

# Preventing Lead Poisoning in Scrap Metal Recycling:

## *An Alert for Workers and Employers*



*Your workplace can expose you to lead.*

*Lead can harm your health and your family's health.*

*You can protect yourself and your family.*

Many resources are available to help you deal with lead exposure in the workplace and the health problems caused by lead poisoning.

Your employer, your doctor, the Department of Labor & Industries, the SHARP (Safety & Health Assessment & Research for Prevention) Program, and the Department of Health can help — at no cost to you.

### Introduction

Scrap metal recovery and collection can place workers at risk for lead poisoning. Lead may be present in the coatings on the scrap (paints, hot dips, etc.), as pure metal, an alloy or its oxides (as found in battery plates).

Exposures to lead fumes and dust put workers at risk for lead poisoning. "Take-home" lead exposure is especially dangerous to children ages six and younger, because lead is toxic to the brain and can cause permanent damage.

### Why should I care about lead poisoning?

Even if you are exposed to small amounts of lead, it can build up in your body and stay there for a long time. Too much lead in your body can damage your brain, nerves, kidneys, and blood cells. Lead can also cause infertility in men and harm unborn babies.

Many people with high lead levels do not feel sick or poisoned. Some of the early symptoms of lead poisoning or overexposure may include:

- Nausea, depressed appetite, stomach aches or cramps
- Muscle or joint aches
- Headache, trouble concentrating, irritability or depressed mood
- Tiredness or problems sleeping

If you experience any of these symptoms, or suspect you have been overexposed to lead, notify your employer and contact your doctor.

### Understanding your blood-lead test

The most common test for lead is called the blood-lead level test, which measures how much lead is in your bloodstream in micrograms of lead per deciliter of blood ( $\mu\text{g}/\text{dl}$ ).

## Is there a problem?

Blood-lead levels above 5 µg/dl are considered to be harmful to adults. Immediately notify your employer if you develop signs or symptoms associated with lead poisoning or if you need medical advice concerning the effects of current or past exposure to lead or your ability to have a healthy child.

## Preventing lead poisoning

### Torch cutting

#### Exposures

The heat generated by a cutting torch is high enough to melt lead on the surface of the metal. The small lead particles (fume) in the smoke generated in this process penetrate deeply into the lungs and are quickly absorbed by the body, creating the potential for severe lead poisoning. These lead particles may also stick to a worker's skin and clothing and can contaminate food and/or cigarettes and the worker's car, home and family.

#### Controls

Local exhaust ventilation (LEV) equipped with high efficiency (HEPA) filtration may be appropriate for some operations but may be impractical when cutting large pieces of scrap metal. Alternative controls must be considered if the process is not easily controlled by LEV.

Surface preparation methods can be used to reduce exposures. Removing the coating along the path of the cutting torch before actually cutting eliminates them as sources of lead. Abrasive removal is preferred over burning. Burning can generate more lead fumes than torch cutting because the entire surface burns, not just the cut line. Chemical stripping may work but may introduce other chemical exposures and create a fire hazard.

Changes in work practices may also reduce exposures. Increasing the distance between the worker and the cutting head of the torch by using an extended cutting torch (sometimes called an "oxy-lance torch") or positioning the worker such that the wind carries the smoke and fume away from the worker can reduce exposures. Take care to ensure that other workers downwind are not exposed to the cutting fumes.

Consider using mechanical cutting devices, rather than torch cutting. Powered saws or shears may be used for many tasks, and do not generate lead



fumes. However, be aware that these mechanical devices may introduce other hazards, such as excessive noise and other traumatic injuries.

### Abrasive removal of surface coatings

#### Exposures

Abrasive removal of surface coatings is unlikely to create a metal fume but it is capable of generating large amounts of lead dust that may be inhaled.

#### Controls

Many newer abrasive devices are equipped with dust removal systems. These systems typically use a shroud to enclose the abrasive operation. The shroud is connected to a vacuum equipped with a HEPA filtration system and prevents dust from escaping during grinding.

### Battery breaking

#### Exposures

Battery breaking or recycling creates lead exposure hazards. The lead "plates" are filled with lead oxide which breaks up and forms very small particles that can easily be inhaled. Batteries also contain extremely corrosive hydrochloric acid contaminated with lead.

## Controls

Exposures during battery breaking may be controlled using a hood or LEV. Some batteries, because of their large size, may not easily fit into a hood. In these cases, personal protective equipment such as respirators, gloves, protective coveralls and work boots are necessary to reduce exposure.

## Facility maintenance

### Exposures

Routine maintenance of equipment and the facility can also be a source of lead exposure. Lead dust can collect on or in equipment, and when disturbed can be inhaled. Other potential sources of exposure are dry sweeping floors, emptying trash bins and maintaining air-cleaning devices.

### Controls

Whenever there is a potential for lead dust accumulation, floors and other work surfaces should never be dry swept or cleaned with compressed air. Use a HEPA vacuum and then wet-wash the surface with warm water and detergent. After the area has dried, the surface should be vacuumed once more. Frequently wipe surfaces such as lunch tables with a clean wet cloth.

## Additional resources

### SHARP Program

L&I's SHARP Program can provide further information on work-related lead poisoning to interested employers, workers and health professionals. Call 1-888-667-4277 or 360-902-4728, or visit [www.Lni.wa.gov/SHARP](http://www.Lni.wa.gov/SHARP).

### Division of Occupational Safety and Health

L&I's Division of Occupational Safety and Health (DOSH) enforces the worker protection rules for workplaces with lead and investigates complaints from workers and concerns from health care providers. It also offers free assistance and information to both workers and employers upon request. Call 1-800-423-7233, or visit [www.Lni.wa.gov/Safety](http://www.Lni.wa.gov/Safety).

### The Washington State Department of Health

The Washington State Department of Health provides information and resources on reducing children's exposure to lead. Call 360-236-4280 for more information, or visit [www.doh.wa.gov/lead](http://www.doh.wa.gov/lead).

### Lead dust isn't just a health risk to workers!

Lead taken home on clothing and other contaminated materials can cause lead poisoning in children.

*Upon request, foreign language support and formats for persons with disabilities are available. Call 1-800-547-8367. TDD users, call 360-902-5797. L&I is an equal opportunity employer.*