

Linn-Benton Community College

Linn-Benton Community College Lead Awareness and Protection Plan

IV. RESPONSIBILITIES

a. SAFETY DEPARTMENT

- i. Provide and maintain a procedure that meets the intent of the OSHA Standards 29 CFR 1910.1025 and 29 CFR 1926.62, and provide notification to employees and technical assistance in the implementation of this procedure.

b. SUPERVISORS

- i. Supervisors will be responsible for identifying potential employee exposures to lead, developing standard operating procedures for routine work to comply with the written program, schedule air monitoring, scheduling employees for necessary medical testing and informing the Safety Department of employee health concerns with potential exposures to lead.

c. GUEST/MANAGEMENT

- i. Guests and contractors must be compliant with OSHA Regulations. They are responsible to follow the direction of our employees who are trained and knowledgeable of the hazards and of the requirements of the facility.

d. EMPLOYEES

- i. Employees will be responsible for complying with procedures established by their supervisors to minimize potential lead exposure and inform their supervisor if they have health concerns that may be pertinent to lead exposure so the supervisor can arrange for appropriate consultations for the issue.

V. GENERAL HAZARDS

- a. We know that overexposure to lead can have serious effects on health.
- b. Lead's dangers come not from skin contact but from breathing in too much lead dust or fumes. There's also a risk of swallowing lead if a person touches food, cigarettes, cosmetics, etc., when their hands are contaminated by lead.
- c. Lead-based paint and paint debris are a key hazard when painting, repainting, rehabbing, demolishing, or renovating buildings, tanks, bridges, etc. Lead bricks, mortar and sheets, lead support rods and construction materials, mineral wool insulation with lead contaminants, lead pipes, lead solder and leaded steel roofing materials are potential hazards when involved in renovation, re-insulation, industrial vacuuming, etc.
- d. There's also a risk of hazardous exposure in any work environment that makes or uses products that contain lead.
- e. Employees will not disturb lead containing material when encountering such material at the facility.
- f. A very large dose of lead (for example, children eating large amounts of lead-based paint) can have almost immediate effects. It can cause seizures, coma and, in a matter of days, death.
- g. Most of the effects, however, take time to show up. When lead enters the body, it gets into the bloodstream and from there into organs and body tissues. If the body takes in more lead than it can naturally eliminate, the lead builds up and, over time, can cause severe and irreversible damage to the blood-forming, nervous, urinary, and reproductive systems.
- h. The milder short-term effects of overexposure to lead can include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, tremors, numbness, dizziness, hyperactivity, and stomach pain. If you work with or around lead and have any of these

Linn-Benton Community College Lead Awareness and Protection Plan

symptoms, it's crucial that an employee reports them immediately. That's because chronic overexposure to lead can cause much more serious problems that rarely show symptoms until it's too late to reverse them.

VI. CHRONIC OVEREXPOSURE TO LEAD CAN CAUSE:

- a. Anemia- That's a decrease in the blood's capacity to carry oxygen, which can make you weak and tired.
- b. Nervous System Damage- Sometimes this is temporary, but the worst cases can lead to severe, or even fatal, brain damage. The symptoms of lead-caused nervous system damage can be vomiting, poor memory, restlessness, irritability, tremors, convulsions, muscular weakness, and a feeling of dullness progressing to drowsiness and stupor. Again, it's important to report any of these symptoms if an employee has been exposed to lead. In the worst cases, people may have seizures, go into a coma, and even die.
- c. Kidney Disease- Unfortunately, urinary problems and other symptoms of lead-related kidney disease don't usually show up until kidney damage is major and usually permanent.
- d. Reproductive Impairment- Lead is a reproductive risk for both men and women. It may decrease women's fertility and cause abnormal menstrual cycles. For men, overexposure may decrease the sex drive or cause impotence or sterility. One of lead's worst hazards is the danger it poses to both men and women who plan to have children. Women who are pregnant, or hope someday to be, should avoid long-term exposure to lead. If either parent has been overexposed to lead, there's apparently a greater chance of miscarriage or stillbirth. Any children born to a parent exposed to high lead levels are more likely to have birth defects, mental retardation, behavioral disorders, and/or die during the first year of childhood.

