

## The Impact of Lead in Martindale-Brightwood

### *Why is Lead an Important Issue to me?*

Lead is a major public health hazard and widespread in the Martindale Brightwood area. You cannot see or smell lead and usually it has no taste with the exception of some lead-based paints. Lead was extensively used throughout history especially in many industrial processes during the 20<sup>th</sup> Century. For a long time, lead was

Even extremely low levels of lead can cause health problems, especially in young children from the ages of 6 months to 6 years.

thought to be safe in low doses but only more recently (since the 1970's) have the dangers of lead poisoning been discovered. Damage



to children due to lead poisoning is irreversible (Hunt, *Lead Contamination Issue Remains Unresolved*, 2008). Despite the environmental health risk, lead poisoning is a preventable disease.

The two most common products that once contained lead were paint and gasoline. Legislation halting the manufacture of paint over 0.06% in lead content (1978) and the phasing out of leaded gasoline (mid 1980's) has successfully reduced the amount of lead released into the environment. Unfortunately, large amounts of lead-based paint persist in and around homes. Although all U.S. children are exposed to some lead from food, air, dust and soil, some children are exposed to high dose sources of lead. Lead-based paint is the most widespread and dangerous source of lead exposure for preschool children. (Kinder, *Lead Contamination In Our Environment*, 1997). Residual lead from gasoline and industrial processes/emissions still contaminate the soil along heavy traffic areas and residences near former and/or active industrial facilities.

Lead-based paint is the most widespread and dangerous source of lead exposure for preschool children.

### *What exactly is Lead and what are its uses?*



Lead is a heavy, soft metal that is indestructible and non-biodegradable and found naturally in all parts of the world. The softness of lead made it very adaptable and it was bent and shaped into many useful items. People used the flexibility of lead for hundreds of years. Today, lead is found in many modern products such as pottery, batteries, and stabilizers for plastics, pigments for inks, electrical and plumbing solder and pipes. The manufacture, use, and disposal of these products release very fine lead particles into the environment. These particles enter the air, water, or food, and contaminate soil and dust. Minute lead particles can travel long distances, creating problems far from their source (U.S. EPA, *Lead in the Environment Tutorial*, 1999).

## ***What Are the Risks Associated With Lead Exposure?***

Lead is a highly toxic metal that can cause a wide range of health issues including damage to the brain and other vital organs, behavioral problems, learning disabilities, seizures and in extreme cases *death*. Recent research indicates that even relatively low blood lead concentrations in children and adolescents may be associated with deficits in cognitive and academic skills (HUD *Leading Our Nation to Healthier Homes: The Healthy Homes Strategic Plan*, 2008).

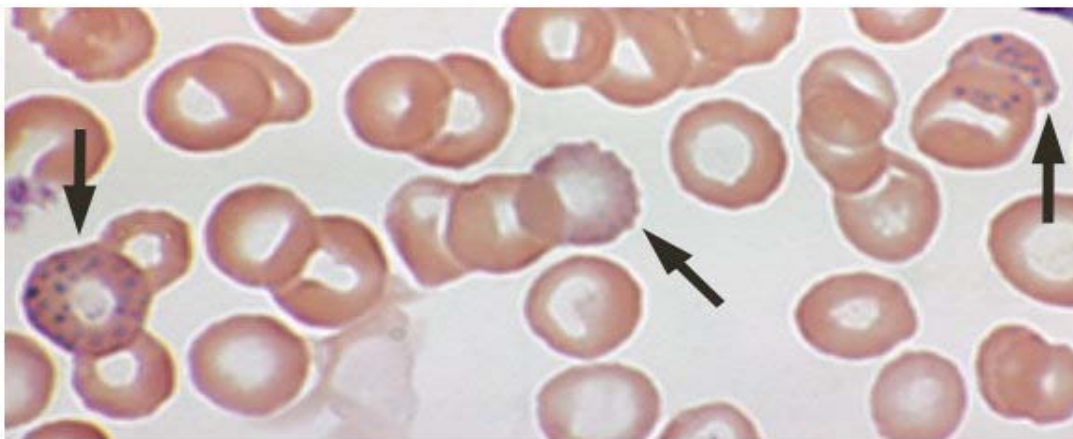
Lead poisoning is the direct result of too much lead in the human body. After the body is exposed to lead by inhalation, skin contact or ingestion (eating/drinking), it enters the bloodstream and attaches the proteins that carry it to different tissues and organs. **Remember** – lead does not biodegrade or decay but accumulates in the body, increasing the possibility of health risks. Even small amounts of lead can cause to serious problems. There is currently no lead level believed to be safe for infants and young children.

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The most common way to test for lead is by measuring the blood lead level (BLL). Examining an individual's BLL can detect lead poisoning in adults or children. It should be noted that the BLL measurements only show the amount of lead circulating in the blood stream and not the amount of lead stored in the body. Blood lead levels are reported in micrograms of lead per deciliter of blood ( $\mu\text{g}/\text{dl}$ ).



