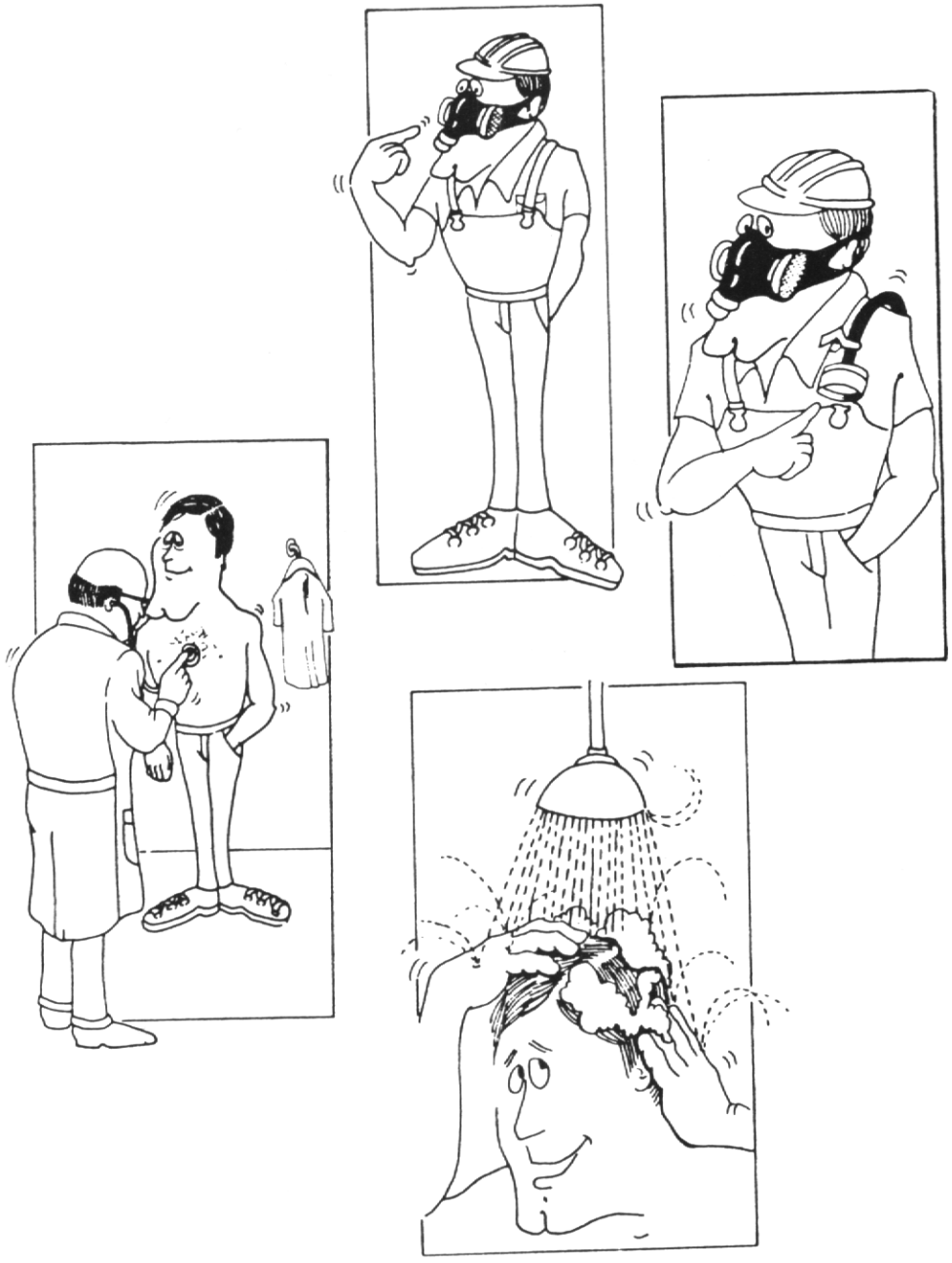
EMPLOYEE GUIDE TO OSHA LEAD STANDARD



Employee Guide to OSHA Standard for Lead

MODULE I - Lead and Your Health
MODULE II - Air Monitoring
MODULE III - Respirators
MODULE IV - Personal Hygiene

Reprinted
by
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Compounds Covered by the Standard

On March 1, 1980 OSHA's Final Standard for Lead went into effect. The purpose of this Standard is to set regulations for your health protection. The Standard applies to all industries in which workers are exposed to elemental lead, inorganic lead compounds or lead "soaps," except the construction and agricultural industries.

MODULE I

EMPLOYEE GUIDE TO OSHA LEAD STANDARD

LEAD AND YOUR HEALTH

WHAT IS OSHA?

OSHA stands for Occupational Safety and Health Administration. It is a division of the Department of Labor and was created in 1970 when Congress passed the OSH Act. It is OSHA's job to set industry safety standards and to enforce them. After holding public hearings, OSHA issued a Final Standard for Lead on November 14, 1978.

WHAT IS THE OSHA STANDARD FOR LEAD?

OSHA's "Standard," as it is referred to, is a 27-page document which reviews much of the clinical and scientific data available about lead and its effects on humans. The Standard contains OSHA's decisions about which levels of lead exposure are safe for your health. The Standard also sets forth your rights and your employer's responsibilities concerning such things as air lead levels, medical surveillance, work habits, and hygiene.

HOW CAN THIS BOOK HELP YOU?

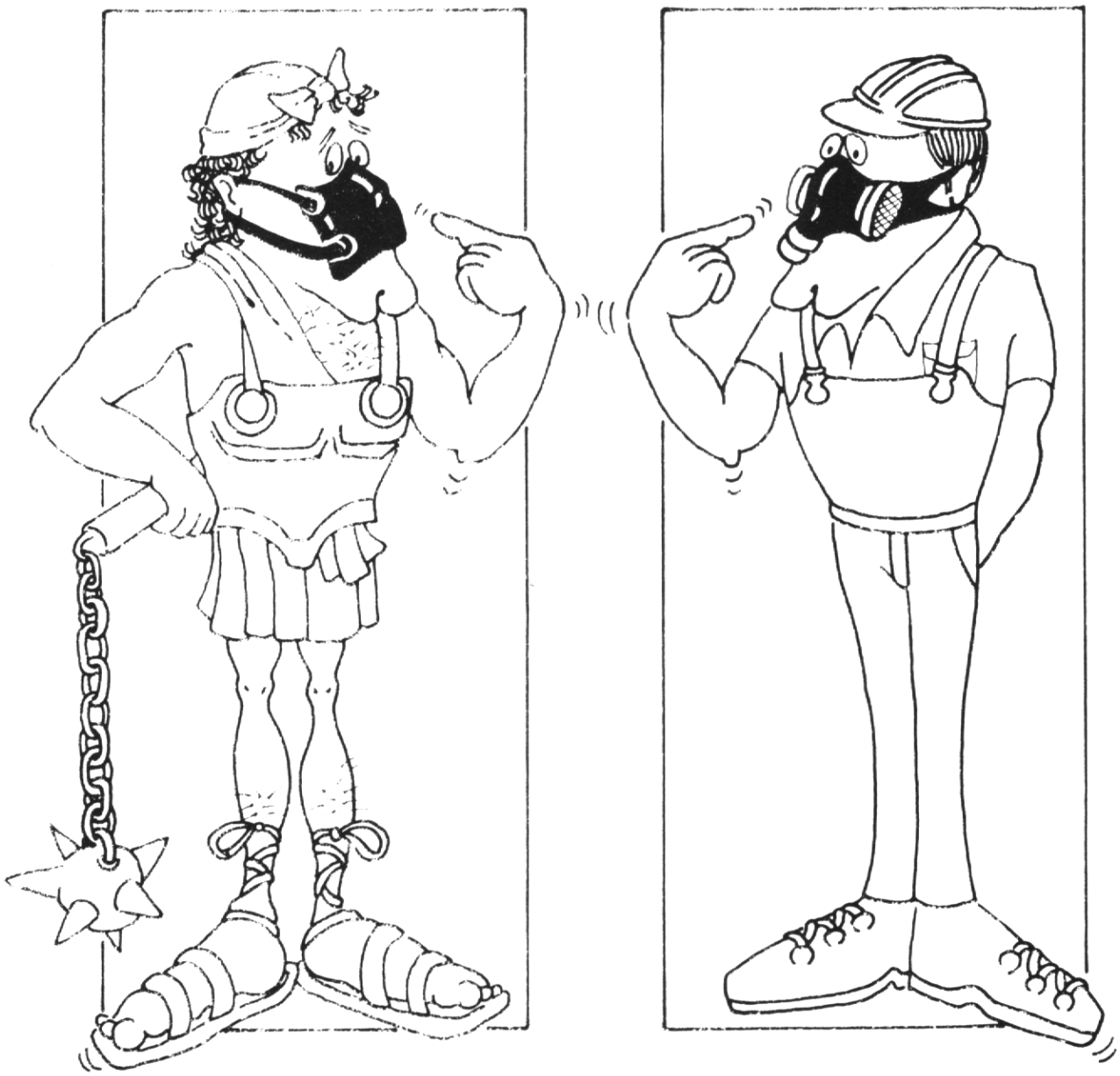
This booklet is a guide to the Standard. It contains all the information you need to know to keep yourself healthy and your workplace safe. It tells you what the Standard says, what rights you have, and what you can do to protect your health. ***This booklet is a valuable tool — use it!***

