

## ***DETERMINANTS OF PHYSICAL DEVELOPMENT IN ATHLETES: RISK FACTORS AND CHALLENGES***

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**Abstract.** That is why all-round mature, healthy and mature upbringing of the younger generation is in the ashes of pedagogues, educators, medical staff, parents. Physical development is an important indicator of the health of a growing organism and has two meanings: the first describes the maturation, formation and biological age of the organism, and the second classifies the morpho-functional state at any time.

**Keywords.** organism, physical development, physical health, genetic programs.

At present, the indicators of physical development of children are determined not only by the functional properties of morpho, but also by the level of biological development of the organism. Changes in physical development indicators depend on age, and the younger the child, the higher the rates. Physical development depends on gender and social conditions.

Non-compliance with hygienic requirements in the family and in educational institutions has a negative impact on the physical development of the young organism, as well as on its mental formation. (1)

Comprehensive reforms are being carried out in our country, which is facing the world. There is a process of renewal in society. Preserving the strength of our independent state and introducing it to the world is one of the main tasks facing the next generation.

Independence has opened up new opportunities for the rebirth of our great achievements and good traditions and their inspiration. It is necessary to improve the scientific and methodical basis of training of highly qualified athletes at the current stage of achieving high sports results, increasing competition at major international competitions, steadily increasing training and competitive load, the ever-expanding geography of Uzbek sport. High results should serve as a criterion for the individual

and individual genetic ability of sport as a whole, the level and social structure of society. It is necessary to update the theory and method of training highly qualified athletes, creating and introducing a new system of scientific views on the way of comprehensive improvement of training technologies. Currently, the condition for success in sports is the development and implementation of new technologies that promote the training of highly qualified athletes.

The health of a person depends on the state of the musculoskeletal system, in many respects, such as walking, working, and physical health. Adequate attention should be paid to the musculoskeletal system of the child from birth from the moment of birth. If he sits incorrectly on the desk, engages in strenuous physical activity that is not appropriate for his age, if he wears very wide or narrow shoes and always looks at the ground, there will be a wide change in his stature.

As a result, the thorax narrows, there are not enough conditions for the proper functioning of the limbs, the legs become flat, you get tired quickly when walking, you can not run fast. In girls, scoliosis is a complication of the birth process, which can lead to severe injuries to the mother and child. (2,3)

Environmental conditions, genetic programs and other factors Acceleration of growth and development under the influence of external factors is called acceleration (lat. Acceleratio - acceleration uv), the term was first coined by the German scientist R. Cox entered biology and medicine in 1935. Acceleration affects not only physical growth but also mental development. Usually group and period accelerations differ. The fact that some children of a certain age are superior to their physical and mental peers is an example of group acceleration. Examples of acceleration of growth and development in modern children and adolescents compared to previous generations, the onset of puberty, the accelerated development of sensory and somatic systems. Over the next 30 to 50 years, the body weight of the cubs increased by 500 g and the body length by 2.0 to 2.5 cm. It was noted that in 15-year-old adolescents, body length increased by 6-10 centimeters and body weight by 3-10 kg. Acceleration of the cardiovascular, respiratory and musculoskeletal systems has led to the "rejuvenation"

of sports, ie an increase in the number of young people among athletes. Acceleration of physical performance leads to acceleration of mental development. Spiritual acceleration can also occur due to the widespread use of the media today: radio, television, computers and the Internet, as well as the increase in the volume of information. Similarly, reversal is observed during puberty. For example, compared to the 1900s, the sexual maturation of boys and girls has now accelerated by an average of 2-3 years. In Czechoslovakia, the onset of menstruation in girls in 1914 was 14 years, and by the end of the twentieth century it was 12 years. Changes in the natural and social environment have a major impact on children's acceleration. Acceleration often occurs with changes in social, natural conditions. For example, the alimentary factor, ie the improvement of nutrition, its high concentration and variety in terms of quantity and energy compared to previous lands, is one of the factors accelerating growth and development. Again, heterosis is a relative predominance in the physical development of children born due to the proliferation of marriages between young people of different nationalities, continents and countries as a result of extensive population migration. Due to urbanization, that is, the increase in urban population and the acceleration of the exchange of information in these conditions, the physical and especially mental development of children is accelerated. . In recent years, the improvement of social and socio-hygienic conditions can lead to an acceleration, creating an opportunity to reduce the incidence of diseases. According to some literature, mutations have appeared in Karaganda under the influence of cosmic rays, which can also lead to acceleration. There are also negative aspects to the acceleration itself. For example, over the past 50 years, the increase in the weight of newborns by 1 to 1.5 kg has increased the tendency of children to become obese. Obesity, on the other hand, causes many diseases, most commonly cancer. (7,8)

