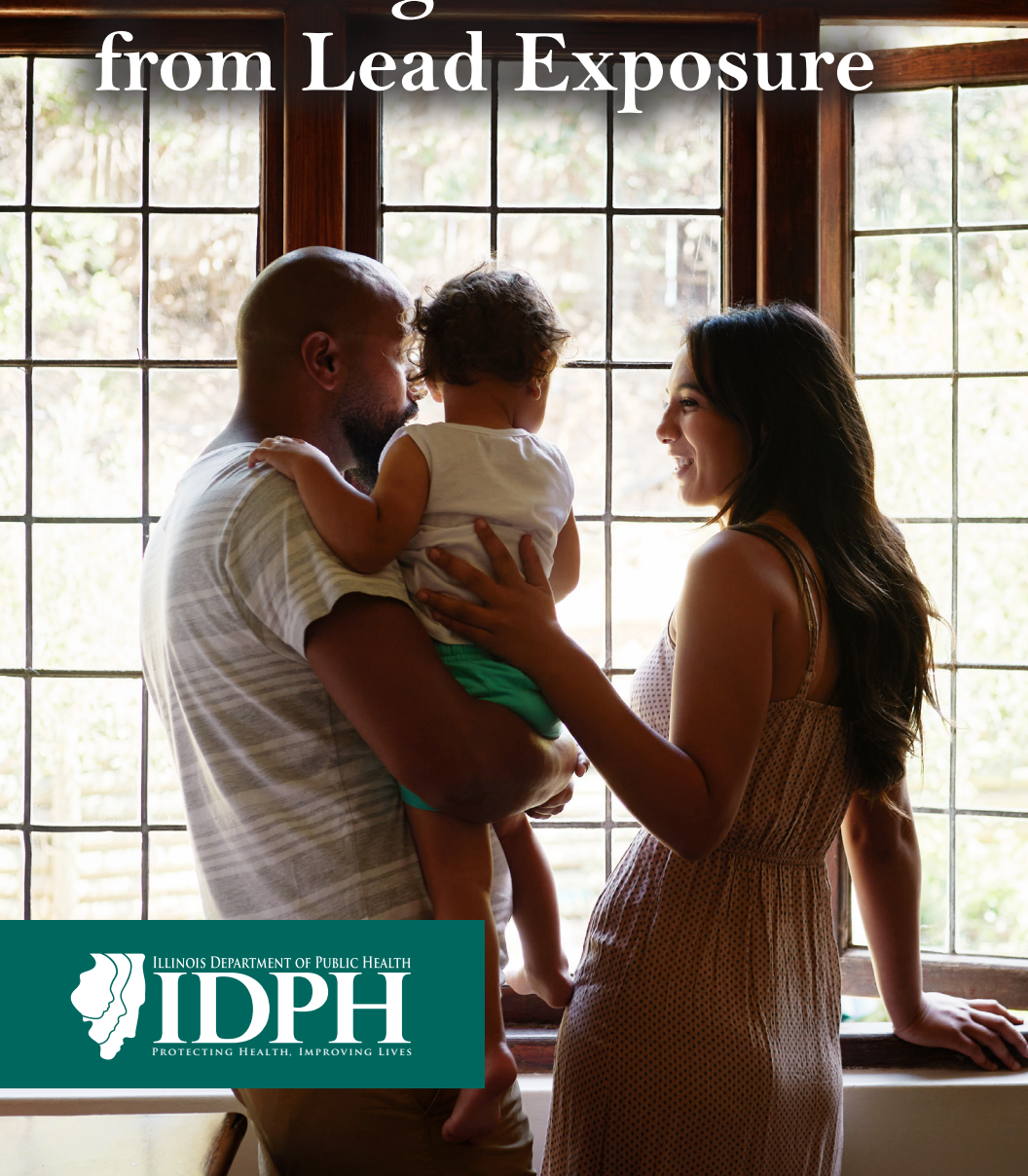




State of Illinois
Illinois Department of Public Health

Protecting Children and Pregnant Persons from Lead Exposure



ILLINOIS DEPARTMENT OF PUBLIC HEALTH

IDPH
PROTECTING HEALTH. IMPROVING LIVES

A child or pregnant person has been tested for lead and identified with an elevated blood lead level. What can be done to help reduce lead exposure and lower the blood lead level? This comprehensive guide will help find ways to reduce lead exposure and lower a child's or pregnant person's blood lead level.



dph.illinois.gov/illinoislead

Illinois Lead Hotline: 866-909-3572

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What is Lead Exposure?

There is no safe level of lead.

Lead is a poison. Even small amounts can interfere with normal body processes and brain development. Exposure to lead is the most common environmental health hazard for children in the United States. Although Illinois has made great progress in reducing elevated blood levels in children, the state still has one of the highest rates in the nation for the number of children with elevated blood lead levels. The most common exposure to lead by children is through the ingestion of paint chips and contaminated dust from deteriorated or disturbed lead-based paint in homes built before 1978. About 75 percent of Illinois homes built before 1978 contain some lead-based paint.

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The body carries the lead in the blood to soft tissues and bones, where it can be stored for many years. Lead harms several organs, including the brain and kidneys. **There is no safe level of lead in the body.** Effects of lead exposure cannot be corrected once they occur.

Who is at risk?

Lead exposure is a preventable health problem and affects people regardless of age, race, or economic level.

