

LEAD EXPOSURE AT WORK
a guide for employees



Ohio Department of Health

Bureau of Child and Family Health Services

**Ohio Healthy Homes and
Lead Poisoning Prevention Program**

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Ohio Healthy Homes
and Lead Poisoning Prevention Program

IS YOUR WORKPLACE exposing you to lead?

Lead is one of man's most useful metals; it is also one of the oldest known poisons. More lead is used today than ever before. Lead batteries and radiators sealed with lead are essential to the automobile industry. Lead is used in plumbing and paints, bullets, pottery, in radiation shields and in lining chemical tanks. Workers in approximately 120 occupations use lead. However, lead can cause severe health problems to the people who work with it unless it is handled properly.

Common occupations for lead exposure

- Plumbing, pipe fitters
- Lead mining/smelters
- Auto repair
- Glass manufacturing
- Shipbuilding
- Printing
- Plastic manufacturing
- Brass, copper and lead foundries
- Police officers
- Steel welders or cutters
- Construction workers
- Rubber product manufacturing
- Battery manufacturing/recycling
- Bridge maintenance
- Firing range instructors, staff, visitors
- Renovation, remodeling or demolition of homes or buildings built before 1978
- Glazing or making pottery





DANGER LEAD HAZARD

Keeping lead exposure out

- ❑ Lead is a potent poison that serves no known use once absorbed by the body. It affects the brain and nervous system, reproductive capabilities, the kidneys, the digestive system, and the ability to make blood. A worker can be exposed to lead by breathing in lead dust from work activities, by eating, drinking, or smoking on the worksite or by handling objects that have lead dust on them.
- ❑ Lead brought home from the workplace on a worker's skin, hair, clothes, shoes, car, or tool box can cause severe lead poisoning among family members. Young children are especially affected by lead; even small amounts can cause permanent damage such as learning disabilities and stunted growth.
- ❑ A man's exposure to lead in the workplace can affect his ability to have healthy children. Lead is one of the very few toxins which can affect pregnancy by causing changes in the father's sperm. Damaged sperm may affect the development of the fetus, causing possible health problem in the baby.
- ❑ If the mother is exposed to lead during pregnancy, problems may occur with the pregnancy or with the health of the baby after it is born. The developing fetus is even more sensitive to lead than infants and young children. The fetus is exposed to lead from the mother's blood, since lead easily crosses the placental barrier. Children who are born to mothers with lead poisoning are more likely to have low birth weight and premature birth. Pregnancies complicated by lead poisoning are more likely to end in miscarriages and stillbirth.

LEAD EXPOSURE can make you sick

Lead Exposure can Cause:

- Fatigue
- Uneasy stomach
- Irritability/nervousness
- Poor appetite
- Headache
- Lowered sex drive
- Sleeplessness
- Metallic taste
- Infertility and abnormal sperm
- High blood pressure

Signs and Symptoms of High Exposure:

- Stomach pains
- Constipation
- Nausea
- Weight loss
- Memory problems
- Muscle and joint pains
- Premature loss of teeth
- Kidney failure

Extreme cases of lead poisoning can result in seizures, coma, or death.

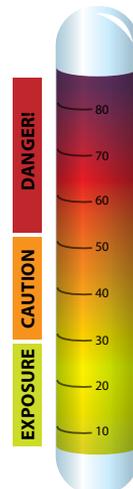
Know your lead exposure levels with a blood test.

The only way to know if you have been exposed to lead is to have a blood test which measures lead in the blood stream.

No known
level of lead is
SAFE in
the body.



- Above 80 $\mu\text{g}/\text{dL}$** serious damage to your health may occur rapidly
- Between 40-80 $\mu\text{g}/\text{dL}$** serious health damage may occur
- Between 25-39 $\mu\text{g}/\text{dL}$** damage to your body may occur without symptoms
- From 10-24 $\mu\text{g}/\text{dL}$** lead exposure has occurred and could affect your health
- 1.64 $\mu\text{g}/\text{dL}$** is the average for US adults.



IS YOUR WORKPLACE practicing lead safety



Your employer is responsible for creating a lead safe workplace.

Lead particles that can be absorbed by the body are so small that they can remain suspended in the air for long periods of time.

The **Lead Standard** is a federal and state regulation (law) that requires employers to follow guidelines to protect workers from harmful lead exposure. An important part of this standard says that lead in the air of a workplace shouldn't be more than 50 μg (micrograms) per meter, averaged over 8 hours.

Access the **Lead Standard** on the web at: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10030



The law requires that you, as workers exposed to lead, be provided with the following rights by your employers:

1. Training:

You have the right to be informed that you are working with lead, as well as any other hazardous materials. Training is required in correct handling of lead products, in the manner in which lead affects your health, in ways to protect yourself from lead exposure, and in the provisions of the OSHA Lead Standard.

2. Monitoring:

Monitoring for air-borne concentrations of lead to which you may be exposed is required. You have the right to observe this monitoring, and to receive the results in writing. The permissible exposure limit set by OSHA is $50 \mu\text{g}/\text{m}^3$ averaged over an eight-hour work day.

3. Medical Examination:

You have the right to a medical exam if you are exposed to air-borne lead at concentrations of $30 \mu\text{g}/\text{m}^3$ (The OSHA Action Level) averaged over an eight-hour work day for more than 30 days per year. Medical exams are also to be provided if you have symptoms of lead poisoning, elevated blood lead levels, difficulty in using a respirator, or are on medical removal protection.

4. Biological Monitoring:

You have the right to have your blood tested for lead and zinc protoporphyrin to determine if your body is absorbing excessive amounts of lead, and the results must be given to you in writing. This monitoring is to be repeated at intervals specified in the OSHA Lead Standard. Your blood lead level should be kept below 40 micrograms per deciliter ($40 \mu\text{g}/\text{dL}$). If you are planning to have children, your blood lead level should be kept below $30 \mu\text{g}/\text{dL}$.

5. Medical Removal: You have the right to be removed from lead exposure if your blood lead level reaches or exceeds $60 \mu\text{g}/\text{dL}$ or if the average of the last three blood lead levels is at or above $50 \mu\text{g}/\text{dL}$. Medical removal continues until two consecutive blood lead levels are below $40 \mu\text{g}/\text{dL}$. During your medical removal, your employer must maintain your earnings, seniority, and other employment rights and benefits as though your work had not been changed. Medical removal can be continued for 18 months.

6. Chelation: Drug treatment for lead poisoning may include a medical procedure called chelation. Do not participate in chelation unless it is done under the supervision of a physician as a treatment for lead poisoning. Chelation is not to be used routinely to keep your blood lead at acceptable levels.

HOW TO protect yourself from lead

! Avoid, whenever possible, breathing or eating lead dust or fumes.



- ❑ Use the ventilation systems that are provided for your protection. Be aware of how these systems work, and make sure that they are working correctly.
- ❑ Use the correct respirator. Make sure it is clean, in good repair, and fits properly.
- ❑ Keep your work area clean. Do not dry sweep or use compressed air to remove lead dust. Use a HEPA vacuum with a high efficiency filter and/or use wet cleaning methods.
- ❑ Do not eat, drink, or smoke in work areas. Use a properly constructed lunchroom.
- ❑ Wash your hands and face before eating.
- ❑ Shower, wash your hair, and change into clean clothes, including shoes, before leaving the workplace. Put dirty work clothes in a plastic bag.
- ❑ If you can't shower at work, shower and wash your hair as soon as you get home.
- ❑ Wash your work clothing at work if possible or separate from other laundry at home.
- ❑ Store street clothes in a separate area of the workplace and in a different locker from your work clothes.
- ❑ Eat a well-balanced diet. Good nutrition can reduce lead absorption.
- ❑ See your doctor for a blood lead test.

FOR MORE INFORMATION ON lead exposure safety

Contact your local health department

Ohio Department of Health

1-877-LEAD-SAFE
<http://www.odh.ohio.gov>

or write to the:

Ohio Department of Health - ABLES Program
246 N. High St., 6th Floor
Columbus, Ohio 43215
Phone: (614) 728-6816

U.S. Environmental Protection Agency (EPA)

<http://www.epa.gov>

Centers for Disease Control and Prevention

<http://www.cdc.gov/environmental/>

U.S. Department of Housing and Urban Development (HUD)

<http://www.hud.gov/offices/lead/healthyhomes/>

National Center for Healthy Housing

<http://www.nchh.org>

Poison Control Center

1-800-222-1222

