



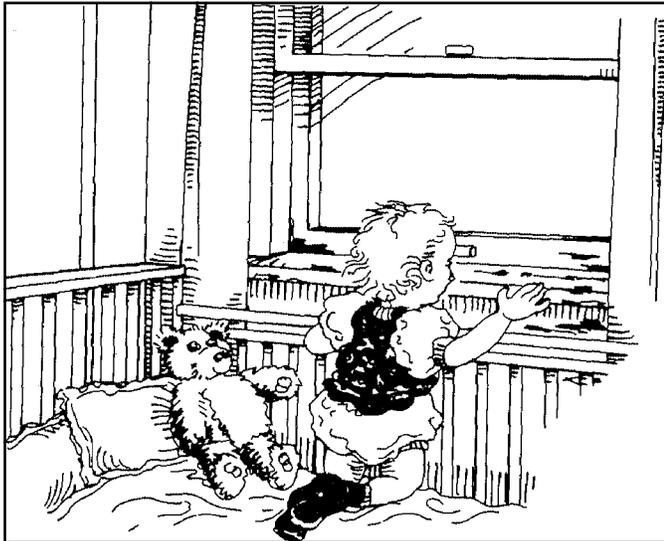
KY-A-Syst for the Home
Environmental Stewardship for Homeowners

Lead in and around the Home

Why Should You Be Concerned?

Lead is a soft metal that is used in ammunition, ceramics, solder, paint, water pipes, and many other products. Lead is dangerous because it is so widely used and lasts forever in the environment, never breaking down into a harmless substance. Because its use is so widespread, it is almost impossible to have a zero level in the blood. You can take steps to reduce exposure to lead (especially important in children), but you cannot avoid it.

Lead poisoning is a serious, preventable health problem. Many public health experts consider it the number one environmental health problem in the United States. Lead poisoning in children can cause learning and behavioral problems, slow mental development, and nervous system damage. In adults, it can also cause high blood pressure and reproductive system damage.



Exposure to lead affects children age 6 and younger more than other age groups.

How Can KY-A-Syst Help?

This publication leads you through an evaluation of your home and property to determine pollution and health risks. After you have read this publication, walk around your home and property and answer the questions in the boxes, circling the answers that best apply. Your answers will help you identify potential risks of exposure to lead so you can reduce or eliminate those risks.

If you answer all questions with choice A, you have few problems with lead in your home. If you answer any question with B, there may be a problem with lead contamination in your home. If you answer any question with either C or D, you will want to consider making changes. Use the action checklist in this publication to help you.

If you would like further help in assessing lead in and around your home, contact your county office of the Cooperative Extension Service.

Children and Lead

Because children naturally engage in hand-to-mouth activities, they are more likely to accidentally ingest lead. Children age 6 and younger are much more likely to be affected by lead exposure than other age groups. Lead-based paint is the most common source of high exposure to lead in children.

An estimated one in nine American children has an elevated blood lead level. Most children with elevated blood lead levels do not show symptoms, and a blood test is the only way to detect the problem. A level of 10 micrograms or more per deciliter of blood is considered elevated in children and is likely to cause negative effects. (A microgram is one millionth of a gram, and a deciliter is a tenth of a liter.)

What is the blood lead level of your children?

- A. Blood lead level is less than 10 micrograms.
- B. Blood lead level is 10 to 19 micrograms.
- C. Blood lead level is 20 micrograms or greater.
- D. My children have never been tested for lead.

Lead Sources inside the Home

According to the U.S. Department of Housing and Urban Development, 74 percent of all homes built before 1980 contain potentially dangerous levels of lead paint. Although lead has been banned from house paint since 1978, the majority of U.S. homes were built before then. Homes built before 1950 are very likely to have high lead levels, especially in paint used on windows and exterior surfaces. Levels of lead as high as 25 to 35 percent lead by weight are common. Some pre-1950 paint was 50 percent lead. Most exposure comes from contact with contaminated household dust rather than from eating paint chips. As paint ages or as painted surfaces rub against each other, lead-containing dust is created. If your paint is perfectly intact, the potential risk of ingestion is greatly reduced. But if lead paint is cracking, chipping, flaking, or rubbed by contact, the danger of lead exposure is much higher. To find out if your paint contains lead, have it tested. Contact your county office of the Cooperative Extension Service or the county health department to find out more about testing lead paint.



For children, lead-based paint is the most common source of exposure to high levels of lead.

When was your home built?

- A. My home was built after 1978.
- B. My home was built between 1950 and 1978.
- C. My home was built before 1950.

Does your interior paint contain lead, and if so, what is its condition?

- A. No lead-based paint is present.
- B. Lead-based paint is present but intact.
- C. Defective lead-based paint is present: it is chipping, peeling, or flaking, or recent remodeling has disturbed the paint.

Your Drinking Water

Although your drinking water is not usually a concentrated lead source like paint or soil, it can still pose risks to your family. Lead can enter your water from several points: lead pipes that bring water to the home, lead pipe connectors, lead-soldered joints in copper plumbing, and brass faucets and pump components containing lead. In some private wells, underwater pumps with brass fittings can cause elevated lead concentrations in drinking water, especially with new pumps and soft water. Having your water tested will let you know if there is lead in it. If lead levels are greater than 15 parts per billion (ppb), action is recommended. A simple way to reduce lead concentrations is to flush 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. To ensure that flushing reduces concentrations

below 15 ppb, have a sample of this “flushed” water tested. Never use water with high lead levels (more than 15 ppb) to mix infant formula. For severe lead contamination, you may need to install a water treatment device, such as a reverse osmosis system, a distillation system, or an activated carbon filter.

Your Water Supply

Water that is soft or acidic can be corrosive and dissolve lead from pipes and fittings more easily than water that is not.

Is there lead in your water supply?

- A. No lead water pipes, leaded solder, or brass fixtures have been used in plumbing.
- B. Lead is present in plumbing, but water has been tested, and precautions have been taken.
- C. Lead is likely to be present in plumbing, but water has not been tested, and no precautions have been taken.

What is the acidity or hardness of your water supply?

- A. Hardness is around 80 milligrams per liter, and pH is 7.5 to 8.5.
- B. Hardness is 60 to 80 milligrams per liter, and pH is 6 to 7.5.
- C. Hardness is 60 milligrams per liter or less, and pH is less than 6.

Water can be tested for pH (acidity) and hardness at a state-certified laboratory or health agency. Optimum pH levels range from 7.5 to 8.5; optimum hardness levels are around 80 milligrams per liter. Always use cold tap water for cooking and drinking; hot water is more likely to dissolve lead.

Lead Sources in Exterior Paint

Prior to 1978, lead was added to paint to inhibit the growth of mold on the paint's surface. Paints with higher lead