High school age period: This period lasts from 12 to 15 years. This period is characterized by rapid growth and weight gain. Body proportions are sharply closer to those of an adult. Secondary sexual symptoms appear during puberty (13-14 years for boys, 11-12 years for girls) and increased exposure to gonadal hormones. The functions



of the pituitary and thyroid glands increase, the thymus undergoes re-development (involution). The brain acts as the "head and distributor of all the functions of the body" of the large hemispheres. The balance and mobility of the propulsion and braking processes are improved, and the functions of acceleration and generalization are complicated, especially due to the development of the secondary signaling system. 8. High school or aspirin age. This period lasts from 13 to 18 years in a child, from 15 to 16 to 19 to 20 years in a boy. This period is characterized by an increase in the function of the gonads, the completion of the development of secondary sexual characteristics. The functions of the endocrine glands, especially the pituitary and thyroid glands, are also enhanced. With the exception of the thymus gland, its involution continues. (8.10)

Changes in the hormonal background affect the conditioned reflex activity of aspirin, and the deterioration of signal differentiation is accompanied by widespread irradiation. In boys, "ammunition" movement of the ashes, legs and body is observed. The latent stages of conditioned reflex reactions increase, speech becomes sluggish, responses become stereotyped, and the formation of new connections to sound signals becomes more difficult. All this indicates a decrease in the activity of the second alarm system. Girls of this age are characterized by a decrease in the ability to work, high sensitivity, and vegetative reactions. For some aspirin learners, it is difficult to compose complex sentences, draw logical conclusions, and memorize learning materials. The second phase of puberty (13-15 years for girls and 15-17 years for boys) is a difficult period of development. In a state of mental stability, there can be a sharp transition to depression and vice versa, severe criticism of older people, sadness, frequent crying in girls. Negative effects are often observed. The hormonal remodeling period requires careful and sensible treatment of aspirin. Conflicts between aspirin and parents and teachers are often the result of children's inability to properly assess the characteristics of OAF during this period. The main conditions for overcoming this period without disturbances and setbacks are a healthy routine, calm, benevolent spirit, fun for uspirin, including exercise. At the age of 15-18, the role of the second signaling

system increases again, and memory improves. At this age, the development of OAF is largely complete, and it achieves high functional perfection. (6)

In medical practice, the drawing of M.V. Chernorusky's constitutional varieties is used.

1) The size of the body is proportional, the musculoskeletal system is well developed: it is called the normative norm.

2) The caddy-coma is harmonious, the muscular system is weakly developed, the length of the body relative to the norm and the size of the thorax, which predominates over the size of the abdomen, is called "Mirzaterak" - "Novcha" (asthenic) type.

3) It is better than the normal type, the body is long, the legs are short, the size of the body and abdomen is higher than the size of the chest (hypertension). The following methods of physical development are performed. external examination (somatoscopy), determination of structural activity indicators (anthropometry) are used. (89.93)

Books show that the daily natural demand for movement of swimmers aged 11-15 years is around 21-30 thousand locomotives (movements), and the total amount of work they perform is 110-150 thousand kg. It is desirable that 20-24% of this is due to dynamic activities. This total physical activity is 2-3 times less than the above indicators, and this condition leads to a state of "insensitivity" to the movement of the body, or hypodynamics. These reasons include the use of vehicles to travel less unusual distances, prolonged sitting in the classroom and reading, and the constant use of television. Hypodynamic condition is a factor that negatively affects the normal growth and development of the child's body. In addition to the basic physiological functions mentioned at the time, general immunobiological parameters, such as resistance to various adverse factors, are reduced, and the child's development does not go as usual. (5) organization in every preschool, school, lyceum and college is relevant. Studies show that when a child goes to school, his or her ability to move independently is almost halved. Physical education classes in the fall of the school year have only 11% of the children's daily physical activity needs. The morning physical exercises are combined with physical education pauses in the classroom, movement games between

lessons. 60-70% of the movement is organized. That is why it is necessary to create conditions for children to play and move freely after school. Because when this is done, the younger generation grows, it develops harmoniously in all respects. At the same time, it should be borne in mind that even when motor activity is extremely high (hyperdynamics), there are a number of inconveniences for the child's body. For example, musculoskeletal disorders in the musculoskeletal system, damage to the intervertebral discs (rupture, compression, dislocation), deformation of the joints, functional disorders of the nervous system, changes in the cardiovascular system. Lifestyle hypodynamics and hyperdynamics are also harmful to his body. (3)

Adolescent school children The next period of adolescence (from 11 to 12 to 15 to 17 years) is especially important for educators and teachers. This period is the period of the presence of large endocrine changes in the body of adolescents and the formation of secondary sexual characteristics. The balance of neural processes is disturbed, the excitation processes become superior to the braking processes. Pustlock activity and the activity of the second alarm system are also developing rapidly. Electrophysiological classification of the brain shows that the effect of subcortical structures is much greater and is accompanied by (in turn, disruption of autonomic processes (shortness of breath, hormonal imbalances, heart pain, etc.). As a result, the emotional state of children, especially girls, increases. All functional changes during this period are associated with sexual activity of adolescents. Healthy lifestyle, stable environment - environment, physical education and sports, fun activities outside school, adults is the basis of the physical, mental and spiritual development of adolescents.

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