

# Lead Training



FOCUS FOUR HEALTH  
IN CONSTRUCTION

LEAD

**AGC** Oregon  
Columbia  
Chapter  
ASSOCIATED GENERAL CONTRACTORS

# Lead in Construction (And Other Heavy Metals In Paint)

- Cadmium
- Chromium



FOCUS FOUR HEALTH: LEAD

# Where Will You See It in Construction?

- Primarily during paint disturbance
- Potentially all the trades exposed
- 58,000 persons work in bridge, tunnel, and elevated highway construction and demolition jobs.
- 90, 000 bridges in the US  
are coated with lead-containing  
paints.



**FOCUS FOUR HEALTH: LEAD**

# Rules and Regulations

- OSHA Codes Created:
  - 1978 Lead Standard in General industry (1910.1025)
  - 1993 Lead Standard in Construction (1926.62)
  - Any level of lead in paint
- Who Else?
  - EPA / DEQ
    - Renovation Repair and Paint Program (RRP)
    - Primarily public areas and those with kids under age six
  - HUD
  - Oregon Health Authority

# Oregon OSHA

- You have the right to a safe and healthy workplace
- Employees have the right to report work-related injuries and illnesses free from retaliation

# Oregon OSHA

- No 1% rule (any amount of lead in paint)
- Based upon the activities you do in construction
- Any exposure to employees
- You have the right to a safe and healthy workplace

# Other Construction Sources of Lead

## Powder Actuated Tools



**FOCUS FOUR HEALTH: LEAD**

# Leaded Sheetrock

- Installation
  - Cutting leaded sheetrock
- Demolition



**FOCUS FOUR HEALTH: LEAD**



# HVAC Soldering

Lead in solder (and tin) when making flashing

Hazards:

- Airborne lead
- Contaminated surfaces
- Acids
- Heat (propane)



**FOCUS FOUR HEALTH: LEAD**

# The Real-Real Problem

- Everyone knows about leaded paint
- EPA knows about leaded paint
- Consumers, tenants, HUD, parents... know about leaded paint
  
- Do your employees know about leaded paint?

# Other Sources of Lead

- Leaded paint
- Soil
- Dust
- Drinking water
- Occupations and hobbies:
  - Fishing weights
  - Reloading
  - Stained glass
- Air
  - Lead in gasoline till 1980s
  - Aviation and racing
- Food
- Folk-cure medications
- Vinyl miniblinds
- Pottery
  - Mexico and others
- Leaded glass

# Where is Lead-Based Paint Likely To Be Found?

- On homes or structures built before 1978
- These buildings may have lead-based paint covered by more recently applied paint
- Hazards can be created during construction activities



**FOCUS FOUR HEALTH: LEAD**

# Lead-based paint



FOCUS FOUR HEALTH: LEAD

# When is Lead-Based Paint a Problem?

- When conducting any of the OSHA trigger tasks (see 1926.62)
- When the paint deteriorates and becomes powdery or flaky
- During paint removal



**FOCUS FOUR HEALTH: LEAD**

## **OSHA Trigger Tasks**

- Manual demo
- scraping,
- sanding,
- heat gun,
- power tool cleaning,
- spray painting w/ lead,
- lead containing mortar,
- lead burning,
- rivet busting,
- abrasive blasting,
- welding,
- cutting, and
- torch burning

# Who is at RISK?

- The person removing lead-based paint
- Occupants of the building, and neighbors if dust is widely dispersed
- Family members of persons working with lead-based paint  
(ex) bringing home lead dust on clothes

# Lead Exposure

## Airborne Exposure

- Activities we do that create airborne lead dust or fumes (trigger tasks)
- Heat can cause lead to become a fume

