

**DRINKING WATER HYGIENE AND INFECTION PROPHYLAXIS**

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**Abstract:** Drinking water is an integral part of human life, ensuring the normal course of all biological and physiological processes in the body. The compliance of water with hygienic requirements is one of the important factors of a healthy lifestyle. Water that does not meet hygienic standards harms the human body and causes the occurrence of many infectious and parasitic diseases.

This article analyzes the hygienic indicators of drinking water (organoleptic, chemical, microbiological and radiological criteria), factors that cause water-borne diseases - in particular, dysentery, cholera, dysentery, viral hepatitis A and other infections. Also, scientifically based recommendations are given on methods of water disinfection, organization of sanitary and hygienic control in centralized water supply systems, preservation of water sources in rural areas, and safe consumption of water in households.

**Relevance:** In today's era of globalization, the need for clean drinking water is increasing sharply. According to the World Health Organization (WHO), every year more than 2 billion people in the world consume water that does not meet hygienic requirements. As a result, more than 500 thousand children die every year from water-borne infections. In Uzbekistan, in some regions, due to water shortages, environmental pollution, and malfunctions of sewage systems, the quality of drinking water may be low. Therefore, strict adherence to water hygiene, protection of water sources, and strengthening infection prevention are urgent issues for the medical field.

**Keywords:** Water hygiene, infection, prevention, water source, disinfection, sanitary control, epidemiology.

**Main part:** Drinking water is one of the basic physiological needs of the human body. It plays an important role in processes ranging from food digestion to blood circulation, heat exchange, metabolism, and the removal of toxins. Therefore, the hygienic quality of water directly affects human health.

Clean drinking water is hygienically evaluated according to four main criteria: organoleptic, chemical, microbiological and radiological indicators. Organoleptically, water should be transparent, colorless, without foreign odor and taste. Its chemical composition should not contain heavy metal salts (copper, zinc, lead, manganese), nitrates, pesticides in excess of the norm. Microbiological indicators are considered the most important: if *Escherichia coli* or other intestinal sticks are detected in 100 ml of water, such water is considered unsuitable for drinking. Radiological safety depends on the amount of natural radioactive elements in the water.

Many infectious and parasitic diseases occur as a result of impaired water hygiene. The most common are cholera, typhoid fever, paratyphoid fever, dysentery, viral hepatitis A, poliomyelitis, giardiasis and amebiasis. These diseases are mainly transmitted through the fecal-

oral route, meaning that water is contaminated with the feces or waste of an infected person, and then healthy people who use that water are infected. This usually occurs when there is no sewage system or water treatment facilities are not working effectively enough.

To prevent infections, several levels of preventive measures are taken. First of all, regular hygienic control should be carried out in centralized water supply systems. Chlorination, ozonation, ultraviolet irradiation, as well as filtration technologies are used to disinfect water. In rural areas, it is important to pay attention to the hygiene of wells and artesian sources: there should be no waste, sewage or plant residues around them, and the well mouth should be closed.

At home, it is recommended to boil water or purify it through special filters, store water in clean containers, and keep drinking and household water in separate containers. Strengthening sanitary and educational work among the population is the most important part of water hygiene. Every citizen should know the need to protect water sources from pollution, properly dispose of waste, and follow the rules of cleanliness.

Water hygiene is also of great importance in medical practice. Microbiological analysis of water samples should be carried out regularly in each hospital, polyclinic and sanatorium. If the quality of water is impaired, the risk of infectious diseases in patients increases. Hygienic control is the main tool for maintaining epidemiological stability, ensuring public health and early detection of foci of infections.

Today, new technologies are being introduced to ensure water hygiene. For example, the use of nanofiltration, reverse osmosis, silver ion-based disinfection systems and environmentally friendly mechanical filters are giving effective results. These methods allow you to purify water without chemicals and eliminate microorganisms. At the same time, environmental protection of water sources and modernization of wastewater treatment facilities at the state level are an important strategic task.

**Discussions and discussions:** There are several controversial points among scientists on the issue of water hygiene. Some experts consider chlorination of drinking water to be the most effective method, but others believe that chlorine residues can harm the human body. Therefore, in recent years, priority has been given to ozonation, ultraviolet irradiation and biological filtration systems instead of chlorine.

There are also different approaches to saving and reusing water resources. Some experts are in favor of reusing drinking water for technical purposes, while others believe that this method poses an environmental hazard. In this regard, an integrated approach to maintaining water hygiene is necessary - that is, combining environmental, technological and sanitary and hygienic measures.

Another important issue in the discussions is the level of hygienic culture among the population. Many infectious diseases occur as a result of non-compliance with hygiene rules, rather than malfunctions in water systems. Increasing the hygienic literacy of the population, especially among children, is the most effective way of prevention.

From a medical point of view, water hygiene cannot be limited to disinfection alone. Water quality monitoring, epidemiological observations, chemical and microbiological analysis of drinking water should be carried out on a regular basis. According to experts, compliance with water hygiene reduces not only infections, but also some forms of oncological, cardiovascular and

metabolic diseases. Therefore, hygienic control of drinking water is an important component of a general health policy.

**Conclusion:** Drinking water hygiene is not only a technical or environmental issue, but also an important socio-medical problem directly related to human health, quality of life and social development. Since more than 70% of the human body consists of water, its purity ensures the normal course of all physiological processes. Clean water is not only a drink, but also the basis of food preparation, hygienic care and sanitary conditions.

As a result of water not meeting hygienic standards, dangerous diseases such as intestinal infections, hepatitis A, cholera, dysentery, giardiasis appear. These diseases pose a threat not only to health, but also to socio-economic stability. Therefore, constant monitoring of the quality of drinking water, protection of water sources, modernization of disinfection systems and strengthening sanitary and educational work among the population should be one of the priority tasks at the state level.

Today, thanks to the development of science and technology, effective methods of water purification have been developed - membrane filtration, ultraviolet disinfection, the use of sorbents and biological purification systems, among others. At the same time, the formation of an ecological culture, such as the rational use of water resources, proper disposal of waste, and not wasting drinking water, is also an important component of hygienic safety.

In conclusion, clean drinking water is the foundation of a healthy society, the most natural and most effective means of preventing diseases. Sanitary and epidemiological stability can be achieved only if every citizen, medical worker and state body deeply feels their responsibility in terms of water hygiene and infection prevention. The path to a healthy generation and a clean environment begins with a hygienic culture.

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