

Morphometric Indicators of Head Sizes in Healthy Girls

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Abstract. The child grows up, some morphometric indicators of the head grow at the same rate in different age periods of childhood, but the intensity of the growth rate of some indicators is not the same in the age periods. childhood. Thus, in healthy girls from newborn to 12 years, the morphometric indicators of the head in the second period of childhood had a normal growth rate compared to the period of infancy: head circumference 1.4 times (21.9%), longitudinal size of the skull base 1.5 times (14.4%), the transverse size of the head is 1.7 times (20.2%), the transverse size of the forehead is 1.8 times (34.2%), the vertical diameter of the head is 2.1 times (46.4 %), longitudinal diameter of the skull base. It was found that the size increased by 1.6 times (18.0%) and the transverse size of the head by 2.0 times (27.4%).

Key words: girl, morphometry, childhood, healthy, head, size.

Relevance. The craniofacial complex includes the head, face, and oral cavity and is the most distinctive of all structures of the human body, giving individuals unique characteristics. Structures of the craniofacial complex, such as the mandible, palate, temporomandibular joint (TMJ), and dentition, offer valuable paradigms for studying development, structure, and function (Ya. V. Kalincheva, 2011). The distinctive facial features of people with craniofacial deafness syndrome are the result of various abnormalities in the development of the skull and face. Children who are hard of hearing often have underdeveloped or absent nasal bones, resulting in a small nose, thin nostrils, and a flattened midface with a flat nasal bridge. People with this condition also typically have widely spaced eyes (ocular hypertelorism), narrowed eye openings (constricted palpebral fissures), a small upper jaw (maxillary hypoplasia), and a small mouth with pursed lips.

Purpose of the study. The purpose of this study was to measure and analyze indicators of physical development of the craniofacial complex in healthy girls.

Research methods. The study was carried out in 50 girls of different ages, indicators of the physical development of the craniofacial complex were measured - the shape of the skull was determined: longitudinal diameter, transverse size, head circumference, transverse size of the forehead, altitudinal or vertical diameter, determined the size of the base of the skull, the length of the base of the skull, the width of the base of the skull, Face: zygomatic diameter, mandibular diameter, inferior angle. jaws, morphological height of the face, physiological height of the face, height of the nose, width of the nose, external orbital width, interorbital width, height of the mucous part of both lips, mouth width, Chest: body length 1. standing height, 2. sitting height, body weight.

Research results. Studies have shown that the head circumference of newborn girls is on average 34.9 ± 0.60 cm, the longitudinal and transverse dimensions of the head are on average 11.4 ± 0.23 cm and 8.6 ± 0.27 cm. the average transverse size is 6.8 ± 0.37 cm, the average vertical

diameter of the head is 6.9 ± 0.34 cm, the average width of the skull base is 7.5 ± 0.24 cm, the average longitudinal size of the skull base is 9, It was equal to 3 ± 0.28 cm.

One-year-old healthy girls have an average head circumference of 47.4 ± 0.54 cm, an average longitudinal size of the skull base of 11.9 ± 0.38 , and an average of 9.1 ± 0.23 cm of the transverse size of the head. In healthy girls of this age, the transverse size of the forehead is 7.3 ± 0.39 cm on average, the vertical diameter of the head is 10.1 ± 0.36 cm on average, the width of the base of the skull is 8.4 ± 0.32 cm on average. the average longitudinal size was equal to 10.0 ± 0.28 cm.

The size of the heads of healthy 2-year-old girls compared to the head sizes of infants and one-year-old girls was found to be insignificant ($P \leq 0.05$). The average size of the head circumference is 48.2 ± 0.60 cm, the average longitudinal size of the skull base is 13.2 ± 0.28 cm, and the average transverse size of the head is 10.4 ± 0.22 cm. At this age, the average transverse size of the forehead is 9.8 ± 0.25 cm, the average vertical diameter of the head is 11.4 ± 0.265 cm, the average width and longitudinal dimensions of the base of the skull are 10.7 ± 0.44 cm and 13.3 ± 0 It was found to be equal to .06 cm.

