



COMPARATIVE CHARACTERISTICS OF THE MOTOR POTENTIAL OF CHILDREN AGED 7-10 YEARS WITH THE REGULATORY REQUIREMENTS OF THE FIRST AND SECOND AGE GROUPS OF HEALTH TESTS "SALOMATLIK"

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ABSTRACT

The article studies the issues of adequate comparability of normative indicators of motor fitness of children of primary school age with the requirements of health tests "Salomatlik".

In order to study the level of motor fitness of primary school students aged 7-8 years, the method of pedagogical testing measured the main indicators of physical fitness : 30 m run, 3x10 m shuttle run, long jumps from a place and from a run, throwing a tennis ball at a target and at a distance , general flexibility, pull-ups on the bar , bending and extending the arms in the lying position and jumping rope

old children during their one-year cycle of education in a general education school, assessed according to the battery of normative indicators of this age group, borrowed from state standards for physical education, showed the identity of the dynamics of motor abilities with children from other regions.

Considering that children of primary school age are not yet familiar with many technically complex physical exercises, in the course of the study, they were offered quite familiar motor actions that children learn while studying in the first grade and recommended by many authors (1,2,8) for pedagogical testing physical capabilities of children of primary school age and comparative results with the normative indicators of health tests "Salomatlik" of the first age group are presented.

According to the data of the conducted studies of motor readiness of 7-year-old children in the process of their one-year cycle of education in a general education school by quarters of training and estimated on the basis of a battery of normative indicators of this age group, borrowed from state standards for physical education, showed the identity of the dynamics of motor abilities with children from other regions.



The results of the research revealed that boys at the age of 7 in running 30 meters had an average result of 7.57 s with an individual range of fluctuations from 9.2 s to 6.6 s ($t = 9.2$; $p < 0.001$), to 8 over the years, the effectiveness in speed capabilities increases by 4.35%, reaching an average value of 7.24 s, with an individual range of fluctuations from 8.6 s to 6.3 s ($t = 9.2$; $p < 0.001$). At the age of 9, the performance in the 30-meter run in children is an average value of 6.83 s with an individual range of values from 7.5 s to 6 s, the overall significant improvement was 5.66% ($t = 2.34$; $p < 0.05$). At the age of 10, the performance in the 30-meter run in children is an average value of 6.34 s with an individual range of values from 7.3 to 5.5 s, the overall significant improvement was 7.17% ($t = 2.34$; $p < 0.05$). This fact indicates that by this age period the structure of speed running acquires the features of completeness and further improvement occurs due to the improvement of physical abilities. Assessing the dynamics of changes in speed abilities in children from 7 to 9 years old, it was found that the increase in performance in running 30 meters was 9.77%, and by 10 years old, this indicator averaged 6.34 ± 0.05 s and amounted to a difference in 7.17%.

Standing long jumps, as a factor of speed-strength nature, is a universal exercise that characterizes the degree of children's mastery of motor skills and physical qualities, occupying a significant place in the motor activity of younger schoolchildren (3,4,5,6,7).

In the course of the studies of motor abilities in younger schoolchildren, it was revealed that the test of standing long jump in boys at the age of 7 was 95.8 ± 1.81 cm, with extreme individual indicators from 130 cm to 71 cm. By the age of 8, the results of testing long jumps from a place in second grade students significantly improve by 19.36% ($t = 4.9$; $P < 0.01$) and reach an average value of 118.8 ± 1.56 cm with the best indicator in this age group - 140 cm and the worst - 100 cm.

Pupils at the age of 9 show an average result in jumps from a place of 127.2 ± 1.10 cm, and at 10 years old they show an average result in jumps from a place of 138.4 ± 1.07 cm with individual differences between the maximum result of 158 cm and the minimum result 120 cm. The total year-to-year increase was 8.09% ($t = 3.4$; $P < 0.01$), and fourth-grade students at the age of 10 had an average result of 138.4 ± 2.6 cm.

