



# Review of blood lead level guidelines

The National Health and Medical Research Council (NHMRC) has undertaken a review into the effect of lead on human health and has used its findings to update its national advice about blood lead levels and lead exposure.

## What is the role of the National Health and Medical Research Council (NHMRC)?

The National Health and Medical Research Council (NHMRC) is the organisation that provides health advice and health guidelines for the Australian community, governments and doctors. One of its tasks is to raise public awareness and advise the community about the health effects of lead and how they can be managed. The NHMRC has just finished a review of the scientific evidence from studies carried out around the world, and has used its findings to update its national advice about blood lead levels and lead exposure.

## What is the new recommendation?

The NHMRC is recommending that if a person has a blood lead level higher than 5 micrograms per decilitre ( $\mu\text{g}/\text{dL}$ ), the source of exposure should be investigated further and reduced, particularly if the person is a child or pregnant.

Research now shows that blood lead levels below 10  $\mu\text{g}/\text{dL}$  may be associated with some health effects in adults and children, but at this stage the NHMRC has concluded that this evidence is not strong enough to show that lead at these levels is the cause of these health effects.

As a precautionary approach, the NHMRC is recommending follow up earlier to keep blood lead levels as low as possible.

## How does this differ from the current recommendation?

Previously the NHMRC has recommended that sources of exposure to lead should be investigated further when blood lead levels are higher than 10  $\mu\text{g}/\text{dL}$ , particularly for children and pregnant women.

## Does SA Health support the new recommendation?

Yes, the change in recommendation supports our goal of reducing the blood lead levels of children in Port Pirie and aligns with SA Health and the Targeted Lead Abatement Program (TLAP) focus on early intervention to prevent children's blood lead levels from rising. We already review children with a result above 4  $\mu\text{g}/\text{dL}$  and sometimes even lower, investigating possible sources of contamination and developing strategies with families to reduce exposure.



## How will this impact on measures proposed to reduce lead exposure in Port Pirie?

The NHMRC recommendation lines up with improvements proposed for Port Pirie.

The \$514 million Nyrstar Smelter Redevelopment program is on track to be commissioned in 2016. It's estimated that emission improvements from this upgrade will reduce, over three to four years, the percentage of children above 10 µg/dL to less than 10%. It is estimated that in combination with the TLAP this percentage will reduce to 5%.

TLAP is a joint program of Nyrstar and the SA Government. This program will invest \$50 million over 10 years and focuses on reducing lead exposure in the community.

This program is enhancing the work already being done in the Port Pirie community to reduce lead exposure and is identifying new ways to further improve blood lead levels.

A major part of TLAP is its early intervention initiative where funds are being invested to strengthen SA Health's lead program so we are able to better target exposure reduction to more children and pregnant women at younger ages before blood lead levels start to rise.

TLAP's focus is consistent with the NHMRC's recommended investigation level of 5 µg/dL and strengthens the use of SA Health's investigation level of 4 µg/dL.

### Will the blood testing program change?

The blood testing program in Port Pirie will not change. The staff at the Environmental Health Centre will still schedule tests as they have always done.

You do not need to have your child re-tested. Children are generally tested once a year or more frequently if they have elevated blood lead levels because their results help work out the best way to reduce their lead exposure quickly.

SA Health's quarterly reports will be changed to report on the percentage of children above 5 µg/dL to reflect the new recommendation, as well as the other blood lead measures used to monitor the lead exposure of the population.

### Is my child at risk if they have a reading above 5 µg/dL?

The review indicates a reading between five and 10 µg/dL does not indicate that lead causes noticeable health effects in individuals.

However the review states a reading above five µg/dL does indicate exposure to lead at a higher level than is typically found in Australia and an investigation to determine the cause of exposure is recommended.

SA Health will review your child's health and work with you to identify where your child is coming into contact with lead and work out a plan to reduce their exposure.

### How does SA Health assess lead exposure?

SA Health asks a range of questions about children's health, living environment and lifestyle to identify any exposure to lead that can be prevented or reduced.

In addition to booking annual blood tests, follow-up blood tests to monitor levels may be required. SA Health also looks at children's indoor and outdoor environments during home visits where samples of dust, paint and soil around homes may be collected to measure lead levels.



SA Health staff use the information to develop plans with families to help reduce exposure. This can involve educating families about how to identify sources of lead and working with parents to make sure children's living spaces are as dust free as possible.

Each family's situation is different. Some of the interventions SA Health uses to help families reduce lead exposure may include providing cleaning supplies and safe sleeping equipment, cleaning homes, greening and mulching exposed soil, subsidised additional childcare, home repairs or assistance with referrals to medical practitioners or other agencies especially for families facing difficult circumstances.

### What are the health risks of lead in blood?

At blood lead levels below 5 µg/dL, the scientific evidence does not show effects on a person's health, so no particular action or treatment is needed.

At levels between 5 and 10 µg/dL health effects have been observed at a population level but it is not clear if these were caused by exposure to lead or by other health and lifestyle factors. Possible health effects include reduced IQ, academic achievement and behavioural problems, delayed puberty and increased blood pressure in adults. The NHMRC advises that the effects are likely to be small at these levels and studies could not determine that lead exposure at these levels directly causes the effects.

At levels above 10 µg/dL, it is well-established that exposure to lead can have harmful effects on a number of body functions and organs in both adults and children. This can include effects on blood pressure, kidneys, blood cells and the brain and nervous system. At levels above 100 µg/dL, the effects can become life threatening. The blood lead level at which people have clinical symptoms varies between individuals, with more severe effects seen at higher blood lead levels.

Lead poisoning is a health condition caused by the absorption of lead into the body. It can only be diagnosed by a medical practitioner based on the clinical signs and symptoms measured or tested in a person who has been exposed to lead. When lead poisoning is diagnosed medical management is required. Treatment with chelation medicine may be considered by Specialist Clinicians when an adult has a blood lead level above 70 µg/dL or a child has a level above 45 µg/dL.

## Who can I speak to for more information?

You are encouraged to discuss any concerns with Port Pirie Environmental Health Centre staff, your regular GP or the SA Health Scientific Services Branch.

Port Pirie Environmental Health Centre  
Phone: 08 8638 4100

SA Health Scientific Services Branch  
Email: [Health.ScientificServices@health.sa.gov.au](mailto:Health.ScientificServices@health.sa.gov.au)

## Translation service

For information in languages other than English, call the Interpreting and Translating Centre and ask them to call the Department for Health and Ageing. This service is available at no cost to you by telephoning 8226 1990.

---

## For more information

**SA Health Scientific Services Branch**  
**Email:**  
**[Health.ScientificServices@health.sa.gov.au](mailto:Health.ScientificServices@health.sa.gov.au)**  
**[www.sahealth.sa.gov.au](http://www.sahealth.sa.gov.au)**

Public –I1-A1

© Department for Health and Ageing, Government of South Australia. All rights reserved.



[www.ausgoal.gov.au/creative-commons](http://www.ausgoal.gov.au/creative-commons)



**Government  
of South Australia**

SA Health