

Age Characteristics of 13-14-Year-Old Teenagers and Taking Them into Account in the Training of Biathletes

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Annotation: This article describes the age characteristics of 13-14-year-old teenagers and their consideration in the training of biathletes.

Keywords: Coach, pedagogy, teenager, biathlon, dynamics, sports, elastic, organism.

Pedagogical activity of coaches-teachers is based on knowledge of the age-related anatomical-physiological laws of the development of the body of teenagers, dynamics of changes in mobility, functional capabilities (V.N. Platonov, 2004 [54]; V.G. Nikitushkin, 2009 [50]).

Including training of sports reserve in biathlon should be carried out based on the age characteristics of athletes (A.I. Silkin, 2012 [60]; V.V. Farbey, 2015 [79]).

Adolescent age, i.e. 13-14 years, plays an important role in the formation of the athlete's organism (V.P. Guba, 1997 [23]; L.P. Matveev, 2004) and the stage (stage) of initial sports specialization, the responsibility of training biathletes coincides with the beginning (A.I. Silkin, 2012 [60]; I.G. Gibadullin, 1991 [21]).

The period of 13-16 years of adolescence is considered the period of sexual maturity or puberty, which is spent with the growth and development of the whole organism. During this period, not only the size and weight of the body increases, but also significant qualitative changes are observed in the functioning of individual organs and systems. The development of the organism is uneven, with ups and downs. (M.M. Bezrukikh, V.D. Son'kin, D.A. Farber, 2002 [9]; A.S. Solodkov, E.B. Sologub, 2005 [84]).

13-14-year-old teenagers (boys) are distinguished by their thick body tissue, elasticity of their tendons, which provides a high level of elasticity and mobility in the joints, allows for large-amplitude movements helps to master the complex technical elements that require execution.

Rapidly growing bone tissue does not contain enough potassium mineral salts and phosphorus, as a result of which it becomes elastic and stringy. For this reason, you should not perform exercises with heavy lifting, uneven loads on the right and left legs, and heavy loads on the legs. Otherwise, there may be a risk of flat feet, curvature of the spine, anomalous fusion of the pelvic bones, and overall slowing down of the bone growth process.

But moderate, rational physical exercises with not too heavy loads help to strengthen bone tissue (A.V. Timushkin, 2008 [71]).

At the age of 13-14, the muscular system in the child's body begins to develop rapidly, but this growth still lags behind the development of the bone system. As a consequence of this, a disproportionate appearance of the body structure occurs, and this is manifested in a small body weight (light weight) due to the relatively long limbs and the small size of the skeletal muscles in relation to the tall height. .

Nevertheless, 1/3 of the total body weight is muscle mass. By the age of 13-16, the muscular apparatus reaches a high level of its development (W.B. Strean, 1998; V.K. Bal'sevich, T. Sokha, 2011 [6]; D.V. Popov, N.S. Zagursky, O.L. Vinogradova, 2014 [32]).

Adolescent skeletal muscles differ from those of 20-25-year-old men based on the type of anatomic structure and innervation (innervation is the supply of nerve cells (cells) to the organs and tissues of the body). During puberty, muscle groups develop unevenly, relatively early, and later, small. That is why leg muscle groups grow earlier than arm muscle groups.

Generally, the development of flexor muscles precedes the development of extensor muscles. With this in mind, when giving strength-building exercises, it is important to give special attention to flexor muscles and special effects to extensor muscles.

When choosing exercises, it is very important to regulate (dosing) the load in order to achieve symmetrical development of the body, and to strengthen the muscle corset for the correct formation of the figure.

Low performance in competitions during puberty cannot be a criterion for determining the level of training or the level of talent of an athlete, because it can be a temporary state of decline in biological development.

In the practice of training athletes, there are many examples of the fact that the low results shown in competitions during adolescence not only equaled the results of their peers by the end of puberty, but also surpassed them (V.K. Bal'sevich, T. Sokha, 2011 [6]).

From the age of 12, the cardiorespiratory system develops rapidly, in particular, chest excursion (differences in changes in chest volume during inhalation and exhalation) increases, lung volume indicators increase. At the same time, at the same age, heart size indicators and body anthropometric indicators do not match. The frequency of heart contractions increases due to the volume of the blood stroke, and AB (arterial pressure) increases. At rest, pulse frequency is 78-80 beats per minute, equal to 110/70 mm of AB mercury column. Therefore, during adolescence, age-related temporary functional changes in the activity of the vascular system are observed, often they can be interpreted as a disease. (A. S. Solodkov, E. B. Sologub, 2005 [84]) (Physiology cheloveka. ... 528 p.).

In children and adolescents, the return to the level of resting blood pressure and blood pressure after carrying out the usual standard loads is slower than in adults, but at the same time faster than in their peers who do not do sports. (V.L. Karpman Z.B. Belotserkovsky I.A. Gudkov, 2004; Yu.A. Goncharova, 2008)

At the age of 13-14, the activity of the central nervous system, which forms simple conditional-reflective connections, grows. However, at the same time, the braking process is weak and the differentiation of impulses is insufficient. (M.M. Bezrukikh, M.M. Son'kin V.D. Farber 2002). For this reason, teenagers are distinguished by high intensity of their movements and excessive activity. At the age of 13-14, that is, during the improvement of dynamic stereotypes in the movement analyzer, the actions of adolescents rise to a high level of development. (A.V. Timushkin, 2008 [71]). At this age, the accuracy parameters of movements, visual-motor coordination grow significantly, the formation of movement stereotypes is faster than in adults. This is an optimal period for learning and consolidating new elements of movement techniques in concrete sports (A.S. Solodkov, E.B. Sologub, 2005 [84]) (Fiziologiya cheloveka. ... 528 p.).

Adolescents are prone to inhibition of reactions due to rapid mood swings and high excitability and rapid exhaustion of the central nervous system (V.A. Makarov, 2001 [44]).

The body of 13-14-year-old teenagers easily adapts to speed training. Such exercises improve the differentiation ability of stimuli and can significantly increase the excitation of the centers of the nervous system. Exercises aimed at developing endurance for a relatively long time lead to a decrease in the activity of the nervous system.

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