


LEAD PAINT SAFETY

Welcome to Module 2 on Lead Paint



Leadfacts

FACT
Lead exposure can harm young children and babies even before they are born.

FACT
Even children who seem healthy can have high levels of lead in their bodies.

FACT
You can get lead in your body by breathing or swallowing lead dust, or by eating soil or paint chips containing lead.

FACT
You have many options for reducing lead hazards. In most cases, lead-based paint that is in good condition is not a hazard.

FACT
Removing lead-based paint improperly can increase the danger to your family.

welvant.com

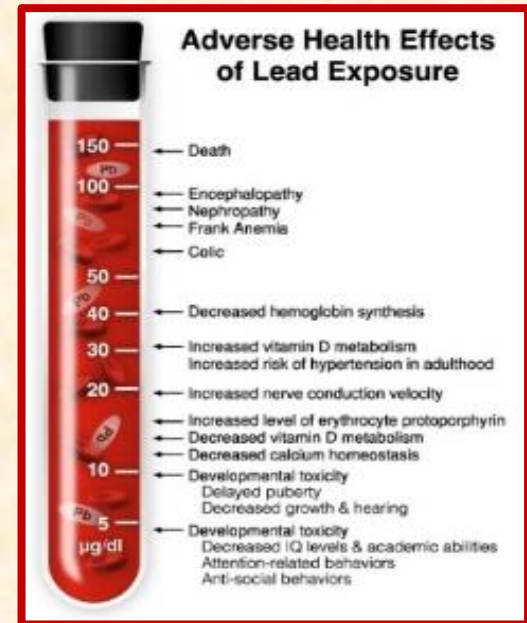
THE FOCUS

1. Health hazards of lead exposure
2. Worker exposure
3. Lead standards – OSHA
4. Employer responsibilities
5. Hazard assessments – biological testing –
6. Employee protection
7. Respiratory protection
8. Contacting OSHA
9. Safety in the Home
10. Checking your family for lead
11. Where lead is found
12. Checking your home for lead
13. How to protect your family
14. State and federal support
15. Renovating, Remodeling, or Repairing (RRP) a Home with Lead-Based Paint
16. For more information



HEALTH HAZARDS OF LEAD PAINT EXPOSURE

Over the next several slides the focus will be on the health hazards of lead paint exposure. It is valuable to have the information just in case lead is found to be inside one's home, or place of employment.



IF SWALLOWED OR BREATHED IN

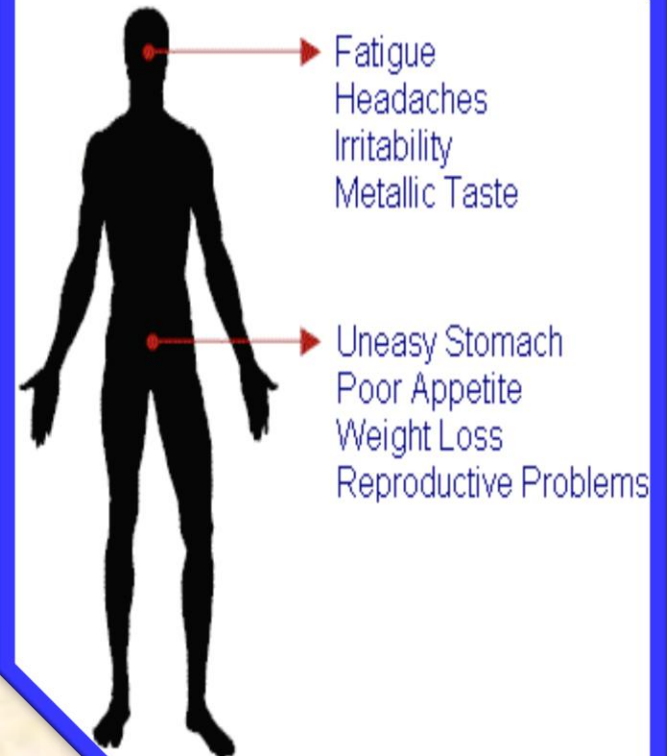
- People, especially children, can swallow lead dust as they eat, play, and perform other ordinary hand-to-mouth activities.
- People may also breathe in lead dust or fumes while they work on jobs that sand, scrape, burn, brush, blast or otherwise disturb painted surfaces that contain lead paint.
- Additionally, pets may be poisoned by the same types of exposure to lead.



