HYGIENIC REQUIREMENTS FOR THE NUTRITION OF SCHOOLCHILDREN DIAGNOSED WITH MYOPIA

Ermatov N.J.[1], Esanova N.A.[2]
1-Tashkent State Medical University
2-Termez Branch of Tashkent State Medical University

International Conferences
Open Access | Scientific Online | Conference Proceedings
INTERNATIONAL CONFERENCES OF PRACTICE

The healthy and rational nutritional regimen of schoolchildren, organized in accordance with hygienic requirements, is one of the fundamental factors capable of ensuring their harmonious growth and physical development.

Proper nutrition during childhood and adolescence facilitates disease prevention, enhances work capacity and academic performance, and promotes physical and mental development. Furthermore, it creates the necessary conditions for the adaptation of the rising generation to environmental factors and exerts a profound influence on the formation of health throughout the individual's entire life course. School-age children possess a range of anatomical and physiological characteristics that result in an increased demand for essential vitamins and minerals.

Currently, while schoolchildren in several developed countries suffer from excessive body weight and varying degrees of obesity, underdeveloped nations experience an increasing incidence of diseases and complications resulting from the deficiency of essential food products, as well as morbidity associated with protein-energy malnutrition. At present, the prevalence and severity of varying degrees of myopia among schoolchildren are steadily increasing, frequently occurring alongside anemia and iodine deficiency disorders caused by insufficient intake of iodine and iron.

The etiology of myopia is closely associated with deficiencies in proteins, essential amino acids, and vitamins. These substances constitute a group of essential organic nutritional factors that the human body either cannot synthesize at all or cannot produce in sufficient quantities, thereby necessitating their intake through dietary sources. To date, this group includes thirteen compounds, specifically the fat-soluble vitamins A, E, D, and K, as well as the water-soluble vitamins C, B1, B2, B6, B12, folate, niacin, pantothenic acid, and biotin, as documented in several scientific studies [1;2;4;5;6].

Coenzymes are low molecular weight, non-protein substances that form complexes with the protein components of enzymes to directly facilitate chemical reactions, wherein the enzymes function as catalysts. This property is characteristic of nearly all water-soluble vitamins and the fat-soluble vitamin A. Another vital function inherent to all fat-soluble vitamins is their participation in the structural formation of cell membranes and cellular organelles. Vitamins exhibit pronounced biological activity even in trace amounts and serve as universal regulators of metabolic processes, with most of them functioning within every cell of the organism [4;5;6].

The preservation and promotion of the health status of schoolchildren represent one of the most significant and pressing challenges currently facing public health professionals.

International Conferences
Open Access | Scientific Online | Conference Proceedings
INTERNATIONAL CONFERENCES OF PRACTICE

The objective of our work is to implement hygienic requirements for healthy nutrition regimens among schoolchildren diagnosed with myopia.

To ensure the harmonious growth and development of schoolchildren, the nutritional regimen must be organized according to the following principles: dietary intake must be quantitatively sufficient and varied to compensate for the organism's energy expenditure; the energetic value of the daily ration must correspond to age, gender, and academic workload; there must be an adequate supply of both animal and vegetable proteins within the daily ration; the consumption levels of animal fats and vegetable oils must be balanced; the proportion of carbohydrates, including mono- and disaccharides as well as refined sugars, must be strictly regulated; the ration must contain optimal amounts of vitamins, specifically C, A, D, B1, B2, B6, and PP; and essential minerals, including calcium, phosphorus, heme iron, iodine, magnesium, selenium, and zinc, must be present in required concentrations. Furthermore, strict adherence to the nutritional schedule is necessary, ensuring food consumption at specific designated times of the day; the daily menu must consistently meet the established physiological norms for proteins, vitamins, and minerals.

The daily energy intake should be derived from proteins (14%), fats (30%), and carbohydrates (56%), with recommended macronutrient ratios of 1:1:3 or 1:1:4. Emphasis must be placed on dietary diversity and the inclusion of a wide variety of food products within the menu. Strict adherence to the nutritional regimen, including the distribution of essential nutrients across specific meal times, is mandatory. Currently, it is imperative to consider the significance and effectiveness of the state-subsidized free secondary breakfast program, as recommended by the President, and to integrate its role into the daily nutritional assessment.

In conclusion, it should be noted that a nutritional regimen organized according to the aforementioned hygienic requirements must provide a daily ration with a 15% increase in energy value. This surplus is necessary to mitigate the adverse effects of environmental factors characteristic of the southern border regions on the health status of schoolchildren, while simultaneously ensuring high levels of cognitive and physical work capacity. A nutritional framework structured in this manner serves as the fundamental prerequisite for students diagnosed with myopia to achieve superior academic mastery. Furthermore, it acts as a primary source for maintaining not only optimal health but also the harmonious physical development of the younger generation.

REFERENCES:

1. Duisengazieva, A. D., & Tanatarov, S. Z. (2021). Teaching the principles of a healthy lifestyle to school-age children. Education of a healthy lifestyle for schoolchildren. Actual Scientific Research in the Modern World, (1-5), 46-51.
2. Lukyanchikov, V. S., & Sharapov, A. N. (2020). Some aspects of adaptation and maladaptation in the pathogenesis of hypoglycemic syndrome in children and adolescents. New Research, (1), 37-45.

3. Maksimov, S. A., Karamnova, N. S., Shalnova, S. A., & Drapkina, O. M. (2020). Empirical dietary patterns and their health affect in epidemiological studies. Problems of Nutrition, 89(1), 6-18. doi: 10.24411/0042-8833-2020-10001.
4. Ermatov, N. J., Shaykhova, G. I., Duschanova, R. I., Alimukhamedov, D. Sh., Dadabayeva, R. K., Rustamova, M. T., Soliyeva, M. N., & Bakhodirov, M. D. (2023). Specific Characteristics of Illness of Primary Class Pupils. Bulletin of Environment, Pharmacology and Life Sciences, 12(10), 171-176.
5. Ermatov, N., Dushanova, R., Khushvaqtov, A., Nuruzova, Z., Sherquziyeva, G., Alimukhamedov, D., Dadabaeva, R., Mamatova, M., & Shodiyev, U. (2024). Hygienic Analysis of the Level of Consumption of Food Products with High and Low Risk Factors in the Winter Period for Primary School Children. African Journal of Biomedical Research, 27(6s), 192-198.
6. Duschanova, R. I. (2025). Hygienic justification of the dependence of vitamin deficiency on nutrient status in primary school students [Doctoral dissertation (PhD) in Medical Sciences]. Tashkent.

International Conferences
Open Access | Scientific Online | Conference Proceedings
INTERNATIONAL CONFERENCES OF PRACTICE