
Lead exposure and your health

Summary

- Lead is a metal that may be found in the home or work environment.
 - Lead exposure can impair intellectual development and damage the brain if levels are high enough.
 - All children should have their exposure to lead minimised.
 - Children under five years of age are at greatest risk of the health effects of lead.
 - All women should minimise their exposure to lead both before and during pregnancy and when breastfeeding.
 - See your doctor to request a blood test for lead if you are concerned.
 - The best way to prevent lead exposure is to remove or protect yourself and others from known or suspected lead sources.
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Lead is a naturally occurring metal. It is used in industry and, in the past, was added to petrol and household paints.

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. Once in the body, lead circulates in the blood and can be stored in the bones.

The health effects from exposure to lead will depend on a variety of factors such as a person's age, the amount of lead they are exposed to and for how long, and if they have other health conditions.

Young children, including unborn babies, are at greatest risk of the health effects of lead exposure. Children are most often exposed to lead by swallowing items or soil containing lead or breathing in dust containing lead. Adults are most often exposed to lead if they work in a job which involves lead-based activities.

Lead exposure sources in Australia

In Australia the most common source of lead exposure is at **workplaces involving the use of lead** compounds. Workers can also sometimes bring lead residues into their home on their work clothes, skin, hair and equipment after contact with lead.

Other sources of lead exposure exist in Australia include:

- lead paint – used in many Australian homes prior to 1970; those built more recently may also have paint containing lead. Lead is still used in paint and surface finishes of cars and boats. Flaking or peeling paint, or renovation activities, may generate dust or chips of paint containing lead which can then be inhaled by adults or inhaled or eaten by children
- hobbies which involve the use of lead – such as home renovations or restoration of old cars or furniture, lead-lighting, pottery using lead glazes, making or handling lead sinkers used for fishing, recreational gun shooting (including casting bullets and shooting at a pistol range)
- air may become polluted with lead from copper and lead smelters, however there are no such smelters in Victoria. Vehicle battery works, iron and steel production and soldering using lead can produce small amounts of lead in the air. In early 2002, leaded petrol for cars was phased out in Australia
- high lead levels in soil can be caused by some industrial and mining activities. In areas with a history of high traffic flow, roadside soil may still contain lead deposited from traffic fumes prior to the removal of lead from petrol
- household dust may contain lead from a number of sources – including deteriorating lead-based house paints, contaminated soil or dust brought into the house
- drinking water can contain small amounts of lead. The solder or fittings of some older pipes may contain lead which can dissolve into water that may be sitting in these pipes

- traditional and alternative medicines, usually sourced overseas, have been found to contain high levels of lead – cases of lead poisoning as a result of taking Ayurvedic treatments imported from India have been reported in Victoria
- some imported traditional cosmetics and applications, including eye liner manufactured in Pakistan and some other Asian, African or Middle-Eastern countries, have been found to contain high levels of lead
- illicit opium has been found to contain high levels of lead – cases of lead poisoning as a result of smoking or swallowing illicit opium originating from overseas have been reported in Victoria
- old toys (for example, painted items or metal cars and toy soldiers) may contain high levels of lead – Australian standards restrict the amount of lead in painted toys. However, some imported toys have presented a risk. Also, very old cots or second-hand painted cots may contain unsafe levels of lead in the paintwork
- foods stored in pewter, lead crystal glassware or pottery containing lead-based glazing may become contaminated with lead. Imported cans from specialty stores with irregularly soldered side seams may contain high levels of lead. Legislation restricts lead levels in Australian foods. Eating animals hunted using lead shot may also cause lead exposure
- metal objects such as jewellery, old coins, medals and curtain weights may contain lead.

The Department of Health and Human Services (Victoria) **Environment Section** can provide advice about lead sources in the home and how to manage them safely (Tel. [1300 761 874](tel:1300761874)).

Young children and lead exposure

Lead exposure can permanently damage the brain and impair intellectual development. For children the risk of exposure to lead and the health effects of exposure can depend on their environment, stage of development or behaviours. Children under five years of age are especially vulnerable to lead exposure because:

- they frequently put their hands, and held objects, to their mouth
- they absorb and retain more lead from their gut and airways than adults do
- their developing brains are more sensitive to the effects of lead.