ONCE IN THE BODY

- In children, lead poisoning damages the nervous system and causes developmental and behavioral problems that can affect them for their lifetime.
- In adults, lead poisoning causes health and reproductive problems. Pregnant women are especially vulnerable to the effects of lead.

Early Symptoms of Lead Poisoning



CHILDREN UNDER THE AGE OF SIX

- At this age, children's brains and nervous systems are more sensitive to the damaging effects of lead.
- Children's growing bodies absorb more lead.
- Babies and young children often put their hands and other objects in their mouths.
- These objects can have lead dust on them.



WOMEN OF CHILDBEARING AGE

- Women should know that lead is dangerous to a developing fetus.
- Women with a high lead level in their system before or during pregnancy risk exposing the fetus to lead through the placenta during fetal development.



LEAD AFFECTS THE BODY IN MANY WAYS

In children, exposure to lead can cause:

- Nervous system and kidney damage
- Learning disabilities, attention deficit disorder, and decreased intelligence
- Speech, language, and behavior problems
- Poor muscle coordination
- Decreased muscle and bone growth
- Hearing damage

› The classic signs and symptoms in children are:-

- 1- loss of appetite
- 2- vomiting
- 3- weight loss
- 4- constipation
- 5- anemia
- 6- Irritability
- 7- learning disabilities
- 8- behavior problems.
- 9- Children may also experience hearing loss, delayed growth, drowsiness, clumsiness, or loss of new abilities, especially speech skills



IN ADULTS

- Harm to a developing fetus
- Increased chance of high blood pressure during pregnancy
- Fertility problems (in men and women)
- High blood pressure
- Digestive problems
- Nerve disorders
- Memory and concentration problems
- Muscle and joint pain

CLINICAL EFFECTS IN ADULTS

Acute inorganic lead toxicity

- Intense occupational exposure to lead over a brief period of time
- Signs and symptoms
 - ✓ abdominal colic,
 - ✓ constipation,
 - ✓ fatigue,
 - ✓ hemolytic anemia,
 - ✓ peripheral neuropathy,
 - ✓ alteration of central nervous system function



WORKER PROTECTION – PART 1

Protect Your Eyes

- Without the right personal protective equipment, workers may ingest or inhale lead from the job and may risk bringing lead from the worksite home to their families.
- Always wear safety goggles or safety glasses when scraping, hammering, etc.
- Do not hug other people until you have taken off your work clothes. Then, wash your work clothes separately from family laundry.



WORKER PROTECTION – KEEP CLOTHES CLEAN

- Wear disposable protective clothing covers. Disposable protective clothing covers can be stored in a plastic bag and reused if they are fairly clean and are not torn. Small tears can be repaired with duct tape.
- At the end of the work period, vacuum off dust, and remove disposable protective clothing covers. Do not use compressed air to blow dust off disposable protective clothing covers or clothing.
- Wear disposable shoe covers to prevent the tracking of dust from the work area and to protect your shoes from exposure to dust.
- Wear gloves to protect your hands and prevent exposure to dust.
- Wear a painter's hat to protect your head from dust and debris. These are easy to dispose of at the end of the day.

MORE ON WORKER PROTECTION

At a minimum, the employer's worker protection program for employees exposed to lead above the PEL should include:

- Hazard determination, including exposure assessment
 - Medical surveillance and provisions for medical removal
 - Job-specific compliance programs
 - Engineering and work practice controls
-
- Respiratory protection
 - Protective clothing and equipment
 - Housekeeping
 - Hygiene facilities and practices
 - Signs
 - Employee information and training
 - Recordkeeping

