



CHAPTER 1

WHAT IS LEAD? WHERE IS IT FOUND?

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Learning objectives

In this chapter you will learn about

- what lead is
- why lead was used
- where lead is found today
- how you can be exposed to lead
- what jobs and hobbies can expose you to lead
- the lead-based paint problem in the United States.

Instructor's notes

This chapter is an overview of the information that is presented in the entire course. It provides the large picture, with specific details to follow.

Below is a menu of options for teaching the session on Chapter 1. It is suggested that you allow 45-60 minutes to teach this chapter.

Training methods

It is recommended that you do either A, B, and C or A, B, and D

- | | |
|-------------------------------------|------------|
| A. True/False Quiz | 20 minutes |
| B. Video and discussion questions | 20 minutes |
| C. Lecture/Slides | 20 minutes |
| D. Show and Tell Lecture/Discussion | 20 minutes |

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**True /False quiz****(20 minutes)**

Purpose: This exercise allows trainees to see how much they already know about lead. It will help you know what parts of the course you may have to emphasize depending on the level of knowledge of the trainees. It also provides an opportunity for you to give information after each question, after you hear the answers of the class.

Materials: Copies of exercise on page 1-4 in the student manual (reprinted below).

Directions: Have trainees work in small groups to answer the questions and have one person take notes. Go over the answers as one large group and get responses from the note takers.

True / False quiz

This is an exercise to see how much you already know about lead. It is *not* a test. Please take a few minutes to read the statements, then circle T for “True” or F for “False.” Your instructor will go over the answers when everyone in the class is finished.

1. Lead is dangerous only to children under six. T F

2. We have known for thousands of years that lead is dangerous. T F

3. Experts can identify lead-based paint just by looking at it. T F

4. Lead exposure can affect a person’s ability to have children. T F

5. Lead is so dangerous that there is no way you can protect yourself from it. T F

6. The law says that if you find lead-based paint in a building, you must remove it as soon as possible. T F

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Answers to True/False quiz

1. **Lead is dangerous only to children under 6.**

False: Lead can affect both children and adults, though children under 6 are most at risk because their brains are still developing. In addition, all children explore and often put items in their mouths. These objects can have lead dust on them and children can get lead dust in their mouths and swallow it. Children also absorb a greater percentage of the lead that gets in their bodies than adults. Lead paint chips may taste sweet. This sweet taste or normal mouthing behavior may result in a child eating paint chips and dust—that's why cleaning up all paint chips and dust is so important

2. **We have known for thousands of years that lead is dangerous.**

True: Hippocrates first noted a case of lead colic in 370 B.C. Ben Franklin and others linked certain occupations that had lead exposure with lead-related diseases.

3. **Experts can identify lead paint by just looking at it.**

False: No one can tell for sure if paint contains lead unless they test it.

4. **Lead can affect a man's ability to have children.**

True: Lead can affect a man's ability to produce healthy sperm and his ability to have an erection. It also affects the female reproductive system.

5. **Lead is so dangerous that there is no way you can protect yourself from it.**

False: If your employer provides proper engineering controls, such as ventilation, change areas, showers, and medical monitoring, and if you wear respirators and protective clothing, you can be protected.

6. **The law says that if you find lead-based paint in a building, you must remove it as soon as possible.**

False: Currently, HUD requires paint testing and lead hazard control measures in federally-owned or assisted housing if the paint is either deteriorated or will be disturbed during maintenance or renovation work. HUD also requires abatement of lead *hazards* if the cost of the rehab or renovation project exceeds a certain threshold. Only a few states require the same for private housing, schools, and other public buildings. Abatement does not necessarily mean removal. It can mean covering (enclosing or encapsulating) the lead-painted surface. Replacing the building component covered with lead-based paint is the safest, most permanent abatement method.



Here would be a good place to point out that lead-based paint that is intact is a potential hazard, especially if it is on a friction or impact surface, or an accessible surface. It is important to stress to the worker that using lead-safe work practices when disturbing paint that is either known or assumed to be lead-based paint can protect the worker and the occupants.

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**Video & discussion questions (20 minutes)**

Purpose: To provide an overview of the hazards of lead to children and adults.

Materials: Video player, Television Monitor, Video (*not provided*)

Directions:

1. Develop a quiz (with questions similar to those on the following pages) based on a video segment you take from a news broadcast or special local broadcast.
2. Hand out the quiz questions.
3. Show the video. Stop it after each part (if applicable) so you can have the class work on the quiz.
4. Have trainees work in pairs to answer the questions after each segment.
5. Review the answers in a large group.

