

Lead

Description/Chemical Forms:

Pb is a heavy, malleable, low-melting metal that is rarely found in that form in nature. Alloys are more common and not easily subject to corrosion from wind or water.



Sources/Routes of Exposure:

Sources: Compounds used in pipes, batteries, ammunition, cable covers, and radiation shields. Lead-based paints and leaded gasoline were used in both industrial and residential applications prior to their bans in 1978 and 1996, respectively. This chemical, while being reduced, is still in production in the US.

Main Route of Exposure:

- Ingestion-soil through hand-mouth contact (ceramics and toys)
drinking water retrieved from lead pipes, produce with contaminated soil, hobbies such as pottery and bullet making

Health Effects:

Adults: approximately 99% of ingested lead will leave the body through wastes within a few weeks

Children: retain 32% of ingested lead, amounts may be higher with prolonged exposure

- Toxicity: CNS effects-decreased cognitive function and poor memory/IQ scores, Pb can cross blood brain-barrier in children under 6 and affect neurotransmitters associated with CNS functions
- Effects are irreversible

Lead

Diagnosis/Treatment Options:	Prevention Strategies:	Links for Additional Information:
<p>According to the ATSDR, no safe blood lead level has been determined</p> <ul style="list-style-type: none">• Blood: recent exposures can be detected in blood by measuring erythrocyte protoporphyrin (EP), although these tests are not routine and have to be requested, or a venous or capillary test• Bones and Teeth: long-term exposures can be detected with x-rays, yet these tests are not widely available in most healthcare practices	<p>One of the best recommendations is to identify the lead source, whether in paint, drinking water, or soil and eliminate it. Advise young children not to put their hands in their mouth when playing around soil or dust that is suspected of contamination.</p> <p>Encouraging proper nutrition, especially sufficient calcium and iron, can actually reduce some of toxic effects of lead through less absorption in the bloodstream</p>	<p>More information concerning lead exposure and health effects can be found at the following sites:</p> <p>http://www.atsdr.cdc.gov/ToxProfiles/tp13-c1-b.pdf</p> <p>http://www.in.gov/isdh/19124.htm</p> <p>http://www2.epa.gov/lead</p> <p>http://www.cdc.gov/niosh/topics/lead/</p>