Children with **pica** – a behaviour that leads to eating non-food substances such as peeling paint flakes, soil or small objects – are also at an increased risk of lead exposure.

Children are particularly at risk during home redecorating or renovating, as they may pick up or swallow paint chips or dust.

Unborn babies are also at risk, since lead swallowed by the pregnant mother readily passes through the placenta. Breastfeeding mothers can also pass on lead to their infants via their breast milk.

Symptoms of lead exposure

Lead exposure can affect people differently, and symptoms often depend on the type of exposure. Some children or adults may not have any symptoms at all.

Acute lead poisoning is usually caused by a recent exposure to a high amount of lead. The symptoms may include:

- muscle pains
- fatigue
- abdominal pains
- headache
- nausea and vomiting
- seizures
- coma.

If a person is exposed to smaller amounts of lead over a longer time period, chronic (long-term or ongoing) lead exposure may produce symptoms such as:

- irritability
- lack of energy

- loss of appetite
- learning disabilities
- behavioural problems
- poor school performance
- poor coordination
- impaired growth.

Many of these symptoms could be caused by other conditions, so it is important to see a doctor if you are worried.

Getting tested for lead exposure

If you suspect that you or a member of your family has been exposed to lead, visit your doctor for further advice. They may recommend that you have a blood test to measure the amount of lead in your blood and determine whether you have been exposed to lead.

In Australia, the National Health and Medical Research Council (NHMRC) recommends that if a person has a blood lead level greater than 5 µg/dL (micrograms per decilitre), the source of exposure should be investigated and reduced, particularly if the person is a child or pregnant woman.

Your doctor or paediatrician can advise you about avoiding exposure to lead. They may recommend monitoring your blood lead level(s) to assess the effectiveness of any action taken. If your blood lead levels are extremely high your doctor may recommend a treatment known as chelation therapy to rapidly decrease the amount of lead in your body.

The Victorian Department of Health and Human Services will also receive a notification from the pathology laboratory and your doctor if your blood lead level is greater than 5 µg/dL. Someone from the department may contact you to help you understand the source of your lead exposure. This will help prevent further lead exposure to you and the people around you.

Preventing exposure to lead

If you think you or someone else may be in a situation where you are exposed to lead at home or work, you can reduce this exposure by:

- following appropriate safety regulations and practices at work and home if your job or hobby involves the use of lead. This includes using proper personal protective equipment and washing your hands with hot soapy water before eating or smoking. Do not bring home lead-contaminated clothing to wash with the household laundry
- taking care when redecorating or renovating your home to reduce the amount of lead dust and reduce disturbance to old paint surfaces. Pregnant or breastfeeding women and children under five should not be present in work areas during renovation activities
- seeking professional advice if you are unsure whether your home may contain lead paint. Consider using a professional contractor to repair homes likely to contain lead-based paint
- ensuring that children do not have access to peeling paint or chewable surfaces painted with lead-based paint, such as old toys, window sills and old furniture (including cots)
- discouraging children from playing in or eating dirt and from putting dirty fingers or toys in their mouth
- washing toys and dummies frequently, and washing children's hands and faces before they eat or nap
- cleaning the house regularly and ensuring there is no build-up of dust or paint chips from peeling paint. Use wet cleaning methods for dusty floors, ledges, window sills and other flat surfaces to minimise the risk of lead-containing dust getting into the air
- consulting with your water supplier or council environmental health officer if you suspect your drinking water may contain lead
- avoiding storing food or drink in pewter, lead crystal or glazed pottery containers.

Where to get help

- Your **GP (doctor)**
- **Victorian Poisons Information Centre** Tel. **13 11 26** – for advice when poisoning or suspected poisoning

occurs and poisoning prevention information (24 hours, 7 days)

- Department of Health and Human Services, **Environment Section** Tel. **1300 761 874** – for health advice about lead issues in the home or lead in your reticulated water supply
- **Worksafe Victoria** Tel. **1800 136 089** – for health advice about lead in your workplace
- **Environment Protection Authority Victoria** Tel. **1300 372 842** – for advice on safe ways to dispose of lead materials, advice about pollution from lead industries and contaminated land

This page has been produced in consultation with and approved by:

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