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ENVIRONMENTAL PROBLEMS AS A FACTOR IN THE DEVELOPMENT OF DISEASES AMONG THE POPULATION

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Abstract

Environmental factors play a key role in shaping human health. This article examines the main types of environmental pollution (air, water, soil), as well as their impact on the development of various diseases. The mechanisms by which toxicants affect the body, including the respiratory, cardiovascular, endocrine, and immune systems, are analyzed. Environmental risks are shown to be a significant factor in the increase in chronic and infectious diseases.

Keywords: Ecology, pollution, health, toxicants, diseases, environment.

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Introduction

The current state of the environment has a significant impact on public health. According to the World Health Organization, a significant proportion of diseases are caused by adverse environmental factors. Intensive urbanization, industrial development, and the chemicalization of agriculture lead to the accumulation of pollutants in the biosphere.

Despite numerous studies, a comprehensive assessment of the impact of various environmental factors on health remains a pressing issue.

The aim of this study is to systematize the main environmental factors and analyze the mechanisms by which they influence human health.

The objectives of the study were to:

- identify the main sources of environmental pollution;
- study the impact of pollutants on various body systems;
- assess the risk of developing diseases.

Methods

This study utilizes an analytical and comparative approach to studying environmental factors and their impact on human health.

The methodological framework includes:

- analysis of scientific literature and reports from international organizations;
- systematization of data on environmental pollutants;
- logical-structural analysis of the relationships between environmental factors and diseases.

The object of the study is environmental factors.

The subject of the study is their impact on human health.

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Results

1. Air pollution. The main sources of pollution are transport, industry, and energy. The most dangerous components are:

a) PM2.5 and PM10

b) nitrogen oxides (NO_x)

c) sulfur dioxide (SO_2)

d) carbon monoxide (CO)

Impact: respiratory diseases (asthma, COPD, lung cancer); cardiovascular diseases (hypertension, heart attack, stroke).

2.Water Pollution. Water resources are polluted by industrial waste, pesticides, and heavy metals.

Microbiological risks: cholera, dysentery, hepatitis A.

Chemical risks: liver and kidney damage; neurotoxic effects; methemoglobinemia in children.

3. Soil Pollution. Soil is a reservoir of toxicants, including: heavy metals; pesticides; radionuclides.

Consequences: hormonal imbalances; infertility; cancer.

4. Waste and urbanization. The increase in waste volume is accompanied by the release of methane, dioxins, and toxic gases. This leads to allergic diseases, skin pathologies, and chronic inflammatory processes.

5. Chemical pollution. Synthetic substances (phthalates, bisphenol-A) have endocrine-disrupting effects. The consequences of exposure include: hormonal imbalances, congenital anomalies, and developmental delays in children.

6. Radiation pollution. Sources include nuclear power plant accidents and man-made emissions. Impact: DNA damage; cancer; genetic mutations.

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7. Climate change. Climate change leads to: an increase in infectious diseases; increased heat stress; deterioration of air quality.
8. Urban factors. Non-chemical factors: noise; light pollution; stress. They contribute to: hypertension; depression; sleep disorders.

Discussion

The data obtained confirm that the impact of environmental factors is complex and multifactorial. Environmental pollution affects the body through several biological mechanisms:
- oxidative stress;
- inflammatory processes;
- endocrine disruption;
- genetic damage.

A characteristic feature of modern environmental risks is their cumulative effect and long-term latent impact. Vulnerable groups include children, the elderly, and people with chronic diseases.
Comparative analysis shows that the combined effects of factors (for example, air pollution and stress) intensify the negative impact on health.

Conclusions

Environmental issues are a significant factor in the development of diseases in the population. Air, water, and soil pollution, chemicalization of the environment, and climate change pose a high level of health risks.
Key findings:
- environmental factors contribute to the increase in chronic and infectious diseases;
- the impact is systemic and long-term;
- socially vulnerable groups are the most vulnerable.

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Practical significance:

- the need to strengthen environmental control;
- the introduction of environmentally friendly technologies;
- the development of preventive medicine;
- increasing environmental literacy of the population.

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