- The Center for Disease Control has set a standard BLL in adults of **25  $\mu\text{g}/\text{dl}$** . It is estimated that most adults have had some accumulation of lead during their lifetime.
- The BLL for a child is **10  $\mu\text{g}/\text{dl}$**  which is much lower than adults; however, most physicians and health care specialists feel that less than **5  $\mu\text{g}/\text{dl}$**  is more appropriate.



Basophilic stippling (tiny blue dots on periphery of blood cells) present among normal red blood cells due to lead poisoning.

The Marion County Health Department (MCHD) has collected numerous blood samples and measured the BLL concentrations in residents (primarily children) throughout Marion County. Based on a review of available BLL information and census tract data supplied by the MCHD, it was determined that the BLL concentrations in children were 2 to 4 times higher in Martindale Brightwood as compared to Marion County. Blood level concentrations above 10 µg/dl is considered elevated.

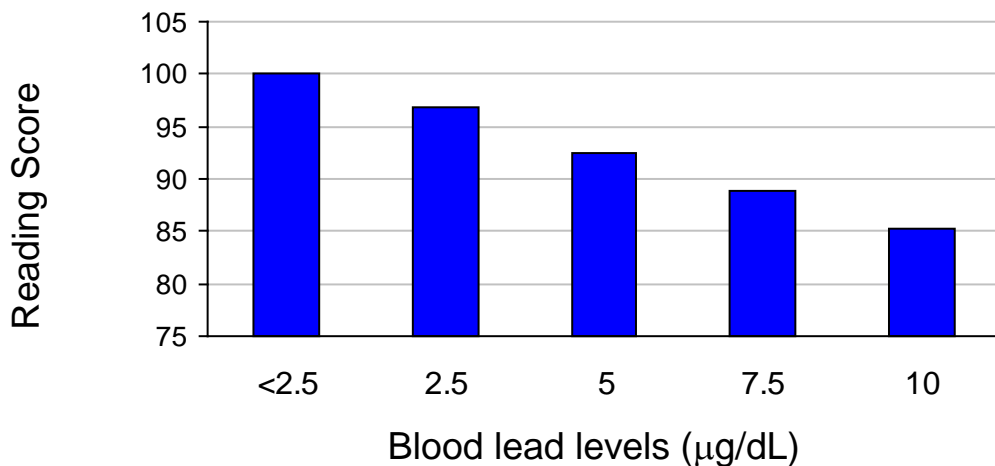
The BLL concentrations in children were 2 to 4 times higher in Martindale Brightwood as compared to Marion County.

<b>Results of Elevated Blood Lead Level Concentrations in Martindale Brightwood</b>			
<b>Year</b>	<b>*Number of Samples Collected from Martindale Brightwood</b>	<b>Percent of Elevated BLL in Martindale Brightwood</b>	<b>Percent of Elevated BLL in Marion County</b>
2000-2005	1,733	8.29 %	2.4%
2005-2007	1,650	9.4 %	3%
2009	246	8.13%	2%

\*Children may be sampled multiple times during case management activities. Information from 2000-2005 represent blood lead sample results for 1,281 children; 1,492 children during 2005-2007; and approximately 246 children in 2009. (Source: Marion County Health Department, Childhood Lead Poisoning Prevention Program).

It is estimated that 1.4% of children screened in Marion County in 2006 had unacceptably high levels of lead in their blood which is 40% higher than national average. Lead exposure can harm young children and babies even before they are born. Even children who seem healthy can have high levels of lead in their bodies. Lead poisoning continues to pose a threat to many children despite the fact that blood lead levels in children has fallen in the last several decades. By the time they get to school, it's too late to address this issue. ( Marion County Health Department; U.S. EPA, U.S. HUD and U.S. CPSC, *Protect Your Family from Lead in Your Home*).

**Lead-Related Reading Deficits in U.S. Children**



Lanphear BP, et al. Public Health Reports 2000;115:521-529 and Improving Kids' Environment: Environmental Threats to Kids' Success in School, The Indianapolis Star Edition Board, February 24, 2010.

The impact of lead on a child's ability to succeed in school can be dramatic as illustrated above in reading deficiencies attributed to lead poisoning. There also is a direct correlation between increased lead levels and violence (criminal arrests) in youth.

Even low levels of lead in a child's body can cause the following:

- Learning disabilities, attention deficit disorder, and decreased intelligence
- Speech, language, and behavior problems
- Poor muscle coordination, decreased muscle and bone growth
- Hearing damage
- IQ scores 4-7 points lower than their peers
- Nevin: Preschool blood-level trends explain variations in SAT scores

Sources: U.S. EPA, U.S. HUD and U.S. CPSC, *Protect Your Family from Lead in Your Home* Greater Boston Physicians, 2000; Nevin, 2009

### ***What Are the Sources of Lead Poisoning?***

Lead can be found in soil from off-site industrial sources and automobiles, paints, varnishes and plaster, pigments for inks, ceramic pottery, plumbing and electrical solder, plastics, glass panels and decorative drinking glasses, bullets, batteries, and newspapers. Other sources of lead contamination in the home can originate from outside sources, which include historical leaded gasoline vehicle emissions and industrial facility discharges (refineries, smelters, battery manufacturing), lead solder in canned food (imported foods) and copper pipes and more recently children's painted toys/jewelry. High lead concentrations were detected in the paint for the toys depicted below.



