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# DISEASES COMMON AMONG THE POPULATION LIVING IN THE ARAL SEA REGION

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**Abstract.** This article analyzes the health problems that have arisen among the population in the Aral Sea region as a result of the ecological disaster. Research results show that residents living around the Aral Sea suffer from widespread respiratory, oncological, hepatological, endocrine, and reproductive system diseases. The main causes of these conditions include air pollution, poor-quality drinking water, and contamination of soil and vegetation. The article examines existing problems and proposes comprehensive solutions. It also substantiates the interrelation between ecological and medical factors and emphasizes the need to implement an ecological health care concept.

**Keywords.** Aral Sea region, ecological disaster, health problems, respiratory diseases, oncological diseases, drinking water, reproductive health, endocrine disorders, psychological health, ecological healthcare, toxic dust, pesticides, Aral Sea.

## Introduction

The Aral Sea is one of the largest examples of ecological disasters that occurred in the second half of the 20th century. The environmental crisis caused by the drying of the Aral Sea has had a detrimental impact on the health of the population living in the area. The regions surrounding the Aral Seaparticularly the Republic of Karakalpakstan, Khorezm region, and southern parts of Kazakhstan are recognized as environmentally hazardous zones. The reduction in water resources, the spread of salt and dust particles into the atmosphere through wind, contamination of groundwater, long-term use of toxic pesticides, and industrial waste all these factors have negatively affected the health of the Aral Sea region's population. The drying of the Aral Sea accelerated desertification in the region. As the sea bed became exposed, hundreds of tons of salt, sand, chemicals, and heavy metals began rising into the air. Each year, hundreds of thousands of tons of dust and salt particles are carried across Central Asia by wind. These particles enter the human body through the respiratory system, causing various diseases.

**Respiratory Diseases.** Chronic respiratory diseases are among the most common pathologies in the Aral Sea region. Chronic bronchitis, bronchial asthma, allergic rhinitis, and other respiratory diseases are especially prevalent among children and the elderly. The spread of salty and chemically-laden dust

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particles in the air directly damages the bronchial system. Some studies have shown that these dust particles contain pesticides such as DDT, increasing their toxicity.

**Oncological Diseases.** Cancer rates particularly of the lungs, liver, and esophagus are significantly higher in the Aral Sea population than the national average. Experts link this to the high concentration of carcinogenic substances in the air, poor-quality drinking water, and low living standards.

**Hepatological Diseases.** Due to contamination of drinking water sources, infectious hepatitis types A, B, and C are widespread. In addition, exposure to hepatotoxic substances (e.g., heavy metals and pesticides) disrupts liver function, leading to chronic hepatitis and cirrhosis.

**Endocrine System Disorders.** Thyroid disorders, especially hypothyroidism and goiter, are widespread in the Aral region. This is primarily due to iodine deficiency and the influence of heavy metals in the environment. Some studies also show a rise in cases of diabetes mellitus in this region.

**Reproductive and Developmental Issues.** Among women in the Aral region, complications during pregnancy, premature births, congenital anomalies, and developmental disorders are common. These are linked to the toxic substances and heavy metals in the environment, many of which pass through the placenta to the fetus.

**Psychological and Social Impact.** Long-term ecological problems have led to increased levels of stress, anxiety disorders, and psychological depression among the population. Youth migration, hopelessness, and declining motivation are on the rise. This further exacerbates health-related issues.

The Aral Sea region, as an ecological disaster zone, presents a complex set of threats to human health. The ecological catastrophe that began with the drying of the Aral Sea has disrupted not only the environment but also human life and well-being. In this area, health care issues require a systematic, comprehensive, and deeply integrated approach. Primarily, the problem arises in multiple interconnected stages: Drying of the Aral Sea → Spread of dust and pesticides → Pollution of air, water, and soil → Respiratory, hepatological, oncological, and endocrine diseases → Pressure on the healthcare system → Social instability and psychological disorders forming a tightly linked chain of consequences.

Analysis shows that the diseases found in this region are not primary, but rather secondary outcomes of ecological factors. In other words, the cause of illness is not genetic predisposition but prolonged, involuntary exposure to a toxic environment. This situation requires a new type of approach in the healthcare system namely, the implementation of an ecological health care model. Another important analytical point is that these problems cannot be solved by medical means alone. For example, a patient with liver disease caused by heavy metal exposure can be treated, but if the patient continues to live in the same polluted environment, the disease will reoccur. Therefore, environmental remediation must be the primary step, not just treatment. In addition, the social and psychological aspects of the problem are still insufficiently studied. The Aral population is increasingly experiencing stress, depression, and psychological breakdowns. People have lost trust in their future, in their children's health. This leads to migration, social fragmentation, and apathy.

## Conclusion

The Aral Sea disaster is not just an ecological crisis, but also a major medical and social problem. The health damage to the regional population has manifested in the form of numerous diseases.

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Respiratory, hepatological, oncological, endocrine, and reproductive system disorders are widely prevalent in the region. Protecting the health of the Aral Sea population through a comprehensive approach will help improve medical indicators in the region and mitigate the consequences of the ecological disaster. This, in turn, will have a positive impact on the overall stability of Central Asia.

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