

THE IMPORTANCE OF PROVIDING CLEAN DRINKING WATER IN CHILDREN'S INSTITUTIONS

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Abstract

Protecting and strengthening children's health is one of the priority directions of any society. Compliance with sanitary and hygiene requirements in children's institutions — preschool educational organizations, schools, boarding schools, and specialized childcare institutions — particularly the provision of clean drinking water, plays a decisive role in ensuring healthy growth and development, preventing infectious diseases, and creating a safe educational environment. According to the World Health Organization (WHO), children's bodies are highly sensitive to contaminated water, and intestinal infections, parasitic diseases, and illnesses transmitted through poor sanitation are widely spread among children [7, 8].

This article highlights the importance of providing clean drinking water in children's institutions, its impact on health, existing requirements and recommendations, as well as key aspects of the issue based on national and international experience.

Keywords: Children's institutions, clean drinking water, sanitation and hygiene, children's health, intestinal infections, parasitic diseases, safe educational environment, prevention.

Introduction

Why is ensuring clean drinking water at school essential for children's health? When it comes to children's health, one of the main conditions that cannot be overlooked is ensuring sufficient access to clean drinking water in educational institutions. It is particularly important that teaching and upbringing conditions in general education schools meet the required standards, as children spend most of their day in such institutions: studying, playing, and developing. In order for them to maintain high energy levels, attention, and stable health, having access to safe-quality drinking water at any time is crucial.

In this article, we examine why providing clean drinking water in schools has a decisive importance for children's health and development. Water is one of the essential factors of human life, and its quality and safety are especially important for children.

Children's bodies grow faster than adults, metabolic activity is higher, and the immune system is not yet fully developed. Therefore, the importance of clean drinking water is several times greater for children:

1. Ensuring homeostasis — water is the main component of all biochemical processes in the body.
2. Preventing intestinal infections — clean water prevents the entry of pathogenic microorganisms.
3. Reducing intoxication risks — harmful factors such as nitrates, heavy metals, phenol, and chlorinated organic compounds may cause severe poisoning in children.
4. Strengthening immunity — clean water helps maintain general physiological stability.



5. Impact on growth and development — toxins and parasites in contaminated water may lead to anemia, developmental delays, and certain cases related to autism spectrum disorders, according to international studies.

According to the WHO report of 2024, approximately 1.5 million children worldwide suffer annually from diseases associated with contaminated drinking water. In the Central Asian region, intestinal infections, dysentery, rotavirus, and norovirus are noted to have high prevalence among children. About 70–80% of such infections are linked to contaminated water and poor sanitation conditions [7].

In several low-income countries, the introduction of safe drinking water into schools has been shown to reduce absenteeism and lower overall infectious disease rates. These results demonstrate the effectiveness of WASH programs [6].

In Uzbekistan, it was recorded that 45% of the most frequent childhood infections between 2020–2023 were waterborne.

National and international experience in ensuring access to clean drinking water

Foreign experience:

- In Japan, water quality in schools and preschools is ensured through filtration + ultraviolet disinfection technologies.
- In Germany, testing water systems in every children's institution for Legionella bacteria is mandatory.
- In South Korea, a “Water Safety Index” is implemented, and children’s institutions are required to obtain certification every quarter [7–11].
- In the USA, in addition to pipeline water, “hydration stations” (filtered dispensers) are mandatory in children's institutions.

In Uzbekistan, childhood health is also prioritized at the state policy level. In particular, within the framework of the “Strategy for the Development of Preschool and General Secondary Education for 2022–2026,” the task of providing all educational institutions with safe drinking water has been defined.

Within the state programs “Development of Water Management and Sanitation” in 2021–2024, more than 6 million people, including a large number of children’s institutions, were provided with clean drinking water.

- The Ministry of Preschool Education, the Ministry of Health, and the State Sanitary and Epidemiological Surveillance Committee conduct continuous sanitary monitoring.
- “Express water quality control” laboratories were established in a number of regions within children’s institutions.

The normative technical documents strictly define the physical, organoleptic, bacteriological, and toxicological indicators of drinking water quality set by the Ministry of Health of the Republic of Uzbekistan [1–3].

Sanitary and hygiene requirements for the provision of drinking water in children’s institutions. According to the sanitary and epidemiological requirements for the organization and conditions of education in general education schools (SanPiN 0341-16), strict compliance with requirements for water supply and sewage systems is mandatory [3].



• The buildings of general education schools must be equipped with centralized household–drinking water supply, sewage, and water drainage systems in accordance with the requirements established for water supply and wastewater removal in public buildings and structures. The kitchens, buffets, shower rooms, washrooms, personal hygiene rooms, medical-purpose rooms, labor training workshops, primary school classrooms, art rooms, physics, chemistry and biology classrooms, laboratory rooms, rooms intended for cleaning equipment maintenance, as well as toilets in newly constructed and reconstructed general education schools under general schools, preschool education institutions and boarding schools must be provided with centralized cold and hot water supply.

• In cases where centralized water supply is not available in a settlement, continuous supply of cold water and installation of water-heating systems must be ensured in kitchen block rooms, medical-purpose rooms, toilets, boarding rooms and preschool education facilities within existing general education school buildings.

• General education schools must be provided with water that meets hygienic requirements for drinking water supply and ensures quality and safety.

• In general education school buildings, the kitchen sewage system must be separated from other sewage systems and must have an independent connection to the external sewage system. Sewage pipes from upper floors must not pass through kitchen production rooms.

• In non-sewered rural areas, general education school buildings are equipped with internal sewage systems (in the form of a “lyuft-closet”) with local treatment facilities installed. Installation of outdoor toilets (located in the yard) is also permitted.

• The drinking regime of pupils in general education schools must be organized in accordance with sanitary-epidemiological requirements established for the organization of pupils’ nutrition.

In recent years, although large-scale reforms are being implemented in the Republic to improve drinking water supply, in some regions the level of provision of clean drinking water in children's institutions still does not meet requirements.

Conclusion

Providing clean drinking water in children’s institutions is a fundamental condition for protecting health. It is invaluable not only for children's physical status, but also for the effectiveness of the educational process, immunity, and their overall development. With the support of state policy, medical-hygienic control, and modern technologies, it is possible to fundamentally improve water safety in children’s institutions.

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