It was revealed that the successive growth of students for the age period from 7 to 10 years according to the indicators in the standing long jump test for the studied age period was 24.68%.

When performing long jumps with a running start at the age of 7, boys studying in the first grade show an average result of 156.6 ± 1.76 cm, with individual extreme differences from -123 cm to 195 cm. By the age of 8, schoolchildren show results significantly exceeding the initial values equal to an average of 198.4 ± 1.91 cm with the extreme ones being 220 cm and 138 cm, with a total increase of 21.0% ($t = 12.3$; $p < 0.01$). At the age of 9, boys run long jumps by an average of 210.5 ± 1.21 cm, with the best results among the examined schoolchildren being 230 cm and the worst ones being 187 cm. By the age of 10, fourth grade boys showed a significant increase in long jumps up to 241.1 ± 1.42 cm, constituting a significant progressive year-to-year increase of 12.69% ($t = 4.22$; $p < 0.01$). It should be noted that the successive increase in the result in long jumps from a running start for the age period from 7 to 10 years was 35.04%.



The degree of coordination abilities of junior schoolchildren was studied according to the results of test tasks when throwing a tennis ball at a target from 6 meters. The monitoring analysis of the results in this test revealed that 7-year-old students showed an average result of 4.6 ± 0.17 times with an individual spread of the studied indicators from 3 to 5 times. By the age of 8, pupils of the 2nd grade have a general significant increase in coordination effectiveness in throwing by 5.7% ($v = 14.5\%$; $P < 0.05$), with an average value of 4.9 ± 0.29 times

Table 1

The level of physical fitness of children aged 7–10 years of general education schools in Ferghana region ($X \pm Sx$)

No.	Tests	Age (years)					
		7 years n =56	8 years n =52	Difference 7-8%	9 years n =45	10 years n =24	Difference 9 - 10%
1	Run 30 m, sec	7.57 ± 0.06	7.24 ± 0.05	4.35	6.83 ± 0.03	6.34 ± 0.05	7.17
2	Standing long jump, cf.	95.8 ± 1.81	118.8 ± 1.56	19.3	127.2 ± 1.10	138.4 ± 1.07	8.0
3	Pull-ups on the bar, times	1.82 ± 0.09	2.05 ± 0.11	11.2	2.37 ± 0.10	2.68 ± 0.09	11.5
4	Throwing a tennis ball for a distance, m	11.41 ± 0.23	12.1 ± 0.19	5.7	14.98 ± 0.35	23.16 ± 0.29	35.4
5	Throwing a tennis ball at a target	2.42 ± 0.12	2.98 ± 0.13	18.7	3.41 ± 0.13	3.73 ± 0.13	8.5
6	Flexion and extension of the arms in an emphasis lying, times	10.31 ± 0.20	13.07 ± 0.45	21.1	13.6 ± 0.20	15.1 ± 0.20	9.9
7	General flexibility, see	3.06 ± 0.12	2.82 ± 0.11	7.8	2.96 ± 0.12	2.74 ± 0.11	7.4

In throwing a tennis ball at a distance, 7-year-old students showed an average result of 11.41 ± 0.23 m with an individual spread of the difference in results from 1500 cm to 800 cm. By the next age period, they have a general increase in throwing performance by 5.70% ($t = 9.67$; $P < 0.001$), which is a total mean value of up to 12.10 ± 0.19 m (with results varying from 1550 cm to 900 cm), and 9-year-old boys showed results from 2450 cm to 1005 cm with an average value of the result equal to 14.98 ± 0.35 m; 10 year old boys showed results from 2800 cm to 1590 cm with an average result of 23.16 ± 0.29 m; the overall increase was 50.7% ($t = 12.14$; $P < 0.001$).