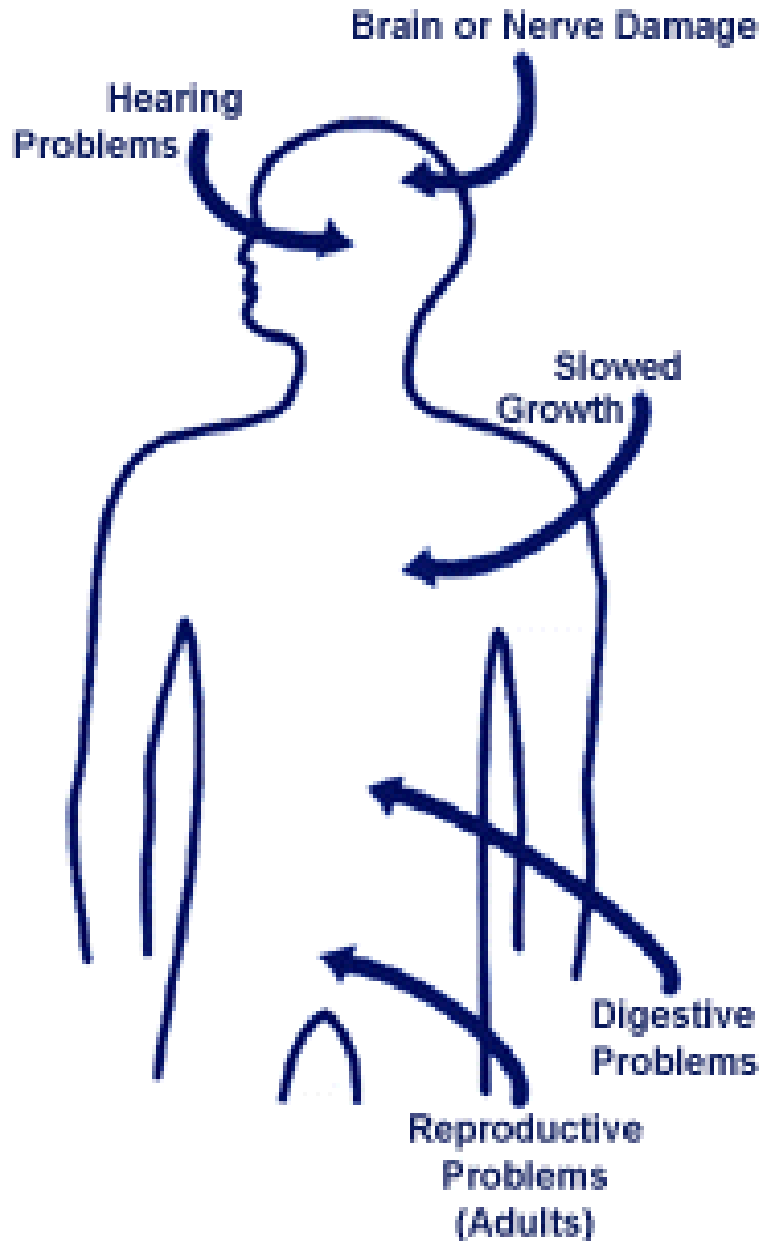
## Ingestion Exposure

- Transfer of lead chips/dust to stomach
- Depends upon:
  - Airborne lead
  - Hygiene / housekeeping practices



# Health Effects of Lead

- Lead enters body (airborne or ingestion)
- Body thinks lead is calcium
- Stores lead in blood and bones
  - Blood lead levels (normal = <10 ug/dl)
  - Takes a while to remove from body



## How Lead Enters and Affects Our Bodies

- Damage to brain
- Behavior and learning problems; hyperactivity
- Slowed growth
- Hearing Problems
- Headaches

**FOCUS FOUR HEALTH: LEAD**

# Common Symptoms of Lead Poisoning

## Mild Symptoms

- Loss of appetite,
- Nausea or constipation,
- Fatigue,
- Irritability or headache,
- Muscle weakness.
- Cardiovascular disease

## Severe Symptoms

- Abdominal cramps or
- Vomiting,
- Confusion,
- Unconsciousness,
- Paralysis (wrist drop).

# Children

- Children are affected by lead **more severely** and at **lower levels** than adults
- Have a tendency to place lead-contaminated finger and toys in mouths
- They can absorb up to 50% of the lead entering their bodies
- Nervous system is still developing
- Body is still looking for calcium
- Studies suggest that relatively low levels of lead can adversely affect development and behavior
  - Center for Disease Control (CDC) recently reduced reference blood lead level for children (<5 g/dl)

# Reproductive Effects

- During pregnancy, lead may pass through to the placenta to the unborn child
- May affect development of nervous system of the baby and increase the risk of premature birth

# Testing for Lead

- As it is not possible to identify lead-based paint by its appearance
- When testing, all surfaces/layers of paint should be tested for lead
- Presume if the building is <1978, unless tested, the paint should be treated as lead-containing
- Testing for lead will not eliminate you from Oregon OSHA lead rules (even when below detection limits)