LEAD

Substance

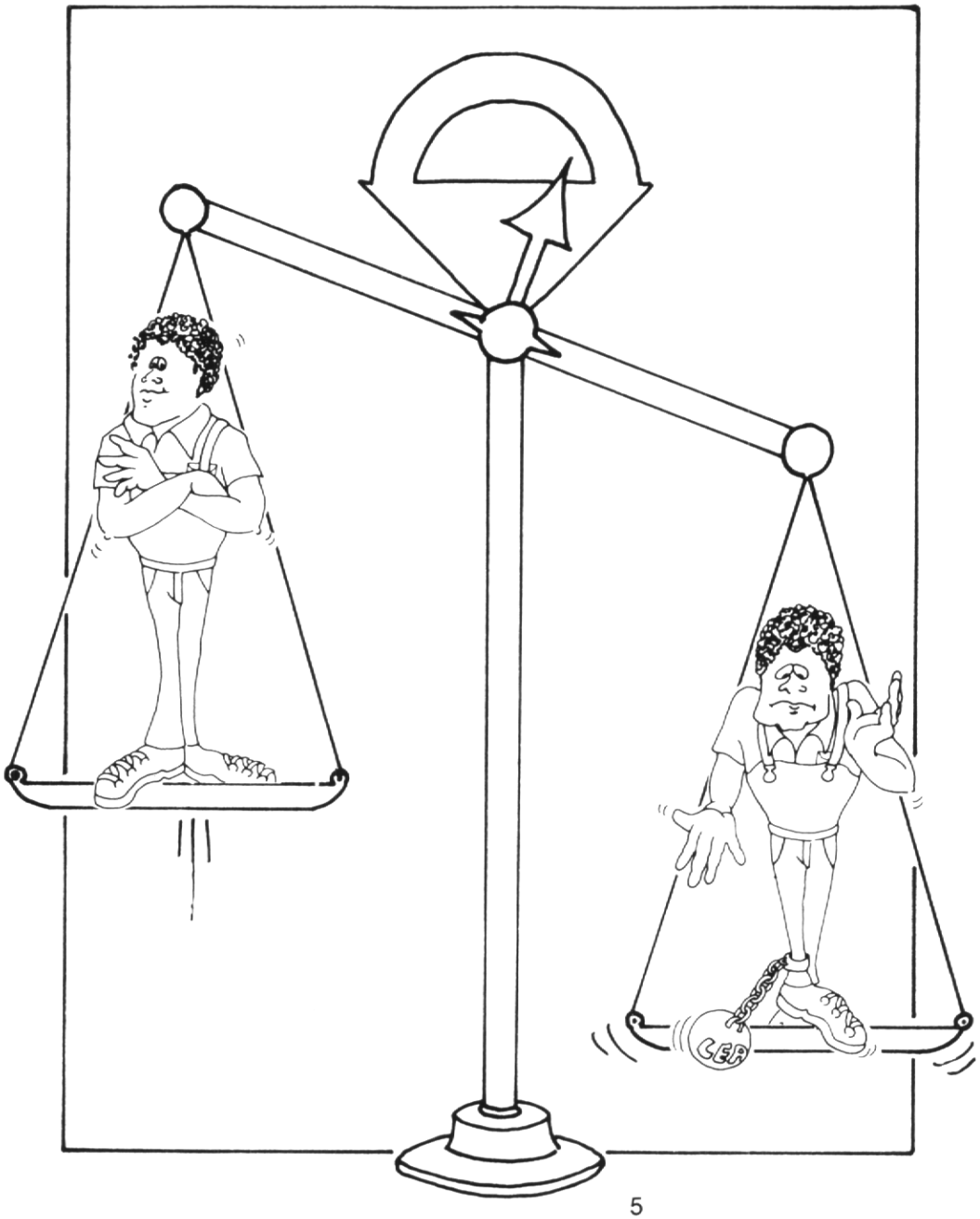
Lead (Pb) is a natural substance. It is usually thought of as a heavy metal. But it is also a basic chemical element which can combine with other substances to form lead compounds.

It has been mined since the earliest days of man's history, and the Romans were familiar with the health problems associated with lead. One Roman made a respirator out of an animal's bladder! Even though lead has been around for so long and has been studied more closely than just about any other metal, there is still disagreement about the effects of lead on your health. But there is no disagreement about this - ***Lead is toxic and overexposure is dangerous!***



HEALTH HAZARDS

Because lead is a natural part of our environment, we all live with a certain amount of lead in our systems. In addition, we all take lead into our bodies during the course of our everyday activities. Most of the lead taken in during the day is excreted and so a ***balance*** is maintained. But because you work in a lead-related industry your exposure to lead is ***greater*** than the average person's. Your body can't eliminate the amount of lead taken in, and, as a result, the ***balance is destroyed.*** Lead begins to build up in your blood, cells, and organs. It builds up ***gradually*** though, so you are unaware that it is happening until you begin to experience the symptoms of ***lead poisoning.***

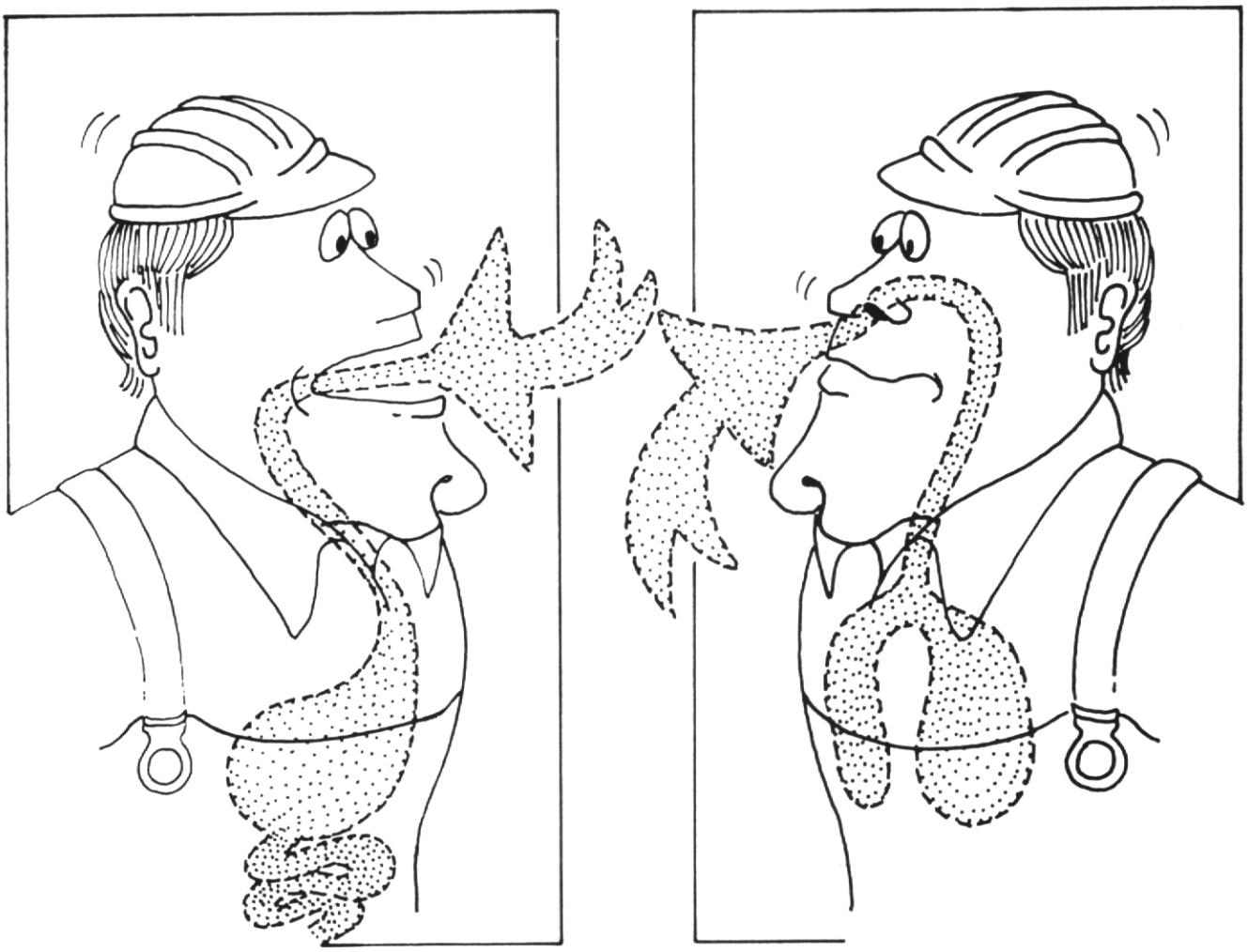


HOW DOES LEAD ENTER THE BODY?

Lead can enter the body in either of two ways: through ***Inhalation*** (breathing) or through ***Ingestion*** (swallowing).

When lead is heated, it gives off fumes. These fumes enter the air of a workplace and can easily be inhaled. Once inhaled, they enter the lungs where lead is absorbed into the bloodstream. If absorbed in sufficient amounts, it will begin to build up in the body.

Lead dust is also a common hazard in the workplace. While lead dust can be inhaled, it can also be ingested. Lead dust can build up on hands, clothing, cigarettes, food, etc., and can be transferred to the mouth where it is swallowed, enters the stomach, and is absorbed.



WHAT ARE THE EFFECTS OF LEAD BUILDUP IN THE BODY?

Lead is a poison at a high enough dose. Overexposure to it can cause serious illness and even death. There are two types of overexposure – Acute and Chronic.