WORKERS AT HIGHEST RISK

- Abrasive blasting
- Welding, cutting, and burning on steel structures
- Lead burning
- Using lead-containing mortar
- Power tool cleaning without dust collection systems
- Rivet busting
- Cleanup activities where dry expendable abrasives are used
- Movement and removal of abrasive blasting enclosure
- Manual dry scraping and sanding
- Manual demolition of structures
- Heat-gun applications
- Power tool cleaning with dust collection systems
- Spray painting with lead-based paint



LEAD STANDARDS – OSHA

<http://www.osha.gov/SLTC/lead/index.html>

- The mission of the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) is to assure the safety and health of America's workers by: setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvements in workplace safety and health.
- OSHA has established the reduction of lead exposure as a high strategic priority. This site contains links to lead recognition, evaluation, compliance, and training resources



LEAD STANDARDS - CONTINUED

- The Permissible Exposure Limit sets the maximum worker exposure to lead: 50 micrograms of lead per cubic meter of air ($50\mu\text{g}/\text{m}^3$) over an eight-hour period. If exposure is more than eight hours in a workday, their allowable exposure as a TWA for that day must be reduced according to this formula:
 - Employee exposure (in mg/m^3) = 400 divided by the hours worked in the day.
 - The Action Limit, regardless of respirator use, is an airborne concentration of $30\mu\text{g}/\text{m}^3$, averaged over an eight-hour period.



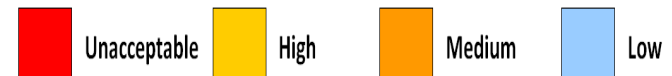
HAZARD ASSESSMENT RISK

An employer is required to conduct an initial employee exposure assessment of whether employees are exposed to lead at or above the AL based on:

- Any information, observation, or calculation that indicates employee exposure to lead
- Any previous measurements of airborne lead
- Any employee complaints of symptoms attributable to lead exposure.

HAZARD RISK ASSESSMENT MATRIX

Frequency of Occurrence	Hazard Categories			
	1 Catastrophic	2 Critical	3 Serious	4 Minor
(A) Frequent	1A	2A	3A	4A
(B) Probable	1B	2B	3B	4B
(C) Occasional	1C	2C	3C	4C
(D) Remote	1D	2D	3D	4D
(E) Improbable	1E	2E	3E	4E



BIOLOGICAL TESTING

Analysis of blood lead samples must be conducted by an OSHA-approved lab and be accurate (to a confidence level of 95 percent) within plus or minus 15 percent, or 6 $\mu\text{g}/\text{dl}$, whichever is greater.

If an employee's airborne lead level is at or above the AL for more than 30 days in any consecutive 12 months, the employer must make biological monitoring available on the following schedule:

- At least every two months for the first six months and every six months thereafter for employees exposed at or above the action level for more than 30 days annually;
- At least every two months for employees whose last blood sampling and analysis indicated a blood lead level at or above 40 $\mu\text{g}/\text{dl}$
- At least monthly while an employee is removed from exposure due an elevated blood lead level.

HAZARD ASSESSMENT - CONTINUED

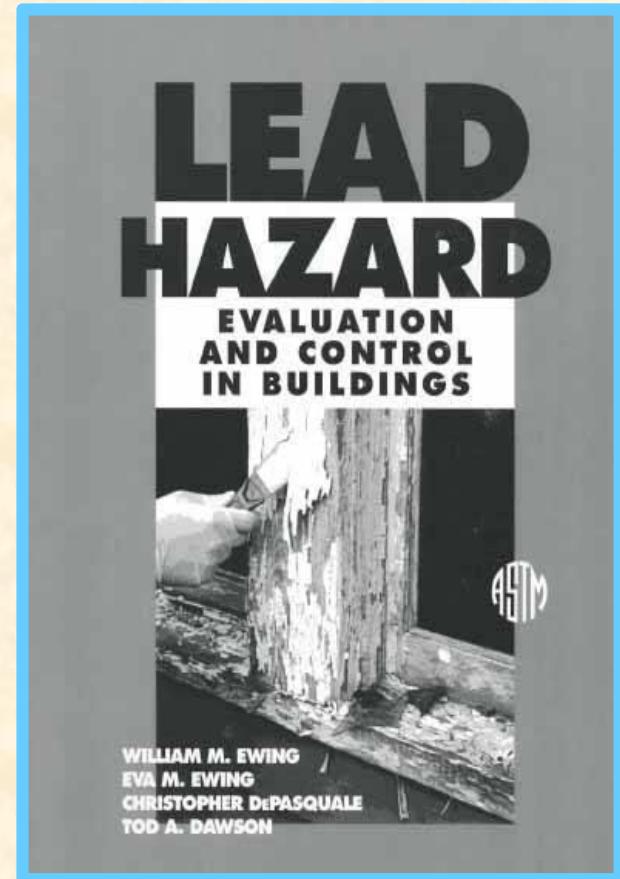
This is a highly complex topic which involves a large number of critical issues including the following:

