

MOHSS

Montana Occupational Health & Safety Surveillance

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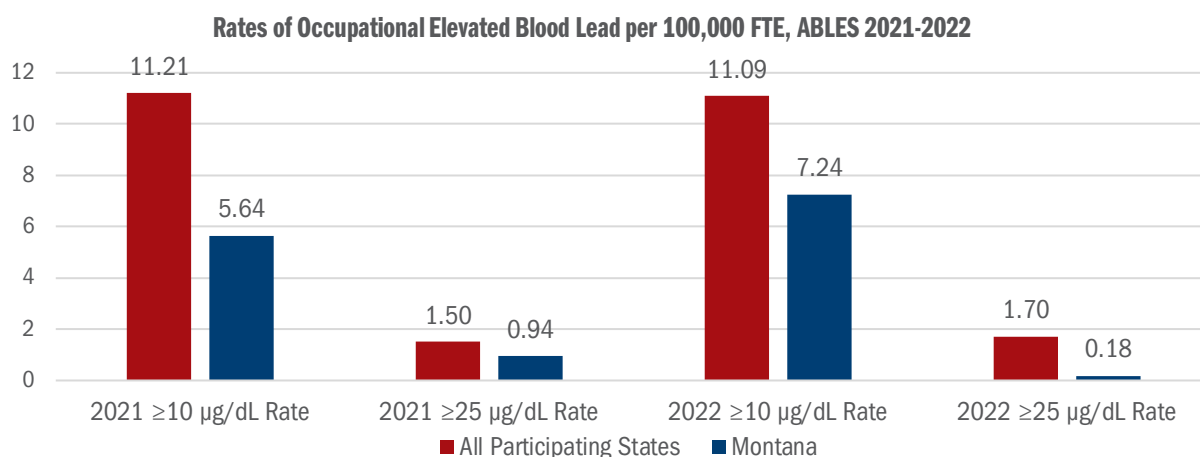
Workplace Lead Exposure

Hazardous substances exist in many workplaces and lead is one of the most common. Lead is a metal used in batteries, weights, ammunition, and countless other products; historically, lead has been present in piping, paint, and fuel.ⁱ Additionally, Montana workers have mined and smelted lead for much of the state's history, and lead remains one of the state's main mining products.ⁱⁱ Despite its many uses, lead can be harmful if inhaled or ingested by humans, with elevated blood lead levels linked to high blood pressure, kidney disease, cognitive dysfunction, and reproductive health issues, as well as more severe effects at higher concentrations.ⁱⁱⁱ This newsletter examines data from Montana's Adult Blood Lead Epidemiology and Surveillance (ABLES) program on the number of Montana adults with elevated blood lead and workplace lead exposure, identifying the most commonly identified industries and providing guidance for preventing work-related lead exposure.

Prevalence of Lead Exposure

From 2021 to 2023, 188 Montana adults aged 16 years and older had a reported blood lead level at or above 5 micrograms per deciliter ($\mu\text{g}/\text{dL}$).^{iv} Among working age adults (ages 16-64) with known lead exposures (124), 72% (89) reported working in an occupation that exposed them to lead.^{iv}

The Centers for Disease Control and Prevention, National Institute of Occupational Safety and Health (CDC-NIOSH) uses the blood lead levels $> 10 \mu\text{g}/\text{dL}$ and $>25 \mu\text{g}/\text{dL}$ when calculating rate of exposure per 100,000 workers. Comparing Montana's ABLES data with the data from all 26 participating states in 2021 and 2022, Montana had a lower rate of reported elevated blood lead $>10 \mu\text{g}/\text{dL}$ and $>25 \mu\text{g}/\text{dL}$ per 100,000 workers.^v Data from 2023 has not yet been published. Lead exposure data should be interpreted with caution. Occupational and personal health lead screening practices vary widely and some people with workplace lead exposure are never tested.



Who is Exposed to Lead?

While lead exposure is possible in any environment where lead material or products are found, a few industries stand out for workplace lead exposure. According to ABLES data collected from participating states, lead exposure is most likely to occur in the construction, manufacturing, mining, and service industries, such as e-waste recycling, automotive mechanical and electrical repair and maintenance, public safety, and firing range workers.^v

Among Montana adults who reported a workplace lead exposure from 2021-2023,^{iv} the most commonly reported industries were:

- Mining
- Small arms and ammunition manufacturing
- Remediation services
- Public administration, specifically national security and police protection

Avoiding Lead Exposure in the Workplace

The harmful health effects associated with elevated blood lead justify implementing safety practices to avoid exposure. Fortunately, workers can reduce the risk of exposing themselves and others to lead with a few simple steps:

- When working in environments where lead exposure is likely, wear proper protective equipment that covers the eyes, nose, mouth, and skin. Employers covered under the Occupational Safety and Health Administration (OSHA) are required to provide equipment.
- Upon completion of work in lead-risk environments, remove contaminated clothes, wash hands, and shower, changing into a clean set of clothes and placing the contaminated clothes in a plastic bag. Wash contaminated clothing separate from other clothing. This is to prevent lead dust from being carried home from work in your vehicle and on your clothes, shoes, skin, and hair, which can cause lead poisoning in other family members, especially young children and pregnant women, who are susceptible to the adverse effects of lead exposure.
- Notify your healthcare provider that your job involves working with lead. This will alert them to conduct blood testing as a way of monitoring potential exposure.

Refer to these resources for more information on avoiding lead exposure in the workplace:

- [Chemical Hazards and Toxic Substances \(OSHA\)](#)
- [Lead Poisoning Prevention \(DPHHS\)](#)
- [Lead - ToxFAQs \(ATSDR\)](#)

ⁱ From the [Occupational Safety and Health Administration \(OSHA\) Safety and Health Topics Spotlight on Lead](#)

ⁱⁱ From “[Modern Mining in Montana](#)” by Bryan Spellman, writing for Distinctly Montana

ⁱⁱⁱ From the [Occupational Safety and Health Administration’s Lead Guidance, Health Effects Section](#)

^{iv} From the Montana Infectious Disease Information System, 2021 - 2023