

Study of anthropometric indicators in children, living in the South Aral region

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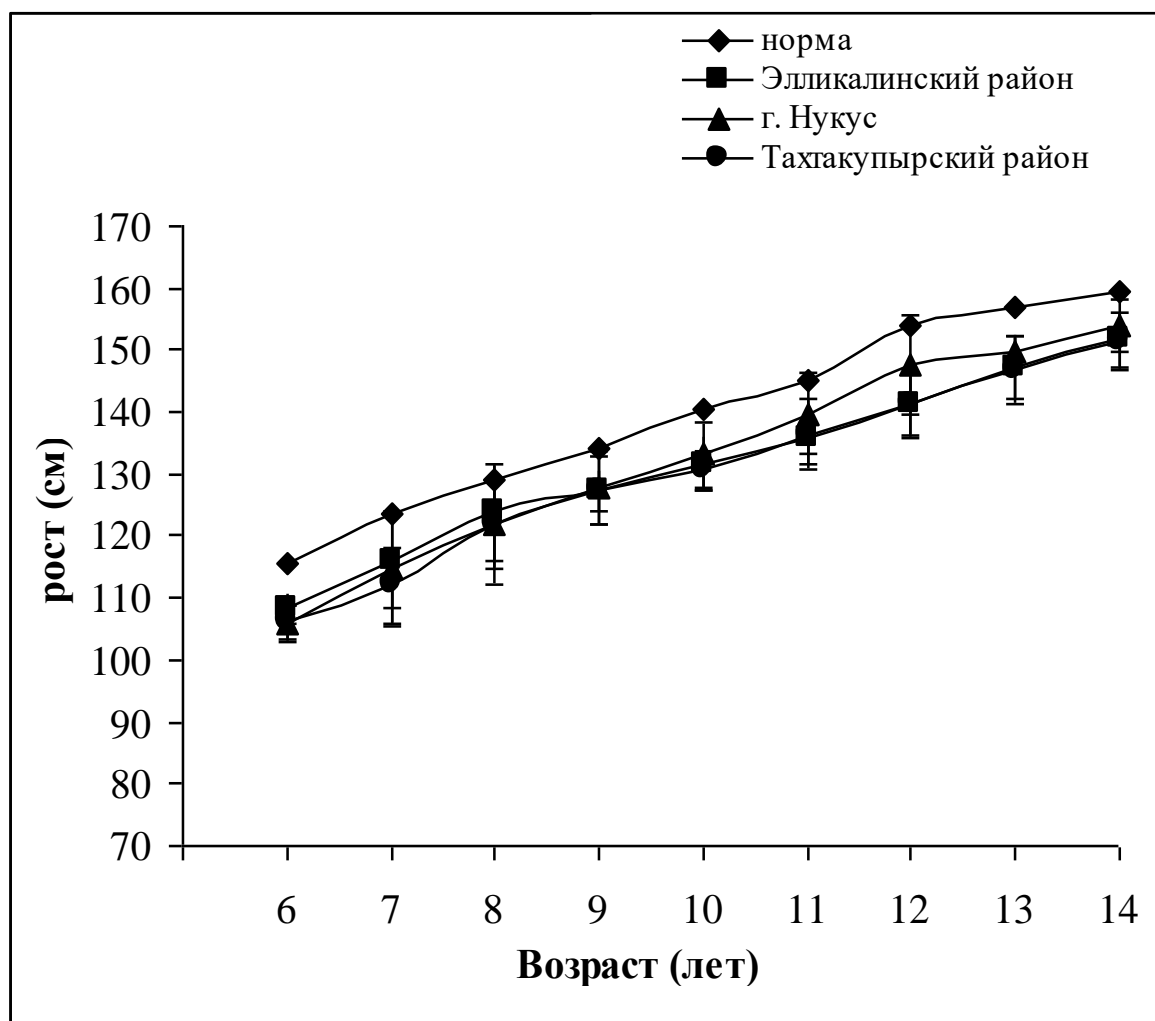
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Karakalpak State University As you know, physical development is one of the indicators of the health of the child population. Growth and body weight indicators are an important indicator of the physical development of children and adolescents (Balandin V.A., Chernyshenko Yu.K. 2005). They are used to assess and interpretation of the health status of the child population. The data of official statistics and scientific research indicate that negative trends in the change in demographic indicators in the Republic of Uzbekistan, including the state of health of the child population, persist (Mambetkarimov G.A. 2005). The problem of physical development of children and adolescents is studied in various directions, and one of the most urgent is the problem of studying the characteristics of physical development. I have children in unfavorable environmental conditions, for example, in the South Aral Sea region. At the beginning of the third millennium, the problem of the influence of polluted ecology in this region becomes the most urgent from the point of view of its influence directly on the younger generation. We examined the indicators of weight and height in girls and boys aged 6 to 14 years, living in areas with different degrees of environmental pollution: Takhtakupyr district - an environmental catastrophe zone, Nukus city is a zone of ecological risk and Ellikala region is a zone of relative ecological well-being. The data are presented in Fig. 1 and 2. As control indicators, the norms adopted in pediatrics were used (Kamilova RT 2001). When analyzing the annual anthropometric indicators, we came to the following results. At the age of 6, regardless of where they live, girls are slightly lower than the standard values. The latter are 111-120 command in relation to them, the growth of girls is 4 less; 9; and 8%, respectively, in the indicated areas. The increase in body length by 7 years was 6.1; 9.3 and 7.3 cm, which is within the limits of the existing norms, but, despite this, the growth of the body still remains below the norm by 7; 7 and 10%, respectively, in the districts.

