To Study the Anthropometric Parameters of the Head of Children with Cerebral Palsy and Compare them with the Data of Healthy Children

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ABSTRACT

In childhood, there are various malformations and disorders of the functions of the central nervous system associated with various factors that lead them to disability. Prevention and timely detection of diseases of the central nervous system is one of the effective treatment measures for such patients.

KEYWORDS: *Anthropometric, Parameters, Healthy Children.*

After 6 years, the growth rate decreases, reaching a minimum in boys at 9.5 years old. After that, boys have moderate uniform stretching until the age of 13. The absolute value of the increase in body length during the prepubertal growth leap in boys reaches 47-48 cm, the growth of boys at 10-11 years is due to the lower extremities, between 14-15 years – the peak of the growth rate for the trunk comes [2.5].

Boys in the highlands and found that girls and boys have the same body length at the age of 8 and 9 years. At about the age of 9, girls begin to accelerate their growth and at the age of 12 they are 3.5 cm taller than boys, which reaches a maximum between the ages of 13 and 14. At the age of 14, 1 month – there is a crossroads of growth curves and in the future boys are much taller than girls (at 15 years – by 4.8 cm, at 16 – by 9.6 cm and at 17 – by 11.9 cm). The growth process in girls practically ends at the age of 16, and in boys the growth process continues after the age of 17.

Studies have shown that the growth phases from birth to adulthood had a wave–like character: the highest growth rates for the first 3 years of life, from 9 to 11 years, the slowdown in growth processes occurs starting at 12 years, this corresponds to the phase of puberty jump, then the growth rate gradually slows down and by 17-18 years - growth stops [3].

When measuring the length and body weight in children aged 7-15 years, it was found that the body length among urban school-age children exceeds that of boys: in body length 7-9 and 14-15 years, in body weight at 7, 9, 15 years [1.4].

In the Tashkent region, according to a number of authors [7], the body length of boys by the age of 8 is 125.6± 0.9 cm, and at 11 years 142.7 ± 1.6 cm, and at 15 years – 165.6 ± 2.4 cm.In children from 7 to 12 years old, the body length in both sexes increases by 1.2 times and the most intense growth is observed in boys at 9 and 11 years old, and in girls at 10 and 12 years old.

The results of the research allowed us to establish that the average growth rate of males aged 15-18 years increases from 170.0□18.5 cm to 178.0□16.4 cm. Against the background of a uniform increase in body length, school athletes at 10-11 years of age slow down the growth process, at 11-12 years of age there is a significant increase and the rates in the two groups coincide, and at 13-14 years of age, football players already surpass their peers in growth rates, having the most significant jump (more than 10 cm) at 14 years of age [6.10].

Some authors believe that over the past 4 years, with the continued increase in growth, both the mass and breast circumference have begun to grow.

The study showed that estimates of the physical development of children from 3 to 10 years of age, boys living in areas of unfavorable environmental situation, have significantly lower values for almost all anthropometric indicators. The nature of the variability of individual signs of the child's body depends on the ecological situation in the area of his birth and residence, and its intensity is associated with the age and sexual characteristics of the organism, as well as with the manifestation of the urban factor, the social component and the degree of accumulation over time of the effect of anthropogenic load [3.9].

Analysis of the results of the study of 786 students showed that the body length in boys of group 1 at 7 years was 123.2 ± 0.62 cm, at 8 years - 126.3 ± 0.67 cm, at 9 years - 131.6 ± 0.75 cm and at 10 years -136.6 ± 0.73 cm, and in sports – 122.9 ± 1.42, respectively; 127.2±1.11; 131.3±0.82 and 137.2±1.01cm there was no significant difference between the body length indicators of boys of different age groups engaged and not engaged in sports. In three years, the body length in boys of group 1 increased by 13.4 cm, and in boys of group 2 – by 14.3 cm. In boys not involved in sports, the greatest increase in body length was observed in the age period from 8 to 9 years (5.3 cm), in athletes the greatest increase in body length was noted a year later, i.e. at 9-10 years (5.9 cm) [3.7.10].

According to a study by some authors of 8 and 9 years of age, boys have more body weight, At 15 years of age there is a second intersection of growth curves, and already at 16 years of age boys weigh more than girls by 3 kg, at 17 years of age by 6.0.