Photographs of recalled toys as identified by the Center for Disease Control and Prevention website <http://www.cdc.gov/nceh/lead/Recalls/toys.htm>. U.S. Consumer Product Safety Commission (CPSC) is charged with protecting the public from unreasonable risks of serious injury or death. CPSC announces all recalls on their website <http://www.cpsc.gov/>.

Other sources of lead poisoning are provided on the following pages. Links for additional resources for lead poisoning information and other useful facts is provided in Appendices A and B.

## Lead-Based Paint

Lead paint exposure accounts for as much as 90% of childhood lead poisoning

The most common occurrence of lead exposure in the home is in lead-based paint. Lead paint exposure accounts for as much as 90% of childhood lead poisoning (Kinder, *Lead Contamination in Our Environment*, 1997). Lead-based paint is more common in homes built prior to 1978; however, higher concentrations of lead-based paint are found in pre-1950 homes. It is estimated that roughly 74 percent of housing built before 1980 contain lead-based paint. It is estimated that 3,000,000 tons of lead remain in 57,000,000 American homes (U.S. EPA, *Lead in the Environment Tutorial*, 1999). Both inside and outside the home, deteriorated lead paint mixes with household dust and soil and becomes tracked in. Chipping and peeling can create an extremely fine dust that cannot be seen with the naked eye. It is this dust that poses the greatest risk of lead poisoning. Large amounts of lead dust can be spread when renovation work is being done. The dust can be breathed by people in the home or it may settle out on surfaces of toys, furniture, floors, food, clothing, hands, etc. (U.S. EPA, *Lead in the Environment Tutorial*, 1999).

Paint chips are larger and tend to fall directly below the damaged area and can become dust in areas of high traffic. Paint chips typically settle along window sills, baseboards, walls and ceiling overhangs. Children playing in or near these locations are at increased risk of lead poisoning. This problem is magnified for children with *pica*. Pica is an abnormal craving or appetite for nonfood substances, such as dirt, paint, or clay. Children can also eat lead dust from chewing on furniture, toys, hands, pillows, and other household objects. Additionally, lead dust from lead-based paint can contaminate soil surrounding the home in which children play (HUD, *The Healthy Home Program*).



Indiana's approach to regulating lead-based paint activities [House Enrolled Act (HEA 1171)] is in line with the federal Residential Lead-Based Paint Hazard Reduction Act. HEA-1171 prohibits dangerous work practices in pre-1960 target housing and child-occupied facilities. It also requires clean-up of visible

paint debris when conducting exterior work on paint. This Act also requires anyone who works on a property built before 1978, before doing any work that will disturb the paint, to give the homeowner or tenant the pamphlet, "Protect Your Family from Lead in Your Home."

The rule also involves a written acknowledgement that the homeowner or tenant receives the pamphlet. Failure to disclose lead test results is a violation of federal regulations and can result in a fine up to \$11,000 per violation.

To find out more about this requirement, call 1-800-424-LEAD or visit the website at [www.epa.gov/lead](http://www.epa.gov/lead) or [www.hud.gov/offices/lead/index.com](http://www.hud.gov/offices/lead/index.com). Additional information regarding Indiana's Lead-Safe Work Practices and Lead Poisoning Prevention is provided by Improving Kids' Environment two-page fact sheet attachment in Appendix C.

### ***Age of Housing-Martindale Brightwood (Census Tract 3528)***

<b>Age of Housing in Martindale Brightwood</b>			
<b>Year Structure Built</b>	<b>Number of Homes*</b>	<b>Percent of Homes</b>	<b>Percent of Homes in the remainder of Marion County</b>
1999 to March 2000	0	0.0 %	2.0 %
1995 to 1998	47	8.7 %	6.1 %
1990 to 1994	0	0.0 %	6.5 %
1980 to 1989	0	0.0 %	13.4 %
1970 to 1979	65	12.1 %	15.7 %
1960 to 1969	84	15.6 %	16.8 %
1940 to 1959	115	21.4 %	21.8 %
1938 or earlier	227	42.2 %	15.8 %

\*Taken from U.S. Census Bureau (Tract 3528) in 2000.  
 (Source: Marion County Health Department, Childhood Lead Poisoning Prevention Program).

Seventy-nine percent of the structures in census tract 3528 were built prior to 1969 when lead based paint was commonly used in residential housing. The amount of lead in paint products declined after the 1950's, but was still used on housing until the late 1970's. Approximately 64 percent of homes in Martindale Brightwood were constructed before 1960 and 91 percent of homes were constructed before 1979.

Approximately 64 percent of homes in Martindale Brightwood were constructed before 1960 and 91 percent of homes were constructed before 1979.

