

Cadmium

Description/Chemical Forms:

Cadmium is naturally found in the Earth's crust, particularly with zinc, copper, and lead ores. In the purest form, this chemical is soft and white, yet it is usually found combined with other elements, such as calcium, chlorine, or sulfur



Sources/Routes of Exposure:

The majority of this chemical is extracted as a byproduct during lead or zinc production and used in batteries (83%), pigments (8%), coatings/platings (7%), stabilizers in plastic manufacture (1.2%) and nonferrous alloys (0.8%). Cd deposits onto soil and sediments to be taken up by plant life and eventually enter the food chain

Main Route of Exposure:

- Ingestion: for nonsmokers, the food supply, especially leafy greens, potatoes, seeds, and legumes; fish from contaminated waters can also bioaccumulate cadmium

-Smokers: Cd is easily absorbed by tobacco leaves, smokers have almost double the body burden of Cd than nonsmokers

Health Effects:

Acute (short-term exposure):
Ingesting high amounts of Cd in a short amount of time can cause stomach irritation, vomiting, and diarrhea. Inhalation of Cd can irritate the lungs and even lead to death

Chronic (long-term exposure):
The greatest risk is inhaling small amounts of Cd over a long period of time, such as regular tobacco use. Build-up in the kidneys can cause damage and eventually renal failure

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Diagnosis/Treatment Options:	Prevention Strategies:	Links for Additional Information:
<p>There are a variety of different tests that can be used to determine level of cadmium exposure</p> <ul style="list-style-type: none">• Blood: useful for most recent exposures• Urine: generally the most preferred method for detecting recent and past exposures• Liver and Kidneys: can determine chronic exposure, yet these tests are not as common	<p>Most elevated Cd exposure comes from cigarettes, therefore tobacco cessation is one of the most effective avoidance methods</p> <p>Other Recommendations:</p> <ul style="list-style-type: none">• Advise occupational workers to wear proper PPE at their place of business• Avoid cadmium-contaminated waters when fishing• Properly dispose of nickel-cadmium batteries; patients may contact local waste and recycling agency for instructions	<p>More information concerning cadmium exposure and health effects can be found at the following sites:</p> <p>http://www.epa.gov/osw/hazard/waste_min/minimize/factshts/cadmium.pdf</p> <p>http://www.atsdr.cdc.gov/PHS/PHS.asp?id=46&tid=15</p> <p>http://www.cdc.gov/niosh/topics/cadmium/</p>