

# Comprehensive Assessment of the Physical Development of Children 4-7 Years Old in The City of Bukhara

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## Abstract

An essential factor determining the health status of the population is the maintenance of optimal physical activity throughout the life of every citizen.. The relationship between the level of physical development and motor activity of children aged 4-7 years with the living conditions, as well as the constitutional features of the body, is determined.

**Keywords:** physical development, body length, head and chest circumference, constitutional feature.

## Relevance of the Problem

Currently, in some countries of the world there is a steady trend towards deterioration of the physical health of the younger generation and a decrease in the functional capabilities of their body [9,10,7]. Negative trends are also observed in the physical development of children, manifested by a decrease in body length and weight (deseleration) and an increase in disharmony of physical development [8,10,115].

Already at preschool age, 15-20% of children are diagnosed with chronic diseases, which, upon admission to school, seriously complicate adaptation to the intra-school environment and cause further deterioration of health and academic performance [9.4].

About 50% of boys and girls who are in high school already have 2-3 diagnoses of diseases.and in general, only 15% of graduates can be considered practically healthy [7].A significant factor.determining the health status of the population.The goal is to maintain optimal physical activity throughout the life of every citizen [3,40].

Many authors point to a close relationship between indicators of physical development and physical fitness in various population groups [5,7].In our region, a comprehensive assessment of the level of physical development and motor qualities in children of the first childhood period has not been carried out before.and also, changes in these indicators were not evaluated when they entered school. Thus, some authors note that when entering the 1st grade, children halve their motor activity seven-year-old schoolchildren and pupils of preschool institutions sharply differ in physical development and physical fitness [8,9,b].

All of the above factors are the basis for this research.The purpose of the study:the sexual ones are revealed.age and constitutional features of physical development and motor qualities in children 4-7 years old in Bukhara.

Material and methods of research To solve the tasks, the parameters of physical development and motor qualities of children aged 4-7 years were measured.on the basis of 4 children's and adolescent institutions of Bukhara.The data were entered into specially compiled protocols, which include the following sections: passport data.anthropometric parameters, functional

tests and motor quality testing data. The complex of research methods was determined within the framework of the target program “Youth physical education and health improvement of children.adolescents and youth in Uzbekistan” (2022-2026).

The following groups of research methods were used:

- 1 . Anthropometric;
- 2 .Functional:
- 3 .Testing of motor qualities;
- 4 .With tatist;

## Discussion of Materials

Evaluation of indicators of physical development and motor qualities in children aged 4-7 in the city of Bukhara was carried out taking into account their age and gender.

### 1 .Girls

Physical development (Tab 1).The body length indicators of Bukhara girls are characterized by their gradual increase from 4 to 7 years, which, compared with the data of each previous age, is significant at  $P < 0.01$ .The largest annual increase from is observed in them at 5 years -6.4 cm per year, then by the age of b, the growth rates decrease by 0.6 cm, and by the age of 7-by another 1.9 cm and make up 5.7 and 3.8 cm per year .The results of the Martpne-Kushelevsky test vary ( $P < 0.01$ ) only from 5 to b years.In other ages, its changes are not reliable.The bulk increase in values is noted from b to 7 even 1 sec per year.

Table 1 Indicators-fppp of creative development and motor qualities of children 4-7 years old in Bukhara

Girls	4 years old, No.350	P	5 years old No.410	R	6 years old No.450	R	7 years old No. 250
Sign	M		m		M		M
Body length.see	101.5= 0,3 15.4= 0.3	<0,01	108.8=0,3	<0.01	115.1=0.2	<0,01	118.4=0.3
Body weight.kg	50,0= 0.2	<0,01	18.1=0.1	<0,01	18.9=0.1	<0.01	21,2=0.2
Environment.chest, cm							
Shoulder circumference at rest, cm	14,8=0,1	<0,01	52.1=0,1	<0.01	54.1=0.1	<0,01	54,8=0.2
Vital.lung volume.ml	610.4= 7.2	<0.01	15,6=0.1	<0,01	15.9=0.1	<0,01	16.8=0.2
Test. Martine-Kushelev.sec		<0.01	800+8.4	<0,01	945=8.8	<0.01	1011=12.7
Dynamometry is right.brushes, kg	1.3= 0.1						
			100.0=1.0	<0,01	58=0.8	<0.05	58.8=0.7
Dynamometry lev.brushes, kg	1.1= 0.1	<0,01	2.2=0,1	<0.01	3.9+0,1	<0,01	4.2=0.2
Lifting the torso for 1 sec.							
Long jump from a place, cm	4.2+ 0,2	<0,01	2.2=0,1	<0.01	2.4=0,3	<0,01	3,2=0.1
Leaning forward while sitting.see	63,1= 1.1	<0,01	1,8=0,1	<0,01	92.0=0.3	<0.05	9.2±0.5
Running a hundred meters at once, sec	3,9=0,4						
	9,8=0,3	<0.01	75.2=0.2	<0.01	93.1=0.9	<0.05	100.2=1.1
		<0.01	30.8=0,5	<0,05	4.0=0,3	<0. Q5	3.2=0.5
		<0,01	9.2=0,2	<0,01	7,9=04	<0.61	7,4=0.1