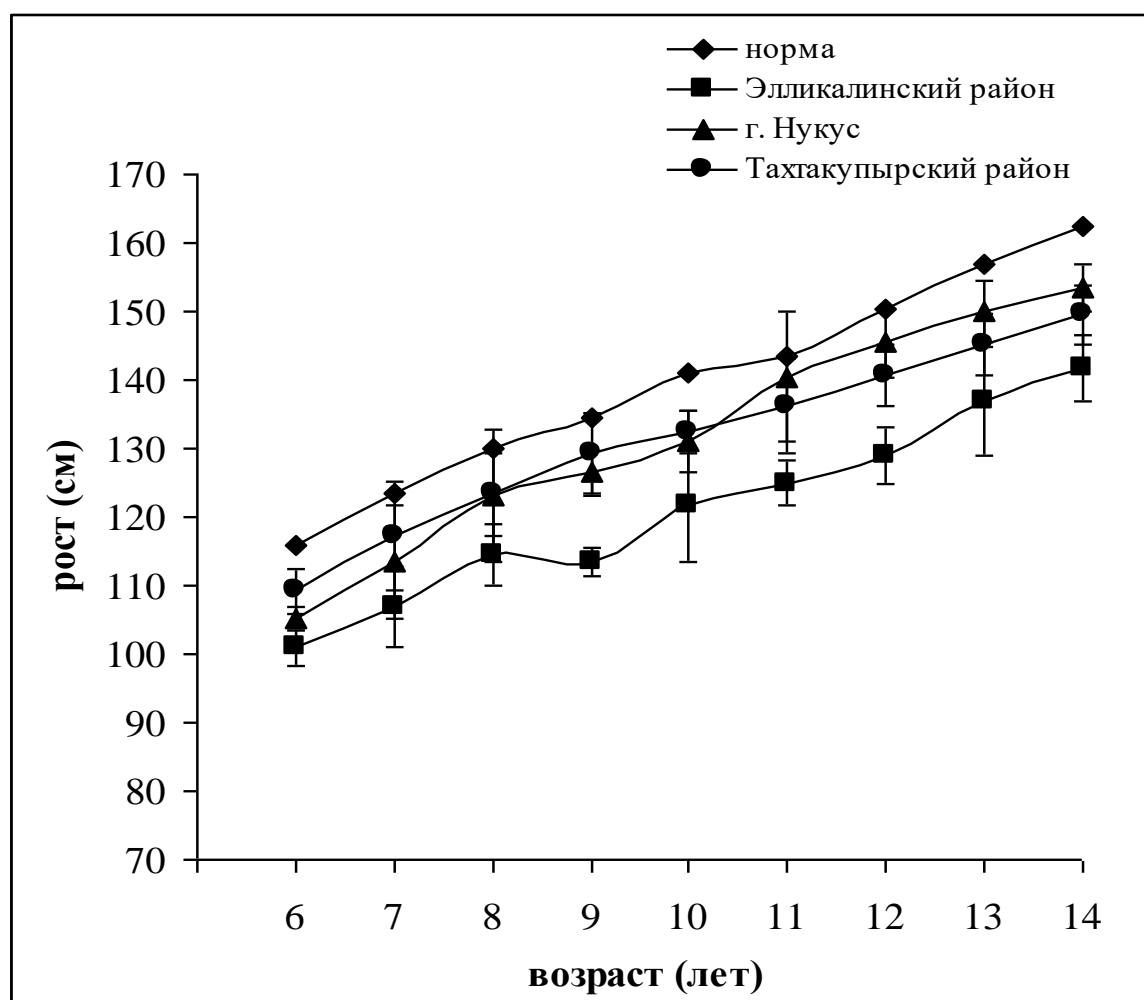
Fig.1. Growth rates of girls (cm) living in different areas South Aral Sea (M + m)



