve the same results in different conditions of the external and internal environment [7].

The functions of these systems are implemented with the maximum saving of human resources [7,10]. The relevance of studying the adaptation of the bodies of young athletes to various physical loads is undeniable, because physical education and sports are becoming the norm of life and an indispensable attribute of personal success for many young generations and teenagers of our country.

The purpose of this article is to study the processes of adaptation of young athletes' body to various physical loads and external environment.

Under the influence of properly organized physical exercises in sports, the plastic process in the body increases, which leads to the rapid formation of bone tissue during the growth period of young athletes. This process is more and clearly manifested in childhood.

In addition, moderate physical activity lasting 1.5-2.0 hours can lead to a 3-fold increase in the level of growth hormone in the blood. The higher the self-samotropin level, the stronger the person's growth [11].

MATERIALS AND METHODS

The normal movement of the body is based on a very fine regulatory movement system. On the one hand, both motor and vegetative systems, on the other hand, the vegetative component is related to the activity of cardiorespiratory systems, the basis of which is metabolism. Normal metabolism is carried out under certain conditions, which is called homeostasis and is the process of internal environment constancy and self-regulation. When the athlete's body enters into different conditions from the environment in which it lives, for example, from flat surfaces to high mountains, from a temperate climate zone to a zone of high temperature and humidity, the organism experiences significant difficulties, but due to the plasticity of self-control mechanisms, homeostasis is maintained. the organism adapts to new conditions in order to survive. When a person moves from one standard time zone to another standard time zone, the body's circadian rhythms are disrupted. Also, after some time, biological rhythms adapt the body to new conditions. Adaptation of the body to new environmental conditions in order to maintain homeostasis is called acclimatization. [8].

Depending on the condition of the organism, the speed of changing conditions, the period of acclimatization can be different. Human presence in the high mountain climate: the main feature of the high mountains depends on the rare atmospheric air, more or less oxygen and its partial pressure, and so on. In addition, high mountains have low ambient temperature, low humidity, strong solar radiation and strong winds. When the partial pressure of atmospheric air decreases, its pressure in alveolar air decreases.

As a result of oxygen passing into the blood and binds to hemoglobin, it weakens, so the body develops a state of oxygen starvation, which is called hypoxia. To overcome this situation, compensatory reactions begin to develop based on self-regulation mechanisms.

First, the ventilation of the lungs increases due to the frequency and depth of breathing to eliminate the lack of oxygen in the blood.

Secondly, the mechanism of acclimatization is considered as an increase in the oxygen capacity of the blood; with a decrease in oxygen in the blood, blood is reflexively removed from the depot, especially from the spleen.

Third, as mentioned, the mechanism of acclimatization is considered as an increase in the oxygen capacity of the blood, with a decrease in oxygen in the blood, the heart rate reflexively increases, and therefore, the blood flow rate and the oxygen supply to the body tissues increase. Thus, adaptation to high altitude conditions depends on:

1. An increase in the number of red blood cells
2. Increase the delivery of O2 to tissues.

The increase in blood oxygen volume lasts up to 1.5 - 2 months [1,4].

RESULTS AND DISCUSSIONS

Studying the adaptation of young athletes to physical activity is one of the central problems that form the methodological foundations of sports theory and practice. Understanding the physiological mechanisms and laws of adaptation is the key to solving the practical medical-biological and pedagogical problems of maintaining and strengthening health and increasing working capacity in the process of physical education.

The ability to adapt to changes in the environment (external and internal) is the basis of livelihood, the ability to do this is the most important feature of the human body. Biological adaptation is a dynamic process of oscillation accompanied by the reconstruction of the functional system of homeostasis to a new level of regulation. [6].

The specificity of movement activity has a significant impact on the processes of adaptation to new climatic conditions. In particular, desynchronization has a greater effect on the performance of speed, speed-power and complex coordination exercises, but its effect is much less on endurance exercises. The performance of athletes also varies from month to month, from season to season, that is, it depends on biorhythms with long periods. However, they are understudied, so there are currently no reliable, evidence-based conditions for their use in coaching practice. [9].

The essence of adaptation is closely related to the capabilities of the human body, that is, functional reserves that can be implemented in changing (including extreme) conditions. By understanding the laws of the organization of the functional system, it will be possible to speed up adaptation to physical activity as a result of effective influence on its individual joints with the help of various means and thereby increase the general physical fitness.

The long-term process of physical education and sports training can be successfully carried out taking into account the age and individual characteristics of human development, the level of his training, the specificity of the chosen sport, the characteristics of the development of physical qualities and skills.

The effectiveness of training depends on the direction and volume of physiological and biochemical changes that occur under the influence of physical loads. At the same time, the effectiveness of changes in the body is determined by the main characteristics of physical loads:

- intensity and duration of performed exercises;
- number of repetitions;
- duration and nature of rest intervals between exercises.

Correct distribution of the above-mentioned parameters and physical loads allows for positive changes in the functional state of the body from a physiological point of view, to achieve sufficient training efficiency, to improve metabolism and, ultimately, to increase physical fitness.

The process of adaptation of the body to the effects of physical loads has a phase character. It is common to distinguish two stages of adaptation: rapid and long-term (chronic). [3,6].

According to the concept of Meyerson F.E. (1979), individual adaptation to multiple repeated physical loads goes through several stages, also the functional capabilities of the organism increase. The first stage of "quick adaptation" is characterized by the almost limited tension of compensatory mechanisms to fully mobilize reserve capabilities and ensure muscle movement. The second stage is the period of transition to long-term adaptation and is characterized by the development of muscle coordination of movement and vegetative functions of the body. It appears after 8-15 months of training, depending on the individual characteristics of the organism. The stage of initial sports specialization is characterized by the flow of both the first and second stages of this process. During this period, the body of a young athlete is usually very sensitive to increased oxygen deficiency. As a result of long-term adaptation to physical loads, the synthesis of specific proteins and nucleic acids is activated in the tissues, which leads to an increase in the capabilities of all structures of the musculoskeletal system, as well as an improvement in its energy supply. During long-term adaptation, morpho-functional changes are accompanied by the following processes:

- change in the relations of regulatory mechanisms;
- mobilization of physiological reserves of the organism and their use;
- formation of a special functional system of adaptation to a specific activity. [2,5].

CONCLUSIONS

Understanding the physiological mechanisms and laws of adaptation is the key to solving practical medical-biological and pedagogical problems of maintaining and strengthening health and increasing work efficiency in the process of physical education. The laws of adaptation are based on the coordinated reactions of individual systems and organs, which ensure the optimal functioning of the whole organism as a whole. It is during intense physical work that the activity of the digestive system and excretory systems is inhibited in athletes, as a result of which the body's reserve capacity to strengthen blood circulation and respiratory functions is preserved. Adaptation to physical activity is manifested in the form of changes in the functional state of the human body. Basically, these manifestations are positive, but the amount of load on the body, which does not correspond to its functional systems, on the contrary, can have a negative effect on their functional state, causing various diseases and injuries.

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