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Research Article

COMPARATIVE DESCRIPTION OF PHYSICAL DEVELOPMENT OF CHILDREN OF JUNIOR SCHOOL AGE USING BODY WEIGHT, HEIGHT AND CHEST CIRCUMFERENCE INDICATORS

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ABSTRACT

In this research work, the body weight (kg), height (cm) and chest circumference (cm) values of junior high school students (7-10 years old) in secondary schools located in some districts of Andijan region of the Republic of Uzbekistan were analyzed based on comparison. Generally accepted anthropometric research methods were used in the research. In the researches, it was found that body weight (kg), height (cm) and chest circumference index value (cm) increase in the age range of 7-10 years in secondary schools located in sub-mountainous climate-geographical zones. Based on the obtained results, it was noted that it is important to take into account the influence of factors related to climate-geographical conditions in the development of a complex of medical/pedagogical corrections and preventive measures in the development of anthropometric parameters for students of junior school age (ages 7-10).

KEYWORDS

Education, conducting, physical development, school age, weight (kg), height (cm), chest circumference (cm).

INTRODUCTION

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Today, the creation of conditions for the physical education of children of primary school age is considered one of the priority issues for the future of society. Study of development indicators. In order to constantly monitor the level of physical development and health of school-aged children during their education, conducting morpho-functional scientific research, developing and implementing a complex of measures to strengthen their health, and, in turn, scientific research from the point of view of the prevention of various possible diseases and practical importance.

Monitoring of physical development is also relevant from the point of view of determining the level of development of the organism of children living in certain environmental conditions and based on a well-defined lifestyle, as well as allowing timely recording of deviations from the standard level and making appropriate corrections.

The complex of chest circumference dimensions, which is considered one of the indicators of physical development of children and adolescents, is important in describing the structural-functional characteristics of the body and, in turn, the state of health.

Research materials and methods. The researches were carried out during the years 2021-2023 in general education schools No. 5 located in the city of Khanabad, Andijan region of the Republic of Uzbekistan. Generally accepted anthropometric research methods were used in the research. Body weight (kg), height (cm) and chest circumference (cm) were measured using standard methods..

The results obtained from OriginPro v. 8.5 SR1 (EULA, USA) was statistically processed using a custom software package. The results are presented in the form of M±m of the results of experiments carried out in repetition n times, where M is the arithmetic mean value and m is the standard error value. The level of statistical reliability of the mutual difference between the values of the experimental results was calculated based on the Student t-criterion and was evaluated as statistically reliable at values of $r<0.05$, $r<0.01$.

The obtained results and their analysis. As we know, physical development in the general case is described on the basis of anthropometric/morphometric parameters of the chest circumference together with the body weight and height of the human organism.

The complex of chest circumference dimensions, which is considered one of the indicators of physical development of children and adolescents, is important in describing the structural-functional characteristics of the body and, in turn, the state of health.

Based on the above data, the research was conducted among the 1st, 2nd, 3rd and 4th grade boys of the 5th general school located in the town of Khanabad under the public education department of the Andijan region. The main anthropometric parameters of junior high school students (7-10 years old) - body weight (kg) and height (cm) of the general education school where the experiments were conducted at the initial stage were studied.

Values of anthropometric indicators of junior high school students (7-10 years old) of secondary school No. 5 located in Khanabad, Andijan region (M±m)

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Anthropometric indicators	Boys (*n*=73)			
	7 years old (*n*=19)	8 years old (*n*=21)	9 years old (*n*=16)	10 years old (*n*=17)
Body weight (кг)	26,5±0,3	27,4±0,2*	33,6±0,3**	37,5±0,5**
Height length (см)	124,6±7,2	135,3±5,4*	149,4±5,8**	155,2±7,7**
Chest circumference (cm): at rest; in the maximally inhaled position; in maximally exhaled position	67,3±0,7	73,8±0,4	85±0,7*	88,4±0,6
	64,7±0,6	70,4±0,5	80,5±0,6*	86,3±0,7**
	64,1±0,5	73,4±0,4	79,2±0,6*	85,6±0,7*

Explanation: 7-10 represents the level of statistical reliability of the difference between the values in the age range (* – r<0.05; ** – r<0.01).

