

Prevent Lead Exposure

in Indoor Shooting and Firing Ranges



- ▶ *Do you work in an indoor firing range?*
- ▶ *Do you use indoor firing ranges?*
- ▶ *Do you cast bullets?*
- ▶ *Do you reload your own ammunition?*

If you answered yes to any of these questions, you and your family may have an increased risk for lead poisoning.

Who is at risk?

Indoor firing ranges are a source of lead exposure for employees, their families and customers. If you work at a shooting range, are a target and hobby shooter, are a member of a shooting team, or a law enforcement officer, you should know the health effects of lead exposure, how to prevent lead exposure and how to get tested for lead poisoning.

How does lead exposure happen?

Most ammunition contains lead. Lead exposure occurs in indoor firing ranges when health and safety controls are not in place to protect shooters and firing range staff from exposure to lead. When a gun is fired, lead vapors are released into the air and can be breathed into the body. Lead dust can also settle on food, water, clothes and other nearby objects. You can ingest lead dust when you touch lead contaminated surfaces, then eat, drink or smoke. People who work at a firing range can also be exposed to airborne lead dust when cleaning the range and guns or emptying bullet trays.

How can lead harm me?

Health effects from lead that has entered your body can become permanent. High levels of lead can result in damage to your brain, kidneys, liver, heart and reproductive system. Symptoms may include stomach pain, nausea, vomiting, fatigue, mood swings, headaches and confusion. A blood lead test can help to distinguish lead poisoning from other illnesses.

Workers and hobby shooters can also carry lead home on their clothing and skin, and potentially expose their families to toxic levels of lead. Lead in the home is especially dangerous for children and women of childbearing age.

Tips to prevent lead exposure:

Lead poisoning is preventable. The following steps are recommended to prevent lead exposure in firing ranges:

- ▶ Use jacketed ammunition, preferably with non-lead primers.
- ▶ Make sure the firing range has good ventilation to reduce airborne lead levels at the firing line. General exhaust ventilation is not adequate. Indoor firing ranges must ensure supplied air moves steadily across all shooting booths to carry the gun smoke away from the shooter's face and directly down the range where it is exhausted, filtered and discharged. A separate ventilation system exclusively for the range is recommended.
- ▶ Never eat, drink or smoke inside a firing range.
- ▶ Wash hands immediately after shooting, cleaning firearms, picking up spent casing pellets or reloading ammunition. Wash hands, forearms and face before eating, drinking, smoking or contact with other people.
- ▶ Change clothes and shoes before leaving the firing range.
- ▶ Wash clothes or uniforms used at the firing range separately from your family's clothing.
- ▶ Have your blood lead level tested routinely.
- ▶ Never place lead bullets in your mouth.

Bullet casting and reloading are also common sources of lead exposure. These practices produce fumes and tiny dust particles that can be inhaled or ingested. Safety precautions to prevent lead exposure include:

- ▶ Only cast or reload bullets in work spaces properly ventilated to control lead exposure.
- ▶ Never cast or load bullets inside the home or around children.
- ▶ Wash hands and face immediately after casting or reloading bullets.
- ▶ Do not eat, drink, or smoke when casting or reloading bullets.

Guidance for firing range operators and owners:

Employers are required to protect workers from lead exposure under OSHA lead standards covering general industry (29 CFR 1910.1025).

While OSHA regulations only apply to workers, measures that protect workers can also protect shooters from lead exposure.

OSHA regulations include:

- ▶ Exposure monitoring
 - Conduct air monitoring for lead.
- ▶ Engineering controls
 - Install an effective supply air and exhaust ventilation system.
 - Routinely evaluate the effectiveness of the system in controlling exposure.
 - Maintain and replace air filters regularly.
- ▶ Housekeeping and hygiene practices
 - Keep the firing range and other workplace areas clean using proper cleaning procedures such as wet-mopping and vacuuming with a high-efficiency particulate air (HEPA) filter.
 - Ensure employees consume food and beverages in lead-free areas.
 - Ensure employees remove contaminated clothing before leaving the worksite.
- ▶ Medical surveillance and hazard communication
 - Provide workers with initial and periodic medical monitoring for lead exposure.
 - Ensure that workers are aware of the risk of lead poisoning and know symptoms that may indicate a health problem.
- ▶ Administrative Controls
 - Rotate workers' assignments in order to limit their exposure time.
- ▶ Respiratory Protection and Personal Protective Equipment (PPE)
 - If unable to keep lead exposure levels below the permissible exposure limit (50 ug/m³), provide employees with PPE, including an appropriate respirator.
 - Fit test and train employees prior to allowing them to use respirators.
 - Lead will pass through paper, so paper dust masks are not protective for this purpose.

Who to contact for more information:

Louisiana Department of Health Office of Public Health Section of Environmental Epidemiology and Toxicology Adult Lead Surveillance Program

Contact this program to learn more about their adult blood lead monitoring program, lead exposure and toxicity, and guidance on how to prevent exposure.

Contact 1-888-293-7020 or email workerhealth@la.gov

Occupational Safety and Health Administration (OSHA) Consultation

This free consultation service is designed to help employers recognize and control potential safety and health hazards at their worksites, improve their safety and health program, and assist in training employees.

OSHA consultation does not issue citations or penalties, or report violations to OSHA enforcement staff.

Contact 1-800-201-2495 or visit www.laworks.net

Occupational Safety and Health Administration (OSHA) Enforcement

File a confidential safety and health complaint if you believe there is a serious hazard or an employer is not following OSHA standards.

Contact 1-800-321-6742 (OSHA) or visit www.osha.gov/workers/file_complaint.html

National Institute for Occupational Safety and Health

For materials on the evaluation, measurement, and control of lead exposures at indoor firing ranges, visit www.cdc.gov/niosh/topics/ranges/.