Reliable differences ($P \leq 0.05$) were found in 3-year-old girls in morphometric indicators of the head compared to infant girls. In 3-year-old girls, the average head circumference is 48.0 ± 0.30 cm, the average longitudinal size of the skull base is 14.6 ± 0.31 cm, and the average transverse size of the head is 11.0 ± 0.21 cm. The average transverse size of the forehead is 10.7 ± 0.29 cm, the average vertical diameter of the head is 12.3 ± 0.26 cm, the width and longitudinal dimensions of the base of the skull are 12.5 ± 0.28 cm and 12.6 ± 0 It was found to be equal to .21 cm.

Significant reliable differences ($P \leq 0.05$) were found in the morphometric dimensions of the head of 4-year-old girls compared to the head sizes of infant girls and insignificant differences ($P \geq 0.05$) compared to 3-year-old girls. In 4-year-old girls, the average head circumference was 48.8 ± 0.41 cm, the average longitudinal and transverse dimensions of the head were 14.9 ± 0.32 cm and 11.5 ± 0.25 cm. In girls of this age, the average transverse size of the forehead is 10.9 ± 0.31 cm, the average vertical diameter of the head is 12.6 ± 0.25 cm, and the average width of the skull base is 12.6 ± 0.36 cm. average longitudinal size is equal to 12.9 ± 0.22 cm.

The size of the heads of healthy 5-year-old girls compared to the sizes of the heads of 4-year-old girls showed insignificant differences ($P \leq 0.05$). The average size of the head circumference of girls at this age is 50.1 ± 0.46 cm, the longitudinal size of the base of the skull is 15.2 on average. ± 0.30 cm and the average cross-sectional size of the head was 11.7 ± 0.24 cm, the average cross-sectional size of the forehead was equal to 11.1 ± 0.28 cm. In 5-year-old healthy girls, the average vertical diameter of the head is 12.7 ± 0.21 cm, the width and longitudinal length of the skull base is 13.1 ± 0.38 cm and 13.2 ± 0.19 cm, respectively.

The average size of the head circumference of 6-year-old healthy girls is 51.4 ± 0.60 cm, the average longitudinal size of the skull base is 15.3 ± 0.34 cm, and the average transverse size of the head is 12.6 ± 0.30 cm. At this age, the average transverse size of the forehead is 11.2 ± 0.33 cm, the average vertical diameter of the head is 12.9 ± 0.26 cm, the average width and longitudinal dimensions of the skull base are 13.6 ± 0.44 cm and 13.8 It was equal to ± 0.20 cm.

It was found that with the growing age of children, their head size also increases according to age. In 7-year-old healthy girls, the average size of the head circumference was found to be 51.9 ± 0.42 cm. In girls of this age, the longitudinal size of the base of the skull was on average - 15.7 ± 0.25 cm, and the transverse size of the head was on average - 12.7 ± 0.22 cm. The average transverse size of the forehead is 11.4 ± 0.21 cm, the average vertical diameter of the head is

13.2±0.17 cm, the average width and longitudinal dimensions of the skull base are 13.9±0.30 cm and 14.0±0.17 cm. It was found to be 13 cm.

The morphometric parameters of the head sizes of 8-year-old healthy girls showed reliable differences ($P \geq 0.05$) compared to the morphometric parameters of 4- and 5-year-old healthy girls, and insignificant differences ($P \leq 0.05$) compared to 6- and 7-year-old girls. The average head circumference of 8-year-old girls was 53.0±0.43 cm, the average longitudinal size of the skull base was 16.2±0.25 cm, and the average transverse size of the head was 13.3±0.25 cm. In healthy girls of this age, the average transverse size of the forehead is 11.5±0.20 cm, the average vertical diameter of the head is 14.0±0.18 cm, and the average width of the base of the skull is 14.0±0.28 cm. the average longitudinal size of the base was 14.3±0.16 cm.

Head sizes of healthy 9-year-old girls were similar to those of healthy 8-year-old girls. The head circumference of 9-year-old healthy girls is on average 53.9±0.44 cm, the longitudinal and transverse dimensions of the head are on average 16.1±0.25 cm and 13.9±0.24 cm. The average transverse size of the forehead is 11.6±0.21 cm, the average vertical diameter of the head is 14.3±0.18 cm, the average width and longitudinal length of the skull base is 14.3±0.31 cm and 14.5±0.17 cm. It was found to be equal to 17 cm.

