

MAJOR PROGRAM POINT

"WORKING WITH LEAD EXPOSURE IN CONSTRUCTION ENVIRONMENTS"

Part of the "CONSTRUCTION SAFETY KIT" Series

"Quality Safety and Health Products, for Today...and Tomorrow"

OUTLINE OF MAJOR PROGRAM POINTS

The following outline summarizes the major points of information presented in the program. The outline can be used to review the program before conducting a classroom session, as well as in preparing to lead a class discussion about the program.

- **In 1978, OSHA issued its "Lead Standard for General Industry."**
 - It did not apply to construction environments.

- **In 1993, OSHA issued the Interim Final Rule for Lead Exposure in Construction.**
 - This extended the same protection provided by the general industry standard to construction workers.
 - The standards are very similar.
 - Most differences deal with tasks of short duration experienced in construction work.

- **Lead is a toxic substance.**
 - Long-term exposure can cause serious health problems.
 - Absorbed in large amounts, lead can even be deadly.

- **Breathing airborne lead dust and fumes is the most common route of entry.**
 - But lead can also be ingested.

- **Once it is absorbed by the body, lead collects in a number of areas, including:**
 - The bloodstream.
 - Bones.
 - Other tissues.

- **Overexposure to lead can occur in two ways:**
 - "Long-term"...where small amounts accumulate in the body over time.
 - "Acute"...where large amounts are absorbed in a short period.

- **Health affects of long-term overexposure to lead can include damage to:**
 - Blood.
 - Kidneys.
 - Nervous system.
 - Reproductive system.

- **Common symptoms of long-term overexposure include:**
 - A metallic taste.
 - A loss of appetite.
 - Nausea.
 - Constipation.
 - Headache.
 - Dizziness.
 - Insomnia.
 - Hyperactivity.
 - Excessive tiredness.
 - Weakness.
 - Pain/soreness in muscles and joints.

- **The major health affect of acute overexposure to lead is "encephalopathy." It:**
 - Affects the brain.
 - Can quickly cause seizures, coma and death.

- **Symptoms of acute overexposure to lead include:**
 - A feeling of dullness.
 - Drowsiness.
 - Grogginess.
 - Poor memory.
 - Restlessness.
 - Irritability.
 - Tremors.
 - Convulsions.
 - Vomiting.

- **Workplace exposures to deadly amounts of lead are very unusual, but not impossible.**

- **OSHA has set a "permissible exposure limit" (PEL) of 50 micrograms of lead per cubic meter of air.**
 - This is the maximum exposure permitted per hour over an 8-hour day.

- **OSHA has also set an "action level" of 30 micrograms of lead per cubic meter of air. It is:**
 - Lower than the PEL.
 - The concentration at which employers are required to provide training and take precautionary measures.

- **If you undergo OSHA-mandated training you will receive instruction in a number of areas, including:**
 - The OSHA standards.
 - Jobs that can result in lead exposure.
 - Associated health hazards.
 - Your employer's written compliance program.
 - Engineering and work practice controls that can limit exposure.
 - The use of respirators.
 - Cleaning and decontamination practices.
 - Your company's medical surveillance and benefits program.

- **Employers must provide this information and training:**
 - Prior to any new job assignments involving lead.
 - Upon request, at any time.

- **OSHA has also set up specific "exposure risk assessment" procedures. They:**
 - Measure airborne lead concentration.
 - Must be used by employers when new operations or tasks are taking place.
 - Are based on air monitoring results or "accepted industry standards".

- **If the assessment shows lead concentrations above the action level, employers must conduct "initial air monitoring".**
 - Air samples are collected over an 8-hour workshift.
 - The samples are then tested for lead concentration.

- **In the construction industry some tasks are of very short duration.**
 - But they can still have the potential for high exposure to lead.
 - Workers must be protected in these situations.
 - The construction industry standard provides "interim protection" while waiting for the results of air monitoring.

- **OSHA has divided construction tasks into three categories.**
 - They are based on the potential for airborne lead concentration.
 - Each category requires different types of respirators to be used.

- **The first category includes tasks with potential exposure of ten times the PEL. Where lead-based paint is present, this includes:**
 - Manual demolition.
 - Manual scraping.
 - Manual sanding.
 - Heat gun use.
 - Paint removal with power tools (that have dust collection systems).

- **The second category deals with concentrations of up to 50 times the PEL. This includes:**
 - Rivet busting.
 - Paint removal with power tools (that don't have dust collection systems).
 - Moving "abrasive blasting enclosures".
 - Cleanup.
 - Lead burning.
 - Using mortar containing lead.

- **The third category deals with tasks generating concentrations exceeding 50 times the PEL, including:**
 - Abrasive blasting.
 - Welding.
 - Cutting.
 - Torch burning.