Based on the results of the observation, the body weight index of 7-10-year-old students of school No. 5 was 26.5 ± 0.3 kg at the age of 7, 27.4 ± 0.2 kg at the age of 8, 33 at the age of 9, 6±0.3kg, at 10 years it was found to be equal to 37.5±0.5kg.

The increase in the body weight index of schoolchildren under observation was 11 kg during 7-10 years. When observing the distribution of this value in age intervals, it was observed that 0.9 kg increased in the age range of 7-8 years, 6 kg in the age range of 8-9 years and 3.9 kg in the age range of 9-10 years.

In the next part of our observations, the height of children of junior school age was studied. The height of children of junior school age at the age of 7-10 is 124.6 ± 7.2 cm at the age of 7, 135.3 ± 5.4 cm at the age of 8, 149.4 ± 5.8 cm at the age of 9, 155 at the age of 10 It was found to be 2±7.7 cm. It was found that these values increased by 30.9 cm at 7-10 years, 10.7 cm at 7-8 years, 14.1 cm at 8-9 years, and 5.8 cm at 9-10 years.

The length of the chest circumference of children of junior school age was measured in three cases. In this case, a centimeter tape with a strip was used to determine the state of rest (in front of the mammary gland), the state of deep inhalation and the state of deep exhalation. In this case, the average indicators of the length of the chest circumference at rest in schoolchildren aged 7-10 years were 67.3±0.7 cm at the age of 7, 73.8±0.4 cm at the age of 8, 85±0.7 cm at the age of 9, 10 It was found that it was 88.4 ± 0.6 cm at the age of.

It was observed that the growth rate of the value of the length of the chest circumference at rest in children of junior school age increased by 21.4 cm at the age of 7-10, by 6.5 cm at the age of 7-8, by 11.2 cm at the age of 8-9, and by 3.4 at the age of 9-10. it was found that it increased by cm.

During the observations, the chest circumference during deep breathing was 64.7±0.6 cm in the 7th year, 70.4±0.5 cm in the 8th year, and 80.5±0.6 cm in the 9th year and it was found to be 86.3 ± 0.7 cm at age.

The length of the chest circumference in students at the age of 7-10 years when taking a deep breath, the

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growth rate of the value of the chest circumference in the state of maximum inhalation is 18.6 cm in the age range of 7-10 years, 5.7 cm in the age range of 7-8 years, and 10.1 cm in the age range of 8-9 years, and at the age of 9-10, it was found that it increased by 5.8 cm.

During the observations, the average index of deep breathing in the age range of 7-10 years was 64.1 ± 0.5 cm at the age of 7, 73.4 ± 0.4 cm at the age of 8, 79.2 ± 0.6 cm at the age of 9, 85 at the age of 10 It was 6±0.7 cm.

It was found that the rate of increase in the value of chest circumference in schoolchildren was 21.5 cm at 7-10 years old, 9.3 cm at 7-8 years old, 5.8 cm at 8-9 years old, and 6.4 cm at 9-10 years old.

CONCLUSION

The study of anthropometric indicators at the age of 7-10 years of junior school is of great importance in determining the indicators of physical development. Based on the results obtained from our observations, we can come to the following conclusions.

1. Body weight indicators increase dynamically depending on age. The difference between 8-9 years old is statistically significant ($r<0.05$).

2. Total height indicators are also based on the laws of growth and development and increase with age.

Differences between 8-9 years are significant and statistically unavoidable ($r<0.01$).

3. It was observed that the indicators of the length of the chest circumference increase in relation to age in all three situations (at rest, in deep inhalation and in deep exhalation). The differences between 9-10 years of age are significant ($r<0.05$) in rest. and can be clearly seen in cases of deep breathing.

4. As a result of the above analysis, it can be seen that the dynamics of growth between 9-10 years of age is clearly noticeable in all indicators. So, compared to 7-8 years old, growth and development accelerates between 9-10 years old.

Suggestion: Based on the analysis of the obtained results, we would suggest to continue regular research and observation work in order to develop a complex of preventive measures in the development of preventive measures for children of junior school age, in the preparation of standards/norms of anthropometric indicators, in medical/pedagogical correction of various descriptions.

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