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## **HEALTH CONSERVATION IN THE PROCESS OF FORMATION OF POSTURE ON ONTOGENESIS OF PUPILS OF 10-12 YEARS**

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**Abstract.** *The article summarizes and systematizes the results of scientific research, which reveals important aspects of the formation and development of posture in the ontogeny of students of general secondary education 10-12 years. The impact of individual development in the process of ontogeny on the health of students in general secondary education for 10-12 years is characterized. Based on the analysis of the obtained data, the necessity to study the biomechanical properties of the spine is actualized in order to form a conscious culture of students' health-saving behavior. The condition of the musculoskeletal system of students of 10-12 years is investigated. It has been stated that the formation of posture should start from the first years of study in general secondary education institutions. It is especially important to create a posture for students of general secondary education 10-12 years.*

**Keywords:** *health preservation, formation, development, posture, ontogeny, students, general secondary education institutions.*

According to WHO, human health by 50-55% is determined by conditions and lifestyle, 25% by environmental conditions, 15-20% by genetic factors and by only 10-15% by health system activity [ 3]. Scientists [1; 2; 7] believe that posture depends on a number of anatomical, physiological factors. Anatomical factors that determine the posture include the shape of the spine, its location relative to the anterior median axis of the body, the severity of physiological bends, the presence of deformities, and the like. Both the function of the spine and its structure and posture depend on the location in the space of the pelvis, the angle of inclination. Important anatomical factors include the spine, belt upper limbs and pelvic. Leading factor in determining posture is the development of muscle. In terms of physiological patterns, posture is a dynamic stereotype. Therefore, the posture of the baby may change despite the relative stability of the anatomical factors. It may improve in the course of special physical training, and may be exacerbated by the violation of the stereotype, such as when changing modes, in connection with entering school, during puberty, and the like. V. V. Hrebennikov [5] emphasizes that human posture is determined by the individual characteristics of the structure of the spine. Researcher

E. A. Zemskyi [7] believes that in the morphological development during the life of 6 to 25 years is the most responsible in forming the correct posture. " Proper posture is the interposition of the skeletal bones, which creates the best conditions for the work of the internal organs, and therefore for the preservation of health . "

The Ministry of Health of Ukraine has determined the conditions for improving the health of Ukrainians. It is the creation of a health- saving environment, the signs of which are: "the optimal combination of methods, forms, means of training and education; research on the impact of educational and methodological training on health; observance of the mode of motor activity, combination of motor and static load; providing an emotionally supportive learning environment " [6].

In the dissertation for the degree of Doctor of Pedagogical Sciences, the national scientist V. P. Horaschuk considers "culture of health as a qualitative characteristic of pedagogical, cultural knowledge and possession of health technologies", researcher V. P. Horaschuk defines "culture of health as a product of management healthy lifestyle. Society and the state should be interested in ensuring that the process of mastering the culture of human health is purposeful and effective "[4].

By definition, I. D. Loveiko [11] "under the pretext of calling the habitual involuntary posture of a person in an orthogonal position, which she takes without undue muscle strain".

***The purpose of the article*** is to theoretically analyze the process of formation of posture in the ontogeny of students of 10-12 years.

***The methodology*** is based on general principles of philosophy, basic modern provisions of pedagogical science, psychology, physical culture, anatomy and reflects the interrelation of methodological approaches to the study of the problem of posture formation in students of general secondary education 10-12 years .

***Scientific novelty*** . The scientific and pedagogical approaches to the problem of posture as a dynamic stereotype, which is formed in individual development in the process of ontogenesis, are revealed . The posture, which is formed and determined by the shape of the spine and its biomechanical properties, is characterized . The condition of the musculoskeletal system, which depends on the posture, is laid down . The article supplemented the methodology and tools for further empirical research on some aspects of health formation in general secondary school students.

**Research results.** Most scientists state that in every age period the posture has its own peculiarities. Due to the varying proportions of the body all ages stable upright position achieved varying degrees of muscular effort and the different relative positions of the body. Posture formation begins from an early age and occurs on the basis of physiological patterns of higher nervous activity, which are characteristic of the formation of conditional motor connections and are in direct dependence on rational motor and hygienic regimens. In this regard, the posture is not an innate feature, but is formed during the individual life (ontogeny).

In educational institutions not only study, but also eat, entertain, rest, play sports. That is, time spent in an educational institution is spent not only on mental activity. According to scientist E. Weiner , "the culture of health is part of the

human culture, which involves the knowledge of a person's genetic, physiological and psychological capabilities, methods and means of control, preservation and development of their health, as well as the ability to transmit health-saving knowledge to others. " Therefore, the culture of human health is a necessary condition for its vital activity and at the same time an important component of professional fitness [9; 14] .

In our study, it is important to note that posture is unstable in middle school age. In the period of increased body growth of students of general secondary education in length is manifested in the simultaneous development of bone, joint-ligament apparatus and the muscular system of the child. Outside the child is unstable, necessary for long-term preservation of static muscle tension physical and mental capacity is not sufficient. Functional lability of the spinal cord, its high mobility are also factors that complicate the formation of posture in middle school age children.