Another test indicator that determines the coordination capabilities of children of primary school age was assessed according to the motor test shuttle run 3x10 m and it was found that pupils of the 1st grade overcame this distance in an average of 10.6 s, with $v = 19.3\%$; $P < 0.05$), and children of the 2nd grade ran this distance in 10.5 ± 0.14 s on average, with $v = 19.6\%$; $P < 0.05$).

The “jumping rope” motor test, which is a favorite motor action for children of the initial age period of education in the system of school physical education, when assessing their potential motor abilities based on the results in this test, revealed that first-graders in the process of performing these jumps in 1 minute had a result equal to 23.4 ± 0.19 times, with a variation spread of 18.3%, and pupils of the 2nd grade significantly exceeded the result of first-graders and had an average result equal to 24.4 ± 0.14 , with $v = 18.3\%$; $P < 0.05$.



This problem acquires special scientific and pedagogical relevance in children's sports, where, according to monitoring studies of domestic and foreign scientific publications, a factor of significant rejuvenation of the composition of national teams has been identified, which gives grounds to assess the levels of motor fitness of children at the early stages of schooling and compare their data with the requirements health tests "Salomatlik", which will allow laying a methodically competent basis for a differentiated approach to assessing their physical fitness. (Table 2)

Monitoring studies of literary sources on this issue revealed that in the lives of children at certain stages of their life path of development, time intervals of motor abilities were identified, which were called sensitive periods, based on physiological facts

table 2

**Estimated gradation of the level of physical fitness of primary school students
school education system, %**

Age	n	Physical Fitness Tests																							
		Run 30 m (sec)			Standing long jump (cm)			Shuttle run 3x10m. (sec)			pull up on the translation not once)			Lean forward (cm)			Run 300m (min)			Average scores for all tests, %					
		Level of physical fitness																							
		IN	WIT H	H	IN	WIT H	H	IN	WIT H	H	IN	WIT H	H	IN	WIT H	H	IN	WIT H	H	IN	WIT H	H	IN	WIT H	H
7	18	13	69	18	24	64	12	32	57	eleven	32	43	19	35	59	6	12	62	26	24.7	59.7	15.6			
8	16	9	74	17	19	70	eleven	29	59	12	36	47	17	24	69	7	14	69	17	21.8	64.6	13.6			
Difference 7-8 years,%		29.8	6.8	5.6	20.9	8.6	8.4	9.4	3.4	8.4	11.2	8.6	10.6	31.5	14.5	14.3	14.3	10.2	14.7	11.8	7.6	12.9			
9	12	14	78	8	21	72	7	23	64	13	46	33	21	23	68	9	8	79	13	22.4	65.8	11.8			
10	14	8	79	13	16	80	4	thirty	61	9	10	74	16	18	67	15	3	87	10	15	74	eleven			
Difference 9-10 years,%		42.8	12.6	38.4	23.8	10	42.8	23.3	4.6	30.7	78.2	55.4	23.8	21.7	1.4	40	62.5	9.1	23	33	eleven	6.7			
7	18	13	69	18	24	64	12	32	57	eleven	32	43	19	35	59	6	12	62	26	24.7	59.7	15.6			
10	14	8	79	13	16	80	4	thirty	61	9	10	74	16	18	67	15	3	87	10	15	74	eleven			
Difference 7-10 years,%		38.4	12.6	27.7	33.3	20	66.6	6.2	6.5	18.1	68.7	41.8	15.7	48.5	11.9	60	75	28.7	61.5	39	19.3	29.4			

The most favorable sensitive periods in children make it possible to achieve more pronounced progress in the improvement of individual motor abilities. However, at present, the onset of sensitive periods in relation to certain motor abilities of children remains a subject of wide discussion. Each component of motor fitness can be characterized by different indicators and demonstrate different chronological changes.

Data on the nature of the manifestation of motor abilities at various stages of ontogenesis are numerous and the range of their variations with age tends to progress during the transition from one age period of life to another. The factors of manifestation of sensitive periods in the development of motor abilities of children at the stage of school education are most often analyzed in relation to the chronological age and the degree of their biological age.

