



Lead exposure risk reduction

Information for clinicians

You are receiving this information because a patient of yours has recently been diagnosed as having an elevated lead level (≥ 5 micrograms per decilitre, $\mu\text{g/dL}$). Elevated lead levels can be associated with a low haemoglobin, acute and chronic damage to the kidneys, hypertension, and encephalopathy. These effects are dependent on factors such as the blood lead level, age of the patient and pregnancy status.

We request that you please review/contact your patient to:

- **Identify lead exposure source(s)**
- **Provide advice on reducing lead exposure**
- **Organise follow up and identify and test others exposed**

Key points for managing a person with an elevated lead level

Role	Responsibilities
Requesting medical practitioner	<ul style="list-style-type: none">• Identify the likely source of exposure via history taking, including occupational history, smoking history, hobbies, and potential lead sources around the home• Notify the Chief Health Officer¹ by completing the electronic lead notification form²• If source is occupational, WorkSafe³ must be notified• Provide clinical management and seek specialist advice, as necessary⁴• Discuss importance of, and measures for, reducing or eliminating exposure to lead• Identify any others who may have been exposed to the same source and recommend they have their blood lead level tested• Arrange follow up testing (generally at 3 – 6 months, depending on level and risk)
WorkSafe	For cases where the exposure source is identified as occupational: <ul style="list-style-type: none">• Facilitates further investigation of the source/workplace• Recommends testing of other staff• Advises workplace on mitigation strategies• Removal from lead risk work depending on lead level
Department of Health ¹	For cases where the exposure source is identified as non-occupational, is unknown or mixed: <ul style="list-style-type: none">• Facilitates source investigation where required• Advises on source removal/mitigation• Assesses any risk to the public

Identify lead exposure source(s)

Lead may be present in soil, consumer products, paint, drinking water, food, and imported cosmetics and natural medicinal products. People may be exposed during work (e.g., painters, welders, tradespersons), hobbies and other activities, as well as in their home.

¹ [Notification of lead poisoning \(health.wa.gov.au\)](https://www.health.wa.gov.au) or https://ww2.health.wa.gov.au/Articles/N_R/Notification-of-lead-poisoning

² A link to their form is in the accompanying e-mail. If you have not received a link for a patient, you can notify the CHO [here](#).

³ [Health monitoring: Lead \(inorganic\) - WorkSafe – DEMIRS](#)

⁴ Information to assist clinicians in the management of patients with elevated lead can be found in the NHMRC's "[Managing individual exposure to lead in Australia – A guide for health practitioners \(The Guide\)](#)", including a summary of the health effects of lead (section 2.2), follow up testing and when to seek specialist advice (section 5.2)

Potential sources to ask your patient about

It is important to review your patient's history, including their smoking status, work history and hobbies to help identify source(s) of lead.

Examples of potential non-occupational sources

Products

- Food or drink containers made from pewter lead crystal, metals other than stainless steel, decorative or imported ceramics e.g., tajines
- Discarded or stored car batteries
- Discarded old pipes, plumbing fittings
- Imported traditional jewellery
- Fishing sinkers
- Traditional/folk medicines - Ayurvedic, Chinese
- Natural medicines
- Natural cosmetics - kohl, surma, calabash chalk
- Burning incense, teas, and herbs
- Foods from overseas
- Creams, oils gifted or purchased overseas
- Loose curtain weights
- Imported toys
- Artist's paints

Environment

- Permanent residence built pre-1970
- Lives in or visits old house/building undergoing repairs or renovations

Activities

- Glass making
- Welding/cutting, soldering
- Lead light making
- Renovating old homes or old furniture
- Plumbing
- Motor/automotive repair
- Jewellery making
- Burning lead stabilised plastics/lead coated wood
- Making fishing weights
- Pottery/ceramic making
- Rifle/gun range visits

Provide advice on reducing lead exposure

Eliminating the source of lead is the best way to reduce an elevated lead level. **If you identify, items or an activity of concern, please ask your patient to refrain from using the item or undertaking the activity.** The Department of Health may contact the patient should an environmental investigation be deemed necessary.

Where eliminating the source is not possible, it is strongly recommended the patient take measures to reduce their risk of exposure to lead.