In 10-year-old healthy girls, the average head circumference is 55.2±0.40 cm, the average longitudinal size of the skull base is 17.7±0.25 cm, and the average transverse size of the head is 14.5±0.24 cm. In healthy girls of this age, the average transverse size of the forehead is 12.0±0.20 cm, the average vertical diameter of the head is 14.8±0.20 cm, and the average width of the skull base is 14.6±0.34 cm. the average longitudinal size of the base of the head was 15.5±0.16 cm. At the age of 11, the average head circumference of healthy girls was 55.5±0.36 cm, the average longitudinal and transverse dimensions of the head were 17.3±0.22 cm and 14.8±0.20 cm. The average transverse size of the forehead is 12.2±0.19 cm, the average vertical diameter of the head is 15.2±0.20 cm, the average width and longitudinal length of the skull base is 15.0±0.34 cm and 15.6±0.17 cm. It was found to be 16 cm.

The average size of the head circumference of 12-year-old healthy girls is 55.9±0.38 cm, the average longitudinal size of the skull base is 17.8±0.22 cm, and the average transverse size of the head is 15.2±0.18 cm. In healthy girls of this age, the average transverse size of the forehead is 12.4±0.19 cm, the average vertical diameter of the head is 15.8±0.21 cm, the average width and longitudinal dimensions of the skull base are 15.4±0.33 cm and 15.7±0.17 cm. It was found to be 17 cm.

Table 1 shows the morphometric parameters of the head sizes of healthy girls by childhood.

Table 1

Morphometric indicators of head sizes of healthy girls by childhood

childhood periods show (sm)	Baby	infant period	early childhood period	childhood of I- period	Childhood of II period
head circumference size	35,7-43,5 38,9±0,24	45,4-49,7 47,4±0,16*	46,7 - 50,2 48,2±0,13*	47,5-53,3 50,1±0,14*	49,9-58,9 54,7±0,13*
longitudinal dimension of the head	9,4-12,9 11,4±0,23	9,8 – 14,7 11,9 ± 0,38	11,4-15,9 13,2-0,28*	12,7-17,3 15,1±0,10*	14,3-19,6 17,1±0,08*
transverse dimension of the head	6,5-10,6 8,6±0,38	6,9-11,1 9,1±0,32	8,5-12,0 10,4±0,22*	9,9- 13,6 11,9±0,08*	12,0-16,9 14,3±0,07*

the transverse dimension of the forehead	4,7-9,3 6,8±0,42	5,1-10,2 7,3±0,39*	7,4-11,5 9,8±0,25*	8,4-12,6 11,1±0,09*	9,6-14,1 11,9±0,07
vertical diameter of the head	7,5-12,4 6,9±0,45	8,0-12,7 10,1±0,36*	9,4-13,4 11,4±0,25*	11,0-14,5 12,7±0,07*	12,5-17,0 14,8±0,06*
the width of the base of the skull	5,1-9,0 7,5±0,24	6,8-10,1 8,4±0,32*	8,6-12,9 10,7±0,22*	10,2-15,5 13,1±0,11*	11,3-18,5 14,7±0,10*
longitudinal dimension of the skull base	6,4-11,0 9,3±0,42	8,1-12,3 10,0±0,32*	9,7-13,1 11,8±0,21*	11,8-14,6 13,3±0,06*	13,5-17,2 15,1±0,06*

Note: *- reliable data on the ratio of the previous period of childhood are indicated ($P \leq 0.05$).

Summary. It can be seen that with the growing age of the child, some morphometric indicators of the head grow at the same rate in different age periods of childhood, but the intensity of the growth rate of some indicators is not the same in the age periods of childhood. Thus, in healthy girls from newborn to 12 years of age, the morphometric indicators of the head in the second period of childhood showed a normal growth rate compared to the period of infancy: head circumference 1.4 times (21.9%), the longitudinal size of the skull base 1.5 times (14.4%), the transverse size of the head is 1.7 times (20.2%), the transverse size of the forehead is 1.8 times (34.2%), the vertical diameter of the head is 2.1 times (46.4%), the longitudinal diameter of the skull base It was found that the size increased by 1.6 times (18.0%) and the transverse size of the head by 2.0 times (27.4%).

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