- **Children:** Children 6 years of age and younger are at the greatest risk. Their small bodies absorb more lead than adult bodies do and the lead harms them more because their bodies are still growing. Children also are more likely to absorb lead dust because they frequently place hands and other objects in their mouths.
- **Pregnancy:** A pregnant person can pass lead in their body to their unborn baby through their blood and through breastmilk after birth. Lead can have negative effects on both a pregnant person and their developing baby.
- **Adults:** Although children are primarily at risk, adults with certain occupations and hobbies can be exposed to lead as well. Jobs that have the potential to cause lead exposure include battery manufacturing and recycling, construction, auto repair, firing range work, and welding/

plumbing. Workers in these occupations can unknowingly carry lead dust home from the workplace and expose their families. People who remodel homes have a high risk of becoming exposed to lead as well.

Pregnancy and Lead

A pregnant person can breathe in or swallow lead before or during pregnancy. Lead is absorbed by the body and is stored in a person's bones for years. Lead that has been stored in a pregnant person's bones will get into the blood stream and can be passed on to the unborn baby. Lead can also be in breastmilk. Lead poisoning often does not make you look or feel sick.

How do I know if I'm at risk for lead exposure?

You are at risk if:

- You live in a home built before 1978 where renovations are currently or have recently occurred.
- Your child has tested positive for lead exposure.
- You eat non-food items, such as clay, soil, pottery, or paint chips.
- You have an oral piercing.
- You use items bought outside the United States, such as food products, cosmetics, herbal medications, or ceremonial powders.
- You cook with or store food items in glazed pottery, painted china, or leaded glass.
- You or someone you live with works or has hobbies that may expose them to a lead source.

How does lead exposure affect my unborn child?

- Damage to the developing brain.
- Born too soon.
- Born too small.
- Learning and behavior problems.

How does lead exposure affect a pregnant person?

- High blood pressure
- Miscarriage



How can a pregnant person protect themselves and their unborn baby from lead?

- Get tested. A blood test is the only way to know how much lead is in your body.
- Eat foods rich in calcium, iron, and vitamin C to help prevent your body from absorbing lead.
- Use lead-free dishes and pots. Lead is more likely to be in pottery from Latin America, the Middle East, India, and in painted china. Lead is also in pewter, leaded glass, and crystal.
- Avoid using traditional medicines, cosmetics, or spices from other countries. They are more likely to contain lead than products made in the United States.
- Don't eat things that could contain lead, such as clay, pottery, soil, or paint chips. Talk with your doctor if you have ever done this.
- Be extra careful if you have jobs or hobbies that involve working with lead. Wash your hands before eating and don't eat in the work or hobby area.
- If your home was built before 1978, when lead paint was still in use, stay away from any repair work being done until the area has been completely cleaned by the workers.



Consequences of Lead Exposure

Exposure to lead can cause a number of serious health problems. Lead can interfere with brain development and slow physical growth.

Children with elevated lead levels may suffer from:

- learning problems
- lowered IQ
- mental retardation
- slowed growth
- behavioral problems



Children with elevated blood lead levels rarely exhibit symptoms, or symptoms can mimic other childhood problems or illnesses such as a cold or the flu. **Children with high blood lead levels might exhibit:**

- stomachaches
- poor appetite
- hyperactivity
- sleeping problems
- irritability
- constipation
- vomiting
- weight loss
- dizziness
- excessive tiredness

***** At very high levels - seizures, coma, and death can occur.**

Childhood lead exposure also can contribute to problems later in life, such as:

- under-performance in school
- violent or hostile behavior
- increased absence in school
- attention deficit disorder (ADD)

Damage caused by lead exposure is permanent and non-reversible. However, spending time communicating with and reading to your child may improve his/her ability to:

- process information more quickly
- perform multiple tasks at the same time (multi-tasking)
- retrieve old information more rapidly
- learn new information more easily
- concentrate through distractions

If you have concerns about your child's development, talk to your health care provider or a member of the lead program staff at your local health department. Or for Early Intervention Services, find the Illinois Department of Human Services office nearest you at:

www.dhs.state.il.us/page.aspx?module=12&OfficeType=4&County=

Medical Treatment for Lead Exposure



Treatment for lead exposure depends on how much lead is in the blood. Children and pregnant persons with a blood lead level in excess of IDPH's identified action level for an elevated blood lead level are referred to the public health department and assigned a nurse case manager and an environmental inspector for a home assessment. Case managers and environmental inspectors help provide the family with education on lead, finding lead sources and getting rid of them, personal and household hygiene measures, renovation recommendations, nutritional interventions, and future blood lead follow-up testing.

STEP 1 – Find

The most important part of reducing a child's blood lead level is to find the lead source and remove it to prevent further exposure to a child or pregnant person. The family should follow the recommendations given by the nurse case manager and environmental inspector to remove or eliminate the lead hazard (refer to pages 11-18 on ways to prevent lead exposure and pages 23-27 for safe lead removal practices).

STEP 2 – Nutrition

Calcium, iron, and vitamin C are important parts of a healthy diet and also help to decrease the way the body absorbs lead (refer to pages 7-8). Consider talking to your medical provider about a multivitamin with iron if not already taking one.

STEP 3 – Developmental assessment

Lead can interfere with growth and brain development that could lead to learning difficulties, decreased reading ability, attention problems, and behavioral problems. Discuss with your medical provider if you have any concerns about your child's development.

STEP 4 – Chelation

For children with extremely high lead levels (greater than or equal to 45µg/dL), special medicines are required. These special medications, called chelation agents, chemically attach to the lead and remove it from the body by excreting it in urine. The purpose of the treatment is to lessen the progression of health complications. **This treatment is not without some risk and is not recommended for lead levels less than 45µg/dL.

