

# LEAD and LEAD POISONING

## Lead and Lead Poisoning

People living in industrialised societies like New Zealand have some lead in their bodies. Lead is taken into the body through food, water and air. Most of this lead is not absorbed by the body. However, some people will develop health problems or lead poisoning if they are exposed to enough lead. If untreated, lead poisoning can be serious.

## Where does lead come from?

Lead may come from a number of sources. These include old paint and some industries, for example, battery manufacture. With the removal of lead from petrol in 1996, the main source of non-occupational exposure to lead in New Zealand is lead-based paint on and around houses built before about 1970, but particularly before 1945. On many older houses, the old paint may still be in place, painted over or flaking off. When old paint is removed, the lead in it may settle in dust or soil.

## Why are young children at risk of getting lead poisoning?

Infants and preschool children in contact with flaking paint or lead-contaminated dust or soil are particularly at risk of developing lead poisoning. This is because they often put into their mouths objects (such as toys or their fingers) that may be contaminated with dust or soil. Paint on old cots or old toys, such as rocking horses or blocks, could be lead-based. Young children absorb more of the lead they take in than older children and adults.

## Are adults at risk?

Adults are exposed to lead by breathing it in as dust from activities such as restoring and cleaning older houses. Not washing lead-contaminated hands properly before smoking or eating may cause exposure to lead. The highest levels of lead in adults' blood occur in industrial workplaces.

The early stages of lead poisoning are non-specific and affect the gastrointestinal and nervous systems. Symptoms of lead poisoning that affects the nervous system can include mood changes (such as depression or irritability), memory impairment, sleep disturbance, headaches, and tingling and numbness in fingers and hands. Symptoms of lead poisoning that affects the stomach and intestine can include lack of appetite, nausea, diarrhoea, constipation, stomach pains and weight loss. In later stages, symptoms may develop in the blood, kidneys, bones, heart and reproductive systems and may, in extreme cases, cause death.

Many studies in humans suggest that rising blood lead levels correlates with rising blood pressure. Low levels of exposure can, over time, damage the heart, kidneys and brain.

## How does lead affect young children?

Contact with low levels of lead does not cause any obvious illness. However, if untreated, low blood lead levels can affect the developing brain and may impair young children's development and later performance at school.

High levels of lead can cause symptoms such as vomiting, stomach pains, difficulty sleeping, constipation and loss of appetite. It is important to know, however, that there are many causes of these symptoms other than lead. If untreated, very high blood lead levels can result in more serious problems and lead to brain damage or even death. If you are uncertain if your child has been affected, ask your doctor for a blood test.

## How does lead affect the unborn child?

Lead can be carried to the unborn child through the mother's blood. Therefore, exposing the mother to lead through repainting, through her type of work (for example, car radiator repair, painting, battery manufacture) or through hobbies involving lead exposure (for example, leadlighting, indoor small bore rifle shooting) may affect the baby while it is still being formed. Exposure to lead can cause premature birth or low birth weight as well as later problems with development.

## How can you protect your child from lead poisoning?

- Reduce exposure to sources such as lead-based paint and contaminated soil.
- Make sure your child has a good diet. Calcium and iron can help prevent your child's body from absorbing lead. Include at least two servings of milk products (equivalent to two glasses of milk) and one serving of lean meat, chicken or fish (equivalent to one small piece) each day.
- Make sure that your children wash their hands before they eat.
- Take special care with home renovations. If renovating older houses, seek advice about controlling leaded paint chips and dust. If the house was built or repainted before 1970, assume that the paintwork is lead-based, unless a test shows that it is not.
- Wash dummies and toys frequently, especially those used outside.
- Wet-dust floors, ledges, window sills and other flat surfaces at least once a week.

## How is lead poisoning diagnosed?

Lead poisoning is diagnosed by measuring the amount of lead in the blood.

## Treatment is available for lead poisoning.

If you have any questions about lead poisoning, please discuss them with your nurse or doctor. For advice about how to protect yourself and your family from lead poisoning if your house is being repainted, see *Repainting Lead-Based Paint*, code 4157 or a Health Protection Officer in your nearest public health unit.