WAYS OF HUMAN BODY DAMAGE BY HEAVY METALS

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ABSTRACT

Abstract: *The urgency of the problem of environmental pollution with heavy metals is explained, first of all, by a wide range of effects on the human body. Heavy metals affect almost all body systems, have toxic, allergic, carcinogenic, gonadotropic properties.*

Keywords: *Zirabulak mining enterprises, heavy metals, groundwater, water quality, the impact of heavy metals on the human body, toxicity of metals, sources of heavy metals.*

INTRODUCTION

Today, more than 40 elements in D.I.Mendeleev's periodic table with an atomic mass greater than 50: vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, molybdenum, cadmium, tin, mercury, lead, bismuth and another - several dozen metals are included.

Currently, detailed information on the danger class of metals has not been fully studied. The direct transfer of many heavy metals to the human body and its effects have been studied, but the mechanisms of migration have been studied very little. Also, currently there is very little information about the mechanisms of accumulation of heavy metals by plants, because until now the main focus of scientific research has been on the absorption of nitrogen, phosphorus and other nutrients from the soil.

LITERATURE ANALYSIS AND METHODOLOGY

There are some types of plants that absorb heavy metals from the soil at a high level. They are called hyperaccumulators (For example, *Thlaspi caerulescens*, *Cardaminopsis halleri*, *Alyssum tenium*, *A. lesbiacum*, *A. murale*). If people use plants in this group as food, certain types of heavy metals accumulate in the human body. This situation is usually only dangerous if the plants are harvested in areas with high concentrations of metals in the soil. The absorption of metals by plants depends on the acidity (pH) of the soil. The higher the acidity, the more soluble and mobile metals are, and the more likely they are to be absorbed and accumulated in plants [2, 3].

Determining the mechanisms of toxicity of metal ions is often complicated by the presence of different ways of their entry into the living organism. Metals can accumulate in the body during the process of eating food or water, passing through the skin, and breathing. Air contaminated with industrial dust is the main environment and source. During breathing, most metals accumulate in lung tissue and then spread to other organs. But the most common way for toxic metals to enter the body is through food and water.

RESULTS

A number of observations were made in order to study the ways in which the human body can be damaged by heavy metals in the area of mining enterprises in the Zirabulok mountain region.

In these regions, the main sources of heavy metal exposure to the human body are drinking water bodies contaminated by mining (quarry or mine) dust and industrial waste. Scientific research is also being carried out on the properties of accumulation.

Heavy metals can spread to the environment through industrial wastewater, organic waste, waste incineration, transport and energy waste. Depending on whether they are in the form of gas or particles, they can spread from the source to great distances along the wind direction. Metal pollutant aerosols pass from the air to the ground or fall into water bodies and accumulate on their shores. Thus, the air is also a carrier medium for heavy metal pollution.

In assessing the impact of heavy metals on the environment, including the human body, the study of the impact of Zirabulok mining enterprises shows that today the population of Ingichka is not fully provided with centralized water supply . Water for the population is transported in cisterns from the upper parts of the mountain lake.

The mountain lake is saturated due to underground water and atmospheric precipitation, and its level changes depending on the season. Since the lake is located near the wastes of mining enterprises, it was found that the chemical composition of such waters changes [4].

DISCUSSION

Industrial wastewater containing heavy metals is the main source of heavy metal pollution of the hydrosphere. Another way of their spread is the pouring of drainage (waste) water into water bodies [1].

Taking into account the climatic conditions of the area (in the example of the researched area), including the wind speed and direction, it can be said based on the above information that the important source of heavy metals dangerous for the human body is the production industries and their dust..

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