STEP 5 – Follow-up testing

The only way to assess if a blood lead level is decreasing is to be retested. Contact your medical provider to make arrangements for repeat lead testing.

Follow-up Venous Blood Testing

Follow up venous blood testing is required to adequately monitor that your child's lead level is decreasing. The frequency of lead testing will be based on your child's blood lead level.



Follow-up Schedule for a Child's Blood Lead Test After a Confirmatory Venous Blood Draw

If Your Child's Venous Blood Lead Level $\mu\text{g}/\text{dL}$ is...	Then They Should be Tested...
0-4	Yearly
5-14	Every 3 months
15-19	Every 2 months
20-29	Every month
30-44	Every 2 weeks
≥ 45	Every week

Recommended that medical provider repeat the blood lead test if there is a rise of $5\mu\text{g}/\text{dL}$ or higher or when deemed necessary.

All follow-up blood testing must be a venous draw (from the arm) because test results are more accurate.

Nutrition and Lead Prevention

Nutrition can play a role in reducing childhood lead exposure for both children and pregnant persons. Lead is a poisonous metal that our bodies cannot use.

Young children absorb higher amounts of lead than adults do.

Lead is absorbed faster on an empty stomach than a full stomach.

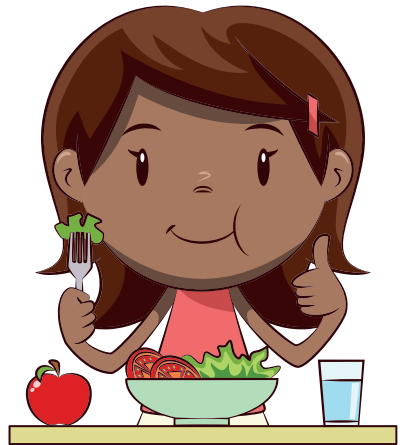
Eating certain foods can limit the amount of lead absorbed by the body.

Since children absorb lead at a faster rate, it's important that your child's stomach is full. An empty stomach absorbs more lead. Providing your child with regular meals and snacks can help his or her body absorb less lead. Children should be fed three meals and 2 or 3 snacks each day.

It is important to reduce the amount of lead that is absorbed and stored in the bones. Good nutrition helps accomplish this goal. A child's body requires certain minerals, especially calcium and iron. When these minerals are lacking in the body, lead absorption is increased. If a child is lacking important nutrition, their body can retain more of the lead than it would have otherwise.

Your physician may also want to consider a multivitamin supplement with iron for your child.

In addition, do not use bone meal as a dietary supplement. If animals have been exposed to lead, it can be stored in bone tissue.



What Foods Help Lessen Lead Absorption?

- **Iron**

Children need to have plenty of iron in their system. To the body, iron and lead appear similar. An iron rich diet can protect the body from the harmful effects of lead.



Beef, chicken, fish, eggs, nuts or sunflower seeds, beans, raisins, dates, iron-fortified cereals, green leafy vegetables

- **Calcium**

Foods high in calcium also help the body to absorb less lead.



Milk, yogurt, cheese, cottage cheese, spinach, calcium-enriched orange juice

- **Vitamin C**

Helps the body absorb iron.

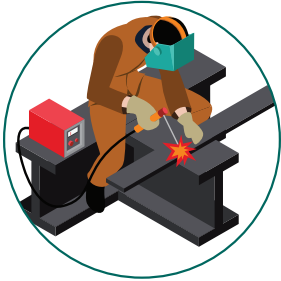


Potatoes, tomatoes, broccoli, oranges, grapefruit, berries

Common Sources of Lead Exposure and Ways to Avoid Them

A child's environment can be full of lead and being exposed to lead may cause serious health problems. This section will identify common sources of lead in the home and environment and explain ways to avoid them.

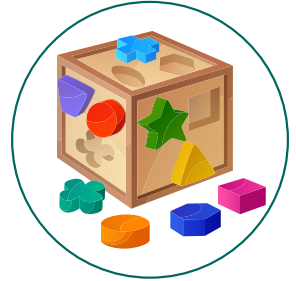
Jobs/ Hobbies



Dust



Household Items



Paint



Water



Soil



Imported Goods



Most Common Areas to Find Lead Dust and Paint in the Home

Household dust is a common source of lead for young children. The dust may contain lead from deteriorating interior/exterior paint that can adhere to hands, toys, food, or other objects young children put in their mouths. Lead dust can be created during sanding, removing old wallpaper or carpet, or even from opening and closing painted windows and doors. Your home may look clean and still contain lead dust, which a child can breathe in or eat.

Lead paint was used on the inside and outside of homes built before 1978. Young children often ingest cracking, chipping, and peeling lead-based paint from the inside and outside of homes, playground equipment, furniture, and toys.



Ways to Prevent Lead Exposure from Lead Paint and Dust

Wash bottles, teething rings, pacifiers, and toys with soap and water. Security blankets should also be washed often to remove any lead dust.



Use soap and water to dust and mop often to remove lead dust in the house. Frequently clean leaded surfaces that regularly experience friction, such as *windows, doors, and floors*.



- Be sure to use two separate buckets, one bucket for soapy water and the other bucket for clean water. Mop water should be flushed down the toilet and not dumped outside or in the sink.
- Use paper towels or disposable rags (one set for washing and one for rinsing).
- Be sure to change rags and mop heads with each cleaning, so lead dust is removed and not just smeared around at the next cleaning.
- If rags and mop heads are to be washed and reused, run one cycle of clear water through the washing machine before doing other laundry.
- Don't forget places like *television screens, table tops, crib rails, stair steps, doorknobs, and mini-blinds*.

