

Lead poisoning a risk at indoor firing ranges

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The New Jersey Poison Control Center is seeing an increase in firing range–related lead poisoning in adults. Credit: Rutgers University

Indoor firing ranges may put hobby shooters, law enforcement officers and employees at risk from lead exposure, particularly if proper dust-control measures are not in place.

"We are seeing an increase in firing range–related lead poisoning in adults, which can result from faulty ventilation systems or just inadequate cleanup of [lead dust](#)," says Diane Calello, New Jersey Poison Control Center Executive and Medical Director at Rutgers New Jersey Medical School. "Exposure can happen from inhaling the lead dust emitted when the firearm is discharged or from ingestion of lead from contaminated hands or food."

Calello, whose center is part of Rutgers Biomedical and Health Sciences, encourages people who use these facilities to understand the [health effects](#) of lead poisoning, how to prevent [lead exposure](#) and the importance of being tested.

How do you know if you have lead poisoning?

Lead gets into the body by inhaling, ingesting or absorbing lead dust or particles. Adults can have lead poisoning without knowing it. The symptoms of [lead poisoning](#) are nonspecific at first, but can include headaches, fatigue, difficulty concentrating and weakness in the hands or feet.

People who shoot at indoor gun ranges or are in professions that work with firearms or lead, such as police officers, should have a blood test, which is the only way to measure the amount of lead in the body. The United States Department of Labor recommends employees working in high-lead environments be tested every six months. So, if an individual is using a shooting range regularly, getting tested every six months is reasonable. According to the Centers for Disease Control and Prevention, there is no safe level of lead.

What are the health effects of lead poisoning?

Inhaled or ingested lead enters the bloodstream and is distributed throughout the body. Over time, it collects and is stored in the bones, leading to significant and even permanent damage to a person's organs and health. The severity of the damage depends upon how much lead is in the body and the length of exposure. It can lead to conditions such as heart disease, high blood pressure, decreased sex drive, infertility, memory loss and difficulty concentrating, hearing and vision problems, tiredness, irritability and mood disorder. Also, pregnant women exposed to lead are at a higher risk of reduced fetal growth, and children suffer a lower IQ and cognitive function.

Who is at risk for lead exposure?

If an indoor gun range does not have proper air ventilation, then shooters, range employees and visitors are exposed to lead dust that comes out of the gun's muzzle when fired. Even if it is not immediately inhaled, lead dust can linger in the air and collect on the shooter's hands, face and clothing, where it can be inhaled, ingested or absorbed into the body later. This puts the shooter's family at risk since [lead particles](#) on skin and clothing can be carried into vehicles and homes. "Take home lead" is harmful to anyone exposed to it – especially young children and pregnant women.

How can people who use indoor firing ranges protect themselves and their families?

Indoor ranges are safe when there is proper air ventilation and when workers take precautions when cleaning the residue, such as wet mopping debris or using a vacuum with a high-efficiency particulate air filter rather than dry sweeping or shoveling to remove debris. Unfortunately, ventilation systems occasionally fail, so it's important to stay vigilant.

Be aware of the features of certain ammunition, which may decrease the lead hazard. For example, jacketed bullets create less dust when discharged. Since loading bullets also can release lead particles into the air, make sure you are in a well-ventilated area, not around children or in a residence and are wearing proper protective equipment. When using a firing range, wash your hands and face before you eat, drink or smoke – and never eat, drink or smoke in areas of lead dust and fumes. Before you leave, shower and change your clothes and shoes if possible. Place your shooting clothes in a tied bag and wash them separately from the family laundry. Keep firearm materials away from living areas and do not put leaded material in your mouth.

What is the treatment for lead poisoning?

In the majority of adult cases, the primary treatment is removal from the source. The body will excrete lead slowly and, if exposure does not recur, will eventually eliminate the excess lead. This will result in resolution of at least some of the symptoms.

Chelation therapy is used in rare cases when the patient is critically ill or has severe elevations in the [blood lead level](#). However, chelation has no benefit in patients with lower levels and more nonspecific symptoms.

Provided by Rutgers University

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