- Nutrition can impact lead absorption, so it is important to review your patient's diet
 - encourage a balanced diet with adequate levels of calcium⁵, iron⁶, vitamin C, zinc, and magnesium
 - consider testing for iron and calcium deficiency, particularly in children and pregnant women.
- It is important to provide your patient with access to relevant patient information on reducing exposure.

People at increased risk of harm

Population group	Reason for increased risk	Actions to consider
Pregnant and breastfeeding women	<ul style="list-style-type: none"> ● Lead can cross the placenta ● Small amounts of lead can transfer into breast milk ● Lead can mobilise during periods of bone resorption, such as during pregnancy or lactation 	<ul style="list-style-type: none"> ● Test for pregnancy and ask about breastfeeding ● Advise to keep away from environments that may be contaminated with lead ● Advise to avoid activities that generate lead contaminated fumes or dust
Young children	<ul style="list-style-type: none"> ● More sensitive to the effects of lead ● Likely to absorb up to 5 times more ingested lead than adults ● They may place objects in their mouths, suck their fingers, swallow dust or soil 	<ul style="list-style-type: none"> ● Young children should have regular meals and snacks (a child with an empty stomach can absorb 7 times more lead than a child that has eaten)
People with a Pica disorder	<ul style="list-style-type: none"> ● More likely to compulsively eat items that may contain lead, such as flakes of dried paint or metal 	<ul style="list-style-type: none"> ● Establish or follow a treatment plan for Pica disorder

⁵ Milk, cheese, and yoghurt are good sources of calcium.

⁶ Good sources of iron include poultry, red meat, liver, fish, fortified cereal, cooked beans/lentils, and green leafy vegetables.

Organise follow up and identify and test others exposed

Patients with an elevated lead level should have regular follow up testing. Where the source has been removed/precautions adopted and the level remains stable, or is not falling as expected, it is important to check for other potential sources.

If others may also be exposed to the same source (e.g., in a household), please request testing for these people.

Public Health advice

If any further information or assistance is required, please contact the Medical and Regulatory Support Unit within the **Public and Aboriginal Health Division** at the Department of Health via LeadNotifications@health.wa.gov.au; the Unit operates business hours Monday - Friday.

Resources

For health professionals

Resource	Provides	Accessible via
The NHMRC's <i>Managing individual exposure to lead in Australia – A guide for health practitioners (The Guide)</i>	<ul style="list-style-type: none">information on minimising exposure (section 7); andinformation to assist clinicians in the management of patients with elevated lead, including a summary of the health effects of lead (section 2.2), follow up testing and when to seek specialist advice (section 5.2)	https://www.nhmrc.gov.au/about-us/publications/managing-individual-exposure-lead-australia
The NHMRC's <i>Administrative report: Evidence on the effects of lead on human health</i>	<ul style="list-style-type: none">a summary of the evidence on health effects of lead	https://www.nhmrc.gov.au/about-us/publications/administrative-report-evidence-effects-lead-human-health

For patients

Resource	Provides	Accessible via
HealthyWA	<ul style="list-style-type: none">information on lead exposure and reducing risk	https://www.healthywa.wa.gov.au/Safety-and-first-aid/Chemicals-and-contaminants
Department of Climate Change, Energy, the Environment and Water's <i>Lead Alert: A six step guide to painting your home</i>	<ul style="list-style-type: none">information about the safe and appropriate methods of handling lead compounds and lead-containing material	https://www.dcceew.gov.au/environment/protection/publications/lead-alert-six-step-guide-painting-your-home
HealthyWA's <i>Buying make up and skin products online</i>	<ul style="list-style-type: none">information on what to do if you are concerned about cosmetics purchased online	https://www.healthywa.wa.gov.au/Articles/N_R/Purchasing-cosmetics-online

This document can be made available in alternative formats on request for a person with disability.

© Department of Health 2024

Copyright to this material is vested in the State of Western Australia unless otherwise indicated. Apart from any fair dealing for the purposes of private study, research, criticism or review, as permitted under the provisions of the Copyright Act 1968, no part may be reproduced or re-used for any purposes whatsoever without written permission of the State of Western Australia.