1. Medical surveillance of employees
2. Medical examinations
3. Test results showing no over-exposures
4. Employee notification of monitoring results
5. Post-medical examination protocols
6. Medical removal (removing an employee after exposure)



EMPLOYER REQUIREMENTS

- The employer must maintain any employee exposure and medical records to document ongoing employee exposure, medical monitoring, and medical removal of workers.
- This data provides a baseline to evaluate the employee's health properly.
- Employees or former employees, their designated representatives, and OSHA must have access to exposure and medical records in accordance with 29 CFR 1910.1020.
- Rules of agency practice and procedure governing OSHA access to employee medical records are found in 29 CFR 1913.10.



RECORD KEEPING – EXPOSURE ASSESSMENTS

The employer must establish and maintain an accurate record of all monitoring and other data used to conduct employee exposure assessments as required by this standard and in accordance with 29 CFR 1910.1020. The exposure assessment records must include:

- The dates, number, duration, location, and results of each sample taken, including a description of the sampling procedure used to determine representative employee exposure
- A description of the sampling and analytical methods used and evidence of their accuracy
- The type of respiratory protection worn, if any
- The name, social security number, and job classification of the monitored employee and all others whose exposure the measurement represents
- Environmental variables that could affect the measurement of employee exposure

ADDITIONAL RECORDS

1. Medical Surveillance Records
2. Documents for employees who are subject to medical removal
3. Employer requirements related to objective data
4. Documents for OSHA and NIOSH review
5. When closing a business

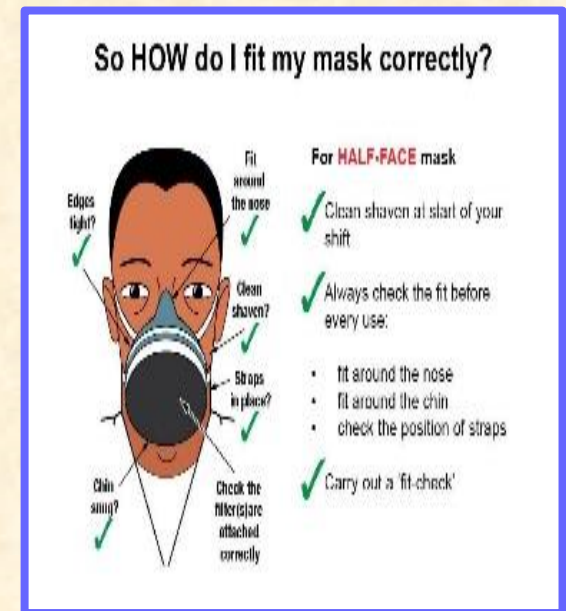


EMPLOYEE PROTECTION

- The most effective way to protect workers is to minimize their exposure through engineering controls, good work practices and training, and use of personal protective clothing and equipment, including respirators, where required.
- The employer needs to designate a competent person capable of identifying existing and predictable lead hazards and who is authorized to take prompt corrective measures to eliminate such problems.
- The employer needs to provide all workers with personal protective equipment, proper shower and washing facilities, change areas, protection from heat stress, end-of-day procedures for safety purposes, protocols for handling contaminated clothing and proper housekeeping practices.
- Employers must educate all their employees on proper personal hygiene practices.

