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A STUDY OF THE PHYSICAL DEVELOPMENT OF ADOLESCENT GIRLS AGED 12-15 YEARS

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12-15 ЁШДАГИ ЎСМИР ҚИЗЛАРНИНГ ЖИСМОНИЙ РИВОЖЛАНИШИНИ ТЕКШИРИШ

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ИССЛЕДОВАНИЕ ФИЗИЧЕСКОГО РАЗВИТИЯ ДЕВОЧЕК-ПОДРОСТКОВ В ВОЗРАСТЕ 12-15 ЛЕТ

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Резюме. *Ушбу мақолада Самарқанд шаҳрида яшовчи 12-15 ёшдаги қиз болаларда жисмоний ривожланиши ва антропометрик кўрсаткичлар орасидаги ўзаро корреляцион боғликликни ўрганилди.*
Калит сўзлар: Болалар, ўсмирлар, жисмоний ривожланиши, антропометрия, корреляцион боғликлик.

Abstract. In this article, the correlation between physical development and anthropometric indicators in girls aged 12-15 living in the city of Samarkand was studied.
Keywords: Children, adolescent, physical development, anthropometry, correlation gardening.

Introduction:The study of physical development of adolescent girls is very important, in this period of development girls undergo not only great changes in physical development, but also the restructuring of reproductive organs. To study the processes of growth and development of children it is necessary to study the correlations between the parameters (1,4,5). Material and methods of research. Anthropometric measurements of 12-15 years old girls of Samarkand city were made, 100 girls were studied for each age. The following body parameters were studied: longitudinal and transverse diameters of the skull, head circumference, transverse size of the forehead, vertical diameter of the skull, length and width of the skull base, zygomatic and mandibular diameters, body length and weight, trunk length, body length, chest circumference in 3 states: at (rest, at the height of inhalation and at full exhalation), upper segment length, transverse and antero-posterior chest diameters, chest height, upper and lower limb lengths and their segments, shoulder and hip circumferences, shoulder width, pelvic width, and a correlation relationship (1) between weight, chest circumference (at rest), upper and lower limb lengths and body height was established.

Keywords: anthropometric, body mass index (BMI), weight, height, childhood.

Materials and methods: For the article, the relevant literature and works of other authors were analysed and studied and anthropometric indicators of girls aged 12 to 12 years were measured.

Research results: Anthropometric measurements showed that the longitudinal diameter of the skull in 12-year-old girls was 16.75 ± 0.17 cm, in 13-year-old girls 16.83 ± 0.18 cm, in 14-year-old girls 16.93 ± 0.18 cm, in 15-year-old girls 17.07 ± 0.16 cm. Transverse diameter of the skull at 12 years is $14,66\pm0,15$ cm., at 13 years $14,78\pm0,17$ cm, at 14 years-$15,04\pm0,15$ cm, at 15 years-$15,11\pm0,13$ cm, head circumference at 12 years is $51,95\pm0,33$ cm. at 13 years $52,60\pm0,37$ cm. in 14 years-$53,31\pm0,36$ cm and in 15 years-$53,63\pm0,36$ cm, transverse dimension of forehead in 12 years-$10,63\pm0,11$ cm, in 13 years-$10,87\pm0,12$ cm, in 14 years-$11,29\pm0,17$ cm, in 15 years-$11,43\pm0,13$ cm, height (vertical) da metre of skull in 12 years-13, $29\pm0,18$ cm, in 13 years - $13,36\pm0,20$ cm, in 14 years $13,73\pm0,18$ cm, in 15 years $13,73\pm0,16$ cm, length of skull base in 12 years $14,80\pm0,17$ cm, in 13 years-$15,14\pm0,20$ cm, in 14 years $15,28\pm0,18$ cm. at 15 years $15,37\pm0,16$ cm,

