

ACTUAL ISSUES OF STUDYING THE IMPACT OF THE ARAL SEA REGION ENVIRONMENT ON WOMEN'S HEALTH

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<https://doi.org/10.5281/zenodo.20118195>

Abstract: The article presents recommendations regarding the impact of environmental and ecological factors on the human body, as well as essential factors for utilizing natural healing resources. It emphasizes the importance of integrating natural elements into health-improving practices to mitigate negative environmental effects.

Keywords: nature, environment, natural factors, ecology, organism, motor activity, health, physical activity.

Due to the economic crisis in several regions of the world, problems related to the quality of human life and the state of the environment are worsening, often taking on a transboundary and global character. International meetings of representatives (UN Conferences on Sustainable Development in 1992, 2002, 2012, etc.) and organizations (UNDP, UNEP, IMF, WHO, etc.) regularly update issues regarding the irrational destruction of natural resources in their documents. At the same time, they constantly highlight the problems of natural resource conservation in the medium and long term, as well as the protection of the health of local populations and wildlife in ecologically unstable zones and regions with unstable socio-economic situations. Deep socio-economic, humanitarian, and socio-cultural problems in several regions, along with crisis situations, give rise to other vital issues, including the preservation of human health and well-being and the strengthening of public health in general, which, in turn, has a negative impact on the physical development of the young and rising generation.

In the late 20th and early 21st centuries, humanity faced serious problems of almost comprehensive environmental pollution. Currently, a critical ecological situation has emerged in many industrial centers around the world, resulting in more than 100 million people living in unfavorable sanitary and hygienic conditions.

The modern scientific and technological revolution is characterized by the rapid development of industry, an increase in electricity consumption, and the expanding use of all types of production and transport. These processes lead to increased environmental pollution, which is one of the most critical challenges for public health protection.

Solving this problem is aimed not only at preserving natural resources for the further economic and social development of the state but also, primarily, at ensuring favorable sanitary conditions for the population, including current and future generations, as well as preventing the harmful effects of environmental pollution.

Environmental pollution affects human health in various ways and is capable of impacting almost all spheres of human activity. The atmosphere and hydrosphere are the most dynamic environments through which the spread of pollutants, especially their chemical elements, occurs much faster than in the biosphere.

The problem of environmental improvement has evolved from a national to a global issue and is under the constant attention of the United Nations. According to data from the World Health Organization, public health depends on the resolution of environmental problems by 20–30%. In the field of environmental protection, a special place is occupied by the fight against atmospheric air pollution, which represents a growing threat to human health and the well-being of society.

Among the largest sources of substances harmful to human health emitted into the environment are ferrous and non-ferrous metallurgy enterprises, chemical, oil, and shale processing complexes, construction material production plants, and transport vehicles.

In recent years, the attention of scientists worldwide has increasingly focused on changing weather patterns and growing air pollution, which often pose a serious threat to human health. Specifically, in large cities during periods of high temperatures, there is a significant increase in the concentration of chemical elements characteristic of atmospheric pollution.

The contamination of urban environments with toxic substances exacerbates the course of many chronic diseases. This primarily affects the cardiovascular and respiratory systems (atherosclerosis, tuberculosis, chronic bronchitis, pneumonia, lung cancer, bronchial asthma, etc.), as well as the nervous and immune systems, gastrointestinal tract diseases, and other pathologies.

N.Yu. Kelina and co-authors (2010) note that between 2006 and 2010, the level of newly diagnosed morbidity influenced by environmental factors showed an upward trend. This was manifested in an increase in pathologies of the nervous system, blood and blood-forming organs, respiratory organs, as well as complications during pregnancy and childbirth. Within the structure of disease classes, circulatory system diseases and neoplasms stand out. Compared to 2006, the growth rate of population morbidity in 2010 was: 21% for nervous system diseases, 12.8% for respiratory organs, 9.3% for blood and blood-forming organs, and 38.8% for complications of pregnancy and childbirth. The growth of malignant neoplasms among the population in 2010 compared to 2006 reached 7.6%.

Given that prolonged exposure to polluted air has a negative impact on public health (increased morbidity and mortality), several authors suggest establishing a quantitative relationship between levels of morbidity, mortality, and the degree of air pollution, followed by the development of methods for predicting health damage.

The increase in mortality from respiratory diseases is primarily linked to the rising concentration of suspended particulate matter in the air with a diameter of less than 10 μm (PM10), whose chemical composition and distribution patterns can cause numerous negative health consequences. The influence of particulate matter on the increase in general mortality rates, as well as lethality rates from cardiovascular and lung diseases, has been proven.