Acute Overexposure

Acute overexposure occurs when you absorb a large dose of lead within a short period of time. A condition known as *encephalopathy* develops which results in seizures, coma, and often death. This stage of lead poisoning is the most severe—and also the most rare. It is most often associated with lead-poisoned children. In industry it almost never happens, but you should be aware that it might.

Chronic Overexposure

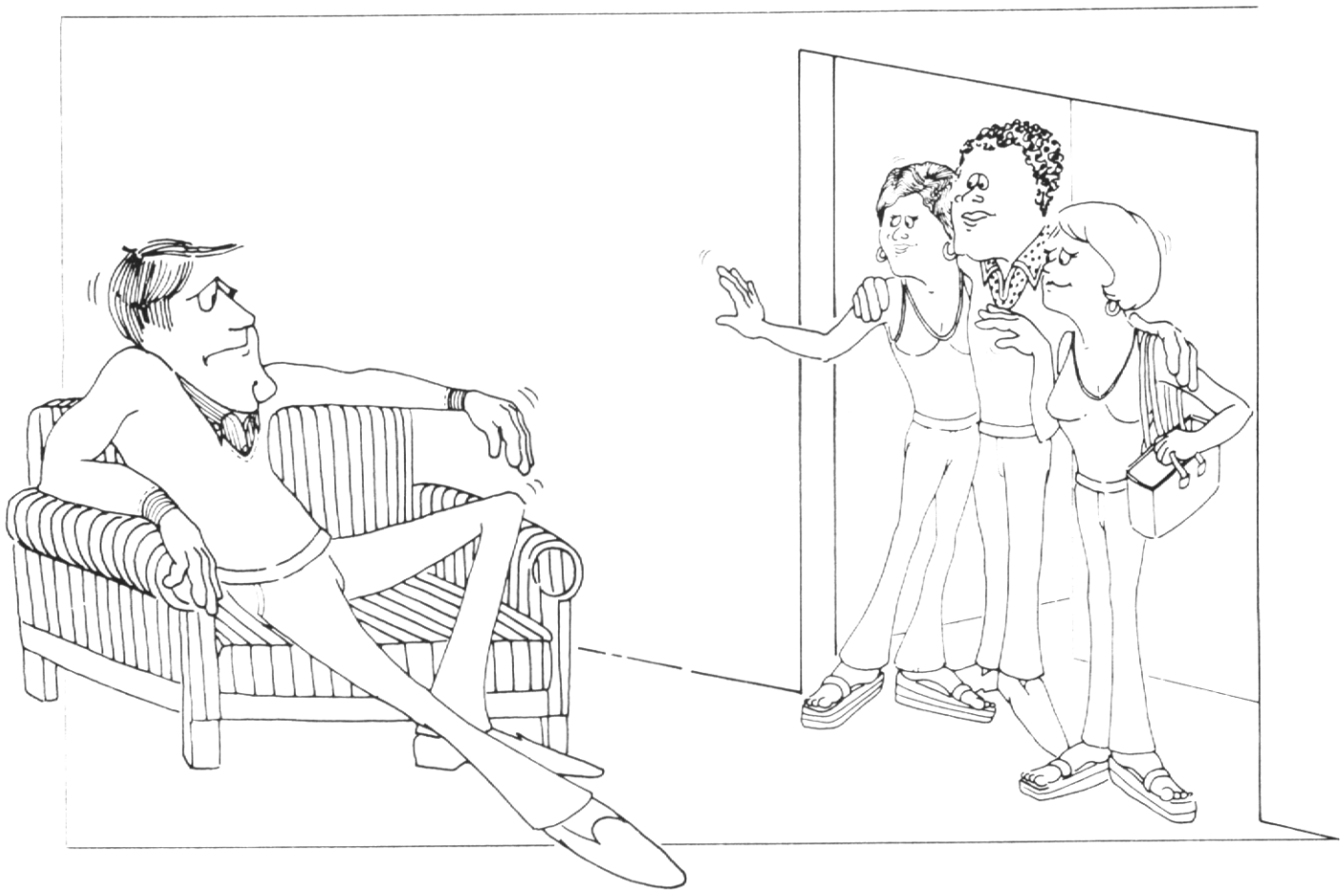
Chronic overexposure occurs with the slow, continual absorption of lead over a long period of time. ***Chronic overexposure is the real danger in industry.*** Because the accumulation of lead in your system is slow, and because the effects are not always noticeable or distinguishable from those associated with minor illnesses, ***chronic overexposure is often overlooked*** - until its signs are unmistakable. By then, permanent and irreversible damage may have already occurred.

SIGNS & SYMPTOMS OF CHRONIC OVEREXPOSURE TO LEAD

Chronic overexposure to lead can impair vital functions of the body as well as damage vital organs. Among the parts of the body affected by lead are the blood, the gastro-intestinal tract, the nervous system, the kidney, and the reproductive system.

Blood

Overexposure to lead can lead to anemia. This occurs when the lead in your system interferes with your body's ability to produce and sustain red blood cells. As a result there is a general ***lowering of your hemoglobin,*** an oxygen-bearing substance in the red blood cells. This lessening of oxygen in the blood can lead to feelings of ***dizziness*** or ***fatigue***. According to OSHA, these symptoms may develop with blood lead levels as low as 50μg/100g blood in some highly sensitive people.



Gastro-Intestinal Tract

Excessive absorption of lead can also affect the gastro-intestinal tract. This is probably the most common, and mildest, form of industrial lead poisoning. Experts do not completely understand how lead affects the gastro-intestinal system, but the symptoms are easily recognized: colic (stomach pain), anorexia (loss of appetite), nausea, vomiting, diarrhea, and constipation. Another sign is an ashen color to your skin. Intestinal colic rarely appears below blood lead levels of 80μg/100g blood.

Kidney

Long-term exposure to large doses of lead can result in kidney damage. Although exposure levels in modern industry are not generally high enough to cause serious kidney damage, you must be very careful because:

1. Once the kidney is damaged, it cannot be repaired, and
2. Normal biological monitoring (blood lead tests and physicals) cannot detect kidney damage.

Your best protection against kidney damage is to limit your intake of lead by following your own common sense and the work rules set down for your protection.

Nervous System

Lead can have a bad effect on both the ***central nervous system*** (brain, spinal cord) and ***peripheral nervous system*** (nerves in arms, legs, etc.). Central nervous system ailments are extremely rare. Most industries do not have high enough concentrations of lead to cause ***lead encephalopathy,*** a disease which can result in paralysis, convulsions, and delirium. Symptoms may include headache, insomnia, bad dreams, personality changes, hyper-irritability, and tremor. Signs of central nervous system disorders rarely occur below blood lead levels of 100 μg/100g blood.

Damage to the peripheral nervous system is more common than damage to the central nervous system, but it is still rare in modern industry. Some recognizable signs include weakness in the hands and fingers, "wrist drop" or "foot drop," and tremors. These symptoms are referred to as "lead palsy" or "painter's palsy." The symptoms are the same as those for intestinal colic, except that there is greater muscle and joint discomfort.

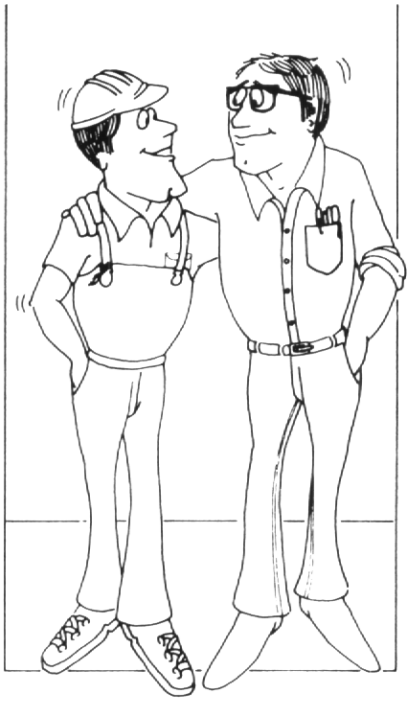
Reproductive System

Overexposure to lead may have serious effects on the reproductive systems of both men and women. ***Pregnant women,*** in particular, should avoid prolonged exposure to lead because it can cross the placental barrier and affect the fetus. Although the exact effects of lead exposure on a fetus are not known, it is reasonable to assume that the fetus cannot accept the same blood levels as adults. Therefore, a pregnant woman has to be even more careful about her exposure to lead than anyone else. Women, in general, who have been overexposed to lead have reported menstrual irregularities, and a greater frequency of sterility, as well as an increased number of premature births, miscarriages, and stillbirths.

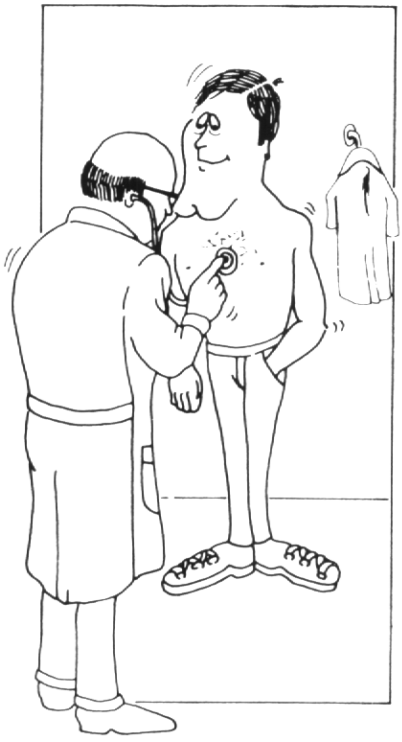
Men can also suffer from reproductive system disorders. Although experts disagree greatly on the subject, OSHA feels there may be a decrease in sexual desire, impotence, decreased ability to produce healthy sperm, and sterility, all as a result of chronic overexposure to lead.