"Normal posture of the student: the head and torso are vertical, shoulders are horizontal, the shoulder blades are pressed to the back, the physiological bends of the spine are moderately pronounced, the line of spinous processes is located in the middle line. The protrusion of the abdomen decreases, but the anterior surface of the abdominal wall is located anterior to the chest wall. The pelvic angle increases, approaching the size of an adult. There is a difference in the angle of inclination of the pelvis in boys and girls ( $28^{\circ} - 31^{\circ}$ ) "[1; 8; 12; 13 ] .

One of the most important points in the formation of the somatic constitution is the timely correction of the child's posture. This is especially important for students aged 10-12. We must state that the disruption of the spine formation is the cause of functional disorders and dystrophic lesions of various organs, pain.

Preventing corrective behavior and correcting them continue to be a pressing issue in medicine, physical education and, of course, pedagogy. The reasons that lead to postural impairment have been well studied [2, p. 68; 5, p. 35; 8, p. 153; 12, p. 287] and "are conditionally divided into two groups: endogenous and exogenous factors. The first group includes birth defects in the development of the spine, the consequences of diseases of rickets, tuberculosis, weakness of the respiratory muscles, disorders of the musculoskeletal system and coordination of movements associated with lesions of the stato- kinetic and visual analyzer, disorders of mineral metabolism, dysfunction of the mineral metabolism [2, p. 67; 15, p. 62].

"Exogenous factors include diverse environmental impact, low levels of locomotor activity (hypokinesia), which cause deformities of the musculoskeletal system, often due to poor physical development and poor health" [10, p. 142].

The nature of the posture is determined by the condition of the spine in interaction with the muscular "corset" and the ligamentous apparatus. "Weak muscles cannot for a long time keep the torso in the correct position, and in their fatigue the body adopts the most lightweight, often incorrect position" [8, p. 144; 13, p. 92]. Such posture is fixed, some conditional reflexes are formed, which fix the wrong posture and in the future are hardly replaced by new temporary connections [2, p. 69].

Domestic and foreign scientists point out that “in the case of postural disorders in the muscular system there are shifts, which are expressed in the asymmetry of the bioelectric activity of the muscles of the extensors of the back, the decrease in muscle tone, the uneven development of anti-gravitational muscles that hold the spine in the correct position” [2, p. 68; 8, p. 174; 15, p. 56]. The relationship of postural and flat feet disorders is revealed [1, p. 338 Hours; 10, p. 124].

To prevent violations of the posture of students of general secondary education 10-12 years it is necessary to apply a set of measures:

- 1) early diagnosis of abnormalities in the posture and arches;
- 2) active formation of the correct posture due to the strengthening of the muscular corset (muscles of the back, abdomen, shoulders, neck) by means of physical culture (exercise);
- 3) ensuring that the furniture in the school and at home is appropriate to the growth and proportions of the students' body;
- 4) control of the teacher for the correct posture of the student in the lessons; in the lower grades at least 2 times a year - exchange of students in places;
- 5) the correct location of the workplace (tables, desks), the entire premises where classes or classes are held, and sufficient lighting;
- 6) proper organization of the mode of training;
- 7) daily use of active rest in physical education lessons , breaks (moving games), in the afternoons (swimming, skiing, special exercises for homework);
- 8) full-fledged nutrition balanced by salt composition ” [12, p. 287 ].

The posture characterizes the condition of the musculoskeletal system, the level of physical development and the formation of behavioral skills, which reflects the ability of the person to maintain the optimal aesthetic and physiological position of the body and its parts while maintaining static postures and ensures the rational and adequate performance of basic natural and professional movements.

At the same time, from a biomechanical point of view, the correct posture is the result of such a correlation of all existing forces, when the physiological bends of the spine are clearly expressed and have a uniformly wavy appearance, which is the main point since they, according to the laws of mechanics, give the ridge a greater degree of rigidity, increase its spring properties and make it easier to maintain balance. Therefore, the posture is estimated by the geometry of the mass of the human body, as one of the reasons for its disorders is the appearance of excessively large weight, which translates it relative to one or two planes of space occupied by the human body. This causes extra strain on the extensor muscles and deformation of the longitudinal axis of the spinal column [1, p. 336 Hours; 8, p. 68]. All this proves the necessity of forming the posture of students of general secondary education for 10-12 years as a basis for maintaining health.

**Conclusions.** Analysis of scientific sources on this problem shows: 1. Posture is considered as a dynamic stereotype, which is formed in the process of individual development in the process of ontogeny. 2. The posture is formed and determined by the shape of the spine and yogis about biomechanical properties. The condition of the musculoskeletal system depends on the posture - the relaxed position of the body,

stored in a state of rest and movement. 3. The sedentary lifestyle promotes the excretion of calcium from the body. This is the cause of postural disorders due to spinal curvature. 4. The posture should be formed with the beginning of students' education in general secondary education institutions . 5. Posture formation is important to begin with the strengthening of the large back muscles by exercise, which is especially important for students aged 10-12 .

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