Boys	4 years old, No.270	P	5 years old No.440	P	6 years No. 460	P	7 years No. 320
Attribute	M		M		M		M
Body length m	101,1±0.2	<0.01	107,9±0.2	<0.01	115,1±0.2	<0,01	19.2±0.3
Body weight.kg	163+ 0,1	<0,01	17.9±0.1	<0.01	19.9±0,1	<0,01	21,8±0,2
Environment.thoracic cage	51,7±0,1	<0.01	53.6±0.1	<0.01	55.5±0.1	<0.01	57,2±0.2
Shoulder circumference at rest, oh"	15.1±0,1	<0,01	15.4±0.1	<0,01	15.9±0.1	<0.01	1b.1±0.1
Vital.volume of lungs, ml							
The Martinet-Kushelev test.sec	643+ 9,4	<0.01	850±8,9	<0.01	1010±9.4	<0,01	1115±10,9
Dynamometry is right.kisgi.kg			58.1±0,9	<0,05	59.4±0.8	<0,05	61,1±0,7
Dynamometry lev.brushes, kg	1.1±0.1	<0.01	2.7±0,1	<0.01	3.6±0,1	<0,01	4,8±0,1
Lifting the torso for 1 sec							
Long jump from meeta, cm	1.0± 0.1	<0.01	2.0±0.1	<0,01	2.7±0.3	<0.01	3.6±0,1
Tilt in front of the seat	. 3.3± 0.3	<0.01	5,9±0,2	<0.01	8,4±0.3	№0.01	101±0,3
Running a hundred meters at once, sec	67,1± 1,4	<0,01	88.1 ±1.1	<0.01	101,6±0,8	<0,01	108.1±1.2
	3,1±0.3	<0,01	2.1±0.2	<0.05	1,4±0,3	<0.05	0.3±0,4
	10.1±0.2	<0,01	8,3±0,1	<0,01	7,7±0.1	<0.01	7.1±0,1

The results of carpal dynamometry when compared with the data of each previous age are significant ( $P < 0.05$ ) change from 4 to 7 years: in the right hand - From  $1.3 \pm 0.1$  to  $4.1 \pm 0.2$  kg. the virgin brush has  $1.1 \pm 0.1$  to  $3.2 \pm 0.1$  kg. The annual increase in the values of the indicator from 5 to 6 years tends to decrease from 1.1 to 0.8 kg per year - in the right hand and from 1.3 to 0.6 kg per year, in the left hand from 0.8 to 0.6 kg per year. At the age of 7, girls have the greatest annual increase in strength of 1.0 and 1.1 kg per year in the right and left hands per year

When studying the data on the physical development of girls aged 4-7 years, it was revealed that the period of the greatest improvement in their indicators is the age of 5-6 years. So in 5 years, the annual increase increases as much as possible in terms of body length and vital

capacity of the lungs and has high values for all other indicators of physical development (except for the Martne-Kushelevsky test).

At the same time, at the age of 6 and to a greater extent at the age of 4 and 7, their share with an average level of physical development (more than 50%) increases due to a decrease in the proportion of children with levels high and below average at 4 years, low and high - at 7 years. At the age of 5, on the contrary, there is a decrease in the proportion of girls with an average level of physical development, while their proportion with high and above average levels increases (up to 30.4%) compared to those of other ages.

Table 2.

Age	Low	Below Average	Average	Above Average	High
4 years	11.1	6.7	61.1	9.6	9.2
5 years	7.0	14.2	48.2	24.8	5.1
6 years	9.3	10.6	56.4	10.9	11.0
7 years	7.7	11.5	58.1	14.1	8.1

The distribution of girls by levels of physical development (in %) the results of testing the speed and strength endurance of the trunk muscles - "Lifting the trunk in 30 seconds annually significantly ( $P < 0.01$ ) increases from 4 to 6 years. At the age of 7, the result also improves, but less significantly ( $P < 0.05$ ). The largest annual increase in the indicator is observed at the age of 6 by 2.5 times a year more compared to the data of children 5 years old, but at 7 years its values deteriorate to 0.9 times a year (Fig.9).

Testing of the dynamic strength of the muscles of the lower extremities - "Long jump from a place" showed an annual significant ( $P < 0.01$ ) increase in results from 4 to 6 years. At 7 years, the indicators improve again, but with less confidence ( $P < 0.05$ ). At 5 years, the annual increase has a maximum value of 16.4 cm per year, then it gradually decreases by the age of 6 - up to 14.2 cm, and by the age of 7 - up to 6.9 cm per year (Fig.10.).

Test results "Lifting the torso of the test results "Long jump from a place" 30 seconds ". When assessing the speed - "running 30 meters on the move", the value of the indicator values significantly ( $P < 0.01$ ) improves from 4 to 6 years.

In the test for active flexibility of the spine and hip joints - "leaning forward while sitting", the result slightly worsens from 4 to 5 years. In 6 years, the indicator increases significantly ( $P < 0.05$ ), and in 7 years it decreases again. The greatest value of annual growth is noted in 6 years and is 1 cm per year, whereas in 5 and 7 years it has a negative dynamics of 0.8 and -0.9 cm per year, respectively, intensive improvement of motor qualities in girls of the first period of childhood, as well as indicators of physical development, occurs in 5-6 years. whereas in 7 years, the values of their growth are minimal in all indicators.

However, if at 5 years of age the increase is maximal when testing the speed and strength endurance of the trunk muscles and speed and is low when testing the active flexibility of the



spine, then at 6 years of age it is maximal on all tests except the "Long jump from a place" test.

### **Conclusions:**

Thus, the comparison of indicators of physical development in children of both sexes significantly differ between the sexes at the age of 7 years, although the chest circumference is greater in boys at all ages. the vital capacity of the lung in 5-7 years, as well as the index of the wrist dynamometer in 6-7 years.

The above data dictate the need to continue the study of physical development and motor qualities of children aged 4-7 years in Bukhara in comparison with other regions of the region.

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