### **How to Prevent Lead-Based Paint Exposure**

If your home was built before 1978, assume that the paint has lead unless tests show otherwise and adhere to these procedures:

- Wipe down flat surfaces, like window sills, with a damp paper towel;
- Mop smooth floors (using a damp mop) weekly to control dust;
- Take off shoes when entering the house;

- Vacuum carpets and upholstery to remove dust;
- If possible, use a vacuum with a HEPA filter or “higher efficiency collection bag”;
- Pick-up loose paint chips carefully with a paper towel and discard in the trash, then wipe the surface clean with a wet paper towel;
- Take precautions to avoid creating lead dust when remodeling, renovating or maintaining your home (numerous how-to videos are available on-line);
- Test for lead hazards (including soil) by a lead professional;
- Have your child’s blood level tested at age 1 and 2. Children from 3 to 6 years of age should have their blood tested, if they have not been tested before and
  - They live in or regularly visit a house built before 1950,
  - They live in or regularly visit a house built before 1978 with on-going or recent renovations or remodeling.
- Frequently wash your child’s hands and toys to reduce contact with dust.

### Lead in Food

Lead can be consumed by food stored in cans with lead soldering. Lead soldering is rarely used in cans within the U.S.; however, it can still be found on cans produced in other countries. Over time lead can leach into the food especially if the can is left open and exposed to air or contains acidic foods such as citrus juices. Lead-free cans have a thin, sharply defined, blue-black line along the seam, or no seam at all. If you see crimped joints (folded over) and smeared with a silver-grey solid, that is lead (U.S. EPA, *Lead in the Environment Tutorial*, 1999).



Lead crystal glassware and ceramic dishes can release lead into food and liquids. Another source of lead can come from home-grown gardens. Vegetables grown in gardens with high-lead content or when plants are sprayed with lead containing herbicides can be contaminated

### Lead in Soil

Lead in soil around your home and on your property can be a major issue of lead poisoning if your house is near a busy street or a source of air-borne lead. Sources would include smelters and manufacturing plants such as the former American Lead Facility located at 1502/1600 E. 21<sup>st</sup> Street. People come in contact with lead contaminated soil and dust in a variety of ways. Children can be exposed to additional lead by playing in dust and dirt along roadways, breathing and eating soil from bare spots in the yard and along house foundation areas (drip- lines). The Lead Safe and Healthy Homes Department, a division within the Marion County Health Department, can come to your home and test the lead in your soil for free. The Lead Safe and Healthy Home Department can be contacted at **221-2155**.

Lead in soil around your home and on your property can be a major issue of lead poisoning if your house is near a busy street or a source of air-borne lead.

Soil with total lead levels of less than 300 parts per million (ppm) are considered safe to use in a garden; however, if children are present then lead levels in soil should not exceed 100 ppm. To be safe, practice the following safety measures:

- Wear gloves;
- Wash hands thoroughly after gardening and especially before eating;
- Be sure small children do not eat garden soil;
- Gardeners can bring in lead contaminated soil into the house on shoes and clothes, so leave shoes and dirty clothes outside the main living areas of the home;
- Keep dust in your garden to a minimum by maintaining a mulched and/or moist soil surface.

In general, most lead absorbed in garden plants are stored in the leaves and outer parts of the roots. Always peel root crops such as beets, carrots, turnips, and radishes before eating. Grow vegetables that produce edible fruits such as tomatoes, peppers, cucumbers, squash, etc. If your soil has a lead contamination problem, grow fewer edible fruits and vegetables and more flowers, trees and shrubs. Thoroughly wash your produce in water containing vinegar (1 percent) or soap (0.5 percent).

Additionally, adhere to the following precautions for garden soils:

- Maintain soil pH levels above 6.5;
- Add organic matter to your soil;
- Locate your garden as far away from busy streets or highways and old buildings
- Mix or cover soil with elevated lead levels with clean (low lead) soil;
- Eliminate the lead by physically removing the soil;
- Used raised gardens or container gardening techniques (see images below).



Photograph 1



Photograph 2

<sup>1</sup>Raised garden located above lead contaminated yard in New York City.

<sup>2</sup> Key Learning Community School students in downtown Indianapolis creating a raised garden for a community garden project.

## Lead in Drinking Water

It is estimated that as many as one in five Americans are exposed to dangerously high levels of lead in water.

Drinking water can also have high levels of lead. It is estimated that as many as one in five Americans are exposed to dangerously high levels of lead in water. Lead is rarely found in water at its source. The water becomes contaminated as it moves through the water distribution system. The lead can come from lead pipes or connectors; lead solder used to connect the pipes and fumes; brass fixtures; and lead lined tanks in water coolers. Homes built before 1920 often have lead pipes. In 1986, the federal government made it illegal to use lead solders (greater than 2% lead in solder). Newer pipes may pose a greater hazard than older pipes because older pipes typically have mineral deposit scale buildup that blocks lead from entering the passing water (Kinder, *Lead Contamination In Our Environment*, 1997).



