

# Information for gun shooters

## Managing exposure to lead

**Lead is not required for human health and can be hazardous when taken into the body by swallowing or breathing in lead or materials contaminated with lead.**

**People using firearms, handling ammunition, casting bullets or visiting shooting ranges are at risk of inhaling or swallowing lead dust or fumes, and to a lesser extent, absorbing lead through the skin.**

### How do shooting activities cause exposure to lead?

Lead is present in most types of ammunition. It can be found in the projectile and the primer (the explosive that ignites gunpowder) of ammunition.

Lead in the primer and the outer surface of the projectile is vaporised and released into the air at high pressures after a firearm is discharged. Shooters inhale lead particles released when a gun is fired. The particles can be absorbed from the lungs into the blood stream. Lead dust and fragments are also released when the projectile impacts solid surfaces.

Surfaces in shooting ranges may be contaminated with fine lead dust. This dust can also be breathed in and swallowed. Exposure to lead-containing dust or fumes may increase when this it builds up in enclosed spaces or indoor shooting ranges.

Lead dust may be suspended in the air or stick to people's hands, hair, face, clothing and footwear. This dust may be transported on your body, clothing and equipment from a shooting range into a car and into your home.

Lead particles may also remain on firearms, or on the ammunition itself. Lead may be transferred to a person's skin when cleaning a firearm, or handling or reloading ammunition.

People who cast their own bullets and shot may be exposed to vapour from molten lead or to lead particles or dust from solid lead or cast items.

### How can lead affect health?

Lead exposure can affect people differently, and symptoms often depend on the type of exposure. Some children or adults may be exposed to lead, but not have any symptoms at all. However, exposure to lead can cause:

- headaches, tiredness, weakness and joint pain
- reduced brain function, including memory loss and difficulty concentrating
- heart, blood and blood pressure problems
- damaged kidneys
- reduced fertility.

Infants, children and pregnant women are especially vulnerable to the health effects of lead exposure.

- Lead can affect young children's 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.

For some people, the health effects of lead exposure may be long-lasting.

Anyone concerned about lead exposure and their health should discuss this with their doctor. The doctor may consider arranging a blood lead test, which is the quickest way to measure the amount of lead in the body.

## How can I reduce exposure to lead?

### Practise good hygiene

Good hygiene practices can reduce the risk of lead exposure.

- Do not eat, drink or smoke while shooting as this makes swallowing or inhaling lead more likely.
- Wash your hands, neck and face with soapy cold water before taking breaks, especially before drinking, eating or smoking, and when you have finished shooting for the day.
- Shower after shooting. If showers are not available in your shooting range it is recommended you shower as soon as you return home.
- Change your clothes and shoes before leaving the shooting range.
- Wet-clean your equipment or the areas where you have been shooting or casting using lead removal wipes or decontamination cloths.

### Wear personal protective equipment

Limit lead exposure when shooting or casting ammunition by:

- Using clothing and shoes dedicated to shooting or casting activities or wearing disposable coveralls. Clothes used for these activities should always be washed separately from general laundry.
- Wearing gloves when shooting, handling or reloading ammunition, casings, solid lead or when cleaning handguns.
- Wearing an Australian Standard 1716 (2013) approved respirator and ensure the area where you are shooting or casting is well ventilated.

### Check the ventilation at your shooting range

Poor ventilation of indoor shooting ranges may result in unnecessary exposure to lead vapour and dust. Good ventilation includes extraction fans which exhaust air containing lead vapour and dust up and out.

If the range regularly appears 'smoky' or you have a metallic taste in your mouth it is likely that ventilation is poor. Try to use a shooting range with adequate ventilation or use an outdoor range.

### Choose the right shooting range

Before using a shooting range consider the following:

- Is it well ventilated?
- Are the range and all communal areas clean and free of visible dust?
- Does it promote the use of lead-free ammunition and require good hygiene practices?
- Does it offer change rooms, lockers and showers?

### Establish a casting area

If you are casting your own bullets, consider the following:

- 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.
- Practice good hygiene.
- Wear personal protective equipment.

### Choice of ammunition

In the past, lead-based ammunition has been used because of its high density, lower cost and longer shelf life. However, alternatives to lead ammunition are available.

- If possible, use lead-free ammunition - ammunition that replaces lead-based primers with safer alternatives and/or ammunition that uses lead-free or jacketed projectiles that have a lead core covered with a copper or nylon coating.

## Good housekeeping practices for cleaners of shooting ranges

Regular cleaning and maintenance of shooting ranges is important to reduce the build-up of lead on surfaces. Cleaners should take special precautions to limit personal exposure during cleaning.

Wear protective clothing such as disposable coveralls, head coverings, and shoe covers when cleaning. Never wear clothes or footwear used for cleaning a range at home.

Wear an Australian Standard 1716 (2013) approved particulate respirator when cleaning a shooting range.

Never dry sweep dust and debris. Dust should be cleaned by wet mopping or using a vacuum cleaner fitted with a HEPA (High Efficiency Particulate Air) filter.

Minimise airborne dust when cleaning bullet trays by emptying trays inside closed plastic bags and spraying a water mist over debris while cleaning.

## Protect your family

Don't bring lead home with you.

Lead is 'sticky' and can be transported from a shooting range on your body, clothes and equipment, into a car and your home. This may expose your family and children. Always wash or shower and change clothes before leaving a shooting range.

## Your children are especially at risk

Think twice before taking children to a shooting range and take the steps described here to ensure your body and clothing are free of lead dust before embracing children or handling toys and personal effects.

If you are pregnant, consider the risks of lead exposure to yourself and your baby and take appropriate precautions to minimise exposure to lead.

Talk to your doctor if you are concerned you may have been exposed to lead through shooting-related activities. If you regularly visit shooting ranges let your doctor know and get your blood lead level tested.

## More information

- Consult your doctor for medical advice.
- Department of Health and Human Services, Environment Section 1300 761 874.
- The Better Health Channel: <https://www.betterhealth.vic.gov.au/health/healthyliving/Lead-exposure-and-your-health>
- Department of the Environment and Energy  
<http://www.environment.gov.au/atmosphere/airquality/publications/recactivities.html>

To receive this publication in an accessible format phone 1300 761 874, using the National Relay Service 13 36 77 if required, or email [environmental.healthunit@dhhs.vic.gov.au](mailto:environmental.healthunit@dhhs.vic.gov.au)

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