

Preventing Lead Poisoning at Indoor Firing Ranges:

An Alert for Workers and Employers



Your workplace can expose you to lead.
Lead can harm your health and your family's health.
You can protect yourself and your family.

Many resources are available to help you deal with lead exposure in the workplace and the health problems caused by lead poisoning.

Your employer, your doctor, the Department of Labor & Industries, the SHARP (Safety & Health Assessment & Research for Prevention) Program, and the Department of Health can help — at no cost to you.

Introduction

Exposures to lead fumes and dust put workers at risk for lead poisoning. "Take-home" lead exposure is especially dangerous to children ages six and younger, because lead is toxic to the brain and can cause permanent damage.

Lead hazards at firing ranges

Shooting firearms using ammunition with lead-containing primers orunjacketed lead bullets generates lead dust and fumes. Shooters and anyone else spending time at the firing line are exposed to these dusts and fumes.

Workers are exposed to lead when:

- Observing and instructing shooters.
- Dry sweeping indoor firing ranges. This causes settled lead dust to become airborne, where it can be inhaled.
- Cleaning the bullet traps by shoveling or pouring bullet debris into buckets. This exposes workers to high levels of airborne lead dust.
- Sorting spent brass. This exposes workers to airborne dust and contaminates their hands with lead.
- Cleaning firearms. This contaminates worker's hands with lead mixed with cleaning oils. These oils can cause the lead to stick to the skin, making it more difficult for workers to wash the lead off their hands.
- Handling equipment (e.g., equipment cases, shooting mats or jackets) previously used or stored in areas containing lead-contaminated dust.

Lead enters the body in two ways:

- Breathing in lead dust, mist or fumes.
- Swallowing lead dust if it gets on your hands or face or if it gets in your food, drinks or tobacco.

Eating, drinking or using tobacco without first washing hands increases lead exposure.

Why should I care about lead poisoning?

Even if you are exposed to small amounts of lead, it can build up in your body and stay there for a long time. Too much lead in your body can damage your brain, nerves, kidneys and blood cells. Lead can also cause infertility in men and harm unborn babies.

Many people with high lead levels do not feel sick or poisoned. Some of the early symptoms of lead poisoning or overexposure may include:

- Nausea, depressed appetite, stomach aches or cramps
- Muscle or joint aches
- Headache, trouble concentrating, irritability or depressed mood
- Tiredness or problems sleeping

If you experience any of these symptoms, or suspect you have been overexposed to lead, notify your employer and contact your doctor.

Understanding your blood lead test

The most common test for lead is called the blood-lead level test, which measures how much lead is in your bloodstream in micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dl}$).

Is there a problem?

Blood-lead levels $3.5 \mu\text{g}/\text{dl}$ and above are considered to be harmful to adults. Immediately notify your employer if you develop signs or symptoms associated with lead poisoning or if you need medical advice concerning the effects of current or past exposure to lead or your ability to have a healthy child.

Preventing lead poisoning on the firing range

Reduce or eliminate the use of lead-containing ammunition

Require the use of jacketed ammunition with non-lead primer to reduce the amount of airborne lead in the range. After using lead-containing ammunition and before the use of jacketed ammunition, ensure that firearms are thoroughly cleaned to remove residual lead.



Control exposures with good ventilation

An effective ventilation system can greatly reduce airborne lead exposures at the firing line and throughout the range. Air movement should carry the smoke and fume down range away from the shooter's face. Local regulations may require filtering of the exhausted air before releasing it outside.

To eliminate the possibility of contaminating adjacent areas within the facility, firing-range ventilation systems should be dedicated to the range and not tied into the general HVAC (heating, ventilation, air conditioning) system. Be sure to contract with a ventilation consultant with a proven record of designing effective firing-range ventilation systems.

Good housekeeping practices will reduce exposures

Keep all areas of the range free from lead by regular cleaning. Surfaces should be cleaned using a high efficiency HEPA vacuum or a wet-sweeping method. Dust accumulations should never be dry swept; this causes lead dust to become airborne.

Care must be used when cleaning the bullet trap

Lead dust can easily become airborne while scooping or sweeping the debris in the trap. Repeated misting with water will help to keep the dust down.

All workers should receive training on how to work safely around lead

Training makes workers aware of the hazards of lead and the steps they can take to protect themselves and their families.

Properly fit-tested respirators should be worn during all cleaning operations

Wearing a half-mask respirator with HEPA filter cartridges during range cleaning and a full-face respirator during the trap cleaning is recommended. Follow fit-testing and other respiratory protection program requirements.

Workers should wear protective clothing while cleaning the range or trap

Disposable coveralls, head covering and shoe covers should be worn for these jobs. Workers should not wear work clothing or shoes home. When lead dust is carried home on shoes and clothing, it contaminates the workers' cars and homes and exposes families to lead.

Prohibit eating, drinking and tobacco use in lead contaminated areas

Require workers to wash their hands and face before eating, drinking or using any tobacco. They should wash up at the start of breaks, before lunch and before leaving for the day.

Establish a medical monitoring program for your workers

Blood-lead levels are an indication of the effectiveness of your exposure controls.

Additional resources

SHARP Program

L&I's SHARP Program can provide further information on work-related lead poisoning to interested employers, workers and health professionals. Call 1-888-667-4277 or 360-902-4728, or visit Lni.wa.gov/SHARP.

Division of Occupational Safety and Health

L&I's Division of Occupational Safety and Health (DOSH) enforces the worker protection rules for workplaces with lead and investigates complaints from workers and concerns from health care providers. It also offers free assistance and information to both workers and employers upon request. Call 1-800-423-7233, or visit Lni.wa.gov/safety-health.

Washington State Department of Health

The Washington State Department of Health provides information and resources on reducing children's exposure to lead. Call 360-236-4280 for more information, or visit doh.wa.gov/lead.

Lead dust isn't just a health risk to workers!

Lead taken home on clothing and other contaminated materials can cause lead poisoning in children.

Upon request, language support and formats for persons with disabilities are available. Call 1-800-547-8367. TDD users, call 711. L&I is an equal opportunity employer.