International Journal of Education, Social Science & Humanities.
Finland Academic Research Science Publishers
ISSN: 2945-4492 (online) | (SJIF) = 8.09 Impact factor
Volume-14| Issue-5| 2026 Published: |22-05-2026|

UDK *574/577+572.79+613.2*

PHYSICAL DEVELOPMENT OF CHILDREN 7-10 YEARS OLD

https://doi.org/10.5281/zenodo.20406785

Hazratova Hulkar Normurodovna
PhD., senior teacher, Department of General Methodological Sciences University of Economics and Pedagogy
hazratovahulkar2@gmail.com
https://orcid.org/0000-0002-3898-2535

Аннотация

В статье представлены итоги исследования показателей физического развития сельских школьников в возрасте 7–10 лет. Полученные данные свидетельствуют о том, что масса тела, рост и окружность грудной клетки учащихся увеличиваются по мере взросления. В частности, у детей 7–8 лет указанные показатели существенно не отклоняются от нормы. У мальчиков и особенно у девочек 9–10 лет наблюдаются показатели роста, окружности грудной клетки и индекса Кетле, превышающие нормативные значения. Изучение физического развития учащихся является одним из важных этапов на пути к дальнейшему укреплению их здоровья.

Ключевые слова

рост, масса тела, окружность груди, дети младшего школьного возраста, рост, развитие.

Annotation

The article presents the results of a study on the indicators of physical development of rural schoolchildren aged 7–10 years. The obtained data indicate that the body weight, height, and chest circumference of students increase with age. In particular, among children aged 7–8 years, the above-mentioned indicators do not significantly deviate from the norm. Among boys and especially girls aged 9–10 years, the indicators of height, chest circumference, and Quetelet index exceed the standard values. The study of students' physical development is one of the important steps toward further strengthening their health.

Key words

height, body weight, chest circumference, children of primary school age, height, development.

International Journal of Education, Social Science & Humanities.
Finland Academic Research Science Publishers
ISSN: 2945-4492 (online) | (SJIF) = 8.09 Impact factor
Volume-14| Issue-5| 2026 Published: |22-05-2026|

INTRODUCTION. It is widely recognized that physical development is one of the key indicators reflecting the health status of a growing young organism, as well as its growth and maturation under the influence of various environmental factors. Accordingly, children's lifestyle, diet, physical activity, and other conditions affect the normal processes of growth and development [4–8]. The highest rates of growth in a child's life occur first during the period before reaching a certain age, then during the school-entry stage, and later during adolescence. [7-12].

In our country, special attention has always been paid by the government to children's health, education, proper growth and development, and other related issues. A number of approved decrees and resolutions aimed at protecting and strengthening maternal and child health, ensuring proper care from an early age, and promoting children's comprehensive and healthy development can be noted [1–3].

At the same time, this issue remains one of the urgent tasks in the fields of physiology and medicine. Studying the morphofunctional (anthropometric) indicators of modern schoolchildren primarily serves to ensure their good health as well as their ability to perform mental and physical activities effectively. At present, this matter is considered one of the pressing issues both in our country and worldwide [10-12].

RESEARCH METHODOLOGY. During our observations, we studied certain anthropometric indicators of primary school students. The research was conducted among 117 students aged 7–10 (including 52 boys and 65 girls) studying in several rural schools of the Kashkadarya region. The students' physical development was examined using anthropometric methods [9]. Body weight was measured with a medical scale (PORODO model: PD-BF1321BT-WH, China, 2020), height with a wooden stadiometer (Russia, 2019), and chest circumference with a measuring tape (China, 2019). The obtained data were statistically analyzed using MS Excel and Origin 6.1 software. The arithmetic mean (M), standard error (m), and standard deviation (SD) were calculated.

The results of the study include data on several anthropometric indicators—body weight, height, Quetelet index, and chest circumference—of students aged 7–10.

RESULTS AND DISCUSSIONS. According to the obtained results, the physical development indicators of the students do not differ significantly from the existing standards. The average body weight of 7-year-old boys was **22.4 ± 0.74 kg,**

International Journal of Education, Social Science & Humanities.
Finland Academic Research Science Publishers
ISSN: 2945-4492 (online) | (SJIF) = 8.09 Impact factor
Volume-14| Issue-5| 2026 Published: |22-05-2026|

their average height **124 ± 0.02 cm,** and their average chest circumference **62.6 ± 1.5 cm**. The Quetelet index was **14.48 ± 0.35 kg/m²,** which is 7–11% lower than the standard value of 16 kg/m². Similar results were also observed among 8-year-old children.

It can be observed that the body weight and height indicators of 9–10-year-old children exceed the standard values by 10.2–18.6% and 6.2–8.5%, respectively. The Quetelet index was 16.08 ± 0.46 kg/m² for 9-year-olds and 16.32 ± 0.61 kg/m² for 10-year-olds, which is approximately 4.5–5.5% lower than the standard value of 17 kg/m².

These findings indicate that among boys aged 7–10, body weight and height increase proportionally with age. This can be explained by physiological and biochemical processes occurring in their bodies, as well as by factors such as living environment, lifestyle, and other external influences.