## Lead in the Air

Airborne lead is suspended in the air and moves with the wind. It can travel long distances and contaminate large areas. The particulate form of lead settles with the dust and soil. People are exposed to this lead when they come in contact with or breathe-in the lead dust. This risk of lead poisoning is normally higher for people living near a source of airborne lead. This suspended lead comes from a number of industrial emission sources, such as metal smelting, incinerators, refineries, battery manufacturing, other factories that use lead (U.S. EPA, *Lead in the Environment Tutorial*, 1999).

A case study regarding the former American Lead facility with supporting soil investigation maps is provided in Appendix D. A



majority of this information comes from the May 2008, Indiana University School of Environmental Affairs Capstone Project titled *Lead in Martindale- Brightwood: Past, Present and Future*. A complete copy of this study is also available within the CARE Grant database. <..\..\Environmental Data\IUPUI Capstone Projects\MB Lead\MB LEAD - FINAL REPORT.pdf>



One of the largest contributors was leaded gasoline. Millions of tons of lead were added to gasoline before use was limited by U.S. EPA regulations restricting the use of lead in gasoline. Much of the lead still persists in the environment as lead in



soils and lead in dust (Kinder, *Lead Contamination In Our Environment*, 1997).

### ***What Else can be done to Prevent Lead Exposure?***

Everyone must be responsible for following strict rules and procedures to reduce the risk of lead poisoning. Emphasis should be on primary prevention efforts as listed below.

- Children should not play in the dirt around the house or drip-line. If possible, provide them with sand boxes;
- Use cold tap water for drinking and cooking;
- Let the water run for one minute before using it to drink or cook;
- Never heat or cook food in the can it comes in and avoid storing food in a can which has been opened;
- Do not allow children to chew or suck on painted surfaces such as woodwork, porches, old toys, cribs and old forms of old furniture;
- Avoid using certain tableware, particularly folk terra cotta plates and bowls from Latin America, which may contain high levels of lead that can leach into food. Additionally, avoid using containers, cookware, or tableware to store or cook foods or liquids that are not shown to be lead free;  
(HUD *Healthy Home Program*, 2008);
- Talk to the Marion County Health Department about testing paint and dust from your home for lead (**221-2155 and 221-2266**);
- Pregnant women and children should not be present in housing built before 1978 that is undergoing renovation;
- Avoid eating candies imported from Mexico;
- Shower and change clothes after finishing a task that involves home restoration projects and working with lead-based products such as stain glass work, bullet making, or using a firing range (CDC, *Prevention Tips*);
- Avoid eating folk remedies or foreign foods (i.e. Indonesia) for treatment of various stomach or digestive ailments.

## ***Prevent Lead Exposure by Making Your Home Lead Free***

The Marion County Health Department (MCHD) has available funding to assist in the

The U.S. Department of Housing and Urban Development has provided the MCHD with funds to cover approximately 75% (\$6,000) of the cost of lead remediation for qualifying low-income property owners.

removal of lead based paint in your home. The U.S. Department of Housing and Urban Development has provided the MCHD with funds to cover approximately 75% (\$6,000) of the cost of lead remediation for qualifying low-income property owners. It requires a \$2,000 match from the property owner. The MCHD realizes that many eligible homeowners will not have the matching funds but there may be a solution!



Improving Kids' Environment has set up a Lead-Safe Homes Fund in 2009 to help cover the cost of the \$2,000. Currently, the fund has \$8,000; however, more funds may become available. A fund-raising campaign has been launched this year to raise additional money to allow low-income parents and grandparents to make their homes lead safe. Additional information is available at the following link:

[www.ikecoalition.org/HealthyHousing/lead\\_free\\_homes\\_fund.htm](http://www.ikecoalition.org/HealthyHousing/lead_free_homes_fund.htm).

## **APPENDIX A**

### **REFERENCE SOURCES**

Helpful resources related to lead poisoning and associated environmental health concerns are provided below.

- 1) U.S. Environmental Protection Agency, Purdue University and the Farmstead Assessment Program, Lead in the Environmental Tutorial, 1999 link, (<http://www.purdue.edu/dp/envirosoft/leadenv/src/title.htm>)
- 2) Centers for Disease Control and Prevention: Lead, <http://www.cdc.gov/lead/>, and Prevention Tips, <http://www.cdc.gov/nceh/lead/tips.htm>
- 3) U.S. Department of Housing and Urban Development, Homes & Communities: Healthy Homes and Lead Hazard Control, <http://www.hud.gov/offices/lead/hhi/index.cfm>
- 4) Yale-New Haven Teachers Institute, Lead Contamination In Our Environment, Carolyn Kinder, July 1997, <http://www.yale.edu/ynhti/curriculum/units/1997/7/97.07.05.x.html>.
- 5) U.S. EPA, Lead in Paint, Dust and Soil-Lead Awareness Program, <http://www.epa.gov/lead>
- 6) Indiana State Department of Health, Indiana Lead & Healthy Homes Program (Lead Poisoning the Silent Menace), <http://www.in.gov/isdh/19124.htm>
- 7) Marion County Health Department, Indoor Air Quality: Back to the Basics Slide Presentation by Lisa A. Cauldwell, MPH, [www.ikecoalition.org/Lead\\_Conf\\_2009/Indoor\\_Air\\_Quality.pdf](http://www.ikecoalition.org/Lead_Conf_2009/Indoor_Air_Quality.pdf)
- 8) Marion County Health Department, Marion County Childhood Lead Poisoning Prevention Program, <http://www.mchd.com/lead/htm>
- 9) Improving Kids' Environment, Lead Information, <http://www.ikecoalition.org/Lead/index.htm>, 2009 Indiana Lead-Safe & Healthy Homes Conference, [http://www.ikecoalition.org/Lead\\_Conf\\_2009/Presentations.htm](http://www.ikecoalition.org/Lead_Conf_2009/Presentations.htm)
- 10) The Indianapolis Recorder, Lead Contamination Issue Remains Unsolved, Ariana Hunt, [http://www.indianapolisrecorder.com/articles/2008/03/28/news/featured\\_story/news03.txt](http://www.indianapolisrecorder.com/articles/2008/03/28/news/featured_story/news03.txt), March 28, 2008
- 11) Indiana University, School of Environmental Affairs at IUPUI, Lead in Martindale-Brightwood: Past, Present and Future, May 2008.