WHAT CAN YOU DO ABOUT IT?

First of all, you should ***notify your employer*** if you develop any of the signs or symptoms associated with lead poisoning or if you desire medical advice about your ability to have healthy children.



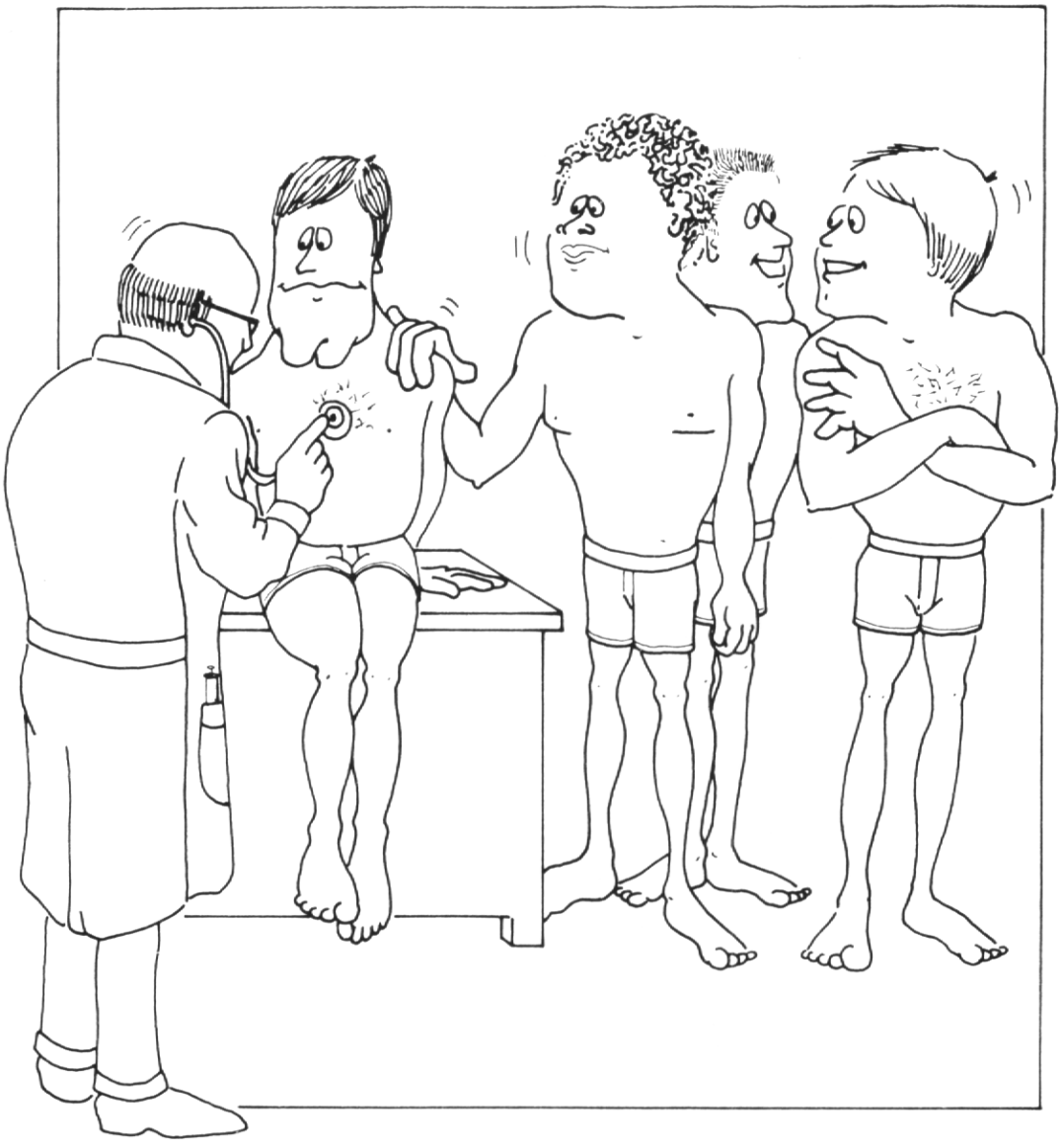
Secondly, you should ***participate in your company's Medical Surveillance Program*** which has been established for your health protection.



Finally, you should know the dangers, signs and symptoms of lead overexposure and ***take common-sense steps*** to reduce your risk.

WHAT IS YOUR COMPANY'S MEDICAL SURVEILLANCE PROGRAM?

Only through individual medical surveillance is it possible to determine how you, individually, are being affected by the exposure to lead. No two people are the same; no two people will react the same way to the same exposure. The only way you can be sure of your reaction is to participate in your employer's medical surveillance program.



Your participation in this program is especially important if:

- you have a high burden of blood lead from past exposures
- you are exposed to additional lead outside of work
- you have a medical condition which could be made worse by exposure to lead
- your lead absorption rate changes

OSHA Requirements

OSHA has established several rules which must be followed in regard to your company's medical surveillance program. First, you must be provided with medical surveillance (physical examination and blood lead testing) if you are exposed to air lead above the "action level" (30 $\mu g/m^3$) for 30 days or more a year. Second, the employer must provide the medical service free of charge and at a convenient time and place. All medical services must be performed by, or under the supervision of, a licensed physician.

If you are exposed to lead above the action level for 30 days or more, you must have a PbB (blood lead) and ZPP (zinc protoporphyrin) test every six months. The PbB test determines the number of micrograms (μg) of lead in every 100 grams (g) of blood. If your blood lead exceeds 40 micrograms per 100 grams (written 40 μg/100g) your testing must be increased to ***every two months.*** Furthermore, your employer must inform you in writing if your blood lead is in excess of 40 μg/100g. He must also inform you in writing of the provisions of the Medical Removal Plan (see below).

Medical Examinations

If your PbB test shows that your blood lead level is at or above 40 μg/100g blood, you must then give the doctor the necessary information about your work and medical history, and the physical must include tests to check your blood chemistry and kidney function. You may also ask for a laboratory evaluation of male fertility or a pregnancy test; ask for whichever applies. The physician must provide the company with a *written opinion,* and you must receive a copy. You also have the right to request a multiple physician review of any medical findings or recommendations by the doctor.

MEDICAL REMOVAL PROTECTION

Medical Removal Protection (MRP) permits your employer to *temporarily* remove you from a high-exposure operation if your blood lead becomes too high. Under the OSHA-established MRP, you are entitled to:

- protection of your earnings, seniority or other benefits which you would have had;
- your job back when you are able to return to it.

If your average blood lead level reached 50u/100g, you will have to be removed from any job where the air lead exposure is 30 ug/m or greater, and you cannot return until your blood lead drops to 40ug/100g or less.

You may also be removed upon the written recommendation of the company doctor. In such cases you will only be allowed to return to your job when the doctor says that it is safe for you to do so.

If you were removed from your job as a result of elevated blood levels, you must be given a monthly blood test. If you were removed as the result of a doctor's recommendation, you must be given the tests or examinations which the doctor prescribes.

Note: Failure to comply with the follow-up medical service may cause you to lose your benefits under MRP.

Medical Removal is a last resort and is not desired by anyone. You may have to be moved to a job or a shift that you do not like. Your employer will have to train a new person to take your place. To avoid medical removal:

- participate in your company's medical surveillance plan
- use common-sense work habits and personal hygiene to avoid overexposure.

WHAT IS CHELATION?

Chelation is a term used to describe the regular use of drugs to lower blood lead levels. The use of drugs to ***prevent*** elevated blood levels is strictly forbidden by OSHA.

Under no circumstances should you be ***routinely*** given chelating drugs as a means of keeping your blood lead down. You could experience serious side effects as a result of the regular chelation.

Under special circumstances, a doctor might prescribe a chelating agent. If this happens, you must be informed in writing before the treatment begins. The treatment must be supervised by a doctor and conducted in a ***clinical setting.*** You also have the right to seek a second opinion.

Chelation is not necessary - good personal hygiene and work habits are your best protection.

RECORDKEEPING

Your employer is required to keep your medical records on file for 40 years or for at least 20 years after your termination of employment, whichever is longer. These records must show your name, results of any blood lead tests or physical examinations, and any opinions written by a physician.

If you have been temporarily removed from a job under the MRP, this must also be kept on file and must include, in addition to your name and social security number, the dates of removal and return and the reason for removal.

You or your authorized representative have a right to see these records.

