



Mercury Poisoning: Silent Threats and Ongoing Concerns

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INTRODUCTION

Mercury, a naturally occurring heavy metal, has been both a boon and a bane for humanity. Throughout history, it has been used in various applications, from traditional medicines to industrial processes. However, the shadow of mercury poisoning looms large over these seemingly beneficial uses. The toxic effects of mercury on human health and the environment have raised significant concerns, prompting widespread awareness campaigns and regulatory efforts to mitigate its impact.

DESCRIPTION

Mercury exists in several forms, each with varying degrees of toxicity. The three primary forms of mercury that pose health risks are elemental mercury, inorganic mercury compounds, and organic mercury compounds. This is the form of mercury that is a liquid at room temperature. It vaporizes easily and can be inhaled, leading to potential health risks for those who work with products containing elemental mercury, such as thermometers and fluorescent light bulbs. These compounds include mercury salts, like mercuric chloride. Inorganic mercury compounds can enter the body through ingestion or inhalation, often causing kidney and lung damage. Methylmercury is the most well-known organic mercury compound. It accumulates in aquatic ecosystems, primarily through microbial processes, and bioaccumulates as it moves up the food chain. Consumption of contaminated fish and seafood is a common source of exposure for humans. Mercury poisoning can have severe health consequences, especially when exposure is prolonged or at high levels. The central nervous system is particularly vulnerable to mercury toxicity, especially in the case of organic mercury compounds like methylmercury. It can lead to cognitive impairment, tremors, muscle weakness, and even neurological disorders in severe cases. High levels of mercury exposure have been associated with cardiovascular issues, including hypertension and increased risk of heart disease. Inorganic mercury compounds can target the kidneys, potentially

leading to kidney damage and dysfunction. Inhalation of elemental mercury vapour can cause respiratory problems, including lung irritation and bronchitis-like symptoms. Mercury contamination isn't limited to human health; it poses a significant threat to the environment as well. Mercury enters ecosystems through various means, including industrial processes, coal combustion, and natural sources. Once released, mercury can accumulate in soil and water bodies, where it transforms into methylmercury—a highly toxic compound that bioaccumulates in aquatic organisms. To address these concerns, various regulatory measures have been implemented globally to reduce mercury emissions and minimize exposure. One of the most significant steps was the Minamata Convention on Mercury, adopted in 2013, which aims to reduce mercury use and emissions. The convention includes provisions to control mercury emissions from industrial processes and to phase out the use of mercury in products like thermometers and batteries. Common sources include contaminated fish, dental fillings, and industrial exposure. Symptoms vary, encompassing neurological, gastrointestinal, and respiratory issues. Minimizing exposure is crucial; be cautious of fish high in mercury, and if you have amalgam fillings, consult a dentist. Swift identification and intervention are vital. Preventive measures, like proper disposal of mercury-containing items, can curb its risks. Stay informed and adopt safeguards to sidestep mercury's potential dangers.

CONCLUSION

Mercury poisoning serves as a stark reminder of the intricate relationship between human activities, health, and the environment. While efforts to reduce mercury use and emissions have been significant, the challenges of mercury contamination persist. A concerted global effort is required to continually raise awareness, strengthen regulatory measures, and promote sustainable practices to safeguard both human health and the planet from the silent threat of mercury poisoning.

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