## APPENDIX B

### Healthy Homes Resource List

Agency	Contact Information
<b>U.S. Department of Healthy Homes and Urban Development</b> , Office of Healthy Homes and Lead Hazard Control	<a href="http://www.hud.gov/offices/lead">www.hud.gov/offices/lead</a>
<b>Centers of Disease Control and Prevention, CDC</b>	1-800-232-4636 Lead: <a href="http://www.cdc.gov/nceh/lead/">www.cdc.gov/nceh/lead/</a> Healthy Homes: <a href="http://www.cdc.gov/healthyhomes">www.cdc.gov/healthyhomes</a> Drinking Water: <a href="http://www.cdc.gov/healthywater">www.cdc.gov/healthywater</a>
<b>U.S. Department of Agriculture, DOA</b> , Cooperative State Research, Education, and Extension Service	<a href="http://www.csrees.usda.gov/sustainablehomes.cfm">www.csrees.usda.gov/sustainablehomes.cfm</a> or 1-202-720-4423
<b>U.S. Consumer Product Safety Commission, CPSC</b>	<a href="http://www.cpsc.gov/cpsc/pub/pubs/pg1.pdf">www.cpsc.gov/cpsc/pub/pubs/pg1.pdf</a> or 1-800-638-2772
<b>U.S. Environmental Protection Agency, EPA</b>	Child Health Protection: <a href="http://yosemite.epa.gov/OCHP/OCHPWEB.nsf/content/homepage.htm">http://yosemite.epa.gov/OCHP/OCHPWEB.nsf/content/homepage.htm</a> Indoor Air: <a href="http://www.epa.gov/iaq">www.epa.gov/iaq</a> or 1-800-438-4318 Lead: <a href="http://www.epa.gov/lead">www.epa.gov/lead</a> or 1-800-424-5323
<b>U.S. Food and Drug Administration, FDA</b>	<a href="http://www.fda.gov/default.htm">http://www.fda.gov/default.htm</a>
<b>Indiana State Department of Health, ISDH</b> Lead and Healthy Homes	<a href="http://www.in.gov/isdh/19124.htm">http://www.in.gov/isdh/19124.htm</a> , 1-317-233-1250 and 1-800-433-0746
<b>Indiana Department of Environmental Management,</b> Air Quality	1-317-233-3861
<b>Marion County Health Department, MCHD</b> Housing Department Lead Safe & Healthy Homes Lead Poisoning Prevention Program	1-317-221-2266 1-317-221-2150 1-317-221-2479 1-317-221-2155
<b>Alliance for Healthy Homes, AFHH</b>	<a href="http://www.afhh.org">www.afhh.org</a>
<b>American Lead Poisoning Help Association, ALPHA</b>	<a href="http://www.alphalead.org">www.alphalead.org</a>
<b>Coalition to End Childhood Lead Poisoning, CECLP</b>	<a href="http://www.ceclp.org">www.ceclp.org</a>
<b>National Environmental Health Association, NEHA</b>	<a href="http://www.neha.org">www.neha.org</a>
<b>National Center for Healthy Housing, NCHH</b>	<a href="http://www.nchh.org">www.nchh.org</a>

**APPENDIX C**  
**Lead Fact Sheet provided by**  
**Improving Kids' Environment**

# Lead-Safe Work Practices

## Three Steps to Lead-Safe Renovation

- Step 1: Seal off the work area so dust will not escape
- Step 2: Use techniques that will minimize dust creation
- Step 3: Clean up really, really well

**LEAD-SAFE PRACTICES:** These practices will minimize lead dust during repair and renovation projects and prevent it from spreading beyond the work area:

- Mist surfaces with water before and during scraping and sanding.
- Mist before drilling and cutting, or use foam, such as shaving cream, to keep dust down.
- Score paint before separating components to prevent paint from chipping when a paint seal is broken.
- Use a heat gun set below 1100°.
- Pry and pull apart components and pull nails instead of pounding out components or nails.
- If you must use power sanding or grinding tools, attach them to a HEPA-filtered vacuum attachment.

