

EPIDEMIOLOGICAL ASSESSMENT OF BODY WEIGHT STATUS AMONG PRIMARY SCHOOL CHILDREN AGED 7–9 YEARS IN A CENTRAL ASIAN REGION

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The article presents the results of a study of the physical development of primary school children living in the Andijan region. Body weight of 246 schoolchildren aged 7 to 9 years was assessed using age-specific standards. The distribution of the examined children by body weight assessment categories was carried out considering gender differences. An increased proportion of children whose body weight exceeds age-appropriate standards was identified. Underweight was detected in a limited part of the sample.

Keywords: physical development, body weight, schoolchildren, assessment categories, normal weight, underweight, overweight

Relevance of the study. One of the priority tasks of modern age physiology and school medicine is to assess the patterns of growth and development of the child's body. Indicators of physical development make it possible to objectively judge not only the level of the child's somatic health, but also the peculiarities of his age maturation, adaptive capabilities and harmony of the formation of the main functional systems [1, 3, 5, 8, 10, 13, 14].

The process of growth and development is influenced by a wide range of factors, including genetic characteristics, environmental conditions, diet, level of motor activity and social conditions. As a result of their interaction, individual variants of morphofunctional development are formed, reflecting the features of the ontogenetic processes [2, 6, 9, 18, 19, 20].

Currently, the study of the age characteristics of the state of health of primary school children is of special scientific interest, since it is during this period that an intensive restructuring of the functional systems of the body and adaptation to new educational loads take place. In recent years, considerable attention has been paid to assessing the parameters of physical development, the functioning of the cardiovascular system, the reserve capabilities of the body and the effectiveness of adaptation mechanisms that ensure the child's adaptation to school conditions [1-4, 7, 8, 14-19].

The purpose of the study is to study the age-related dynamics of body weight in children 7-9 years old in school.

Material and research methods. The study involved students of grades 1-3 of school No. 31 of the city of Andijan, Andijan region. A total of 246 schoolchildren were examined, including 134 girls and 112 boys. Mass measurements were taken in the morning. In statistical processing, parametric methods of anthropometric indicators analysis were used: arithmetic mean (M), mean error (m), mean square deviation (σ) and coefficient of variation were calculated. The significance of the differences between the groups was assessed using Student's t-test at a significance level of $p \leq 0.05$.

Study results. The analysis showed a statistically significant increase in body weight in all students examined during the school year, which corresponds to physiological patterns of development at this age. Girls were found to exceed the average age standards of weight at 7 years old by 0.01 kg, at 8 years old by 5.53 kg, at 9 years old by 3.7 kg. In boys, body weight was higher than standard values at 8 years by 2.15 kg, at 9 years by 0.08 kg; at 7 years, on the contrary, there was a lag from the norm by 0.41 kg.

Comparison with regional and international standards of the CIS countries (for example, the weight range at 7 years in boys 20.0-26.4 kg, in girls 19.3-26.3 kg) shows a noticeable trend

towards an increase in body weight in the sample, primarily among girls 8 years old and boys 9 years old. This serves as an indicator of the possible risk of overweight and obesity. In boys 7 years old, the detected decrease in weight may reflect the features of growth and maturation rates or differences in diet and motor activity.

The distribution of children by rating categories showed the following patterns. Among boys 7 years old, 75% had a mass corresponding to the norm for this age, in girls the normal indicator was recorded only in 41.2% of cases. In the same group of girls, the proportion exceeding the norm was 41.2%, which is significantly higher than among boys (16.7%).

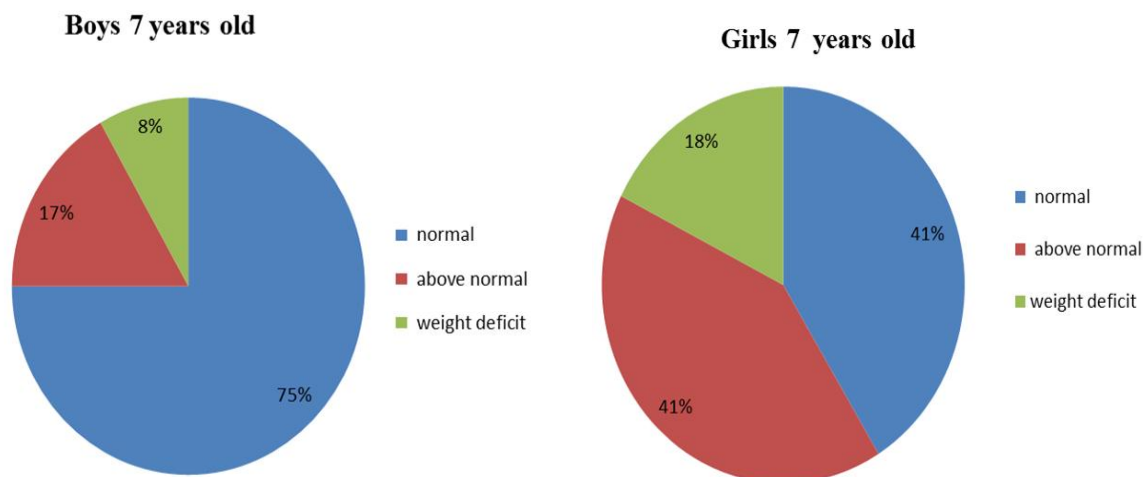


Diagram 1. Weight distribution by assessment categories in examined schoolchildren aged 7 years

At the age of 8, the proportion of schoolchildren with a mass above the standards increases: 62.5% of girls and 50% of boys. Mass deficiency in children of this age was completely absent.

In girls 9 years old, half of the surveyed showed a mass above average, among boys the figure was 38.9%.

In general, normal body weight was established in 47.1% of schoolchildren (44.4% of girls and 49.1% of boys), exceeding age standards in 42.3%, and lack of body weight was recorded in 10.6% of children.

Discussion. The findings demonstrate a consistent trend toward increased body weight in primary school-aged children in school-based settings. The established excess of normative values of body weight in a significant part of students indicates the formation of the risk of overweight and obesity already in the early stages of the school period. The gender differences found reflect the characteristics of the pace of physical development: in girls, overweight was recorded more often at the age of 7-9 years, while in boys the peak of deviations occurred at 10 years. This may be due to earlier onset of somatic maturation in girls and differences in motor activity.

The fact that there were no cases of body weight deficiency at the age of 8 years and the distribution shift towards exceeding the norm may indicate a decrease in the level of daily physical activity and a change in eating behavior due to the school regime. The data obtained confirm the need for regular monitoring of body weight, correction of the motor regime and the formation of healthy eating habits.

CONCLUSIONS:

1. Pupils 7-9 years old revealed a reliable increase in body weight during the school year, corresponding to age-related patterns of physical development.

2. A significant part of children have exceeded the average age standards of body weight, and this trend is more pronounced in girls.
3. Boys of 7 years old have body weight indicators below the age norm, which requires control and assessment of influencing factors.
4. The increasing proportion of overweight children indicates the need for preventive programs aimed at optimizing the diet and increasing motor activity in the school environment.

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