Some researchers have noted that the most intense growth of the muscle component is detected from 12 to 15 years. After 15 years, the quantitative growth of muscle tissue is at an average pace. The growth curve of the indicators of the bone component also has an age variability from 8 to 11 years, the growth of bone mass is at a minimum pace. The period from 12 to 15 years is characterized by intensive processes in the development of bone tissue and maximum in the development of increases in digital indicators. After 15 years, the relative stabilization of the ratios of the bone component and total body weight is determined. In boys from 7 to 12 years old, living in high-altitude conditions, body weight increases by 1.4 times (from 21.5 0.3 to 31.4 0.2 kg), the most intense weight increases in boys at 10-11 years of age, Body length increases by an average of 21.3 cm in boys during this period, intensive growth occurs in boys at 10 years old.

If we take the final dimensions of the head of adolescence for 100%, then at birth on time, all sizes average 58.7%; the facial section in boys is 54.3%. Sexual features of the structure of the head begin to manifest in early childhood, but the final formation of sexual dimorphism occurs during puberty and persists at all other age stages [4.8.9].

In boys aged 17-19, the longitudinal diameter of the head is 18.7□0.04 cm, the transverse diameter is 14.7□0.02 cm, the head circumference is 57.2□0.06 cm [5.6].

Researchers found that in boys from 7 to 12 years old, the circumference of the head increases by an average of 1.0 cm (from 50.5□0.9 to 51.5□ 0.7 cm). In boys, the growth of the head circumference occurs evenly, and in girls – abruptly, especially at the age of 8. The longitudinal diameter in boys increases most intensively at the age of 8, and in girls the growth occurs almost uniformly. The transverse diameter of the head in boys from 7 to 12 years increases by 0.3 cm (from 12.1 0.1 to 12.4 0.1 cm), intensive growth in boys is observed at 8 and 10 years, and in girls at 11 years. The height of the head in both sexes increases by 0.8 cm (in boys from 17.8 0.1 to 18. 0.1 cm, in girls – from 17.6 0.1 to 18.4 0.1 cm) and the most intensive growth occurs in boys at 9 years old, in girls at 11 years old.

Cerebral palsy can be considered as a set of syndromes in which functional disorders undergo complex dynamics as they develop and develop. At the age of 3-6 years, the trigger mechanism for

the development of spasticity is the pathological activation of the u-systems of muscle tone regulation with all the characteristic clinical and physiological phenomena: "unfixed" contractures in the joints, a high level of spontaneous activity of spastic muscles, gross violations of reciprocal innervation, increased stretching reflex and rudimentary post-tonic reactions. At the age of 6-8 years, as a result of an increase in the rate of myelination of the central nervous system and the formation of cortical functions, there is a gradual suppression of the activity of the lower-stem "centers" of regulation of u-systems, as a result of which the stretching reflex and rudimentary positonic reactions are inhibited. During this period, the main role in the activation of the motor neuronal apparatus of the spinal cord is played by influences from the motor tracts formed at the level of the upper head, basal and cortical formations. In children with paralysis, the development of motor programs is significantly stretched over time.

The main changes develop at the level of the peripheral nervous system: the blood supply to the muscles worsens, atrophy develops, connective tissue grows, joint deformities occur.

Morphological changes that contribute to joint stiffness and aggravation of deformities are revealed in the bone-articular and capsule-ligamentous apparatus. In the residual stage of the disease, with the final design of pathological motor stereotypes, a number of compensatory devices arise, without which it is impossible to maintain an orthograde posture, as well as any types of locomotion.

Increased muscle tone leads to significant functional disorders, but a decrease in muscle spasticity does not always have a positive effect on the patient. Thus, in a number of patients with severe paresis, the presence of spasticity of muscles that anatomically and functionally interfere with gravity can facilitate standing and walking. In addition, spasticity can prevent the development of muscle atrophy, soft tissue edema and osteoporosis, reduce the risk of deep vein thrombosis of the lower extremities. Indications for the treatment of increased muscle tone are only those cases when, due to spasticity, the functioning of the body, the maintenance of posture or general comfort is disrupted.

The degree of motor disorders varies from mild to severe disorders and correlates with the degree of damage to the motor structures of the brain, and can also be aggravated by pathology of cranial nerves and epileptic seizures.

Motor disorders negatively affect the development of manual skills and fine motor skills, which has a negative impact on the development of cognitive activity in general. Disorders of general motor skills correlate with speech disorders.

In addition, in children with cerebral palsy, the reflex mechanism that ensures balance is disrupted, that is, there are disorders of the function of the vestibular apparatus, namely, in the sitting, standing, walking position (vertical position), a violation of the antigravity tone is manifested. The level of violation of psycho-emotional development ranges from mild to severe intellectual disability, in the structure of which there is a combination of cortical disorders with psycho-organic and cerebrastenic syndromes.

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