Children should always be seated at a clean table to eat. Walking around while eating increases the chance of food being dropped and exposed to lead dust. Children should not eat food dropped on the floor or ground – the five second rule DOES NOT apply. Clean eating surfaces and counter tops before each meal and snack. Children should not eat outdoors. Wash your child's hands and face with soap and water before eating, naps, and bedtime.



Don't let your child eat or chew on anything you think may contain lead-based paint. Look for teeth marks on the woodwork in your home.

Vacuum all soft surfaces, such as couches and curtains. High efficiency particulate air (HEPA) vacuums are the best type to collect lead dust, since conventional vacuums let dust particles into the air where they can be breathed in. However, if a HEPA vacuum is not available, conventional vacuums equipped with special dust bags can be used. Conventional vacuums also must be well maintained (belts tightened, etc.). Regular vacuuming will keep dust from building up to the point of being a problem.

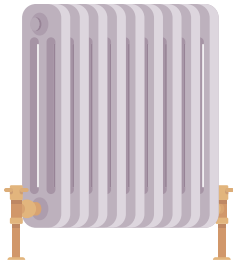


Be aware of lead-based paint that may have been used on:

cribs, highchairs, windows, woodwork, walls, doors, railings, and ceilings.

- Repair all areas that display flaking or peeling paint. Place duct tape over loose paint or plaster for temporary covering. Use lead safe methods to remove paint, plaster, or wallpaper. Refer to pages 23-37 for safe lead removal practices.
- To remove paint chips and dust from around the outside of the house, hose off porches, sidewalks, driveways, and the sides of buildings. Scrub with a stiff brush or broom and soapy water; then rinse as clean as possible. Pick up and throw away paint chips.

Don't forget to:



- Cover old lead painted steam radiators with metal screening so toddlers cannot pick at the paint.
- Change filters on furnaces and air conditioners according to the manufacturers' instructions.

Soil

Lead contaminated soil may be found around your home, garden, or playgrounds. Lead in soil can be ingested (eaten) as a result of children often putting hands and other objects in their mouth. Lead from soil is often breathed from the air or tracked into your home.

Sources of soil contamination

- Car exhaust from leaded gasoline (which was banned in 1996).
- Outside lead-based paint from homes, buildings, porches, or fences with cracking or peeling paint.
- Industrial sources such as former lead smelters, construction sites, and battery manufacturing.
- Older playground equipment.

In addition, children should not eat snow or icicles or drink water that has run off a building.



Ways to Prevent Exposure from Lead in Soil

- Remove shoes upon entering your home so soil and dust are not tracked into the house. Keep washable rugs at the entrances to your home. Wash these rugs separately from other items. Run the rinse cycle once before using the washer again.
- Check the outside of your home, including porches and fences, for cracking and deteriorating lead-based paint that may contaminate soil in your yard or be tracked into your home.
- Fences and vegetation such as grass and bushes help reduce wind from carrying contaminated soil into your home. Keep windows closed on windy days to reduce lead dust from soil being blown inside.
- Do not let children dig or play in dirt, including potting soil. Bare soil should be re-sodded or covered with fresh top soil or plastic covered with decorative rock or wood chips. Wet rototilling can be done to lessen lead in surface soil if lead levels are not high.
- Build a sandbox with a bottom and fill it with clean lead-free sand to provide children with a safe play area. The sandbox should have a lid placed on it to keep the sand clean between playtimes.
- Place outdoor play equipment away from painted structures. Steel play equipment such as swings should be maintained since the paint may contain lead.
- If lead paint has been used on the outside in the past, cover bare soil with grass, mulch, rock, or flower beds around the edge of the home (3 feet from the home). Bare soil in flower beds also needs to be mulched.
- Plant vegetable and herb gardens away from painted structures and roadways. Lead dust may have contaminated soil in your yard. Lead can be taken up into the plants. To reduce risk, grow herbs and leafy greens in pots or raised garden beds. Remove outer leaves of garden vegetables (for instance, lettuce and cabbage) and throw them away. Use a mild vinegar rinse on garden vegetables that do not have a removable peel, such as tomatoes and cucumbers.
- Some cement or concrete surfaces may contain relatively high levels of lead. Hose down porches or sidewalks regularly.

Water

The only way to know whether your tap water contains lead is to have it tested. You cannot see, taste, or smell dissolved lead in drinking water. Contact the Illinois Department of Public Health or your local health department for information about how to test for lead in drinking water.

For homes served by a community water system, an annual water quality report, called a Consumer Confidence Report, should be available from your water utility. Contact your water utility to receive a copy.

For homes served by a household well or other private water supply, contact your local health department for more information on contaminants of concern in your area.

Even if your water provider provides water to your home that does not contain lead, it can still get into your water through your home's plumbing system.



When testing your water for lead, you should use an Illinois Environmental Protection Agency approved laboratory. A list of IEPA approved laboratories can be found at <https://www2.illinois.gov/epa/topics/certification-training/lab-accreditation/Pages/accredited-labs.aspx>.

Strategies to Reduce Lead in Water

Best Practices to Reduce Lead in Water

- Use only **cold** water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water.
- Remove or regularly clean faucet aerators. The small screen can trap sediments containing lead.
- Before using water for cooking or drinking, flush cold water through the fixture for 1–2 minutes.

Long-term Strategies

- Replace plumbing materials such as fixtures, piping, fittings, and service lines containing lead, with lead-free materials approved under the Illinois Plumbing Code.
- Prioritize replacement of fixtures by frequency of use for cooking, drinking, and making baby formula.
- **Even** after replacement, always follow best practices.

