



## Bismuth Poisoning: Unraveling the Lesser Known Threat

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### INTRODUCTION

In the realm of toxic elements, bismuth often takes a back seat to its more notorious counterparts like mercury, lead, and arsenic. However, this unassuming element, with its distinct iridescent hue and applications in various industries, can also pose a significant risk to human health if not properly managed. Bismuth poisoning, though relatively rare, demands our attention as we explore the lesser-known threats that could potentially compromise our well-being.

### DESCRIPTION

Bismuth compounds, such as bismuth subsalicylate, are also widely used in the medical field for their ability to alleviate gastrointestinal discomfort, making them a common ingredient in over-the-counter antacids and anti-diarrheal medications. However, despite its apparent safety, excessive exposure to bismuth can lead to poisoning and adverse health effects. Bismuth poisoning can occur through various routes, primarily involving ingestion, inhalation, or dermal contact with bismuth-containing substances. Ingesting large quantities of bismuth, either intentionally or unintentionally, is the most common way individuals are exposed to toxic levels of this element. This can happen through the consumption of contaminated water, improperly prepared cosmetics, or the misuse of bismuth-based medications. The symptoms of bismuth poisoning can vary depending on the level of exposure and the duration of contact with the toxic substance. Early signs may include gastrointestinal distress, such as nausea, vomiting, and diarrhea. Over time, more severe symptoms may develop, including kidney dysfunction, neurological disturbances, and cardiovascular complications. Children and individuals with impaired kidney function are particularly vulnerable to bismuth poisoning, as their bodies struggle to efficiently eliminate excess bismuth. Diagnosis is often challenging due to the nonspecific nature of the symptoms and the rarity of the condition. Medical professionals rely on a combination of clinical presentation and laboratory tests to confirm bismuth poisoning. Treatment

involves removing the source of bismuth exposure and providing supportive care. In less severe cases, simply avoiding further exposure might be sufficient for recovery. However, for severe instances, chelation therapy a medical procedure that removes heavy metals from the body might be necessary. Chronic exposure to bismuth has been associated with a condition known as "bismuth encephalopathy," which manifests as a range of neurological symptoms such as confusion, tremors, and muscle weakness. This condition underscores the potential for bismuth to affect the central nervous system, making its toxicity a matter of serious concern. Diagnosing bismuth poisoning can be challenging, as its symptoms may overlap with those of other medical conditions. Medical professionals often rely on a combination of patient history, physical examination, and laboratory tests to confirm suspected cases of bismuth poisoning. Urine and blood tests can help determine the levels of bismuth present in the body and guide treatment decisions. Treatment for bismuth poisoning primarily involves removing the source of exposure and managing the symptoms. In cases of severe poisoning, supportive care, including intravenous fluids and medications to address specific symptoms, may be necessary. It's crucial for healthcare providers to stay vigilant and consider bismuth exposure when confronted with unexplained symptoms, especially in patients with occupational risk factors. Preventing bismuth poisoning involves careful monitoring of products containing bismuth, including certain antacids, anti-diarrheal medications, and cosmetics.

### CONCLUSION

Bismuth poisoning might not be as widely recognized as some other toxic elements, it remains a genuine threat that warrants attention. Its presence in various consumer products and industrial processes underscores the importance of responsible handling and usage. By staying informed, promoting awareness, and fostering a culture of safety, we can minimize the risks associated with bismuth poisoning and safeguard the health and well-being of individuals worldwide.

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