

HEALTH

(PART 1)

“LEAD

POISONING”

(1 TRAINING HOUR)

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HEALTH (PART 1) "LEAD POISONING"

LEAD POISONING

Lead is one of most toxic metal contaminants. It is a cumulative poison that is retained in the central nervous system, bones, brain, glands, and hair. Because it is one of the most widely used metals in the United States today, it is estimated that a large number of people have high levels of lead in their bodies. Sources of lead include lead-based paints, ceramic glazes, leaded gasoline, lead pipes and other piping using solder, lead-acid batteries used in automobiles, tobacco, liver, water, some domestic and imported wines, canned fruit (the lead from lead-soldered cans leaches out and is absorbed by fruits), garden vegetables, bone meal, and insecticides.

HISTORY LESSON

Up until the mid-1970's, the use of leaded gasoline was responsible for most of the lead in the environment. The amount of lead found in gasoline was significantly reduced after concern mounted about the environmental effects of lead from exhaust fumes. As a result, catalytic converters were installed in cars. Leaded gasoline has not been banned by the EPA and remains in use here in the United States and abroad.

Lead poisoning was brought to our attention when many children were poisoned by lead paint peelings. Children are at higher risk for lead poisoning. Research revealed that pregnant women who have high levels of lead in their bodies could give birth to babies with high lead levels. Previous research indicates that low level lead exposure in young children may be associated with impaired intellectual development and behavioral problems. A recent study reported suggests that such low levels of lead in children may lead to lifelong problems, such as severe reading problems, poor eye-hand coordination, and slower reflexes.

ABOUT LEAD POISONING

If you have young kids, it's important to find out whether there's any risk that they might be exposed to lead, especially if you live in an older home and also if the child care center or home daycare is a older home.

For example, lead piping was used in homes built before 1930. Newer buildings or homes use copper plumbing, the chances are very good that it was assembled with solder, which is 50 percent lead. Solder leaches a significant amount of lead into the water

supply, especially during the first few years after installation. In years past the concern over the amount of lead leaching into the water, the use of lead solder was banned in 1986.

Long-term exposure to lead, a naturally occurring metal used in everything from construction materials to batteries, can cause serious health problems, particularly in young kids. Lead is toxic to everyone, but unborn babies and young children are at a greatest risk for health problems from lead poisoning -- their smaller, growing bodies make them more susceptible to absorbing and retaining lead.

Each year in the United States 310,000 one to five year old kids are found to have unsafe levels of lead in their blood, which can lead to a wide range of symptoms, from headaches and stomach pain to behavioral problems and anemia (not enough healthy red blood cells). Lead can also affect a child's developing brain.

The good news is that you can protect your family and children at schools or daycares from lead poisoning. Talk to professionals about potential lead sources in the home or anywhere the kids spend long periods of time, especially if they are under 3 years of age.

And it's important for kids to get tested to determine their blood lead levels if they're at risk of exposure--many people with lead poisoning show only mild symptoms or even no symptoms at all.

WHY IS LEAD HARMFUL?

When the body is exposed to lead--by being inhaled, swallowed, or in a small number of cases, absorbed through the skin--it can act as a poison. Exposure to high lead levels in a short period of time is called acute toxicity. Exposure to small amounts of lead over a long period of time is called chronic toxicity.

Lead is particularly dangerous because once it gets into a person's system, it is distributed throughout the body just like helpful minerals such as iron, calcium, and zinc. And lead can cause harm wherever it lands in the body. In the bloodstream, for example, it can damage red blood cells and limit their ability to carry oxygen to the organs and tissues that need it, thus causing anemia.

Most lead ends up in the bone, where it causes even more problems. Lead can interfere with the production of blood cells and the absorption of calcium that bones need to grow healthy and strong. Calcium is essential for strong bones and teeth, muscle contraction, and nerve and blood vessel function.

EFFECTS OF LONG-TERM LEAD POISONING

Lead poisoning can lead to a variety of health problems in kids, including:

- Decreased bone and muscle growth
- Poor muscle coordination
- Damage to the nervous system, kidneys, and/or hearing
- Speech and language problems
- Developmental delay
- Seizures and unconsciousness (in cases of extremely high lead levels)

HOW LEAD POISONING OCCURS

Most commonly, kids get lead poisoning from lead-based paint, which was used in many U.S. homes until the late 1970's, when the government banned the manufacture of paint containing lead.

That's why kids who live in older homes or a school are at a greater risk for lead poisoning. Also at risk are those who immigrate to the United States or are adopted from a foreign country that doesn't regulate the use of lead. Children with a history of pica, a disorder characterized by persistent and compulsive cravings to eat non-food items (like dirt, paint chips or clay), are also at risk of lead poisoning.

Lead is also found in other environmental areas, including:

- Contaminated soil, which is found near busy streets, in part because lead was an ingredient in gasoline until the late 1970's. The soil that surrounds homes and other buildings that were painted with lead-based paint also might be contaminated. Contaminated soil is a particular concern because it can introduce lead dust into the home.
- Water that flows through old lead pipes or faucets, if the pipes begin to break down.
- Food stored in bowls glazed or painted with lead, or imported from countries that use lead to seal canned food.

- Some toys, jewelry, hobby, and sports objects (like stained glass, ink, paint, and plaster).
- Some folk or home remedies, such as greta and azarcon (used to treat an upset stomach).

SIGNS OF LEAD POISONING

Many kids with lead poisoning don't show any signs of being sick, so it's important to eliminate lead risks at home or at a school and to have young kids tested for lead exposure.

