

Is your yard lead safe?

Very small amounts of lead are known to cause serious long term health effects.

Young children are particularly vulnerable to exposure from lead because of their hand to mouth activity and because they play in garden areas where lead can be in the soil.



But: remember that ANYONE can be lead poisoned.

The narrow one metre strip around the foundations of a home, shed or garage (often referred to as the drip zone) is usually where the most lead contaminated soil can be found. This is because paint chips containing lead have fallen to the ground and over the years have mixed with the top layer of soil. This dangerous leaded soil does not "look" different and will not "go away". Lead does **NOT** biodegrade and needs to be removed or made "lead safe".

If you live near a busy road or live in an industrialised area or point source community where a lead mine or smelter or lead industry contributes to lead air pollution, then the soil anywhere on your property could be contaminated and **care should be taken**.

HOW DOES LEAD GET FROM THE SOIL INTO YOUR CHILD?

Lead in dirt clings to fingers, toys and other objects that children normally put into their mouths. This is the most common way that lead in soil gets into your child. Lead in soil does not pass through unbroken skin. The more lead that is in your soil, the more harmful the soil can be to your children's health. If soil is covered, children have less contact with the dirt and the lead in it.



CREATE A BARRIER

The cheapest and easiest method of control for contaminated soil is to create a barrier (covering bare soil areas), so that animals and particularly young children will not come into contact with "leaded soil". However, the potential for future exposure remains unless total removal of the soil is undertaken.



There are a number of "barrier alternatives" that have proved to be effective. If possible first turn the soil over to mix the contaminated top layer. Then "greening" methods such as grassing the area, covering with a ground cover or planting shrubs will help. If you use thorny or prickly plants the temptation for children to play in the dirt or for pets to lie or dig in the soil will be much less. Raised or elevated garden beds (using logs, bricks or bush rock etc) means that clean, fresh soil can be used as back-fill to cover the contaminated area. Placing a thick layer of newspaper and covering with 7.5cms (3 inches) mulch or woodchips, concrete or paving (check with Council about hard surface requirements), crushed brick, gravel or fencing off the area are other methods.

Another lead "hot spot" in the yard is where roof downpipes discharge onto the ground. As this area is prone to constant erosion from the flow of water, an area of stones or pebbles will allow the water to seep away and yet prevent access to soil.

Use any means that will prevent access to dust and dirt.

The most permanent (and initially expensive) barriers will last the longest as mulch, gravel etc need to be regularly "topped up" to maintain coverage.

The NSW EPA soil action level for further investigation is 300 ppm (parts per million)

The following are the USA EPA guidelines for lead contaminated soil:

| BARE SOIL CONCENTRATION | FOR SOIL AREA EXPECTED TO BE USED BY CHILDREN* | FOR SOIL AREA WHERE CONTACT BY CHILDREN IS LESS LIKELY OR INFREQUENT |
|----------------------------------|--|--|
| up to 400ppm (parts per million) | OK** (note NSW EPA action level for further investigation is 300ppm) | OK |
| 400 - 2000ppm | response action 1 | OK |
| 2000 - 5000ppm | response action 1 | response action 1 |
| above 5000ppm | response action 2 | response action 2 |

* these areas include residential backyards, day care/school yards, playgrounds; parks and other areas where children gather.

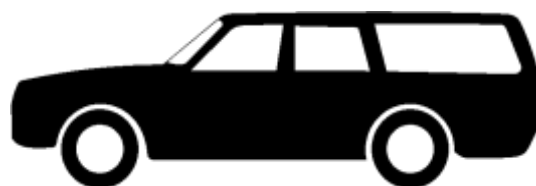
RECOMMENDED RESPONSE ACTION 1
 Interim controls to change use patterns and establish barriers between children and contaminated soil including:

- planting groundcover
- moving play equipment
- restricting access through barriers
- controlling further contamination of the area

RECOMMENDED RESPONSE ACTION 2
 Abatement of soil, including removal and replacement of contaminated soil and permanent barriers

TRAFFIC EMISSIONS AND GARDENS

If you live on a busy road and your soil lead levels are added to by leaded petrol exhaust fall out, the barrier methods still apply, together with the creation of a natural barrier or wall to counter the fall out. Studies indicate that natural barriers are best and they provide other environmental benefits as well! **Evergreen** trees and shrubs with **dense** foliage are the most effective natural barrier as they trap some of the leaded dust before it reaches your home. Remember to plant smog tolerant plants as otherwise your hard work may be wasted when the plant dies. Check with your nursery for what is best for your area.