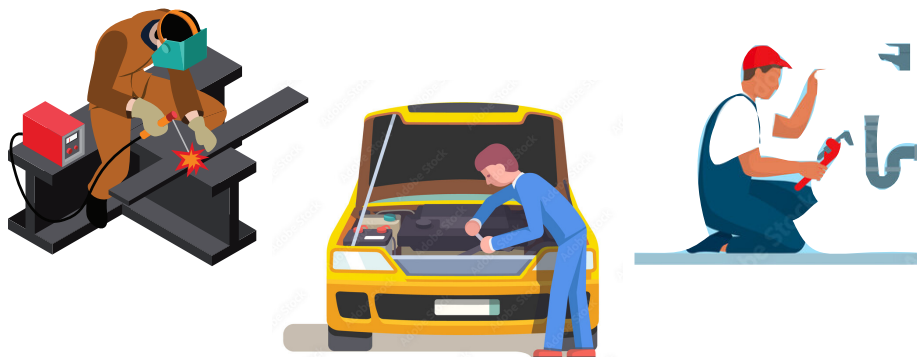
Temporary Strategies

- Adhere to all best practices to reduce lead in water.
- Consider using point-of-use filters certified for lead removal (NSF 53 and NSF 58). After installation, filters should be maintained and replaced in accordance with manufacturer's recommendations.



Jobs/Hobbies of Household Members

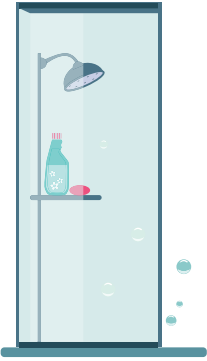
Occupations and hobbies that may result in lead exposure have been known to be a concern for the parent as well as the children living in the household. Lead dust can be carried into the home on clothing, shoes, skin, and hair, which can expose children living in the household.



Common jobs/hobbies that involve lead include:

- target shooting
- casting fishing weights and bullets
- pottery/ceramics
- stained glass
- refinishing furniture
- hazardous waste
- radiator repair
- lead industry work
- smelting
- battery manufacturer or repair
- welding
- construction renovation
- chemical preparation
- home repair and/or house painting
- glass manufacturing
- brass or copper foundry
- valve and pipe fitting
- operating industrial machinery or equipment
- automotive repair
- bridge/tunnel/elevated highway construction

Ways to Prevent Bringing Lead Home to Children from Jobs/Hobbies



Lead dust may settle on your clothes, skin, or hair. Stop lead dust from getting tracked into your home or vehicle by showering and changing out your clothes and shoes before leaving work.

If you cannot shower or change clothing at work, remove your shoes in the garage or entryway, immediately shower and change clothes, especially before sitting on furniture or holding/playing with children, etc.

Keep work/hobby clothes in a hamper separate from other laundry to avoid cross-contamination. Wash them separately and run one cycle of clear water through the washing machine before doing other laundry.



Do not eat, drink, smoke, or apply cosmetics in areas where lead is used.



When working around lead, a respirator and other protective gear should be used. If not, rinse your mouth and wash hands frequently. If workplace conditions are a concern, contact the Illinois Department of Labor, the federal Occupational Safety and Health Administration (OSHA), or the Illinois Department of Public Health.

Imported Goods and Foods

Other countries may not have the same requirements for production of spices, health remedies, supplements, or non-food items. Children exposed to imported household items containing lead may be at risk for increased blood lead levels.

Foods (made outside the United States)

Spices or candies bought outside the United States or made outside the United States may contain high levels of lead. Items can include:

- Spices (chili powder, turmeric, curry powder)
- Candies or snacks
- Foods stored in lead seamed cans or glazed pottery



Prevention

- Be cautious when purchasing these items.
- Choose healthy snacks for your child, such as fruits, vegetables, lean meats, or dairy.

Health Remedies



Some health remedies, supplements or medications from Asia, India, China, or other countries contain high lead levels. Items are often used to help with stomach aches, fevers, rashes, or teething. Items can include:

- Azarcon, Greta – orange or yellow powder
- Paylooah, Kandu – red powder
- Ayurvedic remedies
- Ghasard – brown powder

Prevention

- Avoid using home health remedies; discuss with your medical provider other treatment options.

Cosmetics and Ceremonial Powders

Products from Africa, Asia, and the Middle East may have high lead levels.

Items can include:



- Kohl, Surma – eyeliner
- Sindoor/Kumkum – red or orange powder
- Kajal– used on eyes

Prevention

Do not use these items on your children. Don't allow children to play with or touch these items. Do not use on yourself or display the items in your home where a child could be in contact with it.

Non-Food Items (found in household)

Even items commonly found at home can contain lead.

Items can include:

- Art supplies, toys, and other similar products manufactured outside of the U.S.
- Glazed pottery, ceramic or pewter dishes, or leaded crystal.
- Jewelry – metal parts or paints used on these items may contain high levels of lead.



Prevention

Use lead free dishes, pots and pans when preparing, serving, or storing food.

Other Household Items That May Contain Lead

- Mini blinds (before 1997)
- Painted toys, pewter figurines
- Antique furniture, cribs
- Curtain weights
- Candles made with lead wicks

Before Renting or Buying a Pre-1978 Home or Apartment

Federal Law Requires:

- Sellers must disclose known information on lead-based paint or lead-based paint hazards before selling a house.
- Real estate sales contracts must include a specific warning statement about lead-based paint. Buyers have up to 10 days to check for lead.
- Landlords must disclose known information on lead-based paint and lead-based paint hazards before leases take effect. Leases must include a specific warning statement about lead-based paint.



