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# AGE-SPECIFIC CHARACTERISTICS OF PHYSICAL FITNESS OF COLLEGE STUDENTS

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#### **Abstract**

Periodization of age is conditional to a certain extent and allows to establish approximate boundaries between the phases of its growth, because physical education in each age period has its own different aspects. Age-specific features of the organism determine the content and method of physical training in many aspects, where age-related means are selected, permissible loads and demand standards are determined.

**Keywords:** Indicators of physical training, training methods, physical development, maximum flexibility, optimal loads, standing long jump.

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In the period of 15-20 years, the organs of the body are characterized by the progress of development and are characterized by a gradual increase in body weight and dimensions, and the expansion of the body's adaptation capabilities.

The formation of the skeleton stops at the age of 17-18. By this time, the physiological curvature of the spine is formed. At the age of 16-18, the formation of the sole of the foot is completed, so the main attention of the physical education teacher can be focused on the correct height and development of the sole of the foot.

A full stature allows internal organs and the whole body to function optimally.

Growth in women is completed at the age of 20-22, and in men at the age of 23-25. Body growth is accompanied by changes in the structure of the bone system. Excessive physical activity hinders height growth.

With age, the relative contribution of muscles to the total body weight increases. Body weight continues to increase until about age 25. Women's weight, like height, increases less

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than men's. In 15-year-old teenagers, muscle mass is 32.% of body weight, and in 17-18-year-olds it is 44.2%.

By the age of 18-21, the functional development of the central and autonomic nervous systems is mostly completed. Nervous processes are characterized by hyperactivity, where the power of observational processes prevails over inhibitory forces.

At the age of 16-18, there is a rapid growth of the heart. The longitudinal size of the heart increases by 3 times compared to the size of newborn babies at the age of 16-18 years. The volume of the heart cavity is 250 cm <sup>3</sup> at the age of 13-15 years, and 250-300 cm <sup>3</sup> in adults. If in seven years (from 7 to 14 years) its size increases by 30-35%, in four years (from 14 to 18 years) it increases by 60-70%. An increase in the volume of the heart cavity occurs before the manifestation of vascular pathways. The heart often lags behind the increase in the overall size of the body. At the age of 15-20 years, 10-15% of boys and girls have a relatively "small" heart, which, in turn, causes a prolongation of the recovery process after loading.

Heart rate at 16 years of age is 76 beats per minute, and by 20 years of age it is 65-70 beats in boys and 70-75 beats in girls.

Blood circulation speed is one of the main factors in tissue oxygenation. Blood circulation time is 18 seconds for 14-16 year olds, 17-19 seconds for adults.

To strengthen the cardiovascular system, all-round physical training, strict moderation and gradual increase of physical loads are of great importance.

With age change, there are also changes in the respiratory system, where as the body changes, the demand for oxygen increases and the respiratory organs work more strained. In 14-year-old teenagers, the volume of respiration in 1 minute is 110-130 ml per 1 kg of weight (in adults it is only 80-100 ml), because the functional capabilities of the respiratory apparatus have not been sufficiently improved. Lung capacity and maximal lung ventilation are lower than in adults. The volume of ventilation is 45 l., 61 l. at the age of 17-18 years.

The importance of physical education in the development of the respiratory system is incomparable. The teacher should strengthen the attention of the student to the correct formation of the chest and the strengthening of the respiratory muscles. It is necessary to teach students to breathe properly, to help them acquire the skill of breathing with the chest and diagram (with the abdomen). In this case, it is necessary to take into account that the development of the respiratory system occurs together with the development of other systems of the body, different demands are placed on the development of physical qualities at different ages. There are different requirements for the development of one or another physical quality. The development of one or another physical qualities can be considered not only from the point of view of improving movement abilities, but also from the point of view of ensuring the

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process of physical development of the growing organism and increasing functional capabilities.

The degree of development of physical qualities and the degree of adaptation of the body to the given physical loads for speed, strength, and flexibility are related to the age-specific characteristics of the body.

Flexibility and agility can be achieved by the age of 18, and muscle strength can last until the age of 20 and beyond.

A high level of endurance is usually observed at the age of 23-25 years. Endurance training should be strictly moderated at the age of 17-18, especially at the age of 15-16.

At the age of 16-18, a significant increase in muscle mass and improvement of the neuromuscular apparatus become evident, conditions are created for the development of strength. But in training with this age, it is necessary to refrain from exercises with loads exceeding the norm, because the conditions for developing strength occur a little later - at the age of 19-20.

It should be noted that the period of studying in college coincides with the period of sexual maturity. During this period, there is an increase in excitability and instability of the nervous system. The individual characteristics of physical development of students are determined by the results of medical supervision. Physiological capabilities of students of the same age can differ significantly. Therefore, a scientifically based individual approach based on monitoring is necessary in the process of physical education.

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International Multidisciplinary Conference Hosted from Manchester, England 25<sup>th</sup> April 2023

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