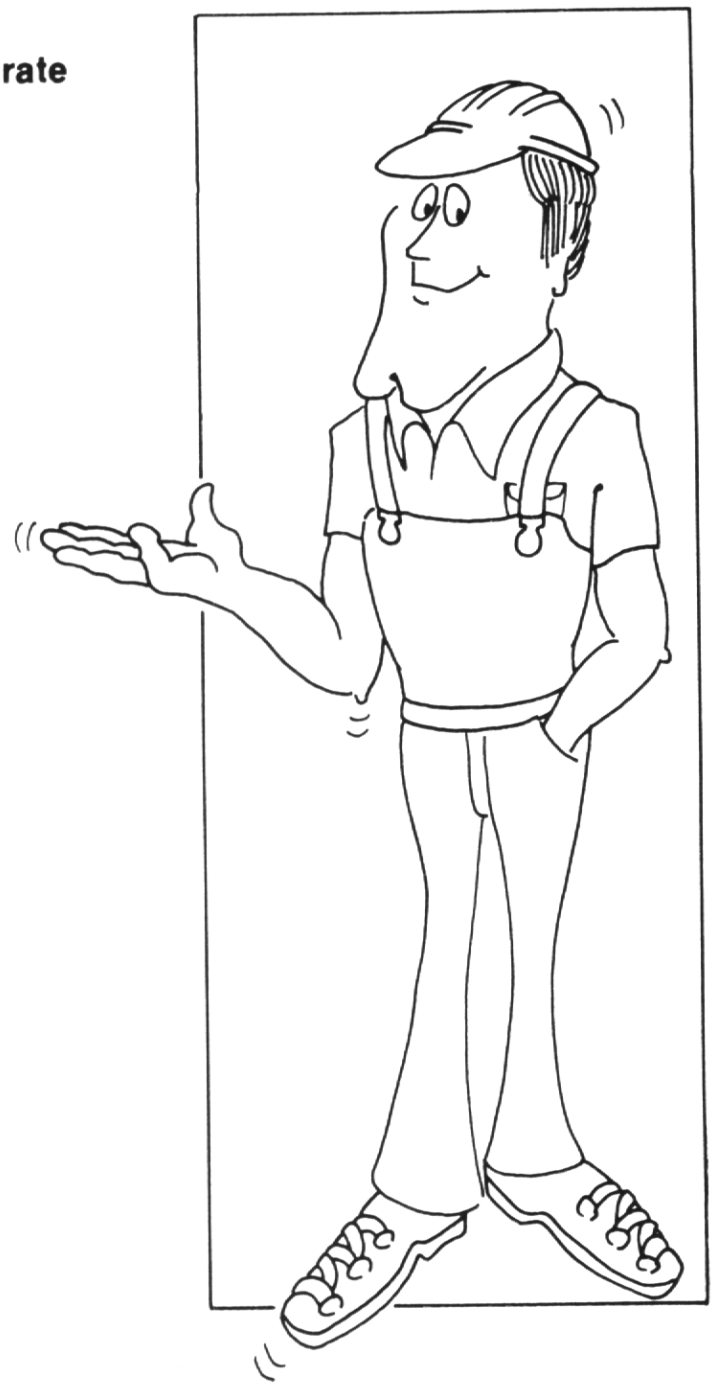
When You Work With Lead, Use Your Head!

Cooperate

Use Your Common Sense

Be Informed

Participate



MODULE II

EMPLOYEE GUIDE TO OSHA LEAD STANDARD

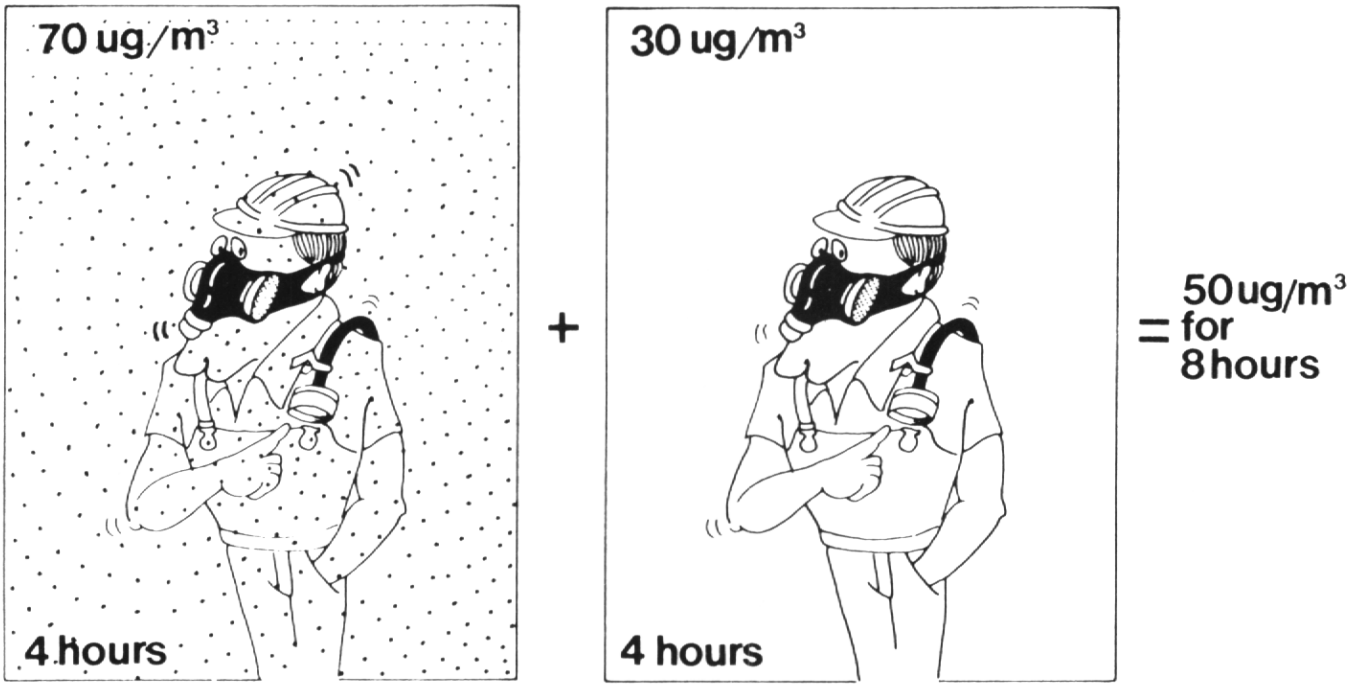
AIR MONITORING

PERMISSIBLE EXPOSURE LIMIT

While you are working in a lead-related industry you may be exposed to lead in the form of dust and fumes. This airborne lead presents a threat to your health, and for your protection, OSHA has a standard of 50 micrograms of lead per cubic meter of air (50 μ/m^3) averaged over an eight-hour workday as the highest level of air lead to which you can be exposed.

This is called the ***Permissible Exposure Limit, or PEL.***

The PEL is an *average* — so you may be exposed to airborne lead which exceeds 50 $\mu g/m^3$ for short periods during the day, just as long as your average exposure for an eight-hour day does not exceed the limit.



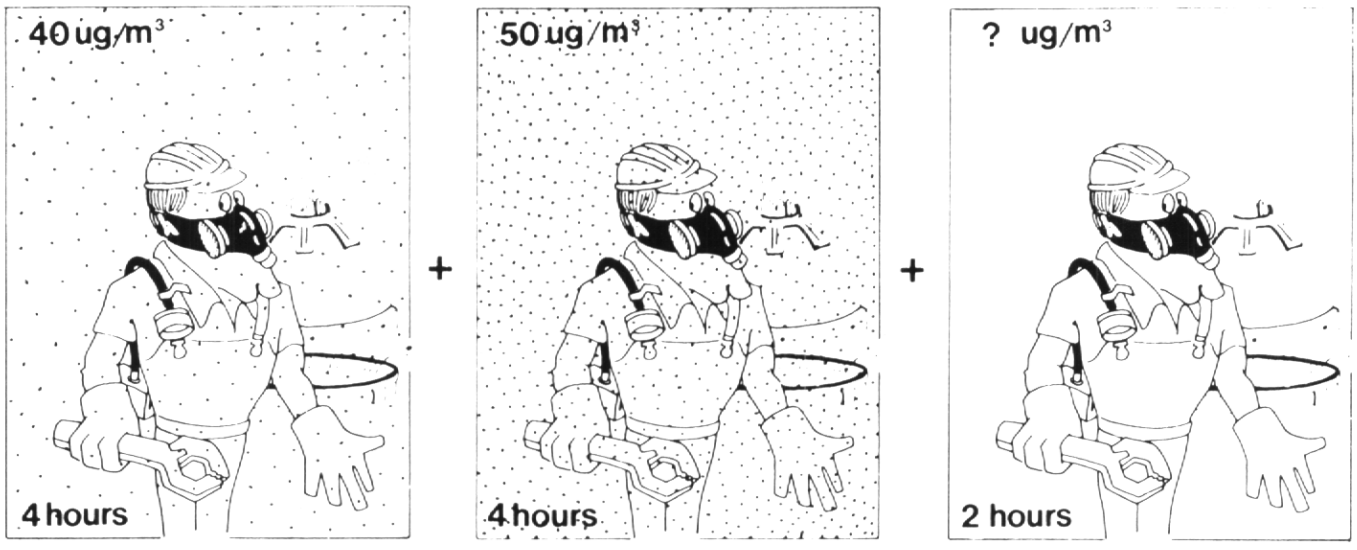
What happens when you work more than eight hours? In that case you can use the following formula to determine if you are exceeding the PEL.

$$PEL = \frac{400}{\text{Total Number of Hours Worked}}$$

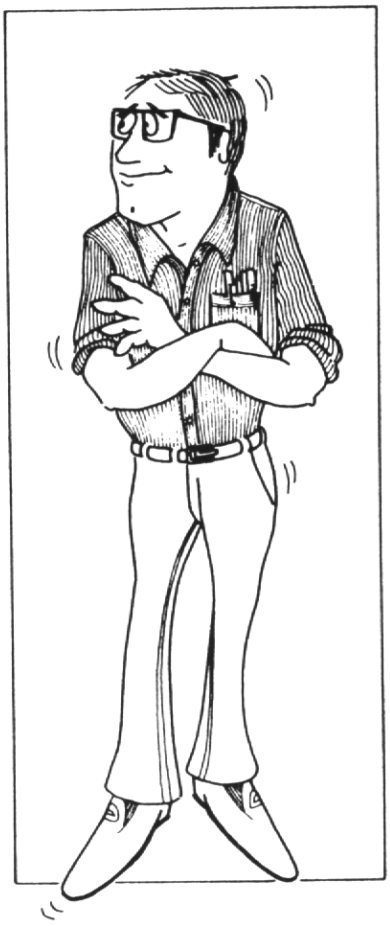
In other words, let's assume you have to work two hours overtime. That would make your total hours worked that day equal to ten (your regular eight plus two hours overtime). Apply the formula:

$$\frac{400}{10} = 40$$

That means that your PEL for that particular day could not exceed 40 $\mu g/m^3$. Anything over that total would be in violation of the standard. Look at the pictures below. What is the highest air lead level that the worker could be exposed to for his last two hours?