Several authors report an increase in manifestations of respiratory hypersensitivity against the background of rising air pollution levels. For the population aged 65 and older, a high correlation coefficient (0.95) was found between hospitalization for cardiovascular diseases and the atmospheric content of suspended particulate matter and carbon monoxide. Cases of increased public requests for emergency medical assistance due to respiratory diseases during periods of elevated carbon monoxide and sulfur dioxide concentrations have been noted.

The research of many authors is dedicated to studying the impact of unfavorable environmental factors on the children's body, which serves as a specific indicator of environmental changes. In particular, it is noted that in almost every large industrial city, the prevalence of diseases of the respiratory system, throat, and ear has increased due to high exposure to harmful elements in the air. An increase in diseases of the urinary system and gastrointestinal tract is also observed, which may be associated with the use of drinking water of inadequate quality.

In studying cases of acute respiratory infections of the upper respiratory tract in children living in polluted areas, a link was identified between morbidity and air pollution with sulfur dioxide, nitrogen dioxide, dust, and carbon monoxide. The high level of childhood morbidity is associated not only with the direct impact of harmful impurities on the mucous membrane of the respiratory tract (at concentrations exceeding maximum permissible concentrations — MPC) but also with a general decrease in the body's resistance to unfavorable external influences. It is

noted that respiratory diseases rank first in the structure of the general morbidity of the population in cities where the atmospheric air is most polluted with formaldehyde, nitrogen dioxide, sulfuric anhydride, and other substances. Within the system of respiratory diseases in children, obstructive bronchitis and stenosing laryngotracheitis take the lead. It is emphasized that periods of exacerbation of these conditions are directly related to the unfavorable environmental situation.

A strong correlation has been established between the morbidity rates of the respiratory and digestive systems in the entire population (both children and adults) and the increase in the Maximum Permissible Concentrations (MPC) of phenol and nitrogen dioxide in the atmospheric air; among children, a link exists between respiratory diseases and the excess of MPC for ammonia and nitrogen dioxide. A moderate relationship was also identified between the morbidity rate of the cardiovascular system and the excess of MPC for ammonia and nitrogen dioxide in the air, as well as between diseases of the digestive and respiratory systems and the excessive content of ammonia, phenol, and dust in the atmosphere.

F.F. Dautov and co-authors (2007) noted a high level of allergic diseases within the structure of the general morbidity of children living in unfavorable environmental conditions. According to the authors, this is due to the specific impact of chemicals in the atmospheric air, which in turn leads to changes in immunoreactivity, as the immune system actively participates in the response mechanism to chemical agents. Adverse environmental conditions contribute to a decrease in the body's adaptive capacities and an increase in morbidity.

Thus, the materials presented in the literature indicate the negative impact of airborne and waterborne impurities on the health of both children and adults. At the same time, certain discrepancies in the literature regarding the methods and degree of risk assessment of cumulative pollution for the population require further study of this issue. The quantitative characterization of the risk of environmental pollution's impact on human health in large regions with a concentration of metallurgical, thermal power, and coal industry enterprises remains an urgent task for today.

An analysis of the current state of the environment and its impact on human vital activity allows for the conclusion that the ecological crisis has transcended the boundaries of local incidents and has become a determining factor in the quality of life for the global community. Anthropogenic pressure on the biosphere has led to a situation where the natural environment has transformed from a source of resources into a source of constant biological threat.

The primary and most alarming result of this process is the decline in the adaptive potential of humanity. Prolonged exposure to toxic impurities in the air and water does not merely cause isolated diseases but leads to a profound systemic restructuring of the organism. A change in the immune response occurs, causing allergic and chronic pathologies to become a mass phenomenon affecting all age groups.

The cumulative effect of pollution poses a particular danger: the constant presence of harmful chemical elements in the living space undermines the health of the rising generation as early as the stage of intrauterine development. This creates long-term risks for the gene pool, as the child's body, being the most sensitive biological indicator, demonstrates an inability to fully withstand an aggressive external environment without additional support.

Thus, solving environmental problems today cannot be limited solely to technical measures at factories. It requires a comprehensive state approach that combines strict environmental monitoring with the active implementation of health improvement programs. The only way to preserve the nation's health in the context of industrial growth is to increase the body's natural resistance through hardening (conditioning), the use of natural health-promoting factors, and physical culture, which must become a mandatory counterweight to the inevitable anthropogenic impact.

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