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National Health and Medical Research Council

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## Frequently Asked Questions

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### NHMRC Information Paper: Evidence on the Effects of Lead on Human Health

May 2015

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## Lead – Frequently Asked Questions

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Lead and lead compounds are not beneficial or necessary for human health, and can be harmful to the human body when swallowed or inhaled. Everyone should avoid contact with lead in homes, communities and workplaces by taking care when performing activities that could expose them to lead. This document has been developed by the National Health and Medical Research Council (NHMRC) to provide practical advice on strategies people can take to reduce their risk of lead exposure. Information relating to the health effects of lead can be found in NHMRC's Information Paper: Evidence on the Effects of Lead on Human Health.

### What is lead and where is it found?

Lead is a naturally occurring metal found in the earth's crust and has a wide variety of uses in manufacturing due to its properties of being soft, malleable and corrosion resistant. Lead is a stable element and does not degrade, so it remains in dust and soil for many years unless it is deliberately removed.

Most people in Australia live in places where there are very small amounts of lead in food, drinking water, air, dust, soil and products. Most of this lead is left over from previous times when lead was much more common in products used in the household and throughout the community.

### What are sources of lead exposure?

Although the use of lead in petrol and paints in Australia has been restricted, it may still be found in some fuels (aviation gasoline for piston engines and some racing fuels) and paints and finishes on some products (e.g. cars and boats). Lead is still used in lead-acid batteries and some ceramic glazes.

In some residential areas, soils still contain lead deposited from traffic fumes over many years (when commercial petrol contained lead) or from lead paints. When old houses and buildings are renovated and lead paint is stripped or sanded, people living or working inside and nearby can be exposed to lead. Drinking water may contain small amounts of lead from pipes, solder and fittings that contain lead.

## Sources of lead in Australia:

### In the home

- Food or drink containers made with lead: lead crystal, pewter, ceramic cookware – especially if it was improperly fired (e.g. imported tagines)
- Imported toys containing lead or coated with lead-based paints
- Imported 'traditional' medicines
- Imported jewellery
- Imported cosmetics
- Old iron enamelled bathtubs, old pipes, solder and plumbing fittings
- Soil contaminated with lead
- Dust contaminated with lead
- Fishing sinkers
- Curtain weights

### Activities

- Restoring homes, boats, cars and furniture that are coated with lead-based paints
- Glazing and firing pottery
- Soldering (radiators, stained glass, electronics)
- Casting lead (e.g. to make ammunition, fishing sinkers)
- Burning of lead-stabilised plastics or materials coated with lead-based paints
- Recycling of objects containing or coated with lead products (e.g. motor vehicle bodies, batteries, electronic equipment)
- Eating animals hunted using lead shot
- Exposure to lead dust at shooting ranges
- Lead mining and smelting, other industries that use lead

## Why are children and babies at the greatest risk of harm from lead?

The possibility of health effects from lead is higher for children and babies (including unborn babies) than for adults. This is because their bodies are smaller and their brains are developing rapidly. Small children are more likely than adults to swallow small amounts of lead, because they put things in their mouths, touch dusty surfaces indoors and outdoors, and touch their mouths more. Children and babies also absorb and store a greater amount of ingested lead than adults.

## How does lead get into my home?

Lead dust can cling to skin, hair, shoes and clothing and can be carried indoors. Some residential areas still contain lead deposited from traffic fumes over many years. Soils containing lead may stick to shoes and be brought inside. Lead dust can also be generated from within the home as a result of peeling or cracking of lead-based paints.

## How can I tell if my home contains lead based paint?

In Australia, the recommended amount of lead in domestic paint has declined from 50% before 1965, to 1% in 1965. In 1992, it was reduced to 0.25%, and in 1997 it was further reduced to 0.1%.

Lead in house paint is a problem only if it is damaged or disturbed, or is in a location where it can be chewed by young children. Paint in good condition that is not flaking or chalking, or is covered by well-maintained lead free paint is not a hazard in itself.

Lead test kits are available from hardware stores which can provide an indication of whether lead is present in your home.

## What should I do if my home contains lead based paint?

Anyone painting a house or doing maintenance that could disturb paint containing lead should avoid exposing themselves and their families, neighbours and pets to its hazards.

Renovation of lead painted surfaces must be done without generating dust that can spread to other areas of the house. This should be undertaken when children are not present. If this is not possible, a temporary solution for poor or degraded paint is to cover it over with new paint, until such time as a full and proper dust free renovation can be conducted. Removing leaded paint from the home can often result in a more immediate hazard than simply leaving the painted area intact.

Ideally, homes with paint containing lead should be assessed and remediated by trained professionals. The Australian Government Department of the Environment has published a 6 step guide to painting homes where lead based paint has been used. The guide can be accessed by following this link: <http://www.environment.gov.au/protection/publications/lead-alert-six-step-guide-painting-your-home>

## What types of hobbies may introduce lead into the home?

Some activities may introduce lead into the home. Hobbies such as renovating old cars, leadlighting, pottery glazing, soldering, or manufacture of lead sinkers may result in lead contamination. People should avoid conducting these activities in the home, or if this is not possible, conduct these hobbies safely by minimising dust, keeping children away from work areas, cleaning up after use (wet wiping, vacuuming, disposing of debris safely), washing well, and laundering.

## What kind of imported products can contain lead?

Be aware that some items imported from overseas (especially in developing countries) may contain lead, for example, cosmetics such as kohl, kohl or surma, toys and jewellery.

Imported dietary supplements and complementary and some alternative/traditional medicines have also been known to contain high levels of lead.

