

## Medical Surveillance for Lead Exposure

Georgia Tech's Safety and Health Consultation Program is a free and confidential service funded by the U.S. Department of Labor and available to small businesses in the state of Georgia.

### How Lead Exposure Occurs

Lead can enter the body from inhaling and ingesting dust and chemicals that contain lead. The most common route of occupational lead exposure is inhalation. Although adults are more likely to be exposed by inhalation, lead can also be ingested by workers who do not follow good personal hygiene practices. At a minimum, these practices include washing hands and removing contaminated personal protective equipment (PPE) and clothing prior to entering areas that should be maintained as lead free.

### Lead Exposure and the Body

Lead exposure can affect almost every system within the body, including:

- brain
- blood
- kidneys
- cardiovascular system
- central nervous system (CNS)
- reproductive system

### Symptoms of Lead Exposure

Symptoms of exposure to lead include, but are not limited to:

- abdominal pain
- constipation
- diarrhea
- brain damage
- CNS disorders
- irritability
- fatigue
- dizziness
- headache
- poor appetite
- weakness
- fine tremors
- insomnia
- "lead line" along gums
- muscle/joint pain
- metallic taste in mouth

### Medical Surveillance

The OSHA Lead in Construction Standard requires that medical surveillance be made available to employees who are occupationally exposed to lead at or above the action level of  $30 \mu\text{g}/\text{m}^3$ . This is referred to as *initial medical surveillance*, and it includes biological monitoring for blood lead levels and zinc protoporphyrin (ZPP).

Employees exposed to lead at or about the action level for more than 30 days in a consecutive 12-month period shall be enrolled in a medical surveillance program that includes at least the following:

- detailed work history,
- medical history, and
- thorough physical exam, with attention to the neurological system, kidneys, teeth, gums, blood, blood pressure, heart, gastrointestinal system, and lungs.

### Frequency of Medical Examinations

Medical examination for lead exposure is to be conducted:

- annually, if the blood lead level (BLL) has been greater than  $40 \mu\text{g}/\text{dL}$  in the past 12 months;
- if signs and symptoms of lead exposure appear, and
- as otherwise deemed medically appropriate.

## LEAD

Atomic Symbol: Pb

Atomic Number: 82

Atomic Mass: 207.20

## Medical Removal

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The employer shall remove any employee from work when BLL results are greater than 50 mg/dL. An employee on medical removal may return to work with a BLL at or below 40 mg/dL or upon approval of the physician. Employees on medical removal shall be provided with up to 18 months of medical removal protection benefits on each occasion of removal due to BLL.

## Written Medical Opinion

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Upon the finding or suspicion of exposure to lead, the employer shall provide the employee with a written medical opinion from the examining physician that includes at least:

- detected medical condition(s) placing employee at increased risk,
- recommended PPE,
- respiratory protection limitations, and
- blood lead levels.

The physician's medical opinion should not contain diagnoses unrelated to occupational exposure.

## For More Information

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- Georgia Tech's Safety, Health & Environmental Division, 404.894.3806  
<http://www.oshainfo.gatech.edu>
- Occupational Safety and Health Administration  
<http://www.osha.gov>
- National Lead Information Center  
1.800.424.LEAD
- Housing and Urban Development Agency  
<http://www.hud.gov/lea>
- Environmental Protection Agency  
<http://www.epa.gov/lead/>

*updated 12/01*