



## Lead— In and Around the Home

Lead is a soft metal that has been used for many purposes. Lead can also be a human health hazard and can pollute the environment. Although you cannot completely avoid lead, you should reduce your exposure, especially if you have children in your household.

### Why should you be concerned about lead?

Lead poisoning is a serious health problem. Many public health experts consider it the number-one environmental health problem in the USA. As many as 1 in 20 U.S. children has a high blood lead level, most likely from lead-based paint from older homes. Families can also be exposed to lead from their drinking water and other sources.

Children six years old and younger are more likely to get lead into their bodies because they put things in their mouths. Children are at greatest risk from lead because they absorb up to 50 percent of the lead that gets into their bodies. Adults absorb only about 10 percent.

Most children with high blood lead levels do not show symptoms. A blood test is the only way to detect the problem. The lowest levels of lead poisoning can damage the brain. At higher levels, symptoms may include tiredness, a short attention span, restlessness, poor appetite, constipation, headache, sudden behavior change, vomiting, and hearing loss. Many of these symptoms may be mistaken for other illnesses. For additional information on lead and children's health in Hawaii, contact the Maternal and Child Health Branch of the Hawaii Department of Health at 808-832-5860.

### Where are the lead sources in and around your home?

The most common sources of lead in homes are

- lead-based paint
- household dust containing lead dust from deteriorating lead-based paint or remodeling
- soils contaminated by leaded gasoline exhaust and disintegrating lead-based paint

- drinking water delivered through lead pipes or in contact with lead solder
- making lead bullets or fishing sinkers.

Laws have stopped the use of lead in residential paint, gasoline, solder, and water pipes. However, older buildings may have lead paint and copper pipes with lead solder. Lead-headed roofing nails may be a source of lead in homes with rainwater catchment systems.

Lead is present in such products as lead-crystal glassware and leaded wine-bottle neck wraps made before 1990. It may also be in some foreign-made products such as painted toys, miniblinds, chalk, crayons, and food cans (soldered with lead). Although lead is now less common in printing inks, it may be present in food packaging labels and newspaper print.

Working with stained glass, furniture refinishing, pottery (using lead glazes), or collecting pewter or lead figurines can cause exposure to lead. Hunters and fishers who use or make lead bullets and lead sinkers also come in contact with lead.

### Lead-based paint in your home

According to the U.S. Department of Housing and Urban Development, 74 percent of all homes built before 1980 contain lead-based paint (LBP). Although lead has



been banned from house paint since 1978, many Hawaii homes and apartment buildings were built before then. Buildings painted before 1950 commonly have paint lead levels as high as 25–50 percent by weight. If you are renting a building that was built before 1978, Federal law requires that the landlord disclose the presence of any known lead-based paint, include a lead warning statement in the lease, and provide you with a federally-approved pamphlet on lead poisoning prevention. If you haven't received this information, contact your landlord or the Environmental Health Office at the Hawaii Department of Health (See *Additional information and contacts*).

Lead was added to paint to inhibit the growth of mold on the surface of the paint. Paints with higher lead levels were used where exposure to moisture is greatest: on windows, doors, and exterior walls. If high-lead paint is intact, it poses little risk.

Lead dust, which is the form most easily ingested, is likely to come from weathering (chalking) paint and especially from surfaces that rub or slide together, such as a window in its frame. Most exposure comes from contact with contaminated household dust rather than from eating paint chips. If your lead-based paint is perfectly intact, then the potential risk of accidental ingestion is greatly reduced. But if lead paint is cracking, chipping, flaking, or being rubbed by contact, then the danger of lead exposure is much higher.

Lead paint on the outside of your house can also be a problem. Dust and paint chips can fall off onto the ground. Children can get this lead into their bodies from the dirt on their hands and dust on their clothes and toys. Young children who often put things in their mouths are at even higher risk. Adults working in these areas can also pick up lead dust on their shoes and clothes and carry it into the house.

If the lead-based paint either inside or outside your house is not wearing off, the easiest way to reduce the risk of lead exposure is to paint over it with a thick coat of latex paint. If the paint is chipping or peeling, or you are planning on remodeling a part of your home that has lead-based paint, you must take precautions to minimize the risk of lead poisoning and pollution. Never dry-sand, dry-scrape or burn this paint. To lower your risk even more, you can hire a certified professional contractor trained to safely remove and dispose of lead-based paint.

### **Lead in your drinking water**

Although your drinking water is not usually a lead source, it can still pose risks. Lead can enter your water from lead pipes that bring water to the home, lead pipe connectors, lead-soldered joints in copper plumbing, and lead-containing brass faucets and pump components. Water that is acidic can dissolve lead from pipes and fittings more easily. Water from public water supplies in Hawaii is not acidic and does not usually increase the risk of lead contamination. However, water in catchment systems, particularly in volcanic areas such as Kau, Puna, and Volcano districts on the Big Island, can be very acidic.

Tests are available to determine the acidity and lead content of your drinking water. Contact the Safe Drinking Water Branch of the Hawaii Department of Health (see *Additional information and contacts*) for a list of state-approved testing laboratories. If lead levels in your water are greater than 15 parts per billion (ppb), you should take action.

