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Environmental pollution and the issue of safety of children's establishments

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Due to persistence of environmental heavy metals and cancer-inducing properties of radon these problems are of major concern to the public and scientists. For a set of objective reasons children are the most vulnerable group in the populace.

To reveal possible ways of heavy metal and radon effects on children's organisms, ecological and geochemical research was performed covering heavy metal pollution of soils and grounds for pre-school establishment sites and playing grounds and on indoor radon concentration level for kindergartens.

In the frame of this research the outcomes of ecological and geochemical assessment of pre-school establishment sites in the sphere of the impact of mining production are discussed.

The research was performed through

- geochemical soil and ground sampling allover kindergarten sites and playing grounds. The samples were analyzed for Hg, Cd, As, Cu, Pb, Zn, Ni, Co, Cr, Mo through the atomic-adsorption method.
- direct radon concentration level measurements in the air of different functional spaces.

The obtain research outcomes evidence that

1. Total Mo contents for all the studied soils and grounds are manifold excessive vs. the background values (129.4 times on the average). Considerable excess vs.

the background is established for Cu and Zn, and inconsiderable – for Co and Ni. From the viewpoint of sanitary and hygienic assessment, Mo, Cu, Ni, Co contents are well excessive vs. MAC for the most study objects. No excess vs. MAC is established for the contents of the elements of the 1^{st} class toxicity: Hg, Cd, As.

2. Excessive radon concentration vs. the norm (200Bq/m^3) is established for one of the three studied kindergartens only. For rooms that stood unventilated for some hours increasing radon concentrations are established that reach critical values.

Based on the obtained research data, concrete recommendations are made for minimization of risk to children.