When kids do develop symptoms of lead poisoning, they usually appear as:

- Irritability or behavioral problems
- Difficulty concentrating
- Headaches
- Loss of appetite
- Weight loss
- Sluggishness or fatigue
- Abdominal pain
- Nausea or vomiting
- Constipation
- Pallor (pale skin) from anemia
- Metallic taste in mouth
- Muscle and joint weakness or pain
- Seizures

These symptoms also can indicate a wide variety of other illnesses, so if your child has any of them, talk to the parents so they can consult the doctor or any other professionals. A blood test may be necessary to look for lead poisoning or other health problems.

TREATMENT OF LEAD POISONING

Treatment for lead poisoning varies depending on how much lead is in the blood. Small amounts often can be treated rather easily; the most important part of therapy is reduction of lead exposure. Gradually, as the body naturally eliminates the lead, the level of lead in the blood will fall.

Kids with severe cases and extremely high lead levels in their blood will be hospitalized to receive a medication called a chelating agent, which chemically binds with lead, making it weaker so the body can get rid of it naturally.

Calcium, iron, and vitamin C are important parts of a healthy diet and also help to decrease the way the body absorbs lead. Your doctor may recommend your child take supplements if there's not enough intake in his or her diet.

All siblings of a child found to have lead poisoning also should be tested. Doctors will report cases of lead poisoning to the public health department.

PROTECTING THE FAMILY AND SCHOOL KIDS

You can protect your kids from lead poisoning by ensuring that your home or school is lead free--ask the local health department about having your place evaluated for lead sources. And have the kids tested for lead exposure, particularly if when they're between 6 months and 3 years old. Kids this age spend a lot of time on the floor and trying to put things in their mouths.

These tips can help you reduce the risk of lead exposure:

- **Be wary of old plumbing.** Old plumbing might be lined with lead. If you have an old plumbing system (in places built before 1970), which used copper pipes and lead solder, you may want to get your water tested. You can call the local health department or water department to find a laboratory that will test your water for lead content. You also can take precautions to limit your exposure. If the water from the cold faucet has not been run for several hours, let cold water run for 30 seconds before drinking it. And because hot water absorbs more lead than cold water, don't use hot tap water for meals.
- **Keep your home or school and children clean.** Wash the kids' hands and toys frequently, and keep dusty surfaces clean with a wet cloth.
- **Ensure that iron and calcium are in your diets.** If kids are exposed to lead, good nutrition can reduce the amount that's absorbed by their bodies. Eating regular meals is helpful because lead is absorbed more than during periods of fasting.
- **Know where the kids play.** Keep them away from busy roads and the underside of bridges.

If you suspect that you might have lead-based paint on your walls, use a wet cloth to wipe windowsills and walls. Watch out for water damage that can make paint peel. Don't sand or heat lead-based paint because doing so increases the risk that lead will be inhaled. If the paint doesn't have many chips, a new layer of paint, paneling, or drywall will probably reduce the risk. It's best to consult a professional, especially because other precautions might be needed to contain the lead in the paint.

IN CONCLUSION

As a goal to help parents, caregivers, teachers, and also children lets try and make aware of the dangers of lead in their environment and to have children especially demonstrate behaviors that will help prevent them from becoming lead poisoned. The ultimate goal is to alert parents, caregivers and teachers to the dangers of lead poisoning in their home, school, or other places in order that they may implement the precautions needed to protect everybody from becoming lead poisoned.

Student Name: _____ **Date:** _____

INSTRUCTIONS: Read each of the following questions carefully and **CIRCLE** your best answer.

1. Lead can be found in many products which include?

- A. leaded gasoline and lead pipes
- B. batteries used in automobiles
- C. tobacco and water
- D. all of the above

2. Long-term exposure of lead can cause serious health problems, especially in young children?

True or False

3. Lead exposure in some young children caused intellectual development and behavioral problem in?

- A. high levels of lead exposure
- B. low levels of lead exposure
- C. no levels of lead exposure

4. Lead in the blood stream can damage _____ in the ability to carry oxygen to the organs and tissues?

- A. red blood cells
- B. platelets
- C. white blood cells
- D. none of the above

5. Who has the greatest risk for health problems from lead poisoning?

- A. elderly and children
- B. adults and elderly
- C. children and unborn babies
- D. all of the above

6. Other health problems in kids that were exposed to lead poisoning has caused?

- A. developmental delay
- B. increased bone and muscle growth
- C. damage to the digestive system
- D. all of the above

7. Children who live in newer homes are at a greater risk for lead poisoning?

True or False

8. The government banned lead-based paint in homes, schools, and other buildings in the late?

- A. 1980's
- B. 1970's
- C. 1990's

9. To ensure that your home or school is lead free, you can talk to the local Health Dept. about having Your place evaluated for lead sources?

True or False

10. Having signs and symptoms of lead poisoning usually appears as EXCEPT?

- A. headaches and abdominal pain
- B. nausea and vomiting
- C. muscle and joint weakness
- D. acne and hair loss

11. What type of testing is most commonly used to determine if an child or an adult has lead poisoning?

- A. saliva test
- B. blood test
- C. skin test
- D. all of the above

FILL OUT YOUR INFORMATION BELOW AND SEND YOUR COMPLETED TEST TO THE ADDRESS BELOW.

INCLUDE YOUR CHECK or MONEY ORDER for \$ 5.00 (PER TEST)

Once received we will send you a printed certificate of completion.

Name: _____

Address: _____

Phone: _____

Email: _____

School Name: _____

MAIL TO:

Lifetech Instructional Services

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Palm Harbor, FL. 34683