Energy-intensive materials play a vital role in Belarus's economy and industry. They are used in various sectors – from mining to rocket engine production. The development of this field requires balancing safety, environmental sustainability, and economic efficiency. Belarus has the potential to further improve its technologies and strengthen its position in the global market for energy-intensive materials.

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TOXIC EFFECTS OF HEAVY METALS

The term “heavy metal” refers to any metallic chemical element that has a relatively high density and is toxic or poisonous at low concentrations. Examples of heavy metals include mercury (Hg), cadmium (Cd), arsenic (As), chromium (Cr), thallium (Tl), and lead (Pb).

Naturally heavy metals are used in industry. Examples of heavy industries are aerospace, shipbuilding, infrastructure building, chemical production and steel production.

To a small extent heavy metals enter our bodies via food, drinking water and air. However, at higher concentrations they can lead to poisoning. This is the main problem for humans. Heavy metal toxicity can result in damaged or reduced mental and central nervous function, lower energy levels, and damage to blood composition. Long-term exposure may result in slowly progressing physical, muscular, and neurological

You might think that heavy metals are rarely used in daily life, but in fact this is not true. We interact with small amounts of heavy metals every day, like when you check the temperature of your thermometer, which uses mercury. Heavy metals like lead, arsenic, mercury, aluminum, zinc, chromium and iron

are found in a wide variety of personal care products including lipstick, whitening toothpaste, eyeliner, nail color. Some metals are intentionally added as ingredients.

Heavy metal poisoning occurs when metals get into your body. This can happen if you're exposed to a large amount of metal including:

- Drinking water from older water supply systems.
- Working with metals on the job.
- Taking medications or supplements with high amounts of metallic elements.
- Handling metals or products made with a large amount of metal (like paint or pesticides) without using personal protective equipment.

Aluminum can accumulate in the human body, potentially increasing the risk of adverse human health effects. People who have been exposed to aluminum for long periods of time have been shown to develop a risk factor for Alzheimer's disease, other neurodegenerative diseases, and breast cancer.

During the experiment, it was proved that arsenic poisoning affects the heart and nervous system. The metal affects the kidneys and liver, leads to hypovolemic shock, lung and skin cancer. Higher concentrations of arsenic resulted in death.

The effects of mercury on living organisms have been confirmed in numerous animal experiments. It turned out that the bulk of mercury atoms evaporated through the nose. When evaporating, they traveled to the hippocampus, the organ that controls memory.

As the experiment showed, symptoms only began to appear when dangerous amounts of lead had accumulated. High concentrations of lead to liver failure, muscle atrophy, mental retardation.

As a future engineer in the field of physico-chemical methods and quality control devices I found out the main ways to prevent poisoning with heavy metals. From my perspective, it is important for us to inform ourselves about the heavy metals.

I want to introduce the basic rules for working in factories with heavy metals and the rules for protecting yourself from heavy metal poisoning in daily life.

1. No smoking, eating, or drinking in work areas.
2. Provide appropriate protective clothing that will remain at the facility.

Provide showering facilities as needed.

Work clothes and street clothes will not be kept in the same area.

Keep Equipment In Good Condition.

Use the least harmful product possible.

Read labels. Know the potential hazards of what you are buying.

Store products in their original container.

Become familiar with the symptoms of toxic metals.

Conclusion

As experiments show, each heavy metal leads to certain health problems. Everything depends on the concentration and duration of exposure. Exposure to heavy metals can be considered acute from an accident or chronic from long-term exposure. Unrecognized or untreated toxicity will likely result in illness and reduced quality of life. To stay healthy you should monitor your well-being.

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KÜNSTLICHE INTELLIGENZ UND UNSER ALLTAG

Künstliche Intelligenz durchdringt unser Leben. Oft unbemerkt, manchmal, wie bei ChatGPT, mit großer Begeisterung. Dabei nutzen wir KI schon lange und haben uns daran gewöhnt. Wenn sie uns nicht unterstützt, vermissen wir manchmal auch etwas. Hier sind meine wichtigsten KI-Anwendungen für den Alltag.

Bildergenerierung. Zu den interessantesten Anwendungen der künstlichen Intelligenz im Ber Bildanalyse gehören die Bilderkennung, die Gesichtserkennung und die Objekterkennung. Diese Anwendungen können in einer Vielzahl von Branc eingesetzt werden, z. B. in der Medizin, der Automobilindustrie und im Sicherheitsbereich. Bildgenerierung hingegen bezieht sich auf die Fähigkeit der KI, Bilder zu erzeugen, die nicht existieren.

Dies ist ein fortgeschrittener Bereich der KI, in dem Computer tatsächlich „lernen“, Bilder zu erstellen, die einem bestimmten Typ oder Stil entsprechen.