AIR MONITORING



Before you can determine if you are being exposed to air leads in excess of the PEL, you need to know what the exposure is at each workplace. In order to learn this, OSHA has required your employer to measure the exposure of a *representative* number of employees who probably have the highest risk. The measurement must be done for a *full shift,* by the use of *personal air samplers,* and without regard to respirators.

This first measurement is called the ***Initial Determination,*** and it is very important. The initial determination will decide what safety measures must be taken by you and by your employer.

If the Initial Determination reveals air leads to be at or above 30 $\mu g/m^3$, called the ***Action Level,*** certain OSHA regulations will go into effect.

At the Action Level, the following OSHA regulations go into effect:

- Your employer must establish an ***Air Monitoring Program*** to determine your exposure at each job classification.

- The monitoring must be ***repeated every six months.***

- Your employer must provide ***medical surveillance*** (physical examination and blood lead tests) to any employee exposed above the action level for 30 or more days per year.

- Your employer must provide a ***training program.***

During the Initial Determination or follow-up Air Monitoring Program, you may be required to wear a personal air sampler for a full shift. This is the only effective way to measure the air lead at your workplace and is in your own best interests. ***It Is Your Health — Protect It!***

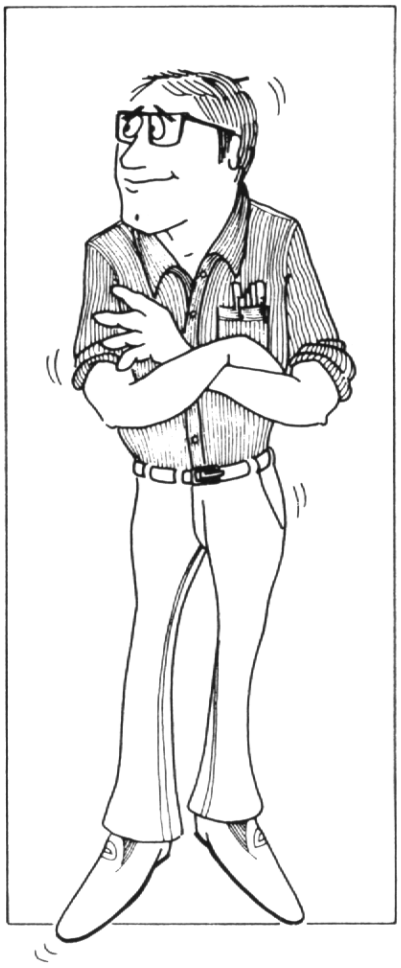
If the Initial Determination reveals air lead exposures lower than 30 $\mu g/m^3$, then, following a written report, *no further monitoring* is necessary unless there is a production, process, or personnel change.

If the Initial Determination reveals air lead exposures at or greater than the PEL, OSHA requires:

- that your employer conduct the Air Monitoring Program every three months instead of every six months.

- that your employer notify you of corrective action to reduce the air lead exposure.

- that your employer put into effect other elements of the Standard covering Hygiene, Housekeeping, Respirator Usage, and Protective Work Clothing.



YOUR RIGHTS CONCERNING MONITORING

Under the OSHA Final Standard for Lead you are entitled to:

- an explanation of the monitoring procedures
- observe the monitoring
- the opportunity to record results or to receive a copy of the results
- a written statement of your personal exposure level within five days of receipt of the results
- a statement of corrective action if your exposure exceeds the PEL.

YOUR RESPONSIBILITIES CONCERNING MONITORING

In order to best protect your own health, you ought to:

- participate constructively in the air monitoring program by wearing a personal air sampler
- be aware of your personal exposure level
- follow common sense procedures to reduce your exposure
- make constructive suggestions for reducing air lead levels.

MODULE III

EMPLOYEE GUIDE TO OSHA LEAD STANDARD

RESPIRATORS

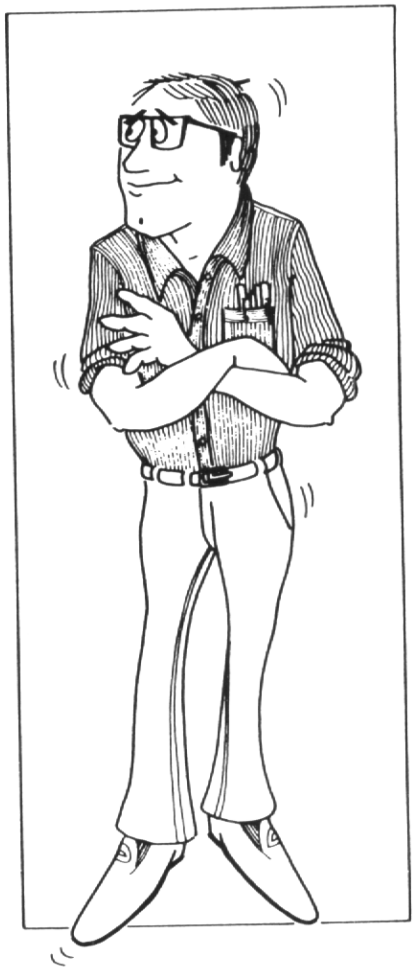
RESPIRATORS

Most of the lead that enters your body enters through the lungs. It is inhaled as dust or fumes which are produced during manufacturing or housekeeping processes. The best way to solve this problem would be to eliminate the lead from the air entirely, but this is not always practical or possible. If the lead can't be removed from the air, then the next best thing to do is to keep it from entering your lungs. That is why, even though they are uncomfortable to wear, ***respirators*** may be required for certain jobs. They can help to protect your health; of course, they ***must be worn, and worn properly.***

YOUR EMPLOYER'S RESPONSIBILITY

Under the OSHA Standard, your employer must:

- provide a respirator for you whenever your exposure exceeds the PEL
- provide the respirator at no cost to you
- provide a respirator if you request one, even if the air lead level is below the PEL
- select a MSHA- or NIOSH-approved respirator that is appropriate for your exposure.
- provide a powered air-purifying system, at your request, if it will provide adequate protection.



In addition to providing a respirator for your use, your employer is obliged to:

- start a respiratory protection program
- assure that your respirator facepiece fits properly
- provide the opportunity for you to change filters whenever necessary
- permit you to leave the work area to wash your face and your respirator facepiece whenever necessary to prevent skin irritation.

YOUR RESPONSIBILITY

In order for your employer to meet the requirements of the Standard, and for your own good health, you must cooperate by carefully and seriously following the rules for the proper ***selection, care, and use*** of respirators.

Selecting your respirator

Respirators are made for different jobs. Make sure that the one you select or are issued is suitable for the job you are doing. Look for the NIOSH or MSHA approval. Your employer may issue you a respirator that is suitable for higher concentrations of air lead than you will be exposed to but you should not accept one that is not sufficient for your level of exposure.

Fit testing your respirator

In order for a respirator to ***work well,*** it has to ***fit well.*** Everybody's face is different, and all respirators are not alike. You will have to "fit test" different respirators until you find one that works on your face. If the respirator doesn't fit properly, it will "leak" dust and fumes around the edges.

There are some simple tests called "qualitative fit tests" which will indicate whether or not your facepiece is leaking. There are two basic types of qualitative fit testing. In one, called the "irritant smoke test," a non-toxic irritating smoke is released near the facepiece. If you sense it through the closed seal of your respirator, there is a problem. An even simpler test is the "positive pressure test" in which you exhale into the facepiece while holding the exhalation valve closed. You should feel a slight positive pressure building up inside the mask. You can use this test yourself to check out your respirator anytime you feel you need to.

There is also a more complicated test known as a "quantitative fit test." In this test you are placed in an enclosed booth and exposed to easily detectable fumes. A machine attached to the booth provides specific information about how well your respirator is working.

Using the respirator

Now that you have selected the proper respirator, you must ***use it properly.*** First of all, you must wear it whenever the job you are doing exposes you to lead in excess of the PEL, or whenever special circumstances require it. Secondly, you must ***never borrow a respirator.*** It is both unhygienic and self-defeating. It probably wouldn't fit you anyway. ***Always use your own respirator.*** Thirdly, wear it properly. ***Both straps must be securely fastened*** around your head, one strap below your ear and one above. Facial hair can interfere with the fit of a respirator and make it useless. Beards and moustaches must be trimmed away from areas of contact between your face and the mask.

Caring for your respirator

Continual care of your respirator will insure that it is working to its best ability and also that it is clean and hygienically safe to wear. Change the filter on a regular basis, or anytime that you notice difficulty inhaling. ***Clean the respirator.*** This should be done at a special station designed for that task. In order to properly clean the respirator, the facepiece, valves, filter holders, covers, and straps should be washed. The respirator should then be rinsed in warm water and dried with a paper towel. ***Check for damage.*** While cleaning, the respirator should be inspected to look for worn or broken parts. If any part of the respirator is damaged, report the defect and do not use the respirator until it has been repaired. ***Store your respirator*** where it will not become contaminated. Plastic bags are very useful.