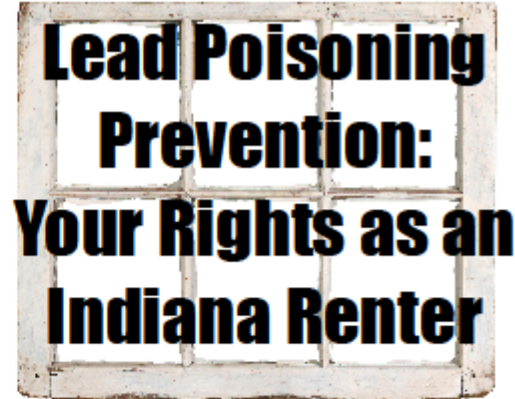
**DO**

**UNSAFE PRACTICES:** These practices are very dangerous around lead paint and are forbidden under Indiana law:

- Don't use an open flame burning or torching.
- Don't use machine sanding, grinding, abrasive blasting or sandblasting without a HEPA vacuum attachment.
- Don't use a heat gun that operates above 1100°F or chars the paint.
- Don't conduct dry scraping, except with a heat gun or within one foot of an electrical outlet.
- Don't conduct dry sanding, except within one foot of an electrical outlet.
- Don't strip paint with a volatile stripper unless the space is ventilated by outside air. Methylene chloride paint strippers are not recommended.
- Don't leave visible paint chips or debris on the soil, pavement or ground outside a building for more than 48 hours after the work is complete.

**DON'T**

For more detailed information on lead-safe work practices visit [www.ikecoalition.org](http://www.ikecoalition.org) or [www.in.gov/isdh/19155.htm](http://www.in.gov/isdh/19155.htm)



If you rent a home or apartment built before 1978, it could have lead-based paint.

Lead paint could cause lead poisoning if it is peeling, chipping or creating lead dust. Children exposed to lead can have problems learning, paying attention, and controlling violent behavior. Lead can even lower a child's IQ scores.

Know your rights as a renter in Indiana:

- If you rent housing built before 1978 and children might live or visit, your landlord must inform you about any known lead-based paint and warn you about potential lead hazards.
- Landlords who don't follow this law may face fines up to \$11,000 per violation.
- Your local health department can test your children for lead in their blood — at no cost to you.
- If lead hazards are found on the property, your landlord must correct them.
- Your landlord must provide you with reports developed by risk assessors, inspectors and clearance examiners.
- Any work done should use lead-safe work practices if lead paint will be disturbed.



**Have your children tested!** A simple blood test will show if your child has high levels of lead.

## Facts About Lead

How can I tell if a person is lead poisoned? Only a blood test will tell you. Since lead leaves the blood over time, you cannot easily tell whether a person was lead poisoned in the past.

Why focus on children six or younger? Children under seven are the most at risk because lead in blood can enter their brain and permanently damage it. A pregnant woman also can pass lead to her unborn child.

How many children are lead poisoned in Indiana? We don't know for sure. Nationally, 1 in 100 children is lead poisoned. Low-income and minority children are more likely to suffer from lead exposure.



Who should be tested? All children living or playing in property built before 1978 should be tested. All children eligible for Medicaid must be tested.

What causes lead poisoning? The most common causes are lead paint dust, lead paint chips, and lead in soil. Children can take in lead dust or contaminated soil found on their toys, blankets, clothes or hands. The dust may be invisible, but only a tiny amount can be enough to poison a child.

Where does the lead come from? The most common sources are lead-based paint that is peeling or deteriorating. Lead paint was prohibited in residential property after 1978, but it remains in many older homes. Lead paint on the outside of a home may contaminate the soil below. Inside a home, windows and doors are the most likely places to find lead-based paint. Lead dust can be found everywhere.



How can I know if my home has lead paint? The only way to know for sure is to have it checked by a risk assessor or inspector licensed by the Indiana State Department of Health.

When is lead-based paint a hazard?

Indiana law assumes that all paint in a building built before 1960 is lead-based. If intact, lead-based paint may not be a hazard. It is often better to keep the paint in place and maintain it until you do a major renovation, and then use lead-safe work practices.

## Lead-Poisoned Children



State and local health agencies can check your child's blood for lead at no charge to you. If a child has lead poisoning:

- The health department must provide you services to reduce your child's lead level.
- The health department must investigate your home to find the source of the lead. A licensed lead risk assessor must conduct the investigation.
- If lead hazards are found on the property, the landlord must correct them.
- If the property receives HUD funds, a risk assessment must be completed in 15 days and hazards addressed within 30 days of a completed report.
- The lead hazards may also be a violation of the local housing code and the terms of your lease. State law requires that a landlord provide a tenant with a safe, clean, and habitable conditions that meet applicable health and housing codes.
- If a state or local agency orders the permanent elimination of lead hazards, the work must be done by licensed lead abatement contractors. Most contractors are not trained in these practices.