skull base width at 12 years 12,32±0,13 cm. at 13 years 12,66±0,13 cm, at 14 years 12,84±0,13 cm, at 15 years 12,94±0,13 cm, zygomatic diameter at 12 years 11,91±0,16 cm, at 13 years 12,21±0,16 cm. At 14 years 12.22±0.16 cm, at 15 years 12.44+0.16 cm, mandibular diameter at 12 years 9.65±0.15 cm, at 13 years 9.99±0.16 cm, at 14 years-10.15±0.18 cm, at 15 years - 10.46±0.14 cm, of the average value of body length in girls of Samarkand at 12 years age is 144.71±2.32 cm, in girls of Minsk city body length is 154.6 cm, in girls of Samarkand city at 13 years of age 155.6 cm, in girls of Minsk city at 15 years of age 154.6 cm. Samarkand girls at the age of 13 are 155.40±2.53 cm, in girls of Altai district of Osh oblast (2) 144±7 cm, in girls of Minsk 159.3 cm, at the age of 14 girls of Samarkand 158.91±2.53 cm, in girls of Osh oblast (2) 144±7 cm, in girls of Minsk 159.3 cm. At the age of 15, the body height of girls of Samarkand is 158.91±2.02 cm, Kyrgyz girls 15026 cm, girls of Minsk 162.4 cm, at the age of 15, respectively, 159.63±1.89 cm, 153±7 cm and 162.4 cm, body weight at the age of 12, girls of Samarkand - 34.57±1.68 kg, girls of Minsk 42.9 kg, at the age of 13, girls of Samarkand - 34.57±1.68 kg. Samarkand girls . 41,33±1,84 kg, in girls of Minsk 48,8 kg, in 14 years of age in girls of Samarkand 46,42±1,84 kg. Samarkand girls 46,42±1,80 kg. in girls of Minsk - 54,6 kg, at 15 years of age in girls of Samarkand. Torso length at the age of 12 is 42.42±0.86 cm, at the age of 13 is 44.62±0.90 cm, at the age of 14 is 47.03±0.90 cm. in 14 years 47,03±0,75 cm, in 15 years 47,95±0,67 cm, body length in 12 years- 66,14±1,49 cm, in 13 years-71,83±1,85 cm, in 14 years 73,59±1,73 cm, in 15 years 73,60±1,45 cm. chest circumference at rest (in pause in 12 years 64,61±1,24 cm, in 13 years 69,23±1,23 cm, in 14 years 72. 95: 1.22 cm, at 15 years 75.46±1.23 cm, chest circumference at height of inspiration at 12 years - 68.89±1.20 cm, at 13 years 73.76±1.36 cm. at 14 years 77.63=1.24 cm. In 15 years - 80,13±1,15 cm, chest circumference at full exhalation in 12 years 63,76±1,24 cm, in 13 years 68,40±1,25 cm. in 14 years - 72,06±1,20 cm, in 15 years 74,72±1,20 cm, waist circumference in 12 years 55. 32±1.22, at 13 years- 58.18±1.15 cm, at 14 years- 60.40±1.18 cm, at 15 years 62.21±1.32 cm, upper arm length at 12 years 21.58±0.36 cm, at 13 years-22.54±0.39 cm, at 14 years 23, 12±0.36 cm, at 15 years 23, 52±0.41 cm, transverse breast diameter at 12 years- 20.3610.34 cm, at 13 years 21.55±0.36 cm, at 14 years 22.1620.36 cm, at 15 years 22.9110.38 cm, antero-posterior diameter of chest at 12 years 14,4910,32 cm, at 13 years 15,2510,32 cm, at 14 years 16,13±0,31 cm, at 15 years 16,54±0,38 cm, chest height at 12 years 23, 60±0,49 cm, in 13 years-25,3010,56 cm, in 14 years- 26,9310,53 cm, in 15 years- 27,60±0,52 cm, length of upper limb in 12 years- 62,61±1,32 cm, in 13 years- 67,63±1,02 cm.

At 14 years 69.84±0.91 cm, at 15 years 70.47±0.77 cm, shoulder length at 12 years 23.18±0.40 cm. at 13 years 24.87±0.41 cm, at 14 years 25.50±0.32 cm. at 15 years- 26.00±0.34 cm, shoulder width at 12 years 30.2310.45 cm, shoulder width of adolescent girls in Samarkand at age 13 was 31.64±0.46 cm, in Osh girls - 32.0±1.8 cm, at age 14 respectively 32.90±0.52 cm and 34.2±1.6 cm, at age 15 33.31±10.49 cm and 33.9±1.7 cm, shoulder girth at rest at age 12 19.33±0.48 cm, at age 13 - 20.90±0.54 cm. In 14 years 22,14±0,53 cm, in 15 years 23,40±0,57 cm, shoulder girth at tense standing in 12 years- 20,3510,48 cm, in 13 years 21,87±0,56 cm, in 14 years - 23,40±0,54 cm, in 15 years 24, 79±0.57 cm, forearm length at 12 years- 23.46±0.38 cm, at 13 years-25.26±10.48 cm, at 14 years-26.16±0.37 cm, at 15 years-26.38±0.34 cm, hand length at 12 years- 16.61 10.28 cm, at 13 years-17.59±0.30 cm. in 14 years - 18,10±0,25 cm, in 15 years - 18,23±0,23 cm, length of lower limb in 12 years 78,48±1,26 cm, in 13 years - 83,52±1,23 cm in 14 years 85,42±1,02 cm, in 15 years "86914±0,97 cm, length of thigh in 12 years - 38,96±0,69 cm, in 13 years - 41,48±0,63 cm; at 14 years 42,40±0,61 cm, at 15 years 42,90±0,56 cm, thigh circumference at 12 years 41,05 1,09 cm, at 13 years 43,82±1,32 cm, at 14 years 47,68±1,19 cm, at 15 years 49,94±1,18 cm, pelvic width at 12 years 22,1610,46 cm. At 13 years 24,52-0,51 cm, At 14 years 25,1±0,44 cm, At 15 years 26,4810,41 cm, Tibia length at 12 years 33,66-0,60 cm. and at 13 years. 35.07±0.60 cm, at 14 years 36.68±0.53 cm, at 15 years.