RESPIRATORY PROTECTION – PART 1

- When respirators are required, employers must provide them at no cost to workers.
- The standard requires that respirators be used during periods when an employee's exposure to lead exceeds the PEL, including periods necessary to install or implement engineering or work practice controls, and work operations for which engineering and work practice controls are insufficient to reduce employee exposures to or below the PEL.
- Respirators also must be provided upon employee request.
- A requested respirator is included as a requirement to provide increased protection for those employees who wish to reduce their lead burden below what is required by the standard.



RESPIRATORY PROTECTION – PART 2

- Before any employee first wears a respirator in the work environment, employers must perform a fit test.
- For all employees wearing negative or positive pressure tight-fitting facepiece respirators, the employer must perform either qualitative or quantitative fit tests using an OSHA-accepted fit testing protocol.
- In addition, employees must be fit tested whenever a different respirator facepiece is used, and annually thereafter.
- If daily airborne exposure to lead exceeds $50 \mu\text{g}/\text{m}^3$, affected workers must don respirators before entering work area and not remove them until they leave the high-exposure area or complete decontamination procedure.



SELECTING A RESPIRATOR

- The employer must select the appropriate respirator from Table 1 of the lead standard, 29 CFR 1926.62(f)(3)(i).
- The employer must provide a powered air-purifying respirator when an employee chooses to use this respirator and it will provide the employee adequate protection.
- A NIOSH (National Institute of Occupational Health and Safety) certified respirator must be selected and used in compliance with the conditions of its certification.
- In addition, if exposure monitoring or experience indicates airborne exposures to contaminants other than lead such as silica, solvents, or polyurethane coatings, these exposures must be considered when selecting respiratory protection.



INFORMATION & TRAINING PROGRAMS

- Employers must institute an information and training program and ensure that all employees subject to exposure to lead or lead compounds at or above the action level on any day participate.
- Also covered under information and training are employees who may suffer skin or eye irritation from lead compounds. Initial training must be provided before the initial job assignment.



Knowing the proper procedures makes all the difference.

TRAINING REQUIREMENTS – PART 1

- The content of the OSHA lead standard and its appendices
- The specific nature of operations that could lead to lead exposure above the action level
- The purpose, proper selection, fit, use, and limitations of respirators
- The purpose and a description of the medical surveillance program, and the medical removal protection program
- Information concerning the adverse health effects associated with excessive lead exposure



TRAINING REQUIREMENTS – PART 2

1. The engineering and work practice controls associated with employees' job assignments
2. The contents of any lead-related compliance plan in effect
3. Instructions to employees that chelating agents must not be used routinely to remove lead from their bodies and when necessary only under medical supervision and at the direction of a licensed physician
4. The right to access records under "Access to Employee Exposure and Medical Records," 29 CFR 1910.10



CONTACT OSHA

For more information on grants, training and education, contact the OSHA Training Institute, Directorate of Training and Education, 2020 South Arlington Heights Road, Arlington Heights, IL 60005, (847) 297-4810 or see Training on OSHA's website at www.osha.gov.



SAFETY AT HOME – PART 1

If you think your home has lead-based paint:

- Don't try to remove lead-based paint yourself.
- Always keep painted surfaces in good condition to minimize deterioration.
- Get your home checked for lead hazards. Find a certified inspector or risk assessor at epa.gov/lead.
- Talk to your landlord about fixing surfaces with peeling or chipping paint.
- Regularly clean floors, window sills, and other surfaces.
- Take precautions to avoid exposure to lead dust when remodeling.



SAFETY AT HOME – PART 2

- When renovating, repairing, or painting, hire only EPA- or state-approved Lead-Safe certified renovation firms.
- Before buying, renting, or renovating your home, have it checked for lead-based paint.
- Consult your health care provider about testing your children for lead. Your pediatrician can check for lead with a simple blood test.
- Wash children's hands, bottles, pacifiers, and toys often.
- Make sure children avoid fatty (or high fat) foods and eat nutritious meals high in iron and calcium.
- Remove shoes or wipe soil off shoes before entering your house.