The indicated dynamics persists annually throughout the analyzed period of the growth of children, i.e. all years up to 14 years. By this age, the lag in body length in relation to the standard values was 6; 4 and 6%, respectively, in the districts. The data obtained on the state and growth dynamics of girls make it possible to conclude that they do not have noticeable differences depending on the area of residence. There is a general pattern - some lag in the growth of the body. Body length values for girls correspond to the minimum standard age indicators (Fig. 1). The annual increase in body length also corresponds to the lower limit of the norm. Probably, in this regard, attention should be paid to the height values of girls at 6 years of age. With normative values from 111 to 120 cm, the indicators for Ellikala district are lower by 4%, in Nukus city by 9% and in Takhtakupyr district by 8%. The obtained values of the height of boys from 6 to 14 years old are presented in Table 3.2 and in Fig. 3.2, from which it follows that hand slightly below the existing regulations. The most pronounced lag is traced among children born and living in the Ellikala region. It is 13, 14, 14, 16, 14, 13, 15, 13 and 13%, respectively. As for the boys from the city of Nukus and the Takhtakupyr region,

there are no noticeable differences in years between them. Growth retardation is traced as a general pattern and ranges from 5 to 10%. As for the value of the annual increase in body length, it is found for children from the city of Nukus and the Takhtakupyr region are within the existing age norms, and for boys from the Ellikalin'sky region, it is generally lower. By the age of 14, the body length of boys from this area is below the standard by 13% and less than the minimum value by 141.8 cm (the norm is 155-170 cm). The height of boys from the city of Nukus is 153.5 cm and the Takhtakupyr region is 149.5 cm. Noteworthy is the initial discrepancy between the boys' body length and the existing norms, that is, by the age of 6 years. The gap was respectively for regions 13; 9 and 6% (fig. 3.2)

Growth indicators of boys (cm) living in various regions of the Southern Aral Sea region (M + m)