Renter's Rights

Illinois Lead Section 45/10

- The Illinois Department of Public Health or representative of a unit of local government or health department approved by IDPH for this purpose, shall report any violation of this act to the state's attorney of the county in which the regulated facility is located.
- The state's attorney has the authority to charge the owner with a Class A misdemeanor, and shall take additional measures to ensure that rent is withheld from the owner by the occupants of the dwelling units affected, until the mitigation requirements under Section 9 of this act are complied with.
- No tenant shall be evicted because rent is withheld under the provisions of this act or because of any action required of the owner of the regulated facility as a result of enforcement of this act.



Lead Abatement/Mitigation in Your Home

The Illinois Lead Poisoning Prevention Act and Code requires a licensed lead abatement contractor with licensed lead workers to perform all lead abatement and mitigation activities in regulated facilities. **For a list of licensed lead abatement professionals in Illinois, visit dph.illinois.gov/illinoislead.**

On a case-by-case basis, the Illinois Department of Public Health may grant a waiver to allow a homeowner to conduct lead abatement or lead mitigation activities, provided it does not endanger the health or safety of humans. If a waiver is granted, it is important to follow IDPH rules regarding lead safe work practices. Disturbing any lead-bearing surface can be very dangerous for both the workers and the occupants of the house.

Read the following sections completely to understand the requirements for conducting a successful lead abatement or mitigation project in your home.



Health Protection Activities

The overall goal is to prevent exposure to interior and exterior lead hazards safely and cost-effectively. Your lead abatement/mitigation project may generate large amounts of paint chips, debris, and dust containing lead. Proper care should be taken to protect yourself and others from being exposed to lead during project activities. **The following must be considered before starting the abatement process:**

No child, pregnant person, or pet should enter the work areas. For major projects, arrangements should be made to have children, pregnant person, and pets stay elsewhere while the project is being completed.



Water must be available for cleaning activities and worker hygiene.

Before eating or drinking during a project, wash hands and face thoroughly and rinse your mouth.



Shoes or shoe covers should be removed before leaving the contained work area to avoid tracking lead into clean areas.



Protective clothing must be worn. This includes disposable coveralls, shoe covers, gloves, hair covers, and safety glasses. Protective clothing should be removed in a designated change area and immediately bagged for disposal. Note: If non-disposable protective clothing is utilized, persons who clean or launder the clothing must be informed of the potentially harmful effects of exposure to lead. Launder separately and do not shake soiled clothes or attempt to remove leaded dust by blowing.

A respirator should be worn. Painter's masks WILL NOT provide the respiratory protection needed. The respirator must be approved by the National Institute of Occupational Safety and Health (NIOSH) and be properly fitted and maintained according to manufacturer's instructions. Respirators must be cleaned at the end of each day and stored in a clean area. Facial hair is not allowed while wearing a respirator. Facial hair prevents a good seal between the respirator and the skin and may allow lead to be inhaled or ingested.



Work Area Preparation and Containment – Interior Work

It is important to keep people out of your work areas to protect your possessions from being contaminated with lead dust and to prevent lead from being tracked to other rooms in your house during work. The following steps must be taken before beginning lead abatement or lead mitigation activities inside of a home:

Restrict Access to Work Areas

- The work areas must be made off-limits to children, pets, and pregnant persons, as well as anyone who is not wearing the proper protective clothing.
- Post warning signs at all work area entrances. The signs are required to say “Warning, Lead Work Area, Poison, No Smoking or Eating.”
- Caution tape and/or solid barriers must also be used to keep people away from work areas.



Pre-clean Work Areas

- Turn off all heating and air conditioning systems. Seal each vent and return duct with a layer of 6-mil plastic and duct tape.
- Clean all solid movable objects by using either a HEPA-filtered vacuum, or by washing them with a water and detergent solution. Remove the objects and store them in a lead-free area. This includes all furniture, toys, utensils, etc.
- Clean all carpets, drapes, clothing, bedding, etc. twice with a HEPA-filtered vacuum. Remove the objects and store them in a lead-free area.
- Clean all fixed objects such as cabinets, book shelves, walls, floors, etc. with either a HEPA-filtered vacuum or a water and detergent solution.



Contain and Protect Work Areas

- Each work area must be contained and sealed off to avoid contaminating other rooms in the house with lead dust. The best materials to use are duct tape and 6-mil plastic sheeting.
- Cover all items in the work area that cannot be removed with 6-mil plastic sheeting. This includes radiators, refrigerators, stoves, kitchen cabinets, built-in furniture, and bookcases.
- Cover the floors in each work area with two layers of 6-mil plastic sheeting. At the end of each work day clean, remove, and dispose of the top layer and place a new layer of plastic on the floor.



Lead Abatement/Mitigation Strategies

There are five general lead abatement/mitigation strategies. More than one of these methods can be chosen, depending on the areas that need abated/mitigated and available resources.

Interim Controls – Temporarily controlling lead-based paint hazards.

Replacement – Replacing building materials (doors, windows, trim, soffit, siding, etc.) that are coated with lead-based paint with new lead-free materials.

Removal – Removing the lead-based paint from building materials.

Encapsulation – Coating the lead-based paint on building materials with a liquid-applied sealant.

Enclosure – Covering the lead-based paint on building materials with a solid barrier.



Interim Controls

Interim controls are intended to make dwelling units lead-safe by temporarily controlling lead-based paint hazards. Typical methods include cleaning areas with high concentrations of lead dust, painting over surfaces containing lead-based paint, and addressing high friction and impact surfaces that produce lead dust. Interim control measures are effective if they are carefully monitored, maintained, and, in some cases, professionally reevaluated.