- **For any category of exposure your employer will provide you with the appropriate personal protective equipment (PPE).**
- **The three categories have been set up to provide "interim" protection for workers while they are waiting for the results of air monitoring.**
 - When the results are received, employers can adjust protection measures accordingly.
- **If air monitoring shows lead concentrations to be below the action level, no air sampling is required until conditions change.**
- **If monitoring shows concentrations that are at or above the action level:**
 - Additional air monitoring is required.
 - Monitoring will be conducted at different intervals (depending on the concentrations).
- **If the results of monitoring show concentrations to be below the PEL, use of PPE may be discontinued.**
- **If the lead concentration is above the PEL, exposure controls required by the standard must be used to reduce exposure to below the PEL.**
- **Your employer must inform you of the results of any air monitoring that is conducted:**
 - It must be in writing.
 - It must be issued within five days.
 - If lead concentrations were above the PEL, a description of the protective actions being taken must be included.
- **Both OSHA lead standards require employers to implement a written compliance program which must include:**
 - Descriptions of work activities involving lead.
 - Records of air monitoring.
 - Methods used to limit employee exposure.

- **"Engineering controls" are one way employers can limit lead exposure. These include:**
 - Mechanical ventilation.
 - Containment systems.
 - Local exhaust ventilation systems.

- **"Work practice controls" are another method of control, and include:**
 - Wetting paint before scraping.
 - The use of vacuums with high efficiency particulant filters (HEPA filters).

- **"Administrative controls" are also recommended, and include:**
 - Abbreviated shifts.
 - Job rotation.

- **OSHA says respirators should only be used when other compliance methods are not effective or feasible (or when lead concentrations are unknown).**
 - They are the last line of defense.
 - If you must use one, it is important that you choose the correct respirator for your activity.
 - Check with your supervisor if questions arise.

- **OSHA requires respirator fit-testing.**
 - This insures proper "face-fit".
 - They test for necessary protection.

- **Employers must provide instruction regarding:**
 - The proper use of respirators.
 - Respirator maintenance.
 - Changing cartridge filters.

- **Hygiene facilities and practices are also important in preventing lead exposure.**
 - These include changing rooms/decontamination chambers.

- **When removing contaminated clothing:**
 - Never shake/blow off excess lead dust.
 - Use a HEPA vacuum.
 - Deposit contaminated clothing in appropriate containers.

- **Employers must provide showering facilities, where feasible.**
- **If showers are not provided, you must:**
 - Wash your face and hands before leaving work.
 - Shower immediately upon getting home.
- **Eating areas must also be kept as free of lead as possible.**
 - Never enter these areas wearing PPE (unless it has been thoroughly cleaned).
 - Wash your face and hands before eating, smoking and applying cosmetics.
- **Even with appropriate precautions, lead exposure can occur.**
 - That is why OSHA requires that "medical surveillance programs" be established.
- **A surveillance program includes, at no charge to employees:**
 - Blood testing.
 - Medical examinations.
- **Blood samples measure indicators of recent and short-term lead exposure, including:**
 - Blood lead level (BLL).
 - Zinc protoporphyrin level.
- **Additional blood sampling is based on results of initial tests:**
 - The higher the BLL, the greater the sampling frequency.
 - Employers must inform you of your BLL within five days of receiving test results.
- **Medical examinations are another part of a surveillance program. They:**
 - Must be conducted under the supervision of a licensed physician.
 - Be based on results of blood tests.
 - Are also required if any lead symptoms occur.
- **If your BLL is too high, "temporary medical removal" will be required.**
 - You must be moved to another work area, with less exposure...or...
 - Be sent home with pay (this is based on "medical removal benefits guidelines").

- **Temporary medical removal gives your body a chance to reduce its lead levels.**
 - Blood sampling and medical examinations will continue.
 - You cannot return to your original job until your BLL gets to a safe level.

- **Doctors can also recommend temporary medical removal for other reasons, such as:**
 - Anemia.
 - Other conditions that make you more susceptible to lead exposure.

- **Lead absorbed by the body can have negative affects on men's and women's reproductive systems.**
 - OSHA recommends that workers who are planning to have children maintain their BLL below 30 micrograms per deciliter.

- **The lead standards require employers to provide medical removal protection benefits that maintain employees' normal:**
 - Earnings.
 - Benefits.
 - Job status.
 - Seniority.
 - Other employment rights.

- **Employers are also required to maintain a number of records, including:**
 - Exposure assessments.
 - Air monitoring data.
 - Blood testing results.
 - Medical examinations records.
 - Temporary medical removal data.

- **These records must be made available upon request to:**
 - Affected employees.
 - Former employees.
 - Employees' designated representatives.

*** * * SUMMARY * * ***

- **Become familiar with the lead standard that affects you.**
- **Discuss how the standard applies to you and your company.**
- **Remember that lead is toxic, and can pose serious hazards.**
- **Exercise extreme caution when working in lead exposure situations.**
- **If you are uncertain about the safety precautions that you should take when working in environments where lead exposure could occur, ask your supervisor.**