
How to Avoid Lead Poisoning in Bridge Repair Work

September 2000
Report 17-9-2000

A Fact Sheet for Bridge Workers



Why am I at risk?

Lead-based paint has been used for years on thousands of bridges and steel structures to protect them from corrosion and the harmful effects of weather. Many of these structures are in need of repair due to normal wear or lapses in regular maintenance.

During repair and demolition projects, ironworkers, laborers, painters, and other construction workers can be exposed to high levels of lead. In fact, in the last two years, workers involved in bridge repair had more high blood lead levels reported to Washington State's occupational lead exposure registry than any other industry.

This pamphlet will help you reduce your lead exposure at work and prevent exposure of your family members to this toxic metal.

How am I exposed at work?

Lead can enter your body in two ways:

- Breathing in lead dust, mist, or fumes.
- Swallowing lead dust if it gets on your hands or face or if it gets in your food, drinks, or tobacco.

- **Your workplace can expose you to lead**
- **Lead can harm your health and your family's health**
- **You can protect yourself and your family**

The following activities during bridge repair can cause lead overexposure:

- ❖ Torch cutting, thermo-lancing, and welding can release lead fumes.
- ❖ Rivet busters, grinders, scalers, abrasive blasting, and other tools can create lead-containing dust.
- ❖ Lead-containing dust can be stirred up by vibration from power tools, discharged air from pneumatic equipment, or cleaning up and handling waste.

Why can lead be a problem for my family?

You may carry lead dust home on your work clothes, work shoes, or areas of the body not covered by protective clothing, such as hands or hair. This “take home” lead can harm the health of others in your home. Young children are very sensitive to lead's harmful effects, because lead is toxic to the developing brain and can cause permanent damage. If a pregnant woman is exposed to lead, it may harm her unborn child.

How can I reduce my exposure?

There are some things you can do to protect yourself and your family from lead exposure:

- ✓ Follow all safe work rules and use controls properly.
- ✓ Attend training and safety meetings.
- ✓ Participate in blood lead testing.
- ✓ Wash your hands and face before you eat, drink or smoke.
- ✓ Eat, drink and smoke only in areas free of lead dust and fumes.

- ✓ Work with your employer to ensure that you are not overexposed to lead in your workplace. Sometimes this may include special ventilation equipment or the use of a properly-fitted respirator.
- ✓ Avoid stirring up lead-containing dust with dry sweeping or blowing. Wet cleaning and vacuuming (with a high efficiency filter system) are generally safer.
- ✓ Use separate work clothes and shoes/boots while at work.
- ✓ Keep your street clothes in a clean place.
- ✓ Don't wear your work clothes and shoes/boots home.
- ✓ If possible, shower at work before going home.
- ✓ Launder your clothes at work. (If you must take work clothes home, wash and dry them separately.)

Why should I care about lead poisoning?

Once lead gets into your body, it stays there for a long time. Even if you are exposed to small amounts, it can build up in your body over 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 the unborn child.

Many people with high lead levels do not feel sick or poisoned. These high lead levels can still seriously affect health. The longer you have a high level, the greater the risk of health problems. Damage done by lead may be permanent.

Each person responds to lead differently. Some of the early symptoms of lead poisoning or overexposure may include:

- irritability
- stomach aches and cramps
- muscle or joint pains
- trouble concentrating
- tiredness

It is important to note that it is possible to have an overexposure and not experience any symptoms. If you are exposed to lead and 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, which measures how much lead is in your bloodstream. Blood lead levels are presented as micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dl}$).

Is there a problem?

This table presents the range of health effects associated with blood lead levels.

Severity of Health Problem	Blood Lead Level	Changes happening in body
Severe health effects may happen quickly and be permanent	110	<ul style="list-style-type: none"> Brain damage Dangerous reduction in blood's ability to carry oxygen
	100	
	90	
Serious health effects may occur	80	<ul style="list-style-type: none"> Decreased blood production Male infertility Nerve damage Decreased hearing Increase in blood pressure Effects on unborn child in pregnant women
	70	
	60	
Lead <u>may</u> have effects <u>without</u> symptoms	50	
	40	
Lead starts building up in your system	30	
	20	
Average level for healthy adults	10	
	3	
	0	

Once your blood lead level climbs above $25 \mu\text{g}/\text{dl}$, your risk of serious disease increases. Even though there is a wide variability of individual response to lead, you should 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.