Sample interactive video questions

The questions listed below are provided as examples of questions which could be used as part of an exercise to discuss a video either purchased by the training provider or taped from a local or national newscast. Select only those questions that are applicable to the specific issues presented on the video used in the training. You can also use these questions as a basis for additional questions more relevant to the video you use.

1. Where is lead found?
2. Should a homeowner or renter try to remove lead-based paint themselves? Why or why not?
3. What are the symptoms of lead poisoning for adults?
4. Can pets be affected by lead?
5. Can family members be affected by lead if they stay out of the rooms where paint removal is being done?
6. What has the federal government done over the past 30 years to remove lead hazards from our environment?
7. Is there a safe level of lead exposure?
8. What are the symptoms of lead poisoning for children?
9. A young child was lead poisoned. How often did s/he have to go to the hospital?
10. What made the young child worse?
11. Why was the house/daycare abated?
12. What actions did officials recommend to get the lead out of the water? Did it work?
13. In what year was lead-based paint illegally put on a school?
14. When is lead-based paint more dangerous?

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15. Where was the lead in the playground?
16. Will lead dust come off your hands if you wash them?
17. How was the child/adult lead poisoned?
18. Where can you find lead in your kitchen?
19. Can you test cans of food for lead content?
20. Where can you go to get lead tests?

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**Lecture/Slides****(20 minutes)**

Purpose: To provide basic, background information to the class. It can help ensure that everyone has a basic background before proceeding with the course.

Materials: Slide projector, slides, flip chart (optional)

Directions: *Do not start your class with slides.* It will make people passive and lead them to think that all they will be doing in the class is hearing people talk at them. You do not have to use all the slides. Even a few slides can provide variety in the presentation of information.

Make sure you involve the class in the slide presentation. Ask questions of the class to keep them involved.

Try not to read from the supplied notes about each slide. Using your own words will make it more interesting for the class. You can add any personal experience that you may have that is relevant. Notes are supplied for slides that are a part of this training kit. The notes include a copy or description of each slide.

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Show and tell

Purpose: To provide background information to the class. It can help ensure that everyone has a basic knowledge of lead before proceeding with the course. It will indicate to trainees where lead can be found; why it was used; and that there are limitations on its current use. You can also introduce the concept of how lead can enter the body, which leads to the next chapter.

Materials: Bring in different items that may contain lead:

- | | |
|-----------------------|---------------------------------|
| 1. Industrial paint | 7. Pottery (ceramic coffee mug) |
| 2. Solder | 8. Fishing sinker |
| 3. Bullets | 9. Bread wrappers (colored) |
| 4. Paint chip | 10. Sunday comic papers |
| 5. Painted wooden toy | 11. Candy wrapper (colored) |
| 6. Pool cue chalk | 12. Vinyl miniblind |

Directions:

1. There are two ways you can run this exercise.
 - a. Break the class into groups of two to four trainees and give each group two items; or for smaller classes, give each group 3 or 4 items.

Each group answers the questions for their items. One person in each group takes notes and will report back to the entire class.
 - b. Place all the objects on the table and have each group answer the questions for all objects. Go over the answers after everyone is finished.
2. Write the questions on the flip chart.
3. Encourage trainees to use Chapter 1 in their manual.

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Discussion questions for show and tell exercise:

1. Is there lead in the object (bullet, paint chip, etc)? How would you know?
2. If there is lead in the object, what is its purpose?
3. If there is lead in the product, who can it affect and how would it get into the person's body?
4. Are there any limitations to the use of these products if they do have lead?

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For more information

These publications have more information on the topics covered in this chapter. You should have a copy of the publications marked with a star (*). You can order your own copy by calling 1-800-424-LEAD.

* Environmental Defense Fund, *The Hour of Lead: A Brief History of Lead Poisoning in the United States over the Past Century and of Efforts by the Lead Industry to Delay Regulation* (June 1992).

* EPA, *Lead: Identification of Dangerous Levels of Lead; Final Rule*; 40 CFR Part 745 (January 2001)

* EPA, *Reducing Lead Hazards When Remodeling Your Home* (September 1997).

* EPA, *Lead in Your Drinking Water* (April 1993).

* EPA, *Home Water Treatment Units: Filtering Fact from Fiction* (September 1990).

* EPA, *Toxics Information Series on Lead* (Pamphlet TS-793).

* EPA, HUD and CPSC, *Protect Your Family From Lead in Your Home* (June 2003).

National Lead Information Center, *Lead: Some Questions and Answers* (April 1993).

National Lead Information Center Hotline: 1-800-424-LEAD

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