Among girls aged 7–10, indicators such as body weight, height, Quetelet index, and chest circumference also differ to varying degrees from the recommended standards for their age. Specifically, the average body weight of 7-year-old girls was 23.3 ± 0.80 kg compared to the standard 22.0 ± 0.3 kg, and their average height was 126 ± 0.01 cm compared to the standard 118.5 ± 0.5 cm. The Quetelet index was 14.57 ± 0.57 kg/m², which is 6.3–9.1% higher than the standard value, while the chest circumference exceeded the norm by an average of 14.6%.

For 8-year-old girls, the average body weight and height were 24.3 ± 0.69 kg and 130 ± 0.01 cm, respectively. While the body weight showed no significant deviation from the norm, height was 5–10% higher. A similar trend was observed in the Quetelet index.

In 9-year-old girls, body weight did not differ significantly from standard values, but height exceeded the norm by 4.7–6.5 cm. However, the Quetelet index averaged 14.23 ± 0.36 kg/m², amounting to 83.7% of the standard value. The chest circumference was also 9.6% (or 5.7 cm) greater than the norm, as clearly shown in the table above.

Among 10-year-old girls, the average body weight was 35.5 ± 1.44 kg compared to the standard 30.2 ± 0.4 kg, and the height was 146 ± 0.001 cm compared to the standard 134.2 ± 0.5 cm. These results indicate that the growth rates of body weight and height in girls of this age group are higher than those of other age groups and standard values. Similarly, the chest circumference was 8.3–12.9% greater than the normative values.

CONCLUSION/RECOMMENDATIONS. In conclusion, it can be stated that certain physical development indicators of students—such as body weight, height,

Quetelet index, and chest circumference—do not fully correspond to the established standards. In particular, among 7–8-year-old children, the mentioned indicators show no significant differences compared to the norms. However, in 9–10-year-old boys and especially girls, height, chest circumference, and the Quetelet index are notably higher than the standard values.This situation can be explained by factors such as the pre-adolescent stage of children's development, the level of mental and physical load they experience, the organization of their daily routines at home and school, and other related aspects.

Regular monitoring and study of the physical development of primary school-age students is considered one of the important steps toward further strengthening their health.

REFE RENCES:

1. Decree of the President of the Republic of Uzbekistan No. PF-6099 of October 30, 2020 "On Measures to Promote a Healthy Lifestyle and Further Develop Mass Sports." Tashkent: New Uzbekistan, 2020, No. 210 (210), pp. 1–2.
2. Resolution of the President of the Republic of Uzbekistan No. PQ-4887 of November 10, 2020 "On Additional Measures to Ensure Healthy Nutrition of the Population." Tashkent: New Uzbekistan, 2020, No. 3, pp. 1–3.
3. Norms of Rational Daily Nutrition for Different Age, Gender, and Occupational Groups of the Population of the Republic of Uzbekistan. Technical Conditions (SanQvaM No. 000-20). Resolution of the Sanitary-Epidemiological Wellbeing and Public Health Service of the Republic of Uzbekistan. Tashkent, 2020, No. 3, pp. 1–2.
4. Zhdanova O.A. Comparative characteristics of physical development indicators of children in the Voronezh region in 1997–1999 and 2011–2014. Russian Bulletin of Perinatology and Pediatrics, 2017, 62(1), pp. 87–93.
5. Kildiyarova R.R. Assessment of physical development of children using percentile charts. Issues of Modern Pediatrics, 2017, Vol. 16, No. 5, pp. 431–437.
6. Latyshevskaya N.I., Rudyakina V.N. Features of physical development of primary schoolchildren living in rural areas. Bulletin of VolgGMU, No. 2(62), 2017, pp. 71–73.
7. Uraimova A.A., Kasymov O.T. Assessment of physical development of schoolchildren in rural areas with different forms of public catering organization. International Journal of Applied and Fundamental Research, No. 3, 2020, pp. 22–28.

8. Tsukareva E.A., Avchinnikov A.V., Alimova I.L. Assessment of physical development and diet patterns of primary school-age children living in Smolensk. *Nutrition Issues*, Vol. 88, No. 4, 2019, p. 87.

9. Kamilova R.T. Unified Methodology for the Study and Assessment of Physical Development of Children and Adolescents. Tashkent: Abu Ali ibn Sina, 1996, 103 p.

10. Rakhmatullayev Y., Kurbanov A.Sh., Hazratova H.N. Physical Development of Rural and Urban School Children and its Comparative Characteristics. Annals of R.S.C.B., ISSN 1583-6258, Vol. 25, Issue 4, 2021, pp. 7603–7608.

11. Hazratova H.N., Kurbanov Sh.K., Rahmatullayev Y.Sh., Buranova G.B. Physical Development of Primary Class Students. Central Asian Journal of Medical and Natural Sciences, Vol. 4, Issue 5, Sep–Oct 2023, ISSN 2660-4159, pp. 330–331.

12. Hazratova, H.N. Provision of some mineral substances to primary school students. Universum: Chemistry and Biology, 6(120), June 2024, Part 2, Moscow, pp. 64–67.