Cleaning

- Bare floors and surfaces should be vacuumed with a HEPA vacuum and thoroughly cleaned with a water and detergent solution. Frequently replace the wash water while cleaning.
- Small rugs and mats should be machine washed or discarded.
- Large rugs and carpets should be vacuumed with a HEPA vacuum or removed and discarded.
- These areas should be cleaned on a regular basis.



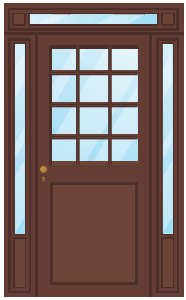
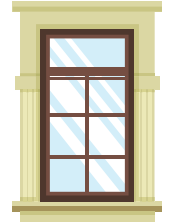
Painting

- Clean, prepare, and contain your work area(s) as discussed previously.
- Remove loose paint chips by wet scraping methods (see page 30 Removal).
- Clean surfaces by washing with a water and detergent solution.
- Paint over surfaces with lead-free paint. For the best results apply a coat of primer before painting.
- Monitor the paint condition and reapply as needed.

Address Friction and Impact Surfaces

Windows

Painted windows may create lead dust and chips when opened and closed. Interim controls include enclosing the friction and impact surfaces of the window; or removing the lead-based paint from the friction and impact components of the window by using wet scraping methods.

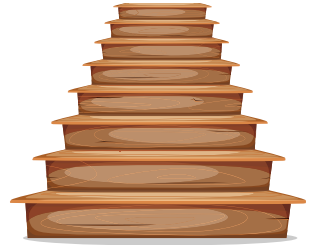


Doors

As with windows, the rubbing and banging of surfaces can produce lead dust and chips. Interim controls include replacing high friction and impact components, removing the lead-based paint from the components, realigning the door frame, trimming the door to fit the door frame, or installing a doorstop to prevent the door knob from banging against a wall coated in lead-based paint.

Stairs

Foot traffic on stairs will cause lead-based surface coatings to deteriorate over time. Interim controls include installing a hard, cleanable covering over the stairs (rubber tread guards); or securely installing carpet on the stairs.



Floors/Porches

Lead-based surface coatings on floors and porches can also be worn over time due to foot traffic. Interim controls include coating the surfaces with polyurethane or durable abrasion-resistant paint; or covering the surface with carpeting, linoleum, tile, etc.

Replacement

Replacement consists of the complete removal of doors, windows, trim, and other building items that are coated with lead-based paint. These materials are replaced with new lead-free products. Replacing items coated in lead paint is beneficial because it completely removes the source. The new building materials can also improve the appearance, quality, and energy efficiency of your home.

When conducting a replacement project, you must follow these steps:

- Clean, prepare, and contain your work area(s) as discussed previously.
- Mist the materials coated with lead-based paint and the surrounding areas with water to control dust.
- Remove the materials. Wrap larger items in plastic sheets and seal with tape.
- Collect and bag all visible debris.
- Use a HEPA-filtered vacuum to clean the work area and wash the area with a water and detergent solution.
- Install the new lead-free materials.



Removal

Removal consists of removing the lead-based paint from building materials. There are various ways to remove the paint, but some are costly and can generate large amounts of waste materials. The recommended removal method is wet scraping. Wet scraping can be very effective, generate a small amount of dust, and be relatively inexpensive. However, wet scraping can be difficult and time consuming.



When using the wet scraping method to remove lead-based paint, you must follow these steps:

- Clean, prepare, and contain your work area(s) as discussed previously.
- Wear a respirator and eye protection.
- Mist the paint surface with water.
- Gently scrape the paint off. Be sure to reapply water as needed to keep the surface moist.
- Collect and bag paint chips.
- Use a HEPA-filtered vacuum to clean the work area and wash the area with a water and detergent solution.
- Repaint the surface with lead-free paint.

Encapsulation

Encapsulation consists of coating the lead-based paint on building materials with a liquid-applied sealant. The sealant creates a protective barrier over the paint. The barrier prevents chalking and flaking of lead-based paint and keeps paint chips and dust from becoming accessible to children.

Encapsulation should not be used on friction or impact surfaces, such as window or doorjambs, or on deteriorated surfaces.

When encapsulating lead-based paint, follow these steps:

- Select an encapsulation product that provides at least a 20-year manufacturer's warranty on the effectiveness of the product.
- Clean, prepare, and contain your work area(s) as discussed previously.
- Have a licensed lead risk assessor conduct a patch test on each surface to be encapsulated.
- Prepare the surface by wet scraping any loose paint and washing it with a water and detergent solution. Be sure to remove all dirt, grease, chalking paint, mildew, and any other surface contaminants.
- Collect and bag all paint chips.
- Apply the encapsulant following the manufacturer's instructions.
- Use a HEPA-filtered vacuum to clean the work area and wash the area with a water and detergent solution.
- Be sure to inspect each encapsulated area monthly to confirm the encapsulant is still intact.



Enclosure

Enclosure is the installation of a hard, durable barrier that is mechanically attached to building components. Surfaces with lead-based paint are enclosed and sealed to prevent access and exposure to lead dust. Materials such as gypsum board, fiberglass mats, wood, tile, paneling, vinyl, stone, or similar durable materials are placed over ceilings, floors, and interior walls. Vinyl or aluminum siding can be placed over exterior walls. Specially designed rubber, vinyl, plastic, and metal products have been developed for wall corners, stairs, windowsills, doors, pipes, and door jambs. Enclosures should have a design life of at least 20 years.



