

INFLUENCE OF MOTOR ACTIVITY ON THE BODY

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The influence of physical activity on the rate of growth, development and formation of body proportions is assessed by comparing athletes and people who do not engage in sports. However, individuals with different body types and levels of biological maturity are selected for different sports. Unfortunately, most researchers mainly study the development of motor qualities and skills, leaving the morphological characteristics of the body without attention. However, among young athletes, morphological characteristics occupy one of the main places at the stage of in-depth training. Each sport is characterized by its own special combination of morphological characteristics (Bezrukikh, 1982; Blinova et al. 2004).

The morphological characteristics of the organism, as well as the motor qualities associated with them, are largely determined genetically (Morris et al., 1993; Pelliccia, 1996; Silverman, 1997).

In many sports, the highest achievements are observed after puberty ends. However, the beginning of sports activity occurs in childhood and adolescence. A number of authors talk about the need to take into account biological age for a differentiated approach when determining loads, including physical ones. Also, the onset of puberty is accompanied by both increased development of performance indicators of the motor apparatus and the process of energy supply to muscle activity (Szlyk et al., 1981; Wasserman et al., 1986).

According to L.A. Alifanova (2000), the full formation and development of the body's potentials is possible if the optimal volume of physical activity is observed. The author's research shows that physical activity is the most powerful physiological irritant that stimulates normal life activity.

His research confirms the concept of the influence of sports activities as a natural stimulator of growth and harmonious development of the child's body. In this case, physical exercise plays the role of a regulator of puberty processes. The

development of the body's energy supply systems is stimulated, the regulation of autonomic functions is improved and the level of their physical performance is increased.

Optimal physical activity leads to moderate acceleration of physical development. An increase in the volume of loads and sports experience has a stimulating effect on somatometric indicators and muscle strength (Weiner, 1983).

During the pubertal period, there is a significant increase in the functional capabilities of the motor system, which is expressed in an increase in the efficiency of motor regulation processes. Physical performance, identified using a standard load, is higher among young athletes than among schoolchildren who do not go in for sports (Antonyuk, 2000).

Research has established that with age, the physiological “cost” of a load of equal relative power decreases. The reasons for this physiological “cost” lie in the improvement of regulatory mechanisms that facilitate the maintenance of homeostasis under conditions of various disturbing influences (Antropova et al., 2000). The revealed pattern confirms the previously formulated by A.A. Markosyan’s concept of age-related increase in the reliability of biological systems.

The dependence of individual components of physical performance on hereditary and external conditions, including sports, is noted in his studies by N.G. Romanova

The level of general muscle performance is formed in ontogenesis under the influence of endogenous (pubertal processes) and exogenous (organization of physical education) factors. In this case, during puberty, the final type-specificity of the muscle fiber occurs, which is established only after the completion of puberty. The maturation of skeletal muscles is completed after reaching puberty (Arshavsky, 1982).

Particular attention in the field of physical activity is occupied by modern sport, which is currently rapidly growing younger. Children are accepted into such famous, beautiful, spectacular and very popular sports as figure skating, artistic and rhythmic gymnastics as soon as they turn 4 years old. Sports sections are primarily aimed at achieving results and promoting young athletes to the top of the sport. Strict

discipline in sports, sometimes comparable to military discipline, helps develop the athlete's sense of purpose and teamwork (Baranov, 2008).

Long hours of training involve a heavy load beyond one's years. Unfortunately, this causes enormous harm to the child's health. But it is for health reasons that parents send their children to sports clubs. It should be noted that chronic muscle fatigue leads to brain hypoxia, since all the oxygen is directed to the restoration of muscle tissue. As a result, the attention of such children in the educational process at school is noted to be distracted. A significant number of female athletes have developmental delays and even lack periods (Belikova, 2008).

Active stress on the muscles slows down the growth of bones in length. Sports injuries are also a significant complication. Children are poorly aware of the danger and therefore easily undertake complex exercises, and sometimes downright dangerous elements. Irreparable harm is caused by so-called asymmetrical sports: tennis, badminton, hockey, fencing, etc. They affect the musculoskeletal system, forming scoliosis. In sports sections, as a rule, there is no play form of activities, which is the norm for children under 6 years old. However, most coaches believe that the sports section is not a kindergarten or a school, and as a result, they do not adhere to physical education standards. It is very important to consolidate the work of trainers with pediatricians (Bashkirov, 1967; Bezrukikh, 2000).

Thus, the above analysis of literary data confirms the importance of assessing biological maturity and taking it into account when analyzing the morphological and psychophysiological indicators of adolescents, including during physical activity.

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