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INDICATORS OF PHYSICAL DEVELOPMENT IN BLIND AND VISUALLY IMPAIRED CHILDREN

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Abstract:The article is devoted to the study of physical development of primary school children with visual impairments. An anthropometric study was conducted, including measurement of height, body weight, chest circumference, and respiratory muscle strength. It was found that children with visual impairments have a lag in physical development compared to their healthy peers. Differences in growth rates, body weight, and respiratory muscle development were revealed, which is associated with limited motor activity. The results emphasize the need for early corrective measures and increased motor activity of children with visual impairments to improve their adaptive capabilities.

Keywords: physical development, visual impairments, primary school age, anthropometry, respiratory muscles, corrective work, motor activity.

Introduction

Human health can be determined by the harmony of physical development, indicators of the functioning of the body's functional systems, and the level of development of physical qualities. Primary school age is one of the most favorable age periods for the development and formation of motor and functional capabilities, but possible visual impairments sharply reduce the adaptive potential and functional reserves of the body [5]. According to the World Health Organization, about 1.3 billion people worldwide suffer from various visual impairments. The number of people who have moderate and severe pathological conditions of the visual analyzer is about 217 million, and blindness has been identified in 36 million. However, it should be noted that up to 80% of all visual impairments could be prevented with timely corrective work. The physical development of children is an indicator of the well-being of society, as well as the ecological state of the territory. It is development during the period of growth that determines the main health features of a particular generation in older ages, including potential longevity and the transfer of relevant qualities to future generations. In order to study the physical development of blind children of primary school age, we conducted an anthropometric study by measuring height, weight, and chest circumference. It turned out that schoolchildren with visual impairments experience regular biological growth and development with age. However, when comparing the data with healthy schoolchildren of the same age, some differences are noted. As can be seen, the height of a healthy schoolchild at the age of 7 is on average 112.03±1.12 cm, while in the blind it is 109.12±1.1 cm and in the visually impaired it is 111.2±0.95 cm, or at the age of 8 in healthy children it is 116.21±1.9 cm, in the blind it is 111.8±1.16 cm, in the visually impaired it is 113.21±2.3 cm, at the age of 9 it is 123.12±3.2 cm, in the blind it is 115.11±1.9 and in the visually impaired it is 118.2±2.2 cm, which indicates that children with visual impairments lag behind their peers of the same age by 4-5 cm. The deviations in the height of senior school students are most pronounced. The body length of children by the age of 10 is on average 5-5.5 cm less compared to the control group. When determining body weight, the most pronounced differences were found at the age of 8, when in the control group this indicator is 24.2 ± 2.3 kg, in the blind 20.9 ± 1.9 and in the visually impaired 22.4 ± 1.7 kg. In healthy children aged 15 years, the weight is 45.6 ± 1.4 kg, and in blind children this indicator is 41.5 ± 1.3 and in the visually impaired it is also less than in healthy children and is on average

41.9 ± 2.23 kg. Analysis of these data shows that the weight of blind and visually impaired children is less, which indicates insufficient nutrition of children in the main group. Although the weight indicators at the age of 11 years differ little in all 3 groups (29.61 ± 1.76; 29.16 ± 1.51 and 29.21 ± 2.01 kg). The chest circumference during inhalation is 69.51±2.52 cm in healthy boys at the age of 10, 63.09±2.01 and 64.01±2.02 cm in the blind and visually impaired, respectively. And at the age of 14, these differences are sharply expressed, where 78.17±2.45 cm in healthy and children with visual impairments 72.67±2.44 and 72.77±1.91 cm, which indicates smaller chest sizes by about 4-5 cm in children with visual impairments. A study of the strength of the respiratory muscles and voluntary breath holding in schoolchildren of comprehensive schools revealed a steady increase in the studied indicators in the process of age-related development of children. Thus, in boys, the strength of the respiratory muscles on exhalation increases from 96.8 mm Hg (7-8 years) to 175.6 mm Hg (17-18 years) and on inhalation, respectively, from 72 to 120 mm Hg, i.e. by 81.2 and 66.6%. For girls in the same age groups, the average values of the respiratory muscle strength indicators increase from 64.2 to 109.6 mm Hg on exhalation and from 55 to 83 mm Hg on inhalation. A comparison of these indicators reveals that in all age groups, the absolute values of the respiratory muscle strength in boys are higher than in girls, and this difference increases with age. The most intensive increase in the strength of the respiratory muscles in visually impaired schoolchildren was noted in primary school age (7-10 years), where the increase in the strength of the respiratory muscles was 23.2% in boys and 32.1 in girls. On average, at the age of 11-14 years, the growth rate is lower than that of primary school students. At puberty, i.e. at the age of 15-18 years, the growth of respiratory muscle strength in boys was 4.5%, while in girls there was a decrease in the studied indicators of 0.99% on exhalation and 0.97 on inhalation. The decrease in the growth rate of respiratory muscle strength in visually impaired children in senior school is apparently a consequence of a significant reduction in the volume of motor activity compared to junior and middle school ages. Comparing the average values of respiratory muscle strength of visually impaired schoolchildren with the corresponding indicators of students in regular schools, one can note a lag in these indicators throughout the school age.

References:

1. Горохова Е.В. Анализ влияния занятий АФК на динамику физической подготовленности младших школьников с миопией слабой степени //Ученые записки университета им. ПФ Лесгафта. – 2015. – №. 1 (119), 75-77.
2. Каёткина Е.В., Иванова Н.В., Кондратюк Г.И., Османова Л.Ш. Пути профилактики и лечения детей с нарушением зрения в специальной школе-интернате - Таврический медико-биологический вестник 2016, 19(1), 42-44.
3. Ланская О.В., Рощина Л.В. Уровень физического развития детей младшего школьного возраста с нарушением зрения //NovaInfo. Ru. – 2017. – Т. 1. – №. 59. – С. 33-41.
4. Синельников И.Ю. Состояние здоровья российских школьников: факторы влияния, риски, перспективы //Наука и школа. – 2016. – №. 3.
5. Poperekov V.S., Bandakov M.P., Kovyazina G.V., Ovsyannikova E.U. The development of coordination abilities of children diagnosed with myopia, as the basis of their physical rehabilitation - Оценка физического развития студентов с различным уровнем здоровья в педагогическом ВУЗе 2016, 275.