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ENVIRONMENTAL FACTORS AND THEIR ROLE IN THE FORMATION OF PHYSIOLOGICAL INDICATORS OF YOUNG STUDENTS

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Abstract: In a rapidly changing environment, primary school students find themselves in a zone of increased risk of environmental factors influencing their health. The article examines the impact of various components of the environment, such as air pollution, noise pollution, climate change and urbanization, on the physiological indicators of primary school children. The results of modern research are used to analyze the relationship between these factors and the state of children's health, statistical data confirming the importance of environmental adaptation in the school environment are presented.

Keywords: factors, ecology, changes, formation, primary school age, indicators, dynamics
Primary school children are in a critical period of their physical and mental development, which makes them especially vulnerable to changes in the environment.

Primary school-age children are at a critical time in their physical and mental development, which makes them particularly vulnerable to changes in the environment. Modern environmental factors such as air pollution, climate change, noise exposure and urbanization can have a significant impact on children's physiology and overall health. According to the World Health Organization (WHO), in recent years there has been an increase in morbidity among children caused by the deterioration of the environmental situation.

In the process of growth and development, children and adolescents are exposed to various environmental factors, many of which can be considered as health risk factors. Not being the direct cause of the disease, these factors cause functional deviations in growth and development, contribute to the occurrence of the disease, its progression and unfavorable outcome.

The environmental factor is of "priority" importance in the development of diseases in children (up to 30%). The effect of environmental factors on the formation of a child's health is realized through:- качество атмосферного воздуха

- Quality of drinking water
- food quality
- Intensity of solar radiation
- Climate harshness

Air pollution is one of the key environmental factors affecting children's health. Studies show that long-term exposure to air pollution reduces the functional activity of the lungs and increases the risk of developing respiratory diseases such as bronchial asthma and chronic bronchitis.

According to a 2019 study in China, air pollution levels expressed in PM2.5 concentrations are directly related to the deterioration of lung function in primary school-aged children. The study

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found that children living in areas with high concentrations of PM2.5 were 25% more likely to suffer from respiratory diseases than their peers living in cleaner regions.
Additionally, a 2020 study in the United States found that children exposed to high levels of nitrogen dioxide (NO2) and ozone (O3) experienced cognitive decline and developmental delays. These data highlight the need to improve air quality in educational institutions and residential areas where children live.
Noise pollution is another important factor that is often underestimated in the school environment. Studies have shown that prolonged exposure to high noise levels increases stress on the child's body and negatively affects cognitive functions, including memory, attention and learning.
A study conducted in Germany found that children attending schools located near busy roads performed 30% worse on attention and memory tasks compared to children studying in silence. At the same time, there was an increase in the level of cortisol in the blood, which indicates chronic stress. This stress can also lead to cardiovascular disorders and other physiological changes.
Climate change also has a significant impact on children's health. Rising temperatures, the frequency and intensity of extreme weather events, such as heat waves, can cause heat stress and disruption of the water-electrolyte balance in children, which is especially dangerous at primary school age.
According to a 2018 study in Australia, over the past two decades, cases of hospitalization of children due to heat stress have increased by 15% due to an increase in average temperatures.
Studies show that young children are more sensitive to temperature changes due to immature thermoregulation and increased metabolism, which requires increased measures to protect them in a changing climate.
Urbanization leads to a decrease in the number of green areas and places for active play, which limits the opportunities for children to engage in physical activity. According to the WHO, children living in urban areas spend 40% less time exercising than children in rural areas.
Lack of physical activity is directly related to weight gain, increased risk of obesity and the development of cardiovascular disease in the future. A 2021 study in the UK found that primary school-aged students living in high-density areas with a lack of parks and green spaces were 20% less likely to participate in sports, contributing to an increased prevalence of obesity and metabolic disorders.
Environmental factors play an important role in the formation of physiological indicators of primary school children. Air pollution, noise pollution, climate change and urbanization have a significant impact on children's health, especially in educational settings. Studies show that in order to protect the health of younger schoolchildren, it is necessary not only to improve the environmental situation, but also to create conditions for their adaptation to modern environmental challenges. It is also important to take into account the influence of these factors when designing school premises and organizing the educational process.

Bibliography

1. World Health Organization. "Global Impacts of Climate Change on Children's Health". WHO, 2020.

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2. K. G. Zhang et al. "Long-term exposure to ambient PM2.5 and children's lung function". Environmental Research, 2019.
3. R. P. Lewis et al. "Cognitive development in children exposed to urban air pollution". Nature Neuroscience, 2020.
    A. Schneider, L. Ponte. "Noise pollution and its impact on cognitive performance in school-aged children". Journal of Urban Health, 2007.
4. Всемирная организация здравоохранения. "Детское ожирение и физическая активность". ВОЗ, 2021.
5. G. J. Simmonds, L. Chapman. "Heat-related hospital admissions in children: A 20-year retrospective study". Australian Medical Journal, 2018.
6. World Health Organization. "Physical activity in the context of urbanization". WHO, 2021.
7. M. H. Richards, J. T. Lee. "Urbanization, green space, and childhood obesity: a cross-sectional study". Journal of Public Health, 2021.