## What types of workplace environments are potentially dangerous sources of lead exposure?

Some occupations involve working with lead which may place workers at greater risk of lead exposure. These occupations include:

- alloying and casting (such as brass casting)
- battery recycling, radiator repairs, or soldering
- manufacture of electronic equipment, certain glass and crystal, ammunition, pigments, ceramic glazes, or pewter jewellery
- other activities that involve working with lead-based products such as lead sheathing and flashings, pigments for pottery or paint and fire assay (cupellation)
- lead mining and smelting, or other industries that use lead.

People working with lead should follow their employers' workplace health and safety guidelines on the safe handling of lead to minimise their risk of exposure. Care should be taken to avoid bringing lead home from work on cars, clothes, bags, or other personal items such as mobile phones. Showering, washing hair and cleaning under finger nails before coming home from work will help to reduce the likelihood of exposing family members to lead. Work wear exposed to lead should be washed and kept separate from other clothing.

In Australia, the regular monitoring of blood lead levels of workers likely to be exposed to lead is required by legislation. The legislation also requires that workers found to have blood lead levels above certain values should be protected from further exposure (for example, by being moved out of the workplace or away from contact with lead).

## What should I do if I live in a lead-exposed environment such as near a mine or smelter?

People working in or living near lead mines and lead smelters can be exposed to higher levels of lead than are found in other areas. These industries produce air pollution that contains lead, which contaminates the local dust and soil. Exposure to lead has been documented in the communities of Port Pirie (South Australia), Mount Isa (Queensland), Broken Hill (New South Wales), Lake Macquarie (New South Wales), Goulburn (New South Wales) and Esperance (Western Australia).

In lead exposed environments, such as near lead mines or smelters, additional measures may be needed to avoid exposure to lead. Children may require regular hand and face washing and drying to remove dust and soil contaminated with lead, so the lead is not accidentally swallowed. Play areas and indoor surfaces should be kept clean and free of dust to reduce the risk of children ingesting lead. Rain water and soils may also be contaminated with lead in these areas.

Local health authorities in these areas provide specific information and run programs to monitor and reduce people's exposure to lead. It is important that people living near lead mines or smelters follow the advice of local health authorities in these areas.

## Can good nutrition reduce my lead absorption?

It is important to have a diet containing adequate calcium and iron since these lower the absorption of any lead that is accidentally swallowed. Good foods include milk, red meat, nuts, legumes and leafy green vegetables.

Be aware that ceramic and pottery products purchased from developing countries can contain lead, which can leach into food when used for cooking or storage. Do not use these for food purposes unless you are confident they do not pose a lead hazard.

## What should I do if I'm concerned about my blood lead level?

If you suspect that you or your child has been exposed to lead, contact your doctor or local health department.

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## Links to practical advice for minimising lead exposure

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### National

NHMRC information on the health effects of lead:

<https://www.nhmrc.gov.au/your-health/review-lead-exposure-and-health-effects-australia>

Workplace lead safety standards:

<http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/ns199410controlofinorganiclead>

Lead Alert – The six step guide to painting your home:

<http://www.environment.gov.au/protection/publications/lead-alert-six-step-guide-painting-your-home>

### New South Wales

Government information on lead exposure in children:

<http://www.health.nsw.gov.au/environment/factsheets/Pages/lead-exposure-children.aspx>

Contact information:

Ph: 1300 066 055

Email: [ENHWU@doh.health.nsw.gov.au](mailto:ENHWU@doh.health.nsw.gov.au)

### Queensland

Government information on lead paint exposure:

[http://access.health.qld.gov.au/hid/AccidentsInjuriesandPoisonings/SafetyintheHome/leadPaintExposure\\_ap.asp](http://access.health.qld.gov.au/hid/AccidentsInjuriesandPoisonings/SafetyintheHome/leadPaintExposure_ap.asp)

Contact information:

Ph: (07) 3328 9310

Postal Address: PO Box 2368, Fortitude Valley BC, Queensland 4006

Lead and Mount Isa <http://www.livingwithlead.com.au/>

### South Australia

Government information on lead:

<http://www.health.sa.gov.au/pehs/PDF-files/ph-factsheet-lead-and-your-health.pdf>

Contact information:

Ph: (08) 8226 7107

Email: [EHB@health.sa.gov.au](mailto:EHB@health.sa.gov.au)

Postal address: PO Box 6, Rundle Mall, South Australia 5000

Lead and Port Pirie <http://www.tlap.com.au/>



## **Victoria**

Government information on lead exposure:  
<http://health.vic.gov.au/environment/hazards-lead.htm>

Contact information:  
Ph: 1300 761 874  
Email: [environmental.healthunit@health.vic.gov.au](mailto:environmental.healthunit@health.vic.gov.au)  
Postal address: 50 Lonsdale Street, Melbourne, Victoria 3000

## **Western Australia**

Government information on lead exposure:  
<http://www.public.health.wa.gov.au/3/1141/2/lead.pm>

Contact information:  
Ph: (08) 9388 4999  
Email: [ehinfo@health.wa.gov.au](mailto:ehinfo@health.wa.gov.au)

## **Northern Territory**

Government information on lead in drinking water:  
[http://www.health.nt.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/65/71.pdf&siteID=1&str\\_title=Lead%20in%20Drinking%20Water.pdf](http://www.health.nt.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/65/71.pdf&siteID=1&str_title=Lead%20in%20Drinking%20Water.pdf)

Contact information:  
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Postal address: PO Box 40596, Casuarina, Northern Territory 0811

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