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MORPHOMETRIC INDICATORS OF GROWTH AND DEVELOPMENT OF CHILDREN IN ENDEMIC AREAS.

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Abstract: Introduction: The study of morphometric indicators of growth and development of children in the endemic zones of the Bukhara region showed that the anthropometric parameters of the body in boys with age (from 6 years to 12 years) increases in size.

Result: In boys, by the age of 12 in relation to the age of 6, the growth of children (boys) increased by 30.5%. The highest growth rate was revealed by the age of 7 by 10.9% in relation to the age of 6. Morphometric parameters (body weight, chest circumference, length of the upper and lower extremities) of 12-year-old boys in relation to 6-year-old children develop from 20.4% of the chest circumference to 50.9% of the body weight of children. The proportional development of the body of children at the main age stages of growth and development will reveal the patterns of postnatal ontogenesis.

Conclusion: The results of anthropometry showed that when examining children of 6-12 years of age on different parts of the body, the indicators of his physical development also directly increase with the growth of the child's age.

Keywords: children, height, body weight, chest circumference, length, upper limb, lower limb, head size.

Introduction

The health of children is an indicator of the well-being of society. At present, against the background of positive trends in increasing the birth rate and reducing child mortality, improving the socio-economic situation of families with children. Increasing the availability of education and medical care, a significant part of preschool children and teaching educational organizations are found to have various diseases and functional abnormalities [1,2,14].

Evaluation of the functioning of all body systems of healthy people will be incomplete without taking into account their constitutional features (somatotypes), since the morph functional development of people belonging to different types of constitution in postnatal ontogenesis occurs differently. One of the main criteria for the health status of the children population, which reflects the influence of endogen and hexogen factors, is the physical development of children [3]. The first clinical symptom of chronic diseases and genetically determined pathology is most often a violation of physical development [4,13].

Monitoring of physical development allows you to determine the characteristics of the growth and development of children, in conditions of a proper lifestyle and habitat. This will allow timely detection of deviations from the level of physical development in the norm and develop measures to prevent and eliminate

violations [5]. Body mass index, body surface area, waist circumference, waist ratio are clinical parameters of body fat and visceral obesity [6,7,12].

In the Bukhara region, there is a positive dynamics of the main demographic indicators, namely, natural population growth and an increase in the birth rate, as well as a significant decrease in infant mortality. And the frequency of non-communicable diseases and controlled risk factors for their development (poor nutrition, low physical activity, overweight) remain high [8,9].

Comparative characteristics of the size of the thyroid gland and the parameters of physical development of children from 11 to 12 years old in endemic zones of the Bukhara region were studied [10,11].

Taking into account the fact that the normative anthropometric parameters of children differ depending on the place and living conditions, we found it necessary to cite the indicators of practically healthy children of boys in the endemic zones of the Bukhara region.

The aim of the work to study the anthropometric indicators of growth and development of children (boys) in the age aspect in the endemic zones of the Bukhara region.

Material and methods.

The research involved 140 children (boys) aged from 6 to 12 years permanently residing in the Bukhara region. The body weight of children was studied using medical scales. Weighing was performed in the morning, on an empty stomach after emptying the intestines and bladder, they were asked to take off their clothes and shoes. The child stood quietly in the middle of the weighing platform. The data obtained were indicated in kilograms (kg). To measure height while standing, a standard-type height meter is used. The chest circumference was measured at rest. The length of the free upper and lower limbs and the size of the head were measured with a measuring tape. The methods of variational statistics were used with the calculation of the arithmetic mean of the studied indicator (M), the average standard error of the average (m), the statistical significance of the measurements obtained when comparing the average quantitative values was determined by the Student's criterion (t). When organizing and conducting research, the principles of evidence-based medicine were used [Ponomareva L.A., Mamatkulov B.M., 2004].

The results of the study and discussion

Studies have shown that the height of 6 years old male children ranged from 112.4 to 120.3 cm, on average – 114.3 ± 0.38 cm. Body weight ranged from 19.3 kg to 27.2 kg, on average – 22.8 ± 0.38 kg. The chest circumference in the pause was in the range from 54.1 cm to 59.2 cm, on average – 56.1 ± 0.24 cm.

The height of 7-year-old male children ranges from 116.2 – 124.2 cm, on average – 120.3 ± 0.30 cm. Body weight ranges from 20.2 to 31.3 kg, on average – 25.1 ± 0.41 kg. The breast circumference in the pause varies from 54.9 cm to 61.8 cm, on average – 58.2 ± 0.26 cm.

In 8-year-old children, the height ranged from 120.2 to 130.9 cm, on average – 127.2 ± 0.42 cm. Body weight ranged from 20.5 to 34.6 kg, on average – 26.9 ± 0.55 kg. The chest circumference in the pause was in the range from 55.2 to 63.4 cm, on average – 59.8 ± 0.32 cm. In all age periods, anthropometric indicators of the

development (height, body weight and chest circumference) of children (boys) in the second period, childhood increases.

The length of growth in 9-year-old male children varied from 123.0 to 138.0 cm, on average – 132.4 ± 0.57 cm. Body weight ranged from 22.6 to 40.2 kg, on average – 30.5 ± 0.67 kg. The chest circumference in the pause was in the range from 55.9 to 66.8 cm, on average – 61.8 ± 0.41 cm.

The height of 10-year-old male children ranged from 127.9 to 146.2 cm, on average 140.1 ± 0.70 cm. Body weight ranges from 28.1 to 43.3 kg, on average – 33.8 ± 0.58 kg. The chest circumference in the pause was in the range from 56.7 to 69.2 cm, on average – 64.6 ± 0.48 cm.

