

Blood Lead Management Guidelines

Adults

Health-Based Recommendations for Nebraska Healthcare Providers

- > Monitor blood lead levels (BLL) in lead-exposed adults on a schedule based on individual risk.
- > Primary management of lead exposure in adults includes identification and reduction/removal of lead exposure.
- > Treatment decisions, including chelation, should be made in consultation with a physician knowledgeable about lead poisoning medical management.

BLL (µg/dL)	Management Recommendations ¹
<3.5	No action needed Monitor BLL if ongoing exposure
3.5–9	Provide lead education and discuss health risks Minimize exposure Consider removal for pregnancy & certain medical conditions* Monitor BLL
10–19	Provide lead education and discuss health risks Decrease lead exposure Remove from exposure for pregnancy Consider removal for certain medical conditions* or BLL ≥10 for extended period of time Monitor BLL (every 3 months)
20–29	Remove from exposure for pregnancy Remove from exposure if repeat BLL in 4 weeks remains ≥ 20 µg/dL Annual lead medical exam recommended Monitor BLL (monthly)
30–49	Remove from exposure Prompt medical evaluation/clinical assessment
50–79	Remove from exposure Prompt medical evaluation/clinical assessment Consider chelation if significant symptoms/signs of lead toxicity***
≥ 80	Immediate removal from lead exposure Urgent medical evaluation Chelation may be indicated***

¹ Table adapted from CSTE, Dec 2021. "Management Guidelines for Blood Lead Levels in Adults".

* Medical conditions that may increase the risk of continued exposure include chronic renal dysfunction (serum creatinine > 1.5mg/dL for men, > 1.3 mg/dL for women, or proteinuria), hypertension, neurological disorders, and cognitive dysfunction.

** For Treatment/Chelation Questions: Nebraska Regional Poison Center: 1-800-222-1222

Medical Removal for Occupational Exposures

Health-based recommendations for removal from exposure are different than those at which Medical Removal Protection is required under the current OSHA lead standards. A physician making a Medical Removal Protection recommendation should contact OSHA or review OSHA lead standards at <https://www.osha.gov/lead/standards>.

Lead Exposure Health Risks

Blood lead levels below 10 µg/dL in adults are associated with decreased kidney function and increases in blood pressure, hypertension, and incidence of essential tremor.^{2,3} Blood lead levels greater than 15 µg/dL are associated with cardiovascular effects, nerve disorders, decreased kidney function, and fertility problems.

Common Exposure Sources of Lead Exposure in Adults

Occupational	Environmental or Hobby
Metal manufacturing and foundries, welding	Traditional medicines or folk remedies
Building repair, renovation, and painting	Products such as sindoor, kohl eye make-up
Battery and scrap metal manufacturing/recycling	Recreational target shooting
Ammunition production	Lead in stained-glass artwork
Indoor shooting range workers	Remodeling or painting pre-1978 housing
Making or installing stained glass	Lead glazes in ceramics or cooking vessels
Cable/wire stripping, splicing or production	Retained lead bullet or fragments
	Casting bullets and fishing weights

Take Home Lead

Lead-exposed adults can bring lead home and expose other people living in or visiting their home. If an adult has a blood lead level of 3.5 µg/dL or higher, individuals sensitive to lead who live in or regularly visit the home also should be tested. This includes children, pregnant women, or women who may become pregnant.

Recommendations for Preventing Lead Exposure in Adults

- Wash hands and face before eating, drinking, or smoking.
- Eat, drink, or smoke only in areas free of lead dust and fumes.
- Wear proper personal protective equipment (PPE), such as goggles, gloves, boots, and protective clothing.
- Wear a clean, properly-fitted respirator with a HEPA filter in all areas that have lead dust or fumes.
- Change into clean clothes and shoes after working with lead and before going home. Shower at work if possible.
- Wash clothes separately from other family members' clothes.
- Avoid products that may contain lead. Some of these include traditional medicines, spices, and glazed pottery, cookware and other products imported or brought in from other countries.

Resources and Contact Information

- Nebraska Information on Lead in Adults: <https://dhhs.ne.gov/Pages/Adult-Lead-Exposure.aspx>
- Nebraska Occupational Health Surveillance Program: 402-471-2937
- NIOSH Information on Lead: <https://www.cdc.gov/niosh/topics/lead/>
- Occupational Exposure Questions: OSHA Omaha Area Office: 402-553-0171 or www.osha.gov/lead

References

1. CSTE, 2021. [Management Guidelines for Blood Lead Levels in Adults](#).
2. Kosnett, M. J. et al. 2007. [Recommendations for medical management of adult lead exposure](#). *Environ. Health Perspect.* 115, 463–471.
3. National Toxicology Program, U.S. DHHS, 2016. [NTP Monograph: Health Effects of Low-Level Lead](#).
4. AOEC, 2007. [Medical Management Guidelines for Lead-Exposed Adults](#) (Revised 04/24/2007).
5. ACOEM, 2016. ACOEM Position Statement: [Workplace Lead Exposure](#).