When enclosing lead-based paint, you must follow these steps:

- Clean, prepare, and contain your work area(s) as discussed previously.
- Lead-based paint surfaces that will be enclosed must be labeled with a warning first. The warning must be written on the surface every 2 feet horizontally and vertically and read “Danger: Lead-Based Paint.” Install the appropriate enclosure material over the lead-bearing surface.
- Be sure to seal seams and edges with caulk or other sealant so lead dust cannot escape.
- Use a HEPA-filtered vacuum to clean the work area and wash the area with a water and detergent solution.
- Be sure to inspect the enclosure system each year for signs of deterioration. Make repairs to the enclosure materials and reseal as needed. Remember to use lead-safe work practices when making repairs.

Prohibited Work Practices

The activities listed below are not allowed during lead abatement or lead mitigation projects. Using these methods will create conditions hazardous to your health:



- Dry scraping
- Dry sanding
- Open flame burning
- Open abrasive blasting
- Interior hydro-blasting
- Uncontained exterior hydro-blasting
- Use of methylene chloride

Daily and Final Cleanup Activities



All lead abatement and lead mitigation activities will create dust. Therefore, it is necessary to thoroughly clean interior and exterior work areas at the end of each day. A final cleaning of each work area is also required at the end of the project. A licensed lead risk assessor will collect dust wipe samples after the final cleaning to confirm no lead dust was left behind.

The following cleaning activities must be conducted in each interior work area at the end of every day, and once again at the completion of the project:

- Remove all waste and debris from the work areas and bag for disposal.
- Vacuum the plastic covering surfaces in each work area with a HEPA vacuum. Wash the plastic over each surface with a water and detergent solution. Change the wash water often.
- After the surfaces are dry, vacuum again with a HEPA vacuum.
- The top layer of plastic on the floor must be removed, disposed of, and replaced each day until the project is completed.
- Be sure to immediately repair any plastic damaged during work or cleaning activities with duct tape.
- For final cleanup, be sure to remove the plastic covering, vacuum bare surfaces with a HEPA vacuum, wash bare surfaces with a water and detergent solution, and vacuum bare surfaces again once the surfaces are dry.
- Lead waste and cleanup materials (mop heads, sponges, rags, filters, and disposable clothing) collected during daily and final cleanup must be placed in sealed airtight plastic bags at least 6-mil thick.
- If appropriate, wash tools and equipment to limit the transfer of lead dust to other areas.

The following cleaning activities must be conducted in each exterior work area at the end of every day, and once again at the completion of the project:

- Remove waste and debris from the work areas and bag for disposal.
- Remove the top layer of plastic sheeting each day. The plastic must be rolled from the outer edge inward to prevent any remaining debris from spilling onto the ground. Replace the plastic before starting work the following day.
- Inspect all surfaces for paint chips and other visible debris. Vacuum any surfaces that contain paint chips or debris with a HEPA vacuum, including the ground.
- Wash exterior horizontal building components (windows, porch, railings, etc.) in the work area with a water and detergent solution.

Final Inspection/Sampling

Contact your risk assessor when the lead abatement or lead mitigation project is finished. Be sure each work area has first been thoroughly cleaned. The risk assessor will conduct a visual inspection to determine if any paint chips, dust, or other debris is present. After passing the visual inspection the risk assessor will collect dust wipe samples from the floors, windows, and other horizontal surfaces throughout the house. The house can be reoccupied when the dust wipe samples pass regulatory standards.

Remember:

- If the risk assessor finds any paint chips, dust, or other debris in a work area during the visual inspection, you will be required to clean the work area again until it passes a visual inspection.
- If any of the dust wipe samples fail to meet regulatory standards, you will be required to clean the area(s) again until samples meet regulatory standards.
- Floors made of concrete, tile, wood, etc., may need to be sealed to obtain an acceptable dust wipe sample result.
- Do not allow children, pets, pregnant persons, or other unauthorized individuals to enter any work area until acceptable dust wipe sample results have been obtained.
- Do not remove any of the lead warning signs, caution tape, or other barriers used to keep people away from work areas until acceptable dust wipe samples have been obtained.



Disposal

Waste materials commonly produced during lead abatement and lead mitigation projects include large building components, debris, paint chips, dust, plastic sheeting, HEPA filters, cleaning rags, mop heads, wipes, protective clothing, respirators, and many others. The following disposal practices must be used to contain and prevent releases of lead while handling waste materials:

- Large building components (doors, windows, boards, etc.) containing lead-based paint must be wrapped in sheets of plastic at least 6-mil thick and sealed with duct tape after they are removed.
- All remaining items and debris containing lead must be placed in large plastic bags at least 6-mil thick. The bags must be sealed airtight with duct tape.
- Bag and seal waste materials before removing them from the work area.
- Arrange with a local waste disposal company to properly transport and dispose of waste materials. The disposal company can provide trash dumpsters of various sizes for disposal of the waste materials as they are generated.
- Keep children away from all waste material.
- Keep dumpsters containing waste materials covered and locked.
- Be aware of federal, state, and local waste disposal regulations. Contact the Illinois Environmental Protection Agency's Bureau of Land (217-524-3300) for further information regarding lead waste disposal.



Children and pregnant persons with a confirmed elevated blood lead level will receive nurse case management and environmental services from the IDPH Lead Program or one of its delegate agencies. It is important to find and eliminate the source(s) of lead; follow the recommendations from your health care provider, case manager, and risk assessor; and complete the follow-up blood lead testing in a timely manner.



For more information and resources on lead exposure during childhood or pregnancy, visit dph.illinois.gov/illinoislead.

Lead Hotline: 866-909-3572

