



Analysis of Indicators of Physical Development of Preschool Children

Manasova I.S.¹
Yadgarova Sh.S.²

Received 15th March 2021,
Accepted 26th March 2021,
Online 3th April 2021

^{1,2} Bukhara State Medical Institute

ABSTRACT: *The article discusses the results of anthropometric studies of children attending preschool institutions. The assessment of the harmony of physical development of children is given. The physical development of children is a combination of morphological and functional properties of an organism that characterize the process of its growth and maturation. The study, carried out in dynamics, made it possible to more fully reveal the tendencies of the temporal variability of the characteristics of the physical development of children. Based on the results of the study, anthropometric standards for the physical development of children were developed.*

In addition, the results of the study of the physical development of children showed that at present, with the main regularities of growth and development being preserved, we can talk about the process of retardation.

Key words: *children, anthropometric indicators, physical development, harmony of development, preschool age.*

Relevance

The physical development of children is one of the main indicators of health. Assessment of the level of physical development is now of paramount importance, since it is largely determined by the socio-economic conditions and the ecological state of the territory and, in addition, reflects the standard of living of the population. The study of the characteristics of the growth and development of children in changing socio-economic conditions is one of the main problems of pediatrics at the present stage. [4,5] Timely dynamic observation of the physical development of a growing child's body is necessary to identify the individual characteristics of growth and maturation, the pace and harmony of development and is an important diagnostic criterion. An objective assessment of the level of physical development of children is possible only if each region has its own, local standards of

physical development. The development of standards for physical development is one of the priority areas of hygiene[4,5]

children and adolescents; and pediatric services. Since these criteria are not static in time, it is recommended to continuously correct the territorial standards of physical development of the child population. In this connection, this research work was carried out.

Materials and research methods

The assessment of physical development was carried out according to the main anthropometric parameters (body weight and length, chest and head [4,5]circumference) in 450 children (270 boys and 180 girls) aged 3 to 7 years. In this work, we used data from a similar study of the physical development of 340 children (185 boys and 175 girls) from 3 to 7 years old, conducted at the Department of General Hygiene of the Bukhara State Medical Institute.

The studies were carried out by the transverse method. To assess the physical development of children, a unified method of anthropometric measurements was used. A prerequisite for anthropometry was the observance of the rules and techniques, which included taking measurements at strictly defined points of the body and using standard instruments. The somatotype was determined according to the scheme with the allocation of the following three soma-totypes: microsomatic, mesosomatic and macrosomatic. The assignment of a child to one of these somatotypes was made according to the sum of the numbers of areas or "corridors" of the centile scale obtained for length, body weight, and chest circumference. With the sum of points (numbers) up to 10, the child was attributed to the microsomatic type, with the sum from 11 to 15 to the meso-somatic type, with the sum from 16 to 21 - to the macrosomatic type.

Determination of the harmony of development **was carried out** on the basis of the same results of centile assessments. If the difference in the numbers of areas or "corridors" between any of the 3 indicators does not exceed 1, we can talk about harmonious development. If this difference is 2, then the child's development is considered disharmonious, and if the difference is 3 or more, the development is sharply disharmonious.

Results and its discussion.

From three to four years, the body weight gain was 2.1 kg in boys, 1.7 kg in girls, 1.3 kg in boys, and 1.4 kg in girls. In the period from 4 to 7 years, the body weight of boys in the year 2015 increased by 5.9 kg, in 2020 - by 8.8 kg. The minimum weight gain (by 1.3 kg) in boys occurred in 2015 at the age of 4 to 5 years, and in 2020 - at the age of 3 to 4 years. The maximum weight gain (4.6 kg) in boys was in 2015 at 6-7 years, and in 2020 (by 3.0 kg) at the same age. In girls from 4 to 7 years old, body weight increased in 2015 by 7.2 kg, in 2020 by 6.8 kg. In girls, the minimum body weight gain (1.5 kg) was recorded in 2015 at the age of 4-5 years, in 2015 (1.4 kg) - at the age of 3-4 years. The maximum weight gain (by 3.1 kg) in girls was established in 2015 at the age of 6-7 years, in 2020 (by 2.5 kg) - at the same age (Table 1).