CHECK YOUR FAMILY FOR LEAD

- Get your children and home tested if you think your home has lead.
- Children's blood lead levels tend to increase rapidly from 6 to 12 months of age, and tend to peak at 18 to 24 months of age.
- Consult your doctor for advice on testing your children. A simple blood test can detect lead. Blood lead tests are usually recommended for:
 1. Children at ages 1 and 2
 2. Children or other family members who have been exposed to high levels of lead
 3. Children who should be tested under your state or local health screening plan
- Your doctor can explain what the test results mean and if more testing will be needed.

WHERE LEAD-BASED PAINT IS FOUND

- In homes and childcare facilities in the city, country, or suburbs
- In private and public single-family homes and apartments
- On surfaces inside and outside of the house
- In soil around a home. (Soil can pick up lead from exterior paint or other sources, such as past use of leaded gas in cars.)
- Learn more about where lead is found at epa.gov/lead.



CHECKING YOUR HOME FOR LEAD

- A risk assessment tells you if your home currently has any lead hazards from lead in paint, dust, or soil.
- It also tells you what actions to take to address any hazards.
- A trained and certified testing professional, called a risk assessor, will:
 1. Sample paint that is deteriorated on doors, windows, floors, stairs, and walls
 2. Sample dust near painted surfaces and sample bare soil in the yard
 3. Get lab tests of paint, dust, and soil samples



PROTECT YOUR FAMILY – PART 1

1. If you rent, notify your landlord of peeling or chipping paint.
2. Keep painted surfaces clean and free of dust. Clean floors, window frames, window sills, and other surfaces weekly. Use a mop or sponge with warm water and a general all-purpose cleaner. (Remember: never mix ammonia and bleach products together because they can form a dangerous gas.)
3. Carefully clean up paint chips immediately without creating dust.
4. Thoroughly rinse sponges and mop heads often during cleaning of dirty or dusty areas, and again afterward.
5. Wash your hands and your children's hands often, especially before they eat and before nap time and bed time.

PROTECT YOUR FAMILY – PART 2

1. Keep play areas clean. Wash bottles, pacifiers, toys, and stuffed animals regularly.
2. Keep children from chewing window sills or other painted surfaces, or eating soil.
3. When renovating, repairing, or painting, hire only EPA- or state-approved Lead-Safe Certified renovation firms (see page 12).
4. Clean or remove shoes before entering your home to avoid tracking in lead from soil.
5. Make sure children avoid fatty (or high fat) foods and eat nutritious meals high in iron and calcium. Children with good diets absorb less lead.

STATE & FEDERAL SUPPORT

There are state and federal programs in place to ensure that testing is done safely, reliably, and effectively. Contact your state or local agency for more information, visit epa.gov/lead, or call **1-800-424-LEAD (5323)** for a list of contacts in your area.³



RENOVATING, REMODELING, OR REPAIRING A HOME WITH LEAD-BASED PAINT

- If you hire a contractor to conduct renovation, repair, or painting (RRP) projects in your pre-1978 home or childcare facility (such as pre-school and kindergarten), your contractor must:
- Be a Lead-Safe Certified firm approved by EPA or an EPA-authorized state program
- Use qualified trained individuals (Lead-Safe Certified renovators) who follow specific lead-safe work practices to prevent lead contamination
- Provide a copy of EPA's lead hazard information document, The Lead-Safe Certified Guide to Renovate Right



FOR MORE INFORMATION

- **The National Lead Information Center** Learn how to protect children from lead poisoning and get other information about lead hazards on the Web at epa.gov/lead and hud.gov/lead, or call **1-800-424-LEAD (5323)**.
- **EPA's Safe Drinking Water Hotline** For information about lead in drinking water, call **1-800-426-4791**, or visit epa.gov/lead for information about lead in drinking water.
- **Consumer Product Safety Commission (CPSC) Hotline** For information on lead in toys and other consumer products, or to report an unsafe consumer product, or a product-related injury, call **1-800-638-2772**, or visit CPSC's website at cpsc.gov or saferproducts.gov.



END OF MODULE 2

This concludes Module 2. Please proceed to the 10-question quiz. Once you have completed that, you will have completed the course.