It is well known that sensitive periods are determined by growing up and natural biological changes in the body and, as a result, in the development of the musculoskeletal system. It has been experimentally found that the most favorable period for general flexibility



is the most suitable age of 7–10 years, when the high elasticity of tendons, ligaments and joints is a beneficial factor that positively affects this process. The most influential factors affecting sensitivity *are* increased body length (acceleration), respectively, muscle mass, as well as increased heart volume, total blood volume and a higher hemoglobin concentration. In this regard, physical education teachers working with this age group should especially take into account the factor of the sensitive period children's motor development.

Professor A.A. Guzhalovsky, on the basis of the long-term studies of the motor fitness of children of primary school age, pointed out their sensitive age stage, when a period of increased plasticity of the functional systems of the body appears.

Monitoring the results of testing the motor fitness of children of primary school age showed that changes in performance in sprint, included in the standards of health tests "Salomatlik", occur unevenly.

Goncharova O.V. in the process of experimental studies on a similar age group of children, when studying the effectiveness of accentuated training effects on the body, he expresses an opinion about the presence of age and individual characteristics in their development.

Sensitive periods in relation to the motor abilities of children with a specific age period is an integral indicator. The variety of identified relationships confirms that the adaptive capabilities of a developing organism are due to the interaction of a complex set of functional systems with constantly changing conditions of the external and internal environment, which leads to heterochronous development of body systems depending on their adaptive abilities at a certain stage of ontogenesis.

Modern scientific studies of age sensitivity and revealing the greatest sensitivity to the development of motor abilities in different periods of growing up and identifying new sensitive periods in relation to motor abilities confirm the heterochrony and variability of this stage of development.

According to E.A. Seytkhalilov, each child has its own individual path of biological development, because in children of different ages, body functions develop at different rates, while the highest rates of motor sensitivity are observed in younger students with high mobility of excitation and inhibition at the same time, in comparison with "inert" types of children. The manifestation of speed-strength abilities is associated with the manifestation of lability and is not associated with the properties of the nervous system. It was revealed that in the same age periods, growth processes are activated, but differentiation processes slow down, which gives grounds to conclude that during the period of age sensitivity, external influences are based on mature functional systems, including natural inclinations with readiness for external influences.

The properties of sensitive periods and the range of potential variability of structures and functions under the influence of external influences are the most significant characteristics for understanding the nature of the relationship between external influences and developing motor abilities.

The studies of domestic authors (wx, ts, ea, rs) found that primary school age is the most favorable period for the purposeful development of physical abilities in children.



According to the data of the conducted studies of the motor fitness of 7-year-old children in the course of their one-year cycle of education in a general education school, by quarters of training assessed on the basis of a battery of normative indicators of this age group, borrowed from state standards for physical education, showed the identity of the dynamics of motor abilities with children from other regions.

During the period of age sensitivity, external influences are based on mature functional systems, which include natural inclinations that reflect readiness for external influences. Individual features are diverse and manifest themselves at the earliest stages of the ontogenetic development of children. The identification of various aspects of the development of motor abilities and the diversity of the rates of age-related dynamics in accordance with psychological characteristics is important not for searching for an accurate assessment of the age "cut", but mainly for studying the very process of individual development of sensitive and critical periods of their development.

The accentuated properties of sensitive periods and the range of potential variability of structures and functions under the influence of external influences are the most significant characteristics for understanding the nature of the relationship between external influences and developing motor abilities.

The conducted pedagogical experiment, aimed at studying the dynamics of changes in motor qualities in the annual cycle of education in children of primary school age, made it possible to conclude that it is necessary:

- taking into account the individual characteristics of the physical development and motor fitness of children.
- optimal dosing of physical activity, taking into account the morpho-functional characteristics of a growing organism;
- regular implementation of medical and pedagogical control.

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