# Home Test Kits

- Available from some hardware stores
- Determine the presence of lead-based paint, \$10 and \$20
  - Test kits can give false results
  - Test kits can be masked by chromium in paint
  - Will not tell amount of lead (brighter does not necessarily mean more lead)
  - Test kits cannot be used for compliance

# Lead Testing

- Atomic absorption and spectro-photometry are valid analytical methods for lead
- Assure your lab is accredited
- Direct reading
  - Xray fluorescence (XRF)
- Must be DEQ accredited inspector
- Testing for lead in paint will not eliminate you from Oregon OSHA lead rules



# OSHA's lead rule 1926.62

- Interim
- Action Limit
- Full (above Permissible Exposure Limit)
- Based upon trigger tasks and air sampling

# Trigger tasks

When conducting any of the OSHA trigger tasks:  
(see 1926.62) you must follow interim rules

- Manual demo
- Scraping
- Sanding
- Heat gun
- Power tool cleaning
- Spray painting w/ lead, lead containing materials
- Lead burning
- Rivet busting
- Abrasive blasting
- Welding, cutting, and torch burning




**FOCUS FOUR HEALTH: LEAD**

# Painting Over Lead-Based Paint

- Painting over lead-based paint can be done even when the paint is flaking. For more information, refer to the [OR-OSHA booklet](#).
- Painting over the paint is a temporary solution

**A quick guide to**  
**1926.62**  
**Oregon OSHA's construction industry rule for controlling exposure to lead.**



**What you should know and not a word more!**

Oregon OSHA

FOCUS FOUR HEALTH: LEAD

# Choosing a Method of Paint Removal

If you have decided to remove the paint, you will need to choose a safe method of removal. Different ways of removing lead paint create different risks to health.

# Hierarchy of Controls

- Engineering
  - Substitution, ventilation
- Administrative
  - Work practices, schedules
- Protection (PPE)

# Protecting Yourself

- PPE
- Respiratory protection
- Smoking, eating, and drinking
- Hygiene
- Medical monitoring (blood testing)

# Protection of Employees During Assessment of Exposure

- Until the employer performs an employee exposure assessment, *interim protection* must be provided:
- six requirements:

# Interim Protections

- As appropriate:
  - Respiratory protection
  - PPE
  - Change areas
  - Hand washing facilities
  - Biological monitoring
  - Training

---

## Trigger tasks and interim protection

If your employees do trigger tasks, you must assume they're exposed at levels above the PEL until you've done air monitoring to determine their exposures. You must also provide all of the following until you can show they're exposed below the action level:

- Appropriate respirators
- Protective clothing
- Clean areas for changing and storing clothes
- Hand-washing facilities
- Blood sampling for lead
- Training that covers lead health hazards and all parts of the lead standard



# Oregon OSHA Requirements

- PPE
- Respiratory protection
- Protective clothing
- Clean area and storage
- Smoking, eating, and drinking
- Hygiene (hand washing)
- Medical monitoring (blood testing)
- Training

**FOCUS FOUR HEALTH: LEAD**

# Setting Up

- Exterior work
  - Contamination
  - Plastic sheeting
  - Preventing dust migration
- Interior work
  - Remove furniture, etc.
  - Cover openings, etc.

# Cleaning Up

- Continue PPE usage
- Wet all dust
- Vacuum with HEPA (high efficiency particulate air) filter or wet-clean surfaces



FOCUS FOUR HEALTH: LEAD

# Exposure Assessment

Must be done by all employers who have a workplace or operation covered by the lead code 1926.62

# Suggestions

- Choose if you will perform leaded paint activities
- Manage the lead from “cradle to grave”
- Know which rules apply and what jurisdiction
  - Oregon OSHA
  - Airborne exposure monitoring
- Require a lead survey be performed by the owner
  - EPA/DEQ, HUD, City of Portland



# Lead in Construction



This material has been made possible by a grant from the Oregon Occupational Safety and Health Division, Department of Consumer and Business Services

**FOCUS FOUR HEALTH: LEAD**

# Post Test – True/False

1. Lead is only regulated by OSHA.
2. Lead exposure can come from both airborne and from contaminated hands/poor hygiene.
3. Overexposure to lead can cause flu-like symptoms.
4. Lead exposure in children is harmless.
5. Respirators are the first choice for controlling overexposures to lead dust.