VII. OSHA REGULATIONS

- a. Because lead is so potentially hazardous, OSHA has a detailed regulation (29 CFR 1910.1025) designed to identify hazardous work and to reduce exposure. As noted earlier, work on old structures or equipment can pose particularly high exposure risks.
- b. The regulations set a permissible exposure limit (PEL) of a time-weighted average of 50 micrograms of lead per cubic meter of air. That is the highest level of lead in the air to which an employee can be exposed over an eight-hour workday.
 - i. Short-term exposures above the PEL are permitted as long as the workday average stays within the regulated limit.
- c. OSHA notes in its regulation, however, that exposure to levels below 40 micrograms is desirable. For those who intend to have children, OSHA recommends keeping exposure below 30.
- d. OSHA's separate regulation for lead exposure in construction applies to all jobs that might have employment-related exposure to metallic lead, inorganic lead compounds, and organic lead soaps.
- e. OSHA specifically mentions the risk of exposure when work involves:
 - i. Demolition or salvage of structures with lead or lead-containing materials.
 - ii. Removal or encapsulation of materials containing lead.
 - iii. Construction, alteration, repair or renovation of structures, substrates or portions thereof that contain lead or lead-containing materials.
 - iv. Installation of products containing lead.
 - v. Lead contamination/emergency cleanup.
 - vi. Transportation, disposal, storage, or containment of lead or lead-containing materials at the construction site.
 - vii. Maintenance operations associated with these construction activities.

Linn-Benton Community College Lead Awareness and Protection Plan

- f. For both construction and general industry, OSHA sets not just a permissible exposure limit, but what it calls an action level for lead. If employees are exposed to 30 micrograms of lead in the air over an eight-hour day, without wearing a respirator, employers must meet various OSHA regulatory requirements. These include:
 - i. Monitoring the air around affected employees to determine lead levels.
 - ii. Giving blood tests to affected employees to determine blood lead levels.
 - iii. Providing a thorough medical exam before assigning an employee to a lead-containing area.
 - iv. Initiating efforts to reduce employee exposure.
- g. The frequency of air monitoring and blood tests varies depending on the levels of lead in the work area and the results of previous blood tests. For instance, employers must take air samples every three months to monitor the exposure of employees who work in areas where lead is at or above the PEL.
- h. If exposure is at or above the action level 30 or more days per year, an affected employee's blood must be tested for lead at least every six months.
- i. If blood tests show that the employee has 40 or more micrograms of lead per 100 grams of whole blood, he or she will have to have a blood test every two months as well as a very detailed medical exam at least annually.
- j. The blood sampling & monitoring should be conducted every 6 months until two consecutive blood samples & analysis are acceptable. The sampling & monitoring should be performed at least monthly during the removal period. Any employee with elevated blood levels should be temporarily removed. Employees should be notified in writing within five days when lead levels are not acceptable. The standard requires temporary medical removal with Medical Removal Protection benefits.
- k. A medical surveillance program is available for all employees who are or may be exposed above the action level for more than 30 days. Medical examinations & procedures shall be performed by or under the supervision of a licensed physician. The medical surveillance is provided without cost to the employees. If the initial determination or subsequent air monitoring reveals employee exposure to be at or above the action level but below the permissible exposure limit the employer shall repeat air monitoring in accordance with this paragraph at least every 6 months. The employer shall continue air monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the action level at which time the employer may discontinue monitoring for that employee.
- l. Affected employees shall be notified of the results of any monitoring performed within 15 working days, either individually in writing or by posting the results in an appropriate location that is accessible to affected employees. Whenever the results indicate that the representative employee exposure, without regard to respirators, exceeds the permissible exposure limit, in the written notice shall be included a statement that the permissible exposure limit was exceeded and a description of the corrective action taken or to be taken to reduce exposure to or below the permissible exposure limit.
- m. Because construction workers tend to do short-term jobs with potentially very high lead levels, OSHA requires even more frequent blood tests for them.
- n. OSHA also requires a medical exam for any employee who works around lead and:
 - i. Has symptoms associated with lead exposure.
 - ii. Has trouble breathing during a respirator fit test.
- o. OSHA also requires an employee's temporary removal from a lead-exposed job situation when:
 - i. Use of engineering controls, protective clothing, respirators, etc. can't bring the blood lead levels down.

Linn-Benton Community College Lead Awareness and Protection Plan

- ii. Blood lead levels average at or above 50 micrograms per 100 grams of whole blood in a series of tests.
- iii. A medical exam places the employee at increased risk of "material impairment of health" due to lead exposure.
- p. Removal from a job is obviously a last resort, but if it's necessary, the OSHA regulation states that the affected employees must retain their pay levels, seniority, and benefits. Once blood levels reach the safety zone, exposed workers can return to their jobs. Close monitoring and testing must continue.

VIII. PROTECTION AGAINST HAZARDS

- a. The fact that this regulation includes such a rigid requirement for air and blood testing - and even for removal from the job in certain circumstances – gives an idea of how seriously government and employers take lead exposure. Fortunately, there are also many ways we can protect ourselves from these hazards. OSHA's regulations also include provisions regarding these protective measures.

