

Working with Lead and Products Containing Lead

This bulletin discusses the health hazards of working with lead, the precautions you must take and the health checks required.

What Jobs May Have Excessive Lead Exposure?

The following processes have been linked with high lead exposures:

- Lead battery manufacture
- Lead and non-ferrous smelting and casting (e.g. brass)
- Radiator repair
- Car exhaust repair*
- Smelting steel scrap
- Scrap metal handling
- Cutting/welding scrap steel
- Machining and polishing lead-containing alloys
- Engine reconditioning
- Plastic production (where lead compounds are used as stabilisers)
- Demolition
- Lead soldering
- Plastic recycling
- Panel beating
- Paint removal
- Leadlight window manufacture
- Lead casting, e.g. fishing weights, toys, soldiers
- Shooting ranges.

* Exposure to lead in engine reconditioning and muffler repair resulted from the lead that was added to petrol. As petrol is now lead free, this is a decreasing problem.

How Does Lead Enter Your Body?

Lead enters the body in two main ways:

- By breathing dusts and fumes into the lungs; and
- By swallowing lead that has contaminated your hands, food or cigarettes.

How Can Lead Affect Your Health?

Lead is a cumulative poison, i.e. it is stored by the body and exposure over a period of time can result in ill health. Lead may affect the nervous system, the digestive system and other parts of your body. The common symptoms of lead toxicity are:

- Mood changes such as depression or irritability
- Forgetfulness and poor concentration
- Sleep disturbances
- Headaches
- Tingling and numbness in fingers and hands
- Poor appetite
- Nausea
- Diarrhoea or constipation
- Stomach pains
- Weight loss.

Other effects may include kidney damage, blood pressure, decrease in the number and quality of sperm, and abortion.

The effects of the lead absorbed by the body may be more pronounced when you have an infection such as “the flu” or you have taken excessive alcohol.

The unborn child is at particular risk from lead. It is recommended that women planning pregnancy avoid working with lead.

Personal Hygiene

One of the most important things to do when you are working in a job where you may be exposed to lead is to ensure that you have good personal hygiene.

- Don't drink or smoke in the workplace.
- Wash your hands and face before eating or drinking.
- Preferably wash or shower before leaving work.
- Store your work clothing separately from your personal clothes.

How Can Lead Exposure be Controlled?

Employers must ensure that exposure to lead is adequately controlled or the worker is protected. If contact with lead cannot be avoided, then the employer must take all practicable steps to ensure that the worker's exposure is minimised. Steps such as installing exhaust ventilation to remove dust must be taken in preference to providing respirators. The exhaust ventilation system should:

- Collect the lead contamination from as close as practicable to the source of dust;
- Draw the lead dust or fume away from the worker; and
- Not release the lead-contaminated air into other work areas.

Other procedures that may be used to control lead exposure include carrying out the process wet instead of dry and ensuring that work areas are frequently cleaned using a method, such as wet wiping, that does not raise dust. Dry sweeping and compressed air must not be used when cleaning.

Do You Need Protective Equipment and Clothing?

If you are working in a job where exposure to dust containing lead cannot be avoided, you may be required to use personal protective equipment, including overalls and a respirator.

In order to prevent lead contaminating clothing that is worn home and placing family members at risk, it is recommended that overalls be used to replace personal clothes and not worn over them.

If it is not practicable to reduce the dust level sufficiently using ventilation, it may at times be necessary to wear a respirator (mask). It is the employer's duty to ensure that the correct respirators are used and that workers are trained on how to fit and wear respirators.

It is important to store respirators in a place where they cannot be contaminated with lead dust, and to regularly clean and maintain the respirators.

To maintain good hygiene, protective equipment should not be shared between workers.

Health Checks

It is the employer's responsibility to ensure that health checks are provided for all employees that may have excessive exposure to lead. This will usually involve a medical or health examination and a blood lead test. It is recommended that a baseline blood test be taken for all new employees. The blood lead level indicates how much exposure you have had to lead.

What is an Excessive Lead Exposure?

Ideally, exposure to lead should be controlled to the point where your blood lead level does not exceed 1.5µmol/litre whole blood.

Further Information

For further information and advice on health checks and blood lead tests, contact your nearest OSH office. Further information may also be obtained from the OSH publication *Medical Surveillance for Lead Workers* (\$10.00 incl. GST).