The length of growth in 11-year-old male children ranged from 135.2 to 150.3 cm, on average – 145.2 ± 0.72 cm. Body weight ranged from 29.3 to 46.4 kg, on average – 36.4 ± 0.82 kg. The chest circumference in the pause was in the range from 58.0 to 71.3 cm, on average – 66.0 ± 0.64 cm. In 12-year-old male children, the length of growth varied from 142.2 to 158.1 cm, on average – 150.1 ± 0.66 cm. Body weight ranged from 30.3 to 48.4 kg, on average – 41.7 ± 0.72 kg. The breast circumference in the pause is from 59.2 to 74.5 cm, on average – 68.8 ± 0.61 cm. Studies have shown that in 6-year-old male children, the length of the upper limbs ranged from 52.5 to 57.8 cm on average – 52.9 ± 0.25 cm, and the length of the lower limb from 56.2 to 65.3 cm on average – 58.0 ± 0.43 cm.

In 7-year-old children, the length of the upper limbs varied from 53.8 to 59.1 cm on average – 56.2 ± 0.24 cm, and the length of the lower limb from 58.2 to 69.7 cm, on average – 65.2 ± 0.42 cm. By the age of 8, the length of the upper limb varied from 54.2 to 59.4 cm on average – 57.3 ± 0.20 cm, and the length of the lower limb at this age is from 64.7 to 74.2 cm on average – 69.2 ± 0.37 cm.

At the 9th year of life of male children, the length of the upper limb varied from 55.1 to 66.5 cm on average – 60.3 ± 0.43 cm, and the length of the lower limb from 67.3 to 75.2 cm on average – 71.2 ± 0.30 cm. In 10-year-old male children, the length of the upper limb ranged from 60.8 to 76.1 cm on average – 65.6 ± 0.58 cm, and the length of the lower limb ranged from 70.7 to 79.8 cm on average – 76.6 ± 0.34 cm.

By the age of 11 years of male children, the length of the upper limb ranges from 65.7 to 75.9 cm on average – 68.6 ± 0.46 cm, and the length of the lower limb ranges from 73.8 to 84.8 cm on average – 79.8 ± 0.36 cm.

At the 12th year of life of male children, the length of the upper limb is from 66.7 to 77.4 cm on average – 70.4 ± 0.52 cm, and the length of the lower limb was from 80.1 to 88.2 cm on average – 83.9 ± 0.32 cm.

In 6-year-old boys, the head circumference ranges from 49.2 to 53.2 cm on average – 51.7 ± 0.30 cm. The longitudinal diameter of the head is from 15.1 to 16.9 cm, on average – 15.7 ± 0.08 cm; the transverse size of the head is from 11.1 to 13.1 cm, on average – 12.1 ± 0.09 cm.

In 7-year-old boys, the head circumference ranges from 49.3 to 53.8 cm on average – 51.9 ± 0.17 cm. The longitudinal diameter of the head is from 15.4 to 17.5 cm, on average – 16.3 ± 0.08 cm; the transverse size of the head is from 11.8 to 13.8 cm, on average – 12.8 ± 0.07 cm.

By the age of 8 the head circumference of boys ranges from 51.3 to 54.2 cm on average - 52.2 ± 0.11 cm, the longitudinal diameters of the head ranges from 16.1 to 17.8 cm on average - 16.7 ± 0.07 cm, the transverse head size from 12.2 to 14.1 cm, on average - 13.1 ± 0.07 cm.

The head circumference in 9-year-old boys ranges from 51.5 to 54.6 cm on average - 52.8 ± 0.12 cm, the longitudinal diameter of the head at this age varies from 16.3 to 18.1 cm on average - 17.0 ± 0.07 cm, the transverse head size from 12.6 to 14.7 cm, on average - 13.6 ± 0.08 cm.

By the age of 10, the head circumference of boys ranges from 52.4 to 55.1 cm , on average - 53.8 ± 0.10 cm . The longitudinal diameter of the head ranges from 16.5 to 18.3 cm, on average - 17.1 ± 0.07 cm; the transverse size of the head ranges from 12.8 to 15.0 cm, on average - 13.9 ± 0.08 cm.

The head circumference of 11-year-old boys ranges from 53.3 to 55.5 cm on average - 54.8 ± 0.15 cm, the longitudinal diameter of the head of boys at this age ranged from 16.8 to 18.5 cm on average - 17.5 ± 0.22 cm, the transverse head size from 13.9 to 15.4 cm, on average - 14.5 ± 0.07 cm

By the age of 12, the head circumference of boys ranged from 54.6 to 56.2 cm on average - 55.2 ± 0.06 cm, the longitudinal diameter of the head ranges from 16.9 to 19.1 cm on average - 17.8 ± 0.09 cm, the transverse size of the head varied from 14.1 to 15.9 cm, on average - 14.8 ± 0.07 cm

Conclusions

Thus, the study of the proportional development of the human body at the main age stages of growth and development will reveal the patterns of human ontogenesis. Anthropometric parameters in boys from 7 years to 12 years showed that, with age, an increase in the size of the body is revealed. In boys by the age of 12, the growth of children (boys) increased by 30.5% in relation to the age of 7. The highest growth rate was revealed by the 7th year of life by 10.9% in relation to the age of 6. Morphometric indicators of body weight, chest circumference, length of the upper and lower extremities of boys at 12 years of age, in relation to 7-year-olds, children develop from 20.4% of the chest circumference to 50.9% of the body weight of children.

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