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CHANGES IN MORPHOMETRIC PARAMETERS OF THE BODY IN CHILDREN WITH SPINAL COLUMN CURVATURE

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Abstract: Scoliosis is a complex persistent deformation of the spine, accompanied, first of all, by a curvature in the lateral plane, followed by twisting of the vertebrae and increased physiological bends of the spine. With the progression of scoliosis, deformity of the chest and pelvic bones develops with concomitant dysfunction of the organs of the thoracic cavity and pelvic organs. Modern literature data show that the prevalence of idiopathic scoliosis ranges from 0.47-5.2%, on average 2-3% of the total population. The prevalence and severity of scoliosis in girls is higher than in boys.

Keywords: anthropometri, childrens, scoliosis, spinal column, body length, chest circumference.

Relevance. From year to year, the number of people who have functional disorders of the musculoskeletal system is growing in the world, which is one of the main reasons for the decline in the capacity and productivity of the population of older age groups [1, 2].

There are no identifiable causes for this condition, as the term “idiopathic” implies, but significant research is ongoing, including the genetic basis of IP. It accounts for more than 80% of cases of scoliosis, and the prevalence of IPR varies from 0.47% in Turkey 4 to 3.26% in South Korea and 5.2% in Germany. The ratio of women to men ranges from 1.5:1 to 3:1 and increases significantly with age.7 Almost 10% of patients with IS need some form of treatment, and up to 0.1% will eventually require surgery [3, 4, 5].

It is important to study diseases of the spinal column in conditions of increasing negative consequences of urbanization and man-made influences. Scoliosis is a disease that is not only accompanied by curvature of the spine, but also causes various deformities in other parts of the child's body [6, 7].

To date, a significant omission in all ongoing research is the lack of scientific research that is aimed at the systematic study of the anthropometric-physical and physical parameters of the body from the point of view of their use in assessing the health of the population, diagnostics, as well as primary prevention [8, 9, 10].

The aim of the study - is to study the anthropometric parameters of different body parts in children with scoliosis in postnatal ontogenesis and compare them with the parameters of healthy children.

Materials and methods. 500 children were examined, 300 of them healthy (180 boys and 120 girls) and 200 children with scoliosis (120 boys and 80 girls). Anthropometric measurements were carried out according to the methodological recommendations of N.H. Shomirzaev, S.A. Ten and I. Tukhtanazarova (1998). The research was carried out in secondary educational institution No. 61, in secondary school No. 2 and in boarding school No. 23 in Bukhara for children with scoliosis.

Anatomical and anthropometric features were evaluated: measurements of body length, chest circumference in pause, during inhalation and full exhalation, trunk length, body, chest height were carried out using a centimeter tape, and body weight using special scales.

Results and discussions.

Studies have shown that newly injured children have an average body length of 51 ± 0.24 cm, body weight - 3.5 ± 0.15 kg, chest circumference in pause 36.2 ± 0.25 cm, at the height of inspiration 38.0 ±

0.25 cm, and at full exhalation 35.8 ± 0.30 cm. The length of the trunk on average is 18.4 ± 0.22 cm, the length of the body is 30.1± 0.30 cm, the height of the chest is 11.6± 0.12 cm.

Studies have shown that the body length in healthy children of the first period of childhood is on average 112.9 ± 0.72 cm. Body weight on average was 20.2 ± 0.53 kg, chest circumference in pause 62.4 ± 0.72 cm, at the height of inspiration 65.2 ± 0.25 cm, and with full exhalation 61.8 ± 0.30 cm. The length of the trunk on average is 20.6 ± 0.52 cm, the length of the body is 41.3±0.42 cm, the height of the chest is 17.6± 0.19 cm.

In the study of children of the first period of childhood with scoliosis, it was revealed that the average body length was 110.4 ± 0.87 cm. The average body weight is 19.3 ± 0.37 kg, the chest circumference in the pause is 60.0 ± 0.26 cm, at the height of inspiration - 63.2 ± 0.37 cm, and at full exhalation - 59.6 ± 0.30 cm. The length of the trunk on average is 20.1 ± 0.25 cm, the length of the body is 40.6± 0.14 cm, the height of the chest is 16.9± 0.30 cm.

As a result of the research, it was found out that the body length in healthy children of the second period of childhood was on average 134.0 ± 0.56 cm. The body weight of the healthy group is on average 29.3 ± 0.81 kg, the chest circumference in the pause is 65.5 ± 0.34 cm, at the height of inspiration - 68.8 ± 0.12 cm, and with full exhalation – 64.5 cm ±0.14 cm . The length of the trunk on average is 44.1 ± 0.51 cm, the length of the body is 64.0±0.42 cm, the height of the chest is 21.6± 0.27 cm.

During the study of children of the second period of childhood with scoliosis, it was found that the average body length was 125.8 ± 1.05 cm, body weight - 27.0 ± 0.62 kg, chest circumference in pause - 63.3 ± 0.23 cm, at the height of inspiration – 66.2 ± 0.22 cm, and with full exhalation - 64.3 cm ± 0.56 cm. The length of the trunk on average is 42.1 ± 0.37 cm, the length of the body is 60.4±0.35 cm, the height of the chest is 20.2 ± 0.84 cm.

Conclusions. Growth in children with scoliosis up to 12 years of age increases 1.52 times. The highest growth rate is observed in 5 (9.2%) and 7 years (8.8%), and the lowest – in 8.11 (3.0%) and 12 years (2.2%). The body weight of people with scoliosis increases by 2.65 times from the age of 3 to 12 years. The highest growth rate is observed in 6 (19.0%) and 8 years (16.5%), and the lowest – in 11 years (6.2%). The size of the chest circumference in postnatal ontogenesis before the age of 12 in males and females in healthy children increases by 1.45 times, and in scoliosis increases by 1.40 times.

Comparison of anthropometric parameters of children under 12 years of age with scoliosis with the parameters of healthy children of the same age shows that the growth rate in terms of chest circumference, trunk and body length, chest height is less than that of healthy peers.

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