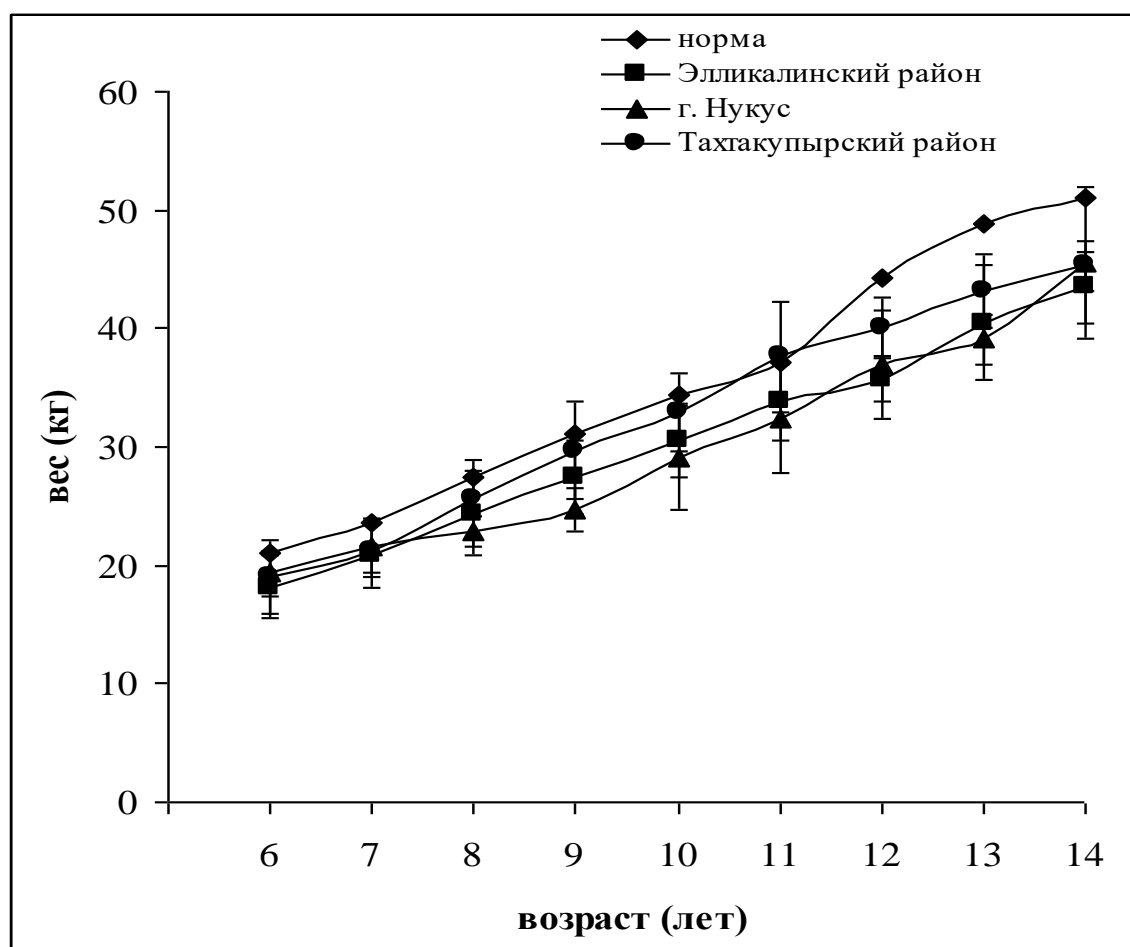


A comparative analysis of body weight indicators for girls and boys in the same age periods was also carried out. In girls aged 6 years, the normal body weight should be