30,93±0,61 cm, tibia circumference at 12 years 27,18-0,68 cm, at 13 years 29,02±0,61 cm, at 14 years 30,56±0,64 cm, at 15 years 31,50±0,61 cm, foot length at 12 years 22,7340,32 cm, at 13 years 23,67±0,35 cm, at 14 years - 24,02±0,26 cm, at 15 years 24,04±0,28 cm. Our study of correlation dependence in adolescent girls showed that at 12 years of age with an average weight of 34.57±1.69 kg from a height of 144.71±2.32 cm, the correlation coefficient was

0.6033, at 13 years of age. This value with an average weight of 41.33±1.84 kg and an average height of 155.40±2.53 cm was 0.5617, at 14 years of age this value with an arithmetic mean of 46.42±1.80 kg and an average height of 158.91±2.02 was 0.4381, at 15 years of age the correlation coefficient with an average weight of 50.58±2.04 kg and a height of 159.63±1.89 cm was 0.3385. The value of the correlation coefficient at 12 years of age when studying the correlation relationship between the mean values of chest circumference (at rest) of 64.61±1.24 cm with a mean height of 144.71±2.32 cm was 0.6331, at 13 years old this value with chest circumference (at rest) 69,23±1,23 cm and height 155,40+2,53 cm was 0,5571, at 14 years old with average chest circumference 72,95±1,22 cm and height 158,91±2,02 cm was

0,4311, at 15 years old the correlation coefficient 0,1881 with average chest circumference 75. 46±1.23 and height 159.63±1.89 cm.

Estimation of the correlation coefficient value of the upper limb length dependence on height showed that at 12 years of age in girls with average upper limb length 62,61±1,32 cm and average height 144,71±2,32 cm this value was equal to 0,4504, at 13 years of age with average upper limb length 67,6311,02 cm and height 155,40±2,53 cm it was 0,7148. At 14 years of age, with mean upper limb length 69.84±0.91 cm and mean height 158.91±2.02 cm, the correlation coefficient was 0.4229 At 15 years of age, the correlation coefficient was 0.5637 with arithmetic mean upper limb length 70.47±0.77 cm and mean height 159.63±1.89 cm. When calculating the correlation coefficient of lower limb length from height, we found that this index has the following values 12 years old with the mean values of lower limb length 78,48±1,26 cm and height 144,71±1,32 cm it is equal to 0,8038, at 13 years old this index is 0,7331 with the arithmetic mean values of lower limb length 83. 52±1.23 cm and average height data: 155.40-2.50 cm, at 14 years of age this correlation coefficient at mean lower limb length data 85.42±1.02 cm and average height data 158.91±2.02 cm is 0.4982, at 15 years of age - at mean lower limb length data 86.14±0.97 cm and average height data 159.63±1.89 cm this index was 0.6694

Conclusions: The correlation relationship between weight and height is average at 12 years of age it is at its upper limit (0. 6033) of the mean score, with a gradual decrease in its 15 years of development to the lower boundary (0.3185) of the mean score.

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ИССЛЕДОВАНИЕ ФИЗИЧЕСКОГО РАЗВИТИЯ ДЕВОЧЕК-ПОДРОСТКОВ В ВОЗРАСТЕ 12-15 ЛЕТ

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Резюме. В данной статье изучена корреляция между физическим развитием и антропометрическими показателями девочек 12-15 лет, проживающих в городе Самарканд.
Ключевые слова: Дети, подростки, физическое развитие, антропометрия, корреляционная зависимость.