How do I know if someone is licensed? All licenses are issued by the Indiana State Department of Health and the Indiana Professional Licensing Agency. You can find a link to the current list at [www.ikecoalition.org](http://www.ikecoalition.org).

### For More Information:

- Indiana State Department of Health: [www.in.gov/isdh/19124.htm](http://www.in.gov/isdh/19124.htm) or 800-433-0746.
- Lead-Safe Indiana Task Force and Improving Kids' Environment: [www.ikecoalition.org](http://www.ikecoalition.org) or 317-677-4760

## ***APPENDIX D***

### ***American Lead Company-A Case Study in Martindale Brightwood***

National Lead Industries (NL Industries), formerly known as the American Lead Company, operated a lead recovery facility (lead smelter) from approximately 1946 until 1965 at 1502/1600 E. 21<sup>st</sup> Street. During the time of the American Lead smelter operation, there were multiple fires in the filter room, which created dust explosions with a smoke laden of poisonous lead. A 1976 health assessment of smelting workers found neurological damage and other negative physiological effects, an early indication of unsafe conditions at the American Lead facility. Conditions for the areas surrounding the plant worsened significantly as a result of an explosion and fire in 1971. Local officials cite the explosion as the primary cause of lead contamination on residential properties in Martindale Brightwood.

Neighborhood opposition toward the NL Industries facility began in 1965 when community members fought to prevent rebuilding one smelter building after a reported hazardous fire destroyed it. Community action shifted focus to neighborhood soil contamination in the 1980s when the MCHD questioned the health and safety of children playing baseball at the nearby Douglas Park. Soil testing at Douglas Park revealed high concentrations of lead, the city agreed to a further investigation of the surrounding community.

The IDEM and MCHD collected numerous surface soil samples on various residential properties between 1995 and 2004. The EPA's standard for lead in bare soil in play areas is 400 parts per million (ppm) by weight and 1200 ppm for non-play areas. Residential parcels above 400 ppm is deemed unsafe and requires remedial action if children or pregnant women reside in the vicinity. If any address has an average lead level beyond 1,200 ppm, it will require cleanup because it is considered hazardous. Based on IDEM's and MCHD's surface soil results, elevated levels of lead in surface soil extended north to E. 25<sup>th</sup> Street, west to Dr. Andrew J. Brown Avenue; south to approximately E. 19<sup>th</sup> Street; and east to Tallman and Bloyd Avenue. Lead concentrations in soils were varied and ranged from below 400 ppm to 17,200 ppm.

Upon this further investigation, the Indiana Department of Environmental Management (IDEM) found NL Industries liable for the cleanup of all contaminated areas within the community. It appeared that lead contaminated soil extended several blocks north/northwest, east and south/southeast of the former NL Industries location.

After several negotiations, IDEM and NL Industries hit an impasse regarding the boundaries of the proposed cleanup area. NL Industries contended that it was impossible to know the specific sources of lead contamination in such a large area, particularly in an industrial area that included multiple manufacturing plants and where many houses were built before regulations regarding lead paint went into effect. The IDEM decided to turn the case over to the U.S. EPA. In 2004, the U.S. EPA and NL Industries signed an Administrative Order of Consent (Order) defining the lead contamination boundaries which NL Industries agreed to pay to cleanup. Unfortunately, final negotiations moved the boundaries two blocks south and one block east of the original boundary lines IDEM had proposed. The negotiated boundaries were 23<sup>rd</sup> Street to the north, Arsenal Avenue to the west, and Tallman Avenue to the southeast. The original suggested

boundaries extended north to 25<sup>th</sup> Street, west to Dr. Andrew J. Brown Avenue, and included a block to the east encompassing parts of Hillside Avenue, Lawrence Street and Bloyd Avenue.

As part of the Order, NL Industries conducted an additional soil investigation within the refined area of concern. This surface soil investigation was conducted during the time period of May 2005 through August 2006. Soil sampling occurred at 221 parcels at depths of 0-3, 6-12, 12-18 and 18-24 inches. The two most frequent depths were at 0-3 and 6-12 inches. Each parcel received at least one test; some received up to 12 tests; additionally, some parcels were tested on more than one occasion. The May 2008 IUPUI Capstone Study created seven maps which illustrate the levels of lead found during the 2005-2006 investigation. Based on a review of the maps, a majority of the surface soil lead concentrations were above 400 ppm (ranging in concentration from 400 – 14,700 ppm). A copy of each map is provided with this case study.

In August/September 2007, the U.S. EPA reportedly finished the cleanup (soil removal) of the properties identified within the modified boundaries. Lead contaminated soil above 400 ppm was to be excavated with a maximum depth of two feet, and properly disposed. Unfortunately, no cleanup documentation report is available for review to determine the adequacy of cleanup. Specifically, the soil confirmation analytical results have not been made public. Many residents and coalition groups such as the Martindale Brightwood Environmental Justice Collaborative (MBEJC) believe there still needs to be more done. Uncertainty regarding the current lead contamination levels at residential properties has raised concerns about neighborhood health and may have undercut area efforts for additional community revitalization.













# Number of Pb Level Tests per Parcel

