



GOALS

This safety session should teach employees to:

- Realize that exposure to lead can be a deadly proposition.
- Understand that they can keep themselves safe if they take proper precautions and use respirators when necessary.

**Applicable Regulations: 29 CFR 1910.1025 for General Industry;
29 CFR 1925.62 for Construction**



1. For many years, people were unaware of the serious dangers of lead.

- Lead was widely used in lead-based paint, lead pipes and solder, and certain construction materials.
- Today the greatest risk of lead exposure comes from old buildings and equipment.
- Demolition or repairs to these buildings can release lead particles and dusts.

2. There are many serious health hazards associated with lead.

- Even a single exposure to high levels of lead can have severe consequences, including seizures, coma, and death.
- Most problems, however, occur after long-term, low-level exposure—lead builds up in the body, but the effects may not be seen for years.
- Usually lead particles and dust are inhaled or swallowed—the dust can settle on food and a person is unaware that he or she is actually eating it.
- Exposure to lead can result in anemia and damage to the kidneys, the nervous system, and other internal organs.
- It can damage reproductive systems of both men and women. Their unborn children are more likely to suffer birth defects, mental retardation, behavioral disorders, or die during their first year of childhood.
- Symptoms of lead poisoning include loss of appetite, metallic taste in the mouth, nausea, stomach pain, weakness, fatigue, insomnia, muscle or joint pain, numbness, tremors, or dizziness.
- Workers who believe they are suffering from lead exposure must report it immediately to get treatment and avoid serious problems.

3. Because lead can cause such serious health problems, the Occupational Safety and Health Administration (OSHA) has set a permissible exposure limit (PEL) at 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air over an 8-hour period.

- When the PEL is exceeded:
 - Workers must wear respirators.
 - Warning signs must be posted.
 - High-lead areas must be restricted.
- The agency *recommends* exposure levels below 40 $\mu\text{g}/\text{m}^3$, however, and below 30 $\mu\text{g}/\text{m}^3$ for those who intend to have children.



4. OSHA has also set an action level of 30 $\mu\text{g}/\text{m}^3$ of air. Above this action level:

- Steps must be taken to reduce lead levels.
- Air must be monitored every 6 months.
- Employees' blood must be tested if exposed more than 30 days per year.
- An employee whose blood lead level is too high must be removed from the job with no loss of pay or status.
- Employees must be informed of lead hazards and have access to their medical records.
- Ventilation systems must be tested periodically.

5. Respirators are required whenever lead levels exceed the PEL.

Appropriate types of respirators include:

- Half-mask air-purifying respirator for low levels found in such tasks as manual scraping and sanding, heat gun use, and general cleanup;
- Powered air-purifying respirator for working with lead tiles and grout, melting or fusing of lead with a torch, cleaning lead paint or other materials with power tools, or cleaning up after abrasive blasting on lead-based paint; *and*
- Supplied-air respirator for abrasive blasting or using an acetylene torch or arc welder on lead-coated surfaces.

6. Employers must also supply other protective clothing, including coveralls, gloves, hats, shoe covers, and face shields or vented goggles.

- Employers must repair, replace, clean, launder, and dispose of personal protective equipment PPE in ways that will prevent spread of the lead contamination.
- Never blow or shake clothing or other objects covered with lead dust—use a high-efficiency particulate air (HEPA) vacuum to remove as much as possible.
- Follow appropriate personal hygiene practices when working with lead:
 - Wash your hands before eating, smoking, or applying cosmetics.
 - Don't take food, beverages, or tobacco into high-lead areas.
 - Don't eat lunch or leave the workplace wearing lead-contaminated clothing.
 - Remove contaminated clothing, and dispose of it properly.
 - Shower before leaving for home.
 - Store work clothes and personal clothes separately.



DISCUSSION POINTS:

Discuss any restricted areas in your facility or any other areas where lead might occur in paint or pipes and cause exposure if repairs were made.



CONCLUSION:

- Know the risks: Follow the rules and stay healthy.
- The dangers are too great—never take chances around lead.



TEST YOUR KNOWLEDGE:

Have employees take the Lead Hazards and Precautions quiz. By testing their knowledge, you can learn whether they understand the hazards of lead and how to protect themselves and whether they need to review this important topic again soon.



LEAD HAZARDS AND PRECAUTIONS QUIZ

1. Lead is dangerous only in extremely high doses.
a. True b. False
2. Lead particles and dust can easily be swallowed by accident.
a. True b. False
3. Workers must wear respirators when the permissible exposure limit (PEL) is exceeded.
a. True b. False
4. Exposure to lead can result in anemia, and damage to the kidneys, the nervous system, and other internal organs.
a. True b. False
5. No action is necessary until the lead level reaches the PEL.
a. True b. False
6. If you experience symptoms of lead exposure, wait for a few weeks to be sure they weren't caused by something else.
a. True b. False
7. If your clothes become covered with lead dust, just shake them or blow it off.
a. True b. False
8. One type of respirator may be used for all lead levels and all types of tasks involving lead.
a. True b. False
9. The best way to clean up lead dust is to use a use a high-efficiency particulate air (HEPA) vacuum.
a. True b. False
10. Employees exposed to certain amounts of lead may have to have tests to measure the level of lead in their blood.
a. True b. False

When you have completed this quiz, turn it in to your supervisor.

Name: _____

Date: _____



ANSWER TO LEAD HAZARDS AND PRECAUTIONS QUIZ

1. b. False. Lead builds up in the body. Long-term, low-level exposures to lead are very dangerous.
2. a. True.
3. a. True.
4. a. True.
5. b. False. Employers must take steps to reduce lead levels when they reach the action level.
6. b. False. Report symptoms of lead exposure immediately to get treatment and avoid serious problems.
7. b. False. Shaking or blowing the dust just spreads it more.
8. b. False. Different types of respirators are required for low levels and hazards than for more dangerous levels and more dangerous duties.
9. a. True.
10. a. True. Employees who are exposed to lead at the action level or greater more than 30 days a year must have their blood tested.