IX. TRAINING

- a. LBCC provides this information to ensure that our employees acquire an understanding of the kinds of monitoring, testing, and protective measures required by OSHA's lead regulations. These standards are designed to protect anyone who could be exposed to lead from suffering serious health consequences.
- b. All employees who have a **reasonable potential for exposure** to airborne lead above the OSHA AL shall receive training.
- c. The training shall be performed prior to initial assignment and shall be repeated annually.
- d. The training shall include:
 - i. the content of the lead standard;
 - ii. the sources and types of exposure to lead in their workplace;
 - iii. personal protective equipment use;
 - iv. health hazards of lead;
 - v. respirator use;
 - vi. medical surveillance; and
 - vii. appropriate engineering controls and work practices.
- e. Documentation will be kept in the employee's safety training file.

X. WARNING SIGNS

- a. To make sure that all employees, regardless of industry, are aware that they are entering areas where lead exposure exceeds the PEL, warning signs shall be posted. Employees must abide by any signs/labels/assessment reports indicating the presence of lead containing materials.

Linn-Benton Community College Lead Awareness and Protection Plan

Appropriate work practices should be followed to ensure the lead containing materials are not disturbed. OSHA also requires these areas to be clearly labeled with signs that say:



- b. OTHER INFORMATIONAL/WARNING SIGNS:
- OVEREXPOSURE TO LEAD CAN CAUSE
SERIOUS HEALTH PROBLEMS INCLUDING**
Kidney disease
Nervous system damage
Reproductive difficulties

PRACTICE GOOD HYGIENE

Don't keep food, beverages, tobacco products, or cosmetics in lead containing work areas.

**Don't handle food, beverages, tobacco products, contact lenses, or cosmetics
until you've washed thoroughly.**

BEWARE!

**Construction work on old buildings, bridges, tanks, and other structures
creates an exposure hazard to paint and other materials containing lead.**

XI. VENTILATION - ENGINEERING CONTROLS

- a. Ventilation is one common protection against overexposure to airborne lead. It may be provided by a mechanical system used with enclosures or in containment situations. Or, it may be a local portable ventilation system. Shrouded tools with ventilation are another option.
- b. OSHA requires that when ventilation is used to control exposure, employers must measure the ventilation system's effectiveness at least every three months.

XII. ADMINISTRATIVE CONTROLS

- a. JOB ROTATION
 - i. One way to reduce lead exposure is to rotate jobs so that each individual has less exposure to lead.
 - ii. If this type of administrative control is used, employers must keep records documenting who is rotated, where, and when.

XIII. PERSONAL PROTECTIVE EQUIPMENT (PPE)

- a. RESPIRATORS
 - i. OSHA also requires the use of personal protective clothing and equipment, including respirators, in an effort to keep an individual's exposure to lead at a safe level.
 - ii. Respirators are required when ventilation, job rotation, and other engineering and administrative controls aren't enough to reduce lead exposure below the PEL.

Linn-Benton Community College Lead Awareness and Protection Plan

1. OSHA also gives an employee the right to request a respirator even if lead levels aren't high enough to require one.
- iii. OSHA explains just what types of respirators must be used to provide the needed level of protection for different tasks. In addition, the agency requires employers to train employees to select and use respirators and to conduct fit testing programs. It is essential that the respirator fit properly to make sure that it won't let contaminated air in. The regulation, which recognizes that not everyone can work effectively while wearing a respirator, goes into more detail on respirator fit testing and selection.
- iv. Because construction-related tasks tend to be relatively short-term and create high lead levels, OSHA assumes that respirators will be needed for many tasks.
- v. The lead regulation for construction breaks jobs down into three respirator-type categories, based on the level of exposure associated with each type of job. Unless testing has proved otherwise, employers must assume that these tasks generate sufficient lead levels to require respiratory protection.
- vi. In addition, employees must also be provided with other types of protection, including:
 - a. Personal Protective Equipment (PPE),
 - b. change areas,
 - c. hand washing facilities,
 - d. training, and
 - e. blood tests.
- vii. A half-mask air-purifying respirator is required when performing tasks with the lowest levels of lead exposure above the PEL. These tasks include:
 1. Using a sledgehammer or similar tool to manually demolish walls or other building components coated with lead-based paint.
 2. Manual scraping and sanding of a surface with lead-based paint.
 3. Using a heat gun to melt lead paint on a surface prior to scraping.
 4. General cleanup in lead containing areas.
 5. Removing dirt, scale or paint from structures with lead-based paint using power tools with dust collection systems. These tools might include grinders, brushes, needle guns, or sanders.
 6. Spray painting.
- viii. A powered air-purifying respirator is OSHA's choice for tasks with the next highest levels of lead exposure. These include:
 1. Repainting, repairing or relining high-pressure acid tanks lined with specialized tile or lead brick held in place with lead-containing mortar or grout.
 2. Lead turning that uses torch melting or fusing of lead or alloyed lead to another lead object.
 3. Removing dirt, scale, or paint from lead-based painted structures with power tools that don't have dust collection systems.
 4. Cleaning up after blasting with dry expendable abrasives on structures with lead-based paint.
 5. Moving or removing the enclosures within which abrasive blasting is performed. These enclosures usually have quite a bit of lead residue.
- ix. A supplied-respirator is needed for the jobs that risk exposure to especially high levels of lead in the air. They include:
 1. Abrasive blasting with sand, steel grit, steel shot, aluminum oxide etc.
 2. Using an acetylene torch or arc welder to weld, cut, or burn on steel structures whose coatings or paint contain lead.

