

Common causes of non-occupational lead exposure

Lead is a heavy metal that has been utilised extensively in various industries due to its unique properties like malleability and corrosion resistance. It has been used in construction for pipes, paints, battery manufacturing, ammunition, and more. Outside of work, lead has historically been present in everyday items like paints, cosmetics and cookware, while certain cultural practices have also involved lead-containing materials. As awareness of lead's health effects has grown, efforts to minimise exposure in both contexts have become crucial.

Below is a list of the more common non-occupational causes of elevated blood-lead levels. If you, or any household members, take part in any of the following hobbies, it is strongly recommended that you read the information and access the corresponding link, which will provide you with information on how to minimise any potential exposure to lead

Para-occupational exposure

'Para-occupational exposure' refers to indirect lead exposure resulting from one's occupational activities, which impacts family members and others nearby. This occurs when lead dust or contaminants present in the workplace settle on an individual's skin and clothing, subsequently being transferred to the home environment.

For individuals who have household members working in environments with known lead exposure risks (such as employees at shooting ranges, welders, and miners), taking additional precautions is crucial. These measures may involve practicing personal hygiene, such as taking a shower before leaving the workplace, and using dedicated work clothes and shoes that are not worn at home.

Workplaces where lead exposure is a known risk should have protocols in place to prevent para-occupational lead exposure. If you are concerned about workplace practices in relation to lead, it is recommended that you contact [Work Safe Queensland](#) to discuss the matter.

Recreational shooting

Lead exposure can occur while operating firearms due to the presence of lead in ammunition. Shooting bullets releases lead particles into the air, which can be inhaled into the lungs. These airborne lead particles can also settle on hands, the body, or clothing, or transfer to the skin when handling or cleaning the gun. Casting or modifying ammunition also poses a risk, as the lead heating process releases lead fumes.

Proper handwashing before eating, drinking, smoking, or preparing food is crucial to prevent ingesting lead from contaminated hands. Lead particles that have settled on a person's body or clothing, which can be an ongoing source of exposure for shooters, can also be introduced into the home environment – potentially exposing others to lead. Good hygiene practices after shooting, such as changing and cleaning your clothes and washing hands, face and neck, can greatly reduce the risk of exposing yourself and others to lead dust.

Further information on recreational shooting, including important safety precautions, can be found on the fact sheet, [Lead exposure and firearms use](#).

Complementary, alternate, or traditional medicines (e.g., Chinese or ayurvedic medicine)

'Complementary medicine' refers to treatments that aim to maintain or improve health, that are not part of conventional medicine. It refers to herbal medicines, vitamins and mineral supplements (this includes traditional medicines used in Chinese, Burmese, African and Indian cultures). Complementary medicines that contain lead have been used for arthritis, infertility, menstrual cramps and colic. Ayurvedic medicine for example (native to India), containing elevated levels of lead, have been found for sale in Australian retail stores. The lead in these medicines can be present either as an intentional ingredient, or as an unintended contaminant.

The Therapeutic Goods Administration (TGA) is responsible for regulating most complementary medicines sold in Australia. Those imported for personal use, however, are not regulated, posing a higher risk of lead contamination. To minimize the risk of obtaining complementary medicines that contain lead, it is recommended that they be purchased from Australian retailers, ensuring that they have AUST L or AUST R number. This shows that the product is TGA-approved for supply.

Further information on complementary, alternate, or traditional medicines, including important safety precautions, can be found on the fact sheet, [Risk of lead exposure from complementary, traditional and herbal medicine](#).

Home renovation and lead paint

Paint used in older Queensland homes often contained high levels of lead. Lead houses built prior to 1970 pose the greatest risk. Although lead paint does not pose a risk when it is intact, it poses a health risk when it starts to deteriorate due to ageing, or if it is disturbed during renovations (such as burning, sanding, scraping or during demolition). If adequate safety measures are not implemented when removing lead-based paints, there is a risk of exposing household members and others in proximity to lead.

Further information on home renovation and lead paint, including important safety precautions, can be found on the fact sheet, [Lead Alert: The six step guide to painting your home](#).

Cosmetics and ceremonial powders

Elevated levels of lead have been found in imported cosmetics and ceremonial powders used in Indian, Middle Eastern, and West Asian cultures. These products may contain lead as an intended ingredient or as a contaminant. In Australia, Pakistani manufactured eyeliners (such as Hashmi Surmi Special and Hashmi Kohl Aswad) have been found with lead concentrations as high as 84%. Children and adults have also been exposed to lead after ingesting a product generically called 'sindoor', though not intended as a food, sindoor is a powder traditionally used to colour hair in some traditional Hindu and Sikh traditions.

Traditional ceramic crockery

Lead has long been used in glazes and decorations for ceramic crockery. The lead is used as it provides a smooth finish and creates vibrant colours. The lead can leach into food during the heating process, or if food is stored in the cookware. The use of acidic foods or liquids in lead crockery can also speed up the leaching process. Crockery that is most likely to contain lead includes highly decorated traditional dishes, such as Moroccan tagines and Mexican bean pots.

Further information on traditional ceramic crockery, including important safety precautions, can be found on the Australian Government webpage, [Lead in ceramic crockery and pottery-making](#).

Mixing or applying glaze or pigments (commonly use in pottery and ceramics)

As discussed above in 'Traditional ceramic crockery', some glazes and pigments used in decorative pottery contain lead, due to the smooth finish and vibrant colours the metal creates. When preparing and applying lead-based glazes and pigments, lead dust and fumes can be created, posing an ingestion risk. Lead-free glazes should be used where possible. However, where the use of lead glazes and pigments is necessary, stringent safety practices should be adopted.

Further information on mixing or applying glazes or pigments, including important safety precautions, can be found on the Australian Government webpage, [Lead in ceramic crockery and pottery-making](#).

Lead casting or soldering hobbies (e.g., lead figurines, electronics and sinkers)

Hobbies that involve lead soldering or casting (i.e. pouring lead moulds), pose a risk due to the lead fumes produced during the heating process. The lead fumes can be ingested if safety precautions are not implemented. Poor safety precautions can expose the hobbyist also expose other household members to lead. This includes hobbies that use electronics, leadlight (i.e. stained glass), lead figurines or fishing sinkers.

Further information on lead casting or soldering hobbies, including important safety precautions, can be found on the Australian Government webpage, [Lead in recreational activities](#).

Electronic cigarettes (Vaping)

Tests conducted by the Queensland Government have found lead in e-liquids used in electronic cigarettes (among other dangerous chemicals, such as formaldehyde, arsenic and mercury). Unfortunately, it isn't possible to provide a comprehensive list on which brands contain lead, as the ingredients, including the presence and concentration of lead, can change between batches. It is recommended that you only obtain your electronic cigarettes from a pharmacy on a prescription.

If you have any concerns or questions in relation to lead exposure, please contact the Metro North Public Health Unit, on 3624 1111, or via email at EH_BrisbaneNorth@health.qld.gov.au.