Inability to use a respirator

If you have difficulty breathing during a fit test or while using a respirator, report this to your superior. You will be given a medical examination to determine whether or not you can wear a respirator. As a result of the examination, other forms of protection may have to be provided.

MODULE IV

EMPLOYEE GUIDE TO OSHA LEAD STANDARD

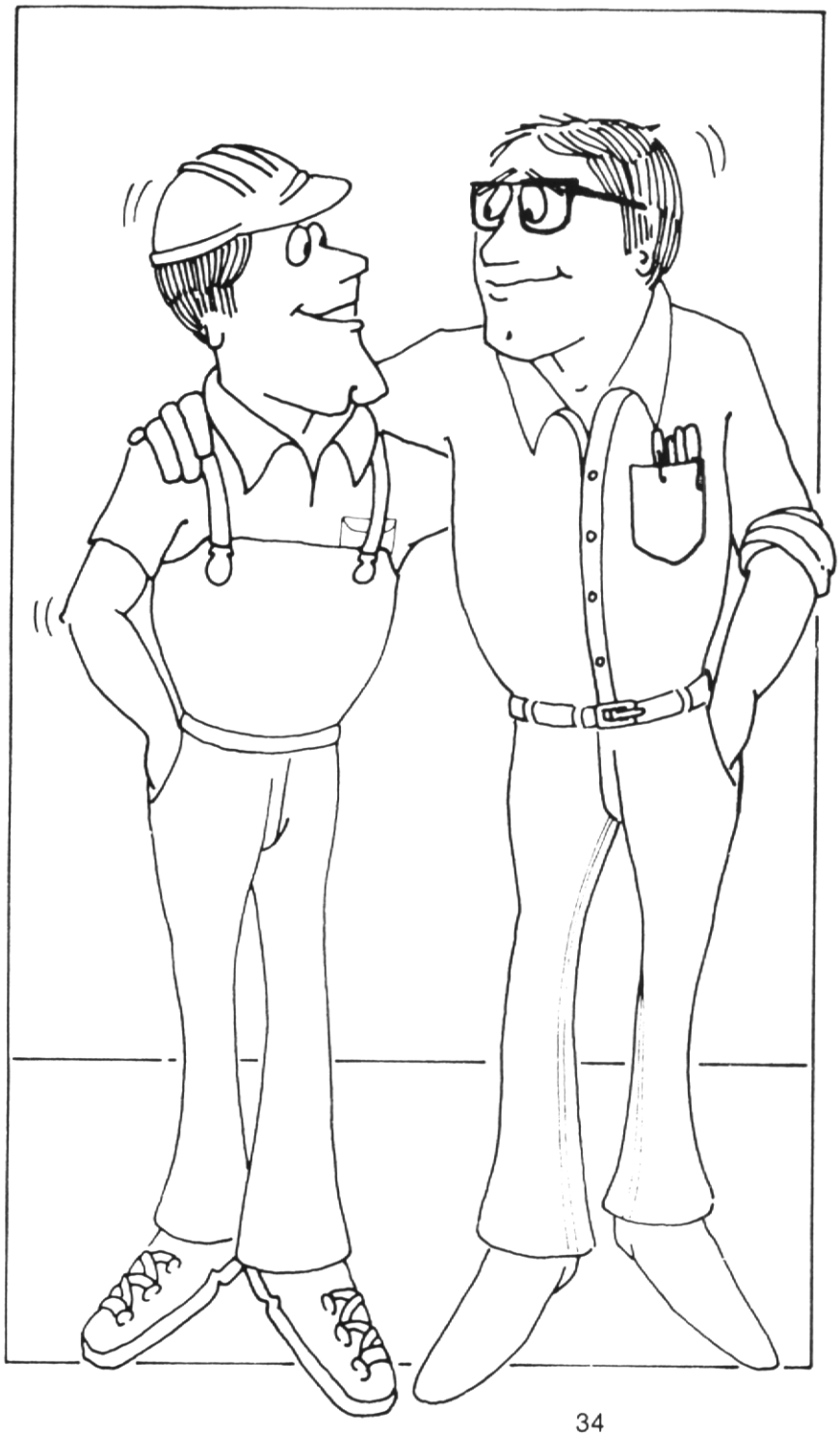
PERSONAL HYGIENE HEALTH

WHAT'S THE BIG DEAL?

Working in a lead industry creates several unusual hazards for you. Most workers don't have to worry too much about their clothing — if their clothes get dirty, they bring them home to be washed. Most workers don't have to worry about where they eat or smoke, or take special precautions before they do so. They can just sit down in the plant and eat their lunch or light up a cigarette without bother. But you have to worry about these things — and more besides. Why? Because lead fumes and lead dust can settle on hands, food, cigarettes and clothing and not only can it poison you, ***but it can be carried home to poison your families as well.*** And remember, doses of lead that are not harmful to adults can be harmful to children.

WHAT CAN BE DONE ABOUT IT?

You and your employer can cooperate in a program to clean up the workplace, lower blood leads, and keep lead out of your home. There are some things your employer has to do in order to comply with the OSHA Standard. For example, he has to use engineering controls to reduce air lead below 50$\mu g/m^3$. But no amount of engineering can totally eliminate all the lead from a lead factory. So no matter what your employer does, it will mean nothing if you don't do your share. Let's look at what you and your employer can do together.



ENGINEERING CONTROLS

Engineering controls can be very effective in reducing the level of air lead. Unfortunately, some old factories cannot be changed, and some of the procedures are not cost-effective or practical. Some common engineering principles that can be used to lower air leads are:

Lead Exhaust Ventilation - This involves the use of hoods, ducts, fans & filters to remove lead dust and fumes at the source of operations.

Enclosure - In this instance, dust-producing operations are separated from the rest of the plant.

Substitution - Where feasible, a non-dust producing operation could replace a dust-producing one.

Construction - Renovations or new construction could be used to separate eating facilities, change rooms, showers, etc., from the work areas.

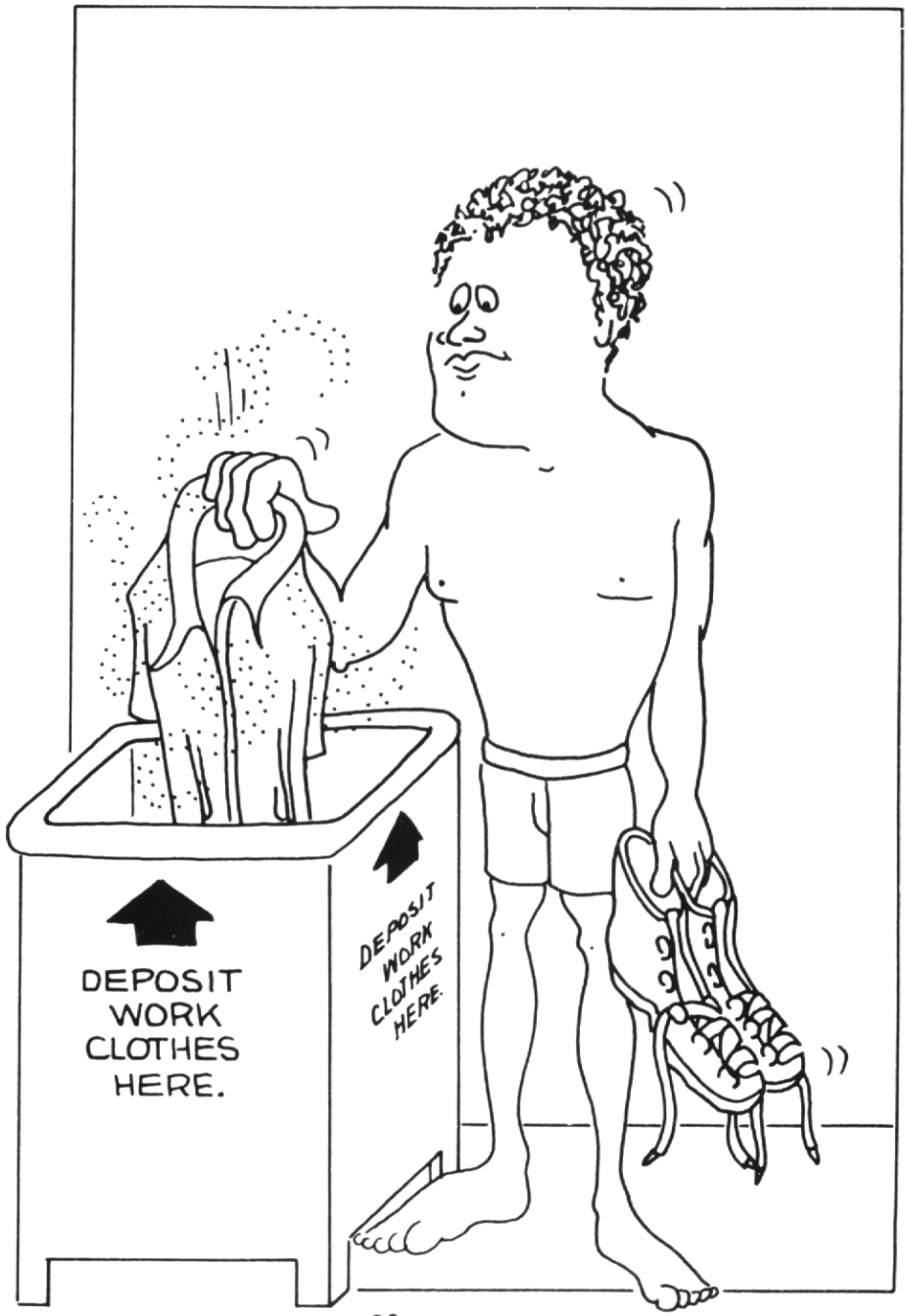
Perhaps your company has already done some or all of these things in an effort to lower air lead. Nevertheless, your cooperation is still needed to insure that the remaining air lead does not seriously affect your health.