Periods of stunted growth in children were observed in 2015 from 4 to 5 years (for boys by 5.6 cm, in girls by 5.5 cm); in 2020, from 3 to 4 years (for boys by 5.6 cm, for girls by 5.5 cm), from 5 to 6 years (for girls by 5.8 cm). Periods of accelerated growth in children were recorded in 2015 from 3 to 4 years (for boys by 6.3 cm, for girls by 6.4 cm), from 5 to 6 years (for boys by 6.7 cm, for girls by 7.0 cm) and from 6 to 7 years (for boys by 9 cm, for girls by

8.1 cm). In 2015, growth acceleration was noted at the age from 4 to 5 years (for boys by 7.5 cm, for girls by 8.1 cm), from 5 to 6 years (for boys by 6.9 cm), from 6 to 7 years (boys 6.8 cm, girls 6.9

cm). The body length in the age period from 3 to 7 years in 2015 for boys increased by 27.6 cm, for girls by 27.0 cm, in 2020 for boys by 26.8 cm, for girls by

26.3 cm. Body length at 7 years in 2015 was 126.7 ± 0.9 cm for boys, 125.8 ± 0.6 cm for girls, and 122.9 ± 0.4 cm for boys in 2020, girls

121.3 ± 0.5 cm (Table 1).

When determining the harmony of development, it was found that, compared to 2015, a decrease in the number of children with harmonious development has been revealed. So, in 2015 out of the total number of surveyed boys with harmonious development ranged from 64.2% to 77.9%, and in 2020 from 53.3% to 68.1%, girls - from 42.2% to 80.8% and from 39.2% to 80.7%, respectively. It was found that in 2020, compared to 2015, the number of children with harmonious development in boys decreased by 5, and in girls in 4 out of 5 surveyed age-sex groups. Along with this, a tendency was established for an increase in the number of children with disharmonious development. So, if in 2015 out of the total number of surveyed boys with disharmonious development ranged from 20.5% to 34.8%, now from 29.8% to 44.5%, girls from 17.5% to 55.7% and from 17.6% to 58%, respectively. Moreover, compared to 2015, in all observed age-sex groups in 2020, there was an increase in their number in boys, and in girls in 4 age-sex groups. An increase in the number of children with sharply disharmonious development in comparison with their peers in 2015 has also been established. So, if in 2015 boys with sharply disharmonious development ranged from 1.6% to 2.2%, then in 2020 from 1.4% to 2.4%, and girls from 1.6% to 2.1% and from 1.7% to 2.8%, respectively. It was found that, compared to 2015, out of 5 age-sex groups in 2020, the number of children with sharply disharmonious development, both among boys and girls, increased in 4 age-sex groups (Table 2). Thus, at present, compared to 2015, the number of children with a microsomatic body type, disharmonious and sharply disharmonious development has increased.

In addition, it was found that the features of the physical development of children aged 3 to 7 years are:

- a significant increase in body weight in boys and girls, both in 2015 and in 2020 from the age of six, and the maximum increase in body length, chest circumference in the same age period;

findings

Based on all of the above, it can be concluded that, thanks to the monitoring of the main anthropometric parameters in all age-sex groups from 3 to 7 years old, it was possible to carry out their comparative analysis over a five-year period and identify the features of physical dis-

The development of children, carried out in dynamics, made it possible to more fully reveal the tendencies of the temporal variability of the characteristics of a growing organism. A detailed analysis of the data obtained made it possible to compile standard tables of the main indicators of the physical development of children, which can be used by doctors for a comprehensive assessment of the health status of different age and sex groups.

The results of the study of the physical development of children showed that at present, with the main regularities of growth and development being preserved, we can talk about the process of retardation. This is evidenced by the shift of the second growth shift to a later age period.

References:

1. Гигиена детей и подростков: руководство к практическим занятиям: учебное пособие / под ред. проф. В.Р. Кучмы. - М.: ГЭОТАР-Медиа, 2010. – 560с.
2. Кучма, В.Р. Гигиена детей и подростков: учебник / В.Р.Кучма. - М.: ГЭОТАР-Медиа, 2008. – 47
3. Кузнецова М. Н., Змановский Ю. Ф., Алымкулов Р. Д. Профилактика острых респираторных заболеваний в дошкольных учреждениях // Здоровый дошкольник. Социально-оздоровительная технология 21 века. М., Аркти, 2000. С. 66-70.3
4. Баранов А. А., Кучма В. Р., Сухарева Л. М. Оценка состояния здоровья детей. Новые подходы к профилактической и оздоровительной работе в образовательных учреждениях // Руководство для врачей. М., 2006. 412 с.
5. Zhumaeva Z.Zh., Manasova I.S. Risk factors of formation congenital heart diseases// Academica International Multidisciplinary Research Journal. - 2020.- P. 76-81.
6. Манасова И.С. Гигиеническая оценка факторов риска формирования врожденных пороков сердца// Международная научная конференция, посвященной 85-летию Курского государственного медицинского университета Том I Курск. - 2020.- С. 236-238.