You can reduce lead concentrations in your water by flushing your plumbing system. If your water system has not been used for more than four hours, flush the system by letting the cold water run for a minute or two before using it for drinking or cooking. Also, always use cold tapwater for cooking and drinking; hot water is more likely to dissolve lead. Be especially careful not to use hot tapwater for mixing baby formula. Even though flushing usually reduces lead concentrations in water, you should still test a post-flush sample of water to be sure that it is below the lead level of 15 ppb.

If the lead concentration in your water after flushing is still about 15 ppb, you should not use this water for drinking and cooking, especially if you have small children. You can install a filter to remove the lead, or get your water from another source. You may want to consider replacing the parts of your plumbing system that are causing the problem.

### **Assessing your risks**

Use the assessment table on the next page to rate your health risks due to lead in and around your home. For each question, indicate your risk level in the right-hand column. Choose the response that fits your situation best.

### Risk Assessment Table for Lead in and around the Home

	Low risk	Moderate risk	High risk	Your risk
<b>Age of home</b>	Built after 1978	Built between 1950 and 1978	Built before 1950	<input type="checkbox"/> low <input type="checkbox"/> moderate <input type="checkbox"/> high
<b>Interior paint</b>	No lead-based paint	Lead-based paint present but intact	Lead-based paint is chipping or peeling or getting dusty, or recent remodeling has disturbed it	<input type="checkbox"/> low <input type="checkbox"/> moderate <input type="checkbox"/> high
<b>Exterior (outside) paint</b>	No lead-based paint, or lead-based paint is present but intact; lawn or dense landscape plantings around the sides of the home	Lead-based paint is weathered; lead-based paint is in the soil around the home, but foot traffic is kept away	Lead-based paint is chipping, peeling, or getting dusty; bare soil or foot traffic below painted walls	<input type="checkbox"/> low <input type="checkbox"/> moderate <input type="checkbox"/> high
<b>Water supply</b>	No lead water pipes, leaded solder, or brass fixtures used in plumbing	Lead present in plumbing, but water has been tested and precautions have been taken	Lead likely to be present in plumbing, but water has not been tested and no precautions have been taken	<input type="checkbox"/> low <input type="checkbox"/> moderate <input type="checkbox"/> high
<b>Water acidity or corrosiveness</b>	Water basic (pH 7.5–8.5)	Water mildly acidic or neutral (pH 6–7.5)	Water acidic (pH <6)	<input type="checkbox"/> low <input type="checkbox"/> moderate <input type="checkbox"/> high
<b>Water testing (if acidic or lead present in plumbing)</b>	No lead present in plumbing, or, water tested within last 6 months showed little or know lead present	Lead present in plumbing, and water tested within the past year showed safe lead levels	Lead present in plumbing system, and water not tested within the past year	<input type="checkbox"/> low <input type="checkbox"/> moderate <input type="checkbox"/> high
<b>Lead Testing for children</b>	Children Under Six have blood tested for lead once a year	Children have been tested for lead	Children have never been tested for lead	<input type="checkbox"/> low <input type="checkbox"/> moderate <input type="checkbox"/> high

#### Additional information and contacts

The Environmental Health Office (EH) and Safe Drinking Water Branch (SDW) Office of the Hawaii Department of Health can be contacted at the following numbers:

**Hawaii:** 974-4000 ext. 67539 (EH), ext. 64258 (SDW).

**Mauai:** 984-2400 ext. 67539 (EH), ext. 64258 (SDW).

**Kauai:** 274-3141 ext. 67539 (EH), ext. 64258 (SDW)

**Molokai and Lanai:** 1-800-468-4644 ext. 67539 (EH), ext. 64258 (SDW).

**Oahu:** 586-7539 (EH), 586-4258 (SDW)

Other sources of information and publications about lead include:

The National Lead Information Center at 800-LEAD-FYI (to request a packet of materials), or 800-

424-LEAD (for personal assistance on lead-related questions); they can also be contacted via the Web at <<http://www.epa.gov/lead/nlic.htm>>.

The U. S. Environmental Protection Agency (EPA) Office of Pollution Prevention and Toxics Lead Programs web site at <<http://www.epa.gov/lead/leadpbed.htm>> and the U.S. EPA National Service Center for Environmental Publications (U.S. EPA/NSCEP), e-mail <[ncepimal@one.net](mailto:ncepimal@one.net)>, Web <<http://www.epa.gov/ncepimahom/nepishom/>>.

The U. S. Department of Housing and Urban Development (HUD) Office of Lead Hazard Control; phone 202-755-1785, Web <<http://www.hud.gov/lea/leapboff.html>>.

**Your action plan**

Now that you have assessed your management practices, you can take action to change your family's exposure to hazards of lead in your home. For areas that you identified as high or moderate risk, decide what action you need to take and fill out the Action Plan below.

Write down all your moderate-risk and high-risk activities below	What can you do to reduce the potential hazard risk from lead?	Set a target date for action
<p><b>Samples of action items:</b></p> <p><i>House was built in 1950 so there may be lead in the plumbing system; haven't had water tested</i></p>	<p><i>Call Safe Drinking Water Branch to get list of water-testing labs</i></p>	<p><i>Before the end of the week</i></p>



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