from 19 to 23 kg. The data obtained during the examination of children indicate that they correspond to them, but are at the maximum lower value and differ from the average value for the Ellikala region by 13%, Nukus - 8 and Takhtakupyr region by 10% (Fig. 3.3). In subsequent years, the difference in average values girls from the normative continues to persist. Their body weight up to 11 years old corresponds to the lower values of the norm. From 12 years old to 14 years old, they begin to lag behind and do not reach these norms, differing from the average values by 19, 17 and 15%, respectively, over the years. A similar dynamics can be traced in relation to the increase in body weight in girls from the Takhtakupyr region. However, their body weight is higher than that of children from the Ellikala region by 1.3 - 12%. Moreover, the differences are gradually decreasing over the years: 7 let - 12%; 8 years old - 7; 9 years old - 5; 10 years - 4 and 11 years - 1.3%. However, starting from the age of 12, the lag in body weight from the normative values becomes noticeable and lower by 9%, 12% and 11%, respectively, over the years. At the age of 14, with a norm of 46.5 to 55.5 kg, the weight averaged 45.3 kg (Table 3.3). As for the body weight of girls from the city of Nukus, as can be seen from the table. 3.3. at 6 and 7 years old, it corresponds to the lower limit of the norm. In the next two years, slightly below it. However, in subsequent years it even exceeds average values. At the age of 14, the average weight of girls from the city of Nukus was 45.5 kg, while the norm was from 46.5 to 55.5 kg. In a comparative aspect, the weight gain in girls from the Ellikala region in the period from 6 to 10 years was 12.4 kg, in the city of Nukus - 9.8 kg, from the Takhtakupyr region - 14.0 kg with a norm of 13.5 kg. In the period from 10 to 14 years, respectively, by districts - 12.9; 16.4; 12.3 kg at a rate of 12.0 kg. In total, during the surveyed period, the weight of the girls increased accordingly by 25.3; 26.2 and 26.3 kg at a rate of 25,5 kg. Based on the data obtained, it can be concluded that more noticeable differences in the development of body weight differ in girls from the Ellikala region. They appear most noticeably by the age of 9, when their weight was 20% lower than the norm. In subsequent years, these differences became somewhat smaller, but continued to persist. The most favorable conditions, perhaps, were for the development of children from the Takhtakupyr region. The body weight of boys at 6 years old, depending on the area of residence, differs significantly: in the Ellikala region it corresponds to the average normative values (21.8 kg), in Nukus it is 11% lower (19.5 kg), and in the Takhtakupyr region it exceeds the average norm by 20% (26.3 kg). In subsequent years, in boys of the Ellikala region, body weight values correspond more to the lower limits of the norm, and after 11 years they are set at lower values. By the age of 14, their average weight was 41.3 kg, with the norm from 45 to 56.8 kg (Table 3.4.). Boys from Nukus throughout the entireIn the x age periods, the dynamics of the development of body

weight is similar to the normative one (Fig. 3.4). Body weight values correspond to low limit values of the norm and lag behind the average by 4-9%. As in children from the Ellikala region after 11 years, their body weight indicators begin to differ more significantly from the normative ones (by 8-14%). At the age of 14, the body weight of boys from the city of Nukus averaged 44.3 kg, while the norm was from 45.0 to 56.8 kg. Less than 9 years old weight of boys from Nukus less than from Ellikala and Takhtakupyr districts.

Body mass indicators of girls (kg) living in various regions of the Southern Aral Sea region (M + m)