Some suggested evergreen trees and tall shrubs* are the White Sally Wattle (Acacia Floribunda^{ab}), Lilly Pilly (Acmena smithii^a), Peppermint Willow (Agonis flexuosa^{abcd}), Weeping Bottlebrush (Callistemon viminalis^{ad}), Port Jackson Cypress Pine (Callitris rhomboidea^{ad}), Bracelet Honey Myrtle (Melaleuca armillaris^{ad}) and Water Gum (Tristaniopsis laurina^{ab})

PLAY AREAS

Soil in areas where children play, should be tested for lead and should be located away



from the drip zone of the house, shed or garage and busy roads. Sand used in sand boxes should be clean, uncontaminated material and should be able to be covered to prevent lead contamination when not in use. When buying sand ask your supplier if it has been tested for lead and other metals. Soil or sand testing will cost around \$35 - \$40 and can be carried out by these labs accredited by NATA for testing soil:

| | |
|--|---|
| <ul style="list-style-type: none"> • AAL - Hornsby Phone (02) 9482 1922 | <ul style="list-style-type: none"> • GTEL Environmental Laboratories - Kingsgrove. Phone (02) 9502 4844 |
| <ul style="list-style-type: none"> • Trace Metal Laboratory NSW Health Department Lidcombe. Phone (02) 9646 0424 | <ul style="list-style-type: none"> • NSW Department of Primary Industries Soil testing service The soil sampling kit provides all you need to submit your samples to our laboratory. The sampling kits are supplied free of charge but there is a charge for testing the contents, please contact our customer service unit for current prices. They are available at NSW DPI district offices or through our customer service centres. |
| <ul style="list-style-type: none"> • GM Laboratories Leichhardt Phone (02) 9564 1033 | <ul style="list-style-type: none"> • Analabs • Banksmeadow. Phone (02) 9316 4255 |
| <p>The LEAD Group Inc. Do-it-Yourself lead safe testing kit All samples are analysed by a NATA registered laboratory, with results available in 1-2 weeks.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="background-color: #e67e22; color: white; padding: 2px;">Australians! Take action today. Is lead harming you & your kids? Buy low cost, NATA accredited laboratory lead test kits here. Sample your dust, soil, water, paint, toys, jewellery, ceramics</p> <p style="background-color: #e67e22; color: white; padding: 2px;">NEW! Water Lead test Kits</p> </div> <p>Proceeds from our DIY Home Lead Assessment kit sales go towards the Global Lead Advice and Support Service administrative costs.</p> | |

SOLUTIONS to BARE SOIL AREAS and TRACK IN DIRT

Cars, boats or caravans parked in the yard will destroy the grass that covers lead contaminated soil, so driveways should confine parking to a designated area that is either paved or has a gravel cover.



In areas where people regularly walk, there should be a path or walkway to minimise the creation of bare soil areas. Removing shoes at the door is the most effective barrier to tracked in dirt, but otherwise washable or hoseable mats at doorways will help prevent some of the dust from being tracked into the home.

PETS

Pets are a source of dust brought into the home on their coats and they should be regularly washed and brushed outside. They are also at risk from lead and if your pet is diagnosed with lead poisoning all members of the family should have a blood lead test

VEGETABLE GARDENING TIPS FOR "LEADED" SOILS



Because of the fall out of lead particles, some areas are just not desirable for growing food crops unless raised beds are created and soil is regularly tested and replaced with clean fill when required. They include areas around smelters, incinerators, landfilled areas, land lying within ten to twenty metres of a heavily travelled road, and land near gutter downpipes or near buildings painted prior to 1970.

City gardeners, should have soil tested to ensure lead levels are acceptable for growing food or assume it is contaminated and take precautions. Homes where soil has been "imported" from an unknown source may also wish to test for lead and other metals.

Research indicates that some leafy vegetables and herbs collect lead dust from the air as well as the soil more readily than other vegetables. Always remember to thoroughly wash all fruit and vegetables prior to storage and eating. Peel root vegetables.

| | |
|--------------------------------|---|
| HIGH uptake of lead | Lettuce, Spinach, Carrot, Endive, Cress, Beetroot |
| MODERATE uptake | Onion, Mustard, Potato, Radish |
| LOW uptake | Corn, Cauliflower, Asparagus, Celery, Berries |
| VERY LOW uptake of lead | Beans, Peas, Melon, Tomatoes, Fruit, Paprika |

If your soil is high in organic matter and at an approximately neutral acidic level (i.e. a pH of about 6.5 to 7), most of the lead that is present in the soil will become bound to soil particles in a way that prevents it from being incorporated into growing crops. You can adjust your pH level if it is too acidic (under 6.5) by adding wood ashes (but NOT ashes from painted wood which may have contained lead) or an appropriate commercial additive. Organic matter can be added by using kitchen scraps that have been composted.

HYGIENE



Washing hands with soap, including cleaning under nails is very effective for removing lead dust. This is especially important for children to learn so that hand to mouth activity does not introduce lead into their system. Make sure hands are dried thoroughly as damp hands pick up more dust! Gardening clothes should be washed separately from other wash loads in

a high phosphate detergent (e.g. liquid sugar soap) and the machine thoroughly rinsed (bowl, surrounds and filter) before being used again to avoid cross contamination with the next load of washing.

TESTING YOUR FAMILY FOR LEAD

If you are concerned that any member of your family may have been exposed to lead in their environment, ask your doctor to organise a blood lead test.

This is the only way to know if there is a problem so that positive action can begin to minimise health damage.



Please contact the Global Lead Advice & Support Service if you would like further information details below.

This project was assisted by the NSW Government as part of its Lead Education Program.

