

Lead exposure from shooting firearms

If you shoot firearms, handle bullets, make your own ammunition or visit shooting ranges, you're at a higher risk for lead exposure. There is no safe level of exposure to lead. Breathing in or swallowing lead dust or fumes harms your health. However, you can lower the risk.

How does shooting expose you to lead?

Lead is in most types of ammunition, both in the bullet and the primer (the explosive that ignites gunpowder).

Lead in the primer and the outer surface of the bullet is released into the air as fumes and fine lead particles after a firearm is discharged. These fumes and fine lead particles can be inhaled into the lungs and the lead absorbed into the blood stream. Lead dust and fragments are also released when the projectile impacts solid surfaces.

Very fine lead dust can be suspended in air and settle on surfaces in shooting ranges, especially indoor shooting ranges. The dust can stick to people's hands, hair, face, clothing and footwear. This dust can be transported on your body, clothing and equipment from a shooting range into a car and into your home.

Lead particles can remain on firearms or on the ammunition itself. Lead can be transferred to your skin when cleaning a firearm or handling or reloading ammunition.

Once on your skin or in your immediate environment, lead can get onto your food or utensils, glasses or plates and ingested while eating.

How does lead harm your health?

Symptoms of lead poisoning depend on a number of factors including how much lead you are exposed to and for how long, your age and if you have other health conditions. Some people with elevated blood lead levels can have no symptoms, but this doesn't mean there are no health effects.

Common symptoms of lead poisoning include:

- abdominal pain
- constipation
- feeling tired
- headaches
- nausea and vomiting
- seizures

Long-term exposure to smaller amounts of lead can cause:

- headaches, irritability and fatigue
- memory loss, difficulty concentrating and poor co-ordination
- loss of appetite
- high blood pressure and heart disease
- anaemia
- kidney disease
- lowered fertility for both men and women.

Infants, children and pregnant women are especially vulnerable to the health effects of lead exposure. Lead can affect young children's growth, brain development and their ability to learn.

Pregnant women can pass lead onto their unborn babies during pregnancy or to an infant during breast feeding.



Department of Health

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How to lower your risk

Practice good hygiene

- Avoid eating, drinking or smoking while shooting. Hand to mouth contact makes swallowing lead more likely.
- Wash your hands, neck and face with cold soapy water before taking breaks, especially before drinking, eating or smoking, and when you have finished shooting for the day. Consider using D-Lead soap.
- Shower after shooting. If showers are not available at the shooting range, shower when you get home.
- Change your clothes and shoes before leaving the shooting range.
- Wipe down your equipment and the areas where you have been shooting with lead removal wipes or decontamination cloths.

Wear personal protective equipment

- Wear clothing and shoes just for shooting and wash them separately from your other laundry. Consider wearing disposable coveralls.
- Wear gloves when handling ammunition, casings, solid lead or cleaning firearms.
- Use a properly fitted P2/N95 face mask that meets Australian Standard AS/NZS 1716:2012. Trim and shave facial hair for a proper fit. If using a reusable respirator, remember to replace filters regularly.

Choose a shooting range that is well-maintained and has good ventilation

- If the range seems smoky or you taste metal, it is likely the area has poor ventilation.
- Good ventilation in indoor ranges includes fans which extract air containing lead vapour and dust.
- Ranges should be kept clean and free of visible dust, require good hygiene practices and provide change rooms, lockers, showers and soap.

Consider using lead-free ammunition

- For a safer option use lead-free ammunition that replaces lead-based primers or ammunition that uses lead-free or jacketed bullets covered with a copper or nylon coating.

Protect your family

- Always shower and change clothes before leaving the range, especially if you live with children or someone who is pregnant.
- Always safely clean any lead dust from your body and clothes before contact with children or handling toys or things children touch.
- Seriously consider the need to take children to a range but if you do, ensure they are safe from all hazards including lead.
- If you are pregnant or breastfeeding, consider the risks of lead exposure to yourself and your baby and take steps to reduce lead exposure.

Casting bullets

If you cast your own bullets, you may be exposed to vapour from molten lead, to lead particles or dust. Practice good hygiene and wear personal protective equipment as listed above. You should also:

- Establish a well-ventilated casting area away from kitchen or food preparation areas.
- Keep children and women who are pregnant or breastfeeding away from casting areas.

Good practices for cleaning shooting ranges

Regular cleaning is needed to reduce the build-up of lead on surfaces. Take precautions to limit exposure during cleaning:

- Wear protective clothing such as disposable coveralls, head coverings, and shoe covers.
- Never wear clothes or footwear used for cleaning a range, at home.
- Wear a P2/N95 face mask that meets Australian Standard AS/NZS 1716:2012.
- Never dry sweep dust and debris. Dust should be cleaned by wet mopping or using a vacuum cleaner fitted with a HEPA filter.
- Empty bullet trays into closed plastic bags while spraying water mist over debris to reduce dust.

Getting tested for lead exposure

Elevated lead levels are confirmed through a blood test. Talk to your doctor about getting a blood test if you shoot at or visit shooting ranges, or if you are experiencing any of the above symptoms.

More information

- Consult your GP for medical advice.
- [The Better Health Channel](http://www.betterhealth.vic.gov.au/health/healthyliving/Lead-exposure-and-your-health) <www.betterhealth.vic.gov.au/health/healthyliving/Lead-exposure-and-your-health>
- [Department of Climate Change Energy, Environment and Water](http://www.dcceew.gov.au/environment/protection/chemicals-management/lead/lead-in-recreational-activities) <www.dcceew.gov.au/environment/protection/chemicals-management/lead/lead-in-recreational-activities>
- Department of Health, Environmental Health: 1300 761 874 or [email](mailto:environmental.healthunit@health.vic.gov.au) <environmental.healthunit@health.vic.gov.au>