Linn-Benton Community College Lead Awareness and Protection Plan

- x. Respirators are a crucial part of an employee's protection when they work in areas with high lead levels. No matter what type of work an employee does, OSHA says that they can change a respirator's filter elements any time they have an increase in breathing resistance. An employee can also leave the work area to wash their face and respirator face piece whenever necessary to prevent skin irritation.

b. CLOTHING

- i. A respirator isn't the only protection an employee is given in a work area with lead exposure above the PEL. OSHA also requires employers to provide protective clothing at least weekly - and employees are required to wear it. In areas with exposure more than four times the PEL without a respirator, an employee will get clean protective clothing daily. In any case, protective clothing may include:
 - 1. Coveralls or similar clothing.
 - 2. Gloves, hats, disposable shoe covers.
 - 3. Face shields, vented goggles, or other appropriate protective equipment.
- ii. To make sure the protective clothing does its job and doesn't create other problems, employers must repair, replace, clean, launder and dispose of protective clothing in a way that doesn't spread the lead contamination around.
- iii. Gloves, hats, vented goggles, and disposable shoe covers shall be provided. Protective clothing shall be cleaned and laundered at least weekly. Clothing shall also be properly disposed and repaired or replaced as necessary.
- iv. An explanation of lead hazards must also be provided to those responsible for cleaning or laundering the protective clothing. In addition, disposal or laundry containers must be labeled:

**CAUTION:WHEN CLOTHING IS CONTAMINATED WITH LEAD.
DO NOT REMOVE DUST BY BLOWING OR SHAKING.**

**DISPOSE OF LEAD-CONTAMINATED WASH WATER IN ACCORDANCE
WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.**

XIV. SAFETY PROCEDURES

- a. Even though the various regulations regarding overexposure to lead provide a variety of protections, each employee must do his or her part too, in order to reduce the chances of developing lead-related health problems.
- b. WEAR REQUISITE PPE
 - i. Employees must use the respirators and protective clothing that are provided for them.
 - ii. LBCC provides the specified PPE to our employees at no extra cost.
 - iii. Employees are to check that they are in good condition before each use. Then remove them according to regulations to prevent the spread of contamination.
- c. GOOD HYGIENE
 - i. Never take food, beverages, tobacco products or cosmetics into work areas with lead exposure at or above the PEL. In addition, employees must wash carefully before handling any of those items.
 - ii. To further reduce the possibility of spreading lead contamination, employers are required to provide showers, change rooms, and lunchrooms for workers exposed to airborne lead above the PEL.

Linn-Benton Community College Lead Awareness and Protection Plan

1. Employees are to use these facilities. In other words, when working with lead, employees are not to just sit down in the work area and eat lunch.
2. At the end of the shift, employees are not to just change clothes and go home.
- iii. When it's time for lunch, employees must wash their hands and face, remove contaminated work clothing or have it vacuumed or cleaned of surface dust.
 1. Never remove lead from protective clothing by blowing or shaking. That would just put more lead dust into the air.
- iv. Once an employee is cleaned up, they may then go to the lunchroom to have lunch.
- v. At the end of the shift, employees must remove their contaminated work clothing according to these rules, shower, and leave the work clothing in the change room.
 1. In the change room itself, clothing and personal clothing are to be stored in separate areas so they don't take lead dust home with them.

XV. GOOD HOUSEKEEPING

- a. OSHA standards mandate that all surfaces be maintained as free as practicable of accumulations of lead.
- b. OSHA recommends the use of vacuums with HEPA filters to clean up floors or other surfaces.
- c. Employees should not use compressed air.
- d. Employees should not shovel, brush, or use dry or wet sweeping unless vacuuming has been tried and found not to work well.

XVI. SUMMARY

- a. It's up to each one of us to take possible lead exposure seriously.
- b. Employees should not ignore any symptoms that could indicate health problems related to working with lead.
- c. Employees need to pay attention to them and report them immediately so the company can investigate the problem and do everything possible to prevent dangerous lead exposure and its effects on the employee's health.