WORK HABITS

You have already been instructed in the selection, use and care of your respirator. You know how important it is to your health. So make sure that you always ***wear your respirator and care for it properly.***

Clothing

If you are exposed to forms of lead that can cause skin or eye irritation, your employer must provide you with protective work clothing. Such clothing must be provided to you in a clean and dry condition weekly; or daily, if your exposure exceeds 50$\mu g/m^3$. Your employer is responsible for providing the clothing as well as the cleaning, so ***make sure that you do not take any work clothes home.***



The best arrangement to avoid taking contaminated clothing home is the dual locker-room set-up with a shower between. In this situation, you change out of your work clothes in one locker room, shower, and change into your street clothes in a second locker room, leaving all the lead contamination in the plant where it belongs.

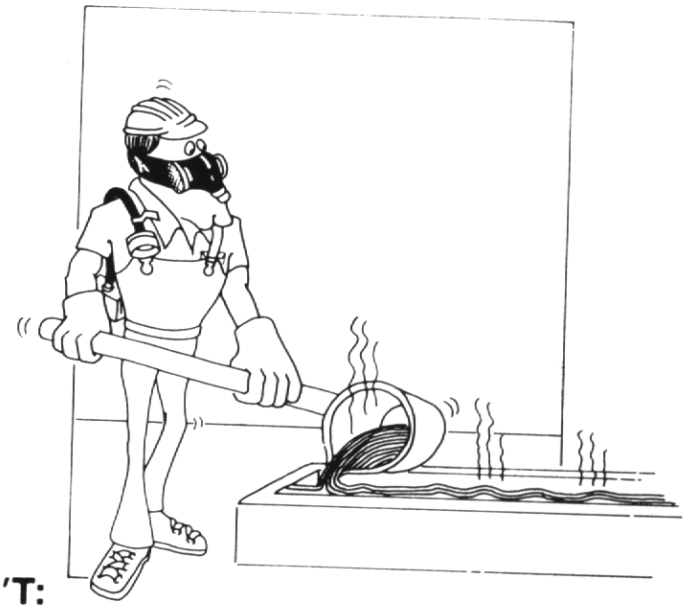
A second possiblity is the single locker-room-shower-supply room layout. Here, instead of a second locker room, there is a supply room where you pick up clean work clothes every day. At the end of the day you should deposit dirty clothing in a ***closed container*** before showering and changing into clean street clothing.

If you wish to protect your family, it is of vital importance that you leave ***all*** contaminated clothing in the plant — including work shoes. If you fail to change your clothing properly or to shower thoroughly, you will be defeating the purpose of OSHA's and your company's efforts to help you, endangering your own health, and endangering the health of those whom you love. It would be foolish to wear a respirator all day, then go home at night covered with lead dust.

Protecting yourself through common-sense work habits and good personal hygiene is ***your responsibility.*** You owe it to yourself and to your family to take care of your health. It is easy to do. Here are a few **DO's and DON'T's** which will help you.

DO:

Use care when carrying, mixing, or feeding lead-bearing materials into vessels. Spilling is a major danger because it increases the amount of lead dust entering the air, creates a clean-up problem, and exposes your person and clothing to direct lead absorption.



DON'T:

Create dust by rough handling of contaminated objects. Horse play, fooling around, tossing or careless handling of lead is both foolish and dangerous to your health and the health of others.

DO:

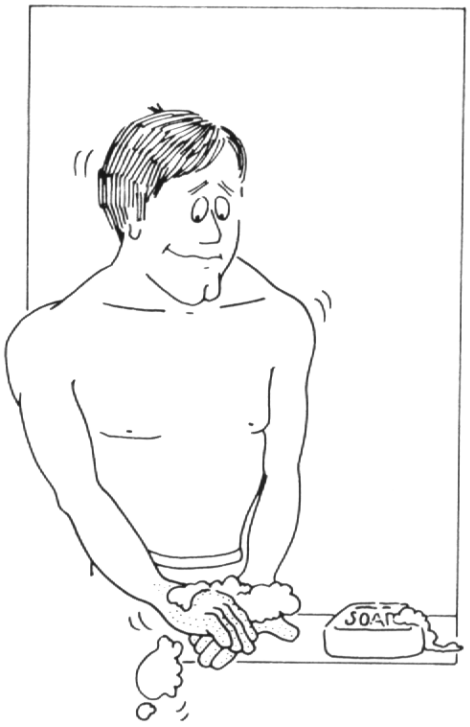
Use vacuum scrubbers to clean up, or if that is not possible, wet down contaminated areas before cleaning up. Vacuum cleaning is best, but it is not always possible, especially in small areas around machinery. Dampen down dust before cleaning it up in these cases.

DON'T:

Dry sweep - it creates dust; then the dust either enters your lungs, settles on your clothing, or lands back on the floor where it began. Dry sweeping is not only ineffective, it is ***dangerous. (Wear your respirator when cleaning up!)***

DO:

Wash your hands, arms, and face before smoking. If you fail to do this, you will be putting lead dust directly into your mouth. You wouldn't eat lead paint; why eat lead dust? ***Poor clean-up habits are one of the major causes of lead poisoning. Wash-up!***



DON'T:

Eat, drink, or smoke in a contaminated area. Bringing food into an area filled with lead dust will result in your direct ingestion of lead which will settle on your food, cup, or cigarette. This is always dangerous. ***Always eat, drink, or smoke in a separate, non-contaminated area.***

DO:

Leave all workclothes in the workplace, and ***shower completely*** before going home. You don't want to be responsible for family members becoming ill from lead dust which *you* brought home.

DON'T:

Put your hands in your mouth, bite your fingernails, or wipe your face on your sleeve while at work. During the work day, dust accumulates under nails, gloves, and clothing. Make it a habit to rinse off with water rather than "wipe-on" lead.

DO:

Use the ventilation systems properly. ***Close all dampers*** on equipment not in use. This will permit the exhaust system to concentrate its power on the equipment that is in use.

DON'T:

Forget to ***open the dampers*** on equipment that is in use. A ventilation system cannot work unless you direct and control it.

GLOSSARY OF OSHA TERMS

Action Level - the air lead concentration at which certain OSHA regulations go into effect or "action" (30 $\mu g/m^3$).

Chelation - the use of drugs to remove lead from the body.

Exposure Monitoring - the regular measurement of air lead concentrations in the workplace.

Fit-Testing - tests given to determine the efficiency of a respirator on your face.

Medical Surveillance - a combination of physical examinations and biological tests required by OSHA for all employees exposed to air lead levels at or above the action level for 30 days or more per year.

Medical Removal Protection (MRP) - a program designed to reduce the exposure of individuals with elevated blood lead levels. It requires the *temporary* removal or transfer of individuals from certain jobs *with economic protection.*

Powered Air Purifying Respirator (PAPR) - a respirator in which filtered air is blown into the breathing zone.

Blood Lead (PbB) Testing - the measurement of lead in blood at regulated intervals for employees exposed above the Action Level.

Permissible Exposure Limit (PEL) - the maximum level of lead in air permitted by the standard (50 $\mu g/m^3$).

Zinc Protoporphyrin (ZPP) Test - a biological test for lead-exposure which measures the amount of zinc protoporphyrin in blood.

The Lead Industries Association can accept no responsibility for results obtained by specific application of information contained herein, and reserves the right to amend or modify such information. Current OSHA standards and guidelines should be complied with.

ADDITIONAL INFORMATION

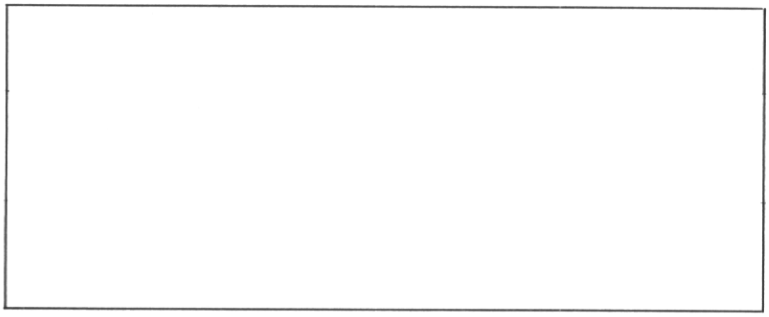
Single copies of the following publications are available free-of-charge from the Environmental Health Department of the Lead Industries Association. Order your selection(s) by writing to LIA at the address below. Publications are available in quantity at a nominal cost for printing and shipping.

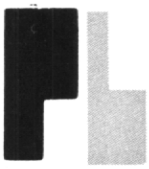
GUIDE TO OSHA OCCUPATIONAL STANDARD FOR LEAD

SUMMARY OF APPENDICES TO OSHA LEAD STANDARD

SAFETY IN SOLDERING

A GUIDE TO THE USE OF LEAD FOR RADIATION SHIELDING





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