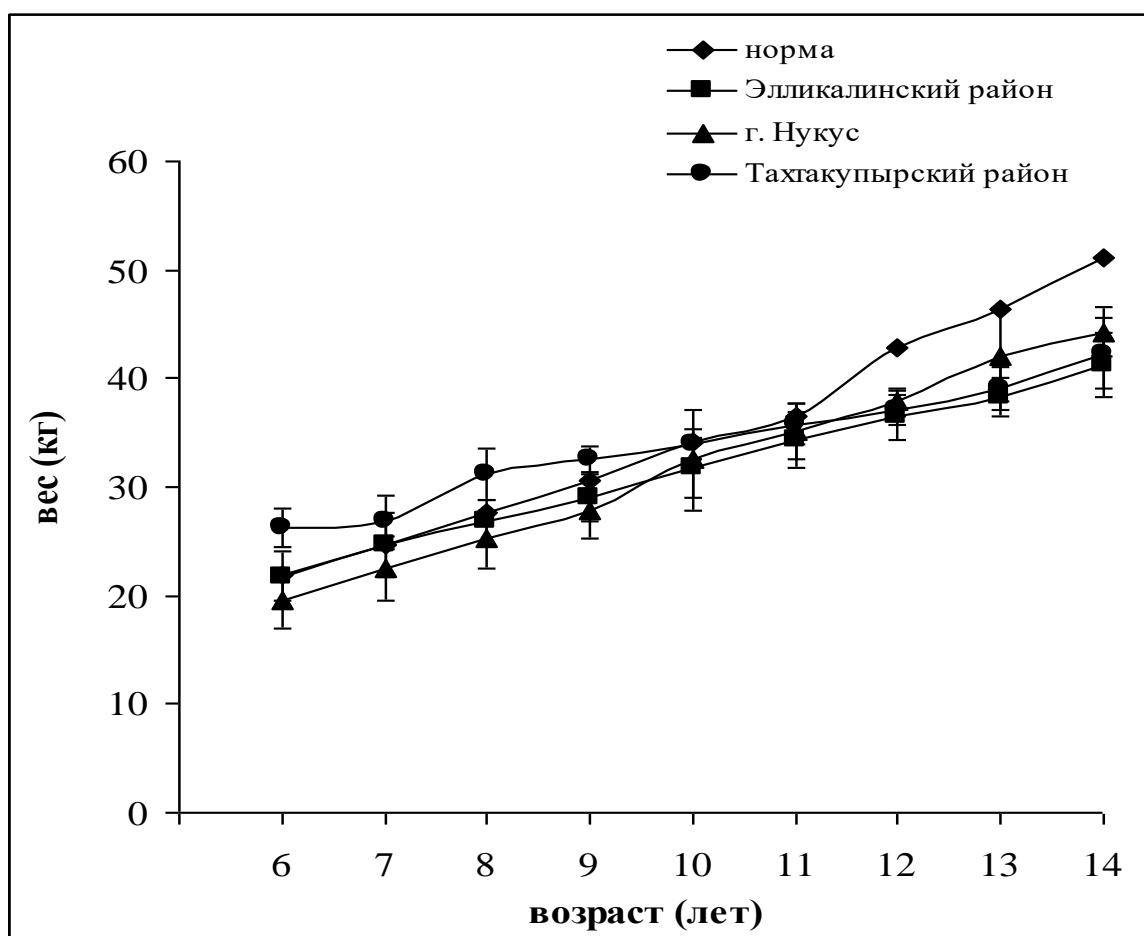


The body weight of boys living in the Takhtakupyr region up to 11 years old corresponds to the existing norms and even slightly exceeds the average values (by 8 - 16%). From the age of 9, there is a slowdown in body weight gain, which leads to a gradual lag in this indicator by 2 - 17%, and by the age of 14, the weight averaged 42.3 kg with a norm of 45.0-56.8 kg. In a comparative aspect, the weight gain in boys from the Ellikala region in the period from 6 to 10 years was 10.0 kg, in the city of Nukus -

13.0 kg and from the Takhtakupyr region - 7.6 kg with a norm of 12.1 kg. In the period from 10 to 14 years, respectively, by districts - 9.5; 11.8 and 8.4 kg with a norm of 16.9 kg. In total, during the surveyed period, the weight of boys increased by 19.5, respectively; 24.8 and 16.0 kg with a norm of 19.0 kg (Table 3.4).

Fig. 4

Body mass indicators of boys (kg) living in various regions of the Southern Aral Sea region (M + m)



Based on the data presented, it can be concluded that boys from Ellikala and Takhtakupyr districts have a lag in the development of body weight in the period from 6 to 10 years and continues to persist up to 14 years. Boys from the city of Nukus begin to lag behind in weight gain after 11 years, although to a somewhat lesser extent than from the indicated regions. At the age of 14, the body weight of boys in all surveyed districts was lower than the standard values. This is more pronounced in the Ellikala region - 19% (41.3 kg), Takhtakupyr - 17% (42.3 kg) and Nukus city by 13% (44.3 kg).

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