Your employer's responsibilities

Under federal and state regulations (the Lead Standards for General Industry and Construction), employers have a responsibility to ensure that workers are protected from harmful lead exposure. This includes making sure that lead in the air of the workplace is not at hazardous levels (i.e., greater than 50 micrograms per cubic meter [$\mu\text{g}/\text{m}^3$] averaged over an eight-hour period).

Your rights as a worker

Your employer is responsible for providing you with the following:

- ◆ A safe and healthful workplace. Your employer is required to comply with standards established to prevent harmful exposure to lead. Your employer must provide protective equipment at no cost to you;
- ◆ A copy of air monitoring results (upon request);
- ◆ A copy of the lead standard (upon request);
- ◆ Medical monitoring. Your employer must provide blood lead testing, medical exams, and consultations to lead-exposed workers; and
- ◆ Under certain conditions, you can be transferred to a non-lead exposed job without loss of pay or benefits (i.e., "medical removal").

You have the right to file a confidential complaint with the Department of Labor and Industries (L&I) if you believe there may be a serious hazard. You also have the right to file a complaint if you believe you are being discriminated against for exercising one of your Washington Industrial Safety and Health Act (WISHA)-protected rights. It is against WISHA law for an employer to discriminate against a worker for bringing up safety or health concerns or for filing a complaint with WISHA. You may call 1-800-4BESAFE (1-800-423-7233) or the nearest L&I office for assistance.

The occupational lead exposure registry

Preventing lead poisoning is a national priority because blood lead levels above 25 µg/dl are considered to be harmful. Consequently, the U.S. Public Health Service aims to eliminate workplace exposures that result in workers having blood lead levels above 25 µg/dl. To accomplish this, the National Institute for Occupational Safety & Health (NIOSH) funds occupational lead exposure registries in several states. The aim of the registries is to track where high blood lead levels are occurring and increase awareness about lead exposure and health effects amongst employees and employers.

In Washington State, the occupational lead exposure registry is managed by the Department of Labor and Industries' Safety & Health Assessment & Research for Prevention (SHARP) program. SHARP receives workplace-related adult blood lead data from the Department of Health, stores the data in a confidential database, mails educational materials, and conducts telephone interviews with lead-exposed workers. SHARP contacts employers if particularly high exposures are seen.

Additional Resources

Your doctor or other health care provider

See a doctor if you are concerned about lead overexposure for yourself or others in your household. The doctor can arrange for blood lead level testing and help you interpret any exposure and health effects. It is important for your doctor to know about your lead exposure even if you don't have any symptoms. An occupational physician is trained to recognize diseases associated with work and may be able to diagnose a lead-related disease more readily than a doctor not trained in occupational illnesses.

Portions of this Fact Sheet were adapted from "Lead Control Guide for Bridges and Steel Structures – Protecting Workers during Rehabilitation & Demolition." Prepared by the Mount-Sinai-Irving J. Selikoff Center for Occupational & Environmental Medicine and the Hunter College Urban Public Health Program. For a copy, call 212-241-7573.

The Washington State Department of Health

The Department of Health provides information and assistance for cases of lead overexposure in children. Call 1-800-909-9898.

Your safety officer or industrial hygienist

Find out if your work area has been checked for lead dust or fumes and find out how you can avoid exposure by using protective equipment and engineering controls.

L&I's WISHA Services

The Lead Standard contains rules that require employers to use proper procedures when lead-containing materials are handled. L&I's WISHA Services enforce the Lead Standard and investigate complaints from workers who feel they are being overexposed to lead or other chemicals. Call 1-800-4BESAFE (1-800-423-7233). WISHA also offers free assistance and information to both employers and employees. Visit WISHA's web site at www.lni.wa.gov/wisha.

L&I's SHARP Program

The Safety & Health Assessment & Research for Prevention (SHARP) program performs research and analysis of workplace health and safety issues. SHARP administers the occupational lead exposure registry and can provide further information on work-related lead poisoning to interested employers, workers, and health professionals. Call 1-888-667-4277 or (360) 902-5669. Visit SHARP's web site at www.lni.wa.gov/sharp.

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, L&I, SHARP, and the Department of Health can help - at no cost to you!