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Correlation Between Ultrasonic Thyroid Anatomy and Parameters of Physical Development of Children During the Second Period of Childhood.

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Annotation: The results of the study showed that in the examined male children, a high correlation was found between the total volume of the thyroid gland and anthropometric indicators: height (r=0.91; P≤0.05), body weight (r=0.92; P≤0 .05), body length (r=0.90; P≤0.05), A similar correlation was found in girls between the volume of the thyroid gland and, respectively: height (r=0.95; P≤0.05), body weight (r=0.96; P≤0.05), body length (r =0.92; P≤0.05).

Keyword: children, thyroid gland, ultrasound, physical development

Relevance. Thyroid disease is one of the most urgent medical and social problems, due to the growing prevalence of thyroid pathology among the population of Uzbekistan, the high frequency of temporary and permanent disability.

According to the World Health Organization (WHO), more than 2 billion inhabitants of our planet live in areas depleted in iodine content [3, 10, 12, 14]. At the same time, 740 million people have endemic goiter, which is 13% of the total population, and 43 million suffer from mental retardation, which is a consequence of iodine deficiency [1, 2, 11].

It is known that an adequate supply of iodine is necessary for normal synthesis of thyroid hormones [4, 7, 9]. Accordingly, the manifestations of iodine deficiency (ID) are the consequences of insufficiency of thyroid hormones (TG). Their range is wide and depends on the period of life in which there is an impact of iodine deficiency on the body and on the severity of iodine deficiency [5,8].

Iodine deficiency diseases are the only cause of brain damage and mental development disorders, which, according to world statistics, can be prevented [3,5,7].

The expert group of WHO and the United Nations Children's Fund (UNICEF), as well as the International Board for the Control of IDD (ICIDZ) recommends regular monitoring of IDD preventive measures [5,6]. To judge the initial severity of iodine deficiency, it is necessary to have at least two parameters. These are the prevalence of goiter in the population among schoolchildren and the median iodine (MIU) calculated from the concentration of iodine in the urine [10,14].

Purpose of the study: The purpose of this study is to study the correlation between ultrasound anatomy of the thyroid gland and indicators of physical development in healthy boys and girls in the second period of childhood.

Material and methods: healthy boys and girls aged 7-12 years of general secondary school №7 in Bukhara were selected to carry out this scientific research. Ultrazvukovoe issledovanie

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shchitovidnoy jjelyy u detey issledovanie provodili v Bukharskogo oblastnogo endocrinologicheskogo dispensary (SONOACE R3). 230 children, 120 boys and 110 girls were observed for the study. The composition of the group of boys and girls of both genders fluctuates between the ages of n=40 and n=56, which allows us to carry out statistical processing on the material and obtain reliable results.

During the ultrasound examination, the length, thickness, thickness, volume and height of the peresheyka shchitovidnoy are measured. The volume of the organ and rasschityvali ego with a definite ultrasound index. The result of ultrasonic research of the schitovidnoy signal is calculated by the volume signal according to the formula Brunn J. (1981).

Antropometricheskoe obsledovanie detey provodilos v meditsinskikh kabinetax etikh uchrejdeniya s uchastem vracha i medsestry togo je uchrejdeniya. Before the observation, the health of parents and children, participants and scientific research was obtained.

Results and discussion: In boys in the second period of childhood, the length of the right lobe of the thyroid gland ranged from 3.0 to 3.8 cm, on average - 3.4 ± 0.009 cm, width from 1.3 to 1.7 m, on average - 1.5 ± 0.004 cm, the thickness of the right lobe ranged from 1.6 to 2.8 cm, on average - 1.9 ± 0.013 cm. The volume of the right lobe of the thyroid gland ranged from 3.0 to 8.7 cm3, on average - 4.6±0.062 cm3. In the second period of childhood, the length of the left lobe of the thyroid gland is from 2.8 to 3.7 cm, on average - 3.4 ± 0.009 cm, width from 1.2 to 1.7 cm, on average - 1.4 ± 0.006 cm , thickness from 1.5 to 2.2 cm, on average - 1.8 ± 0.008 cm. The volume of the left lobe of the thyroid gland at this age ranges from 2.4 to 6.6 cm3, on average 4.1 ± 0.046 cm3 and the height of the isthmus of the gland is from 0.30 to 0.50 cm, and on average 0.42 ± 0.002 cm. In girls in the second period of childhood, the length of the right lobe of the thyroid gland ranged from 3.0 to 4.1 cm, on average - 3.7±0.012 cm, width from 1.4 to 2.1 cm, on average - 1.8± 0.008 cm, thickness of the right lobe from 1.6 to 2.6 cm, on average - 2.2±0.011 cm and volume of the right lobe of the thyroid gland from 3.2 to 10.7 cm3, on average - 7.1±0.083 cm3 . In the second period of childhood, the length of the left lobe of the thyroid gland in girls ranged from 2.8 to 4.1 cm, on average - 3.6 ± 0.014 cm, width from 1.3 to 2.1 cm, on average - 1.7 ± 0.008 cm, the thickness of the right side ranged from 1.5 to 2.7 cm, on average 2.2±0.013. The volume of the left lobe of the thyroid gland ranged from 2.6 to 11.1 cm3, in the middle - 6.5±0.093 cm3 and the height of the isthmus of the gland was from 0.30 to 0.70 cm, and the average is 0.51±0.006 cm. In girls in the second period of childhood, the length of the right lobe of the thyroid gland ranged from 3.0 to 4.1 cm, on average - 3.7±0.012 cm, width from 1.4 to 2.1 cm, on average - 1.8± 0.008 cm, thickness of the right lobe from 1.6 to 2.6 cm, on average - 2.2±0.011 cm and volume of the right lobe of the thyroid gland from 3.2 to 10.7 cm3, on average - 7.1±0.083 cm3 . In the second period of childhood, the length of the left lobe of the thyroid gland in girls ranged from 2.8 to 4.1 cm, on average - 3.6 ± 0.014 cm, width from 1.3 to 2.1 cm, on average - 1.7 ± 0.008 cm, the thickness of the right side ranged from 1.5 to 2.7 cm, on average 2.2±0.013. The volume of the left lobe of the thyroid gland ranged from 2.6 to 11.1 cm3, in the middle - 6.5±0.093 cm3 and the height of the isthmus of the gland was from 0.30 to 0.70 cm, and the average is 0.51±0.006 cm.

The results of ultrasound examination showed that in boys in the second period of childhood, in relation to the newborn, the length of the right and left lobes of the thyroid gland increased by 2.8 times (41.7%), the width of the right lobe by 3.0 times (60.0%) , the width of the left lobe is 2.8

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times (40.0%), the thickness of the right lobe is 3.2 times (40.0%), and the thickness of the left lobe is 3.0 times (50.0%), the volume of the right lobe is 15, 3 times (157.1%) and in the left lobe 20.5 times (166.7%), while the height of the isthmus of the thyroid gland increased 3.2 times (43.8%). The results of ultrasound examination showed that in girls in the second period of childhood in relation to the newborn, the length of the right lobe of the thyroid gland increased by 3.1 times (54.2%), the length of the left lobe by 3.0 times (56.5%), the width of the right lobe by 3.6 times (50.0%), the width of the left lobe by 3.4 times (54.5%), the thickness of the right and left lobe by 3.7 times (69.2%), the volume of the right lobe in 35.5 times (294.4%), the left lobe 32.5 times (306.3%) and the height of the isthmus of the gland increased 4.6 times (173.3%).

In the second period of childhood (7–12 years), the length of growth in boys ranged from 129.7 cm to 145.7 cm, body weight from 29.0 kg to 37.8 kg, and body length was from 31.6 cm to 47 cm. .1 cm. The circumference of the chest in a calm state ranged from 58.4 cm to 70.7 cm, with a deep breath, this figure c ranged from 61.0 cm to 74.8 cm, and with a deep exhalation, the chest circumference ranged from 55 .6 cm to 71.2 cm. And in girls, the height ranged from 131.1 cm to 151.4 cm, body weight from 29.5 kg to 41.9 kg and body length is from 31.2 cm to 47, 9 cm. The circumference of the chest at rest ranged from 59.3 cm to 70.7 cm, with a deep breath, this figure ranged from 63.0 cm to 75.6 cm, and with a deep exhalation, the circumference of the chest ranged from 58.1 cm to 68.6 cm.

Conclusion: In healthy boys and girls, the age-related growth of the morphometric parameters of the thyroid gland corresponds to changes in the indicators of physical development. Given the age and gender characteristics, there is a direct strong correlation between these indicators, which is due to the anatomical variability of the thyroid gland. This coefficient between the volume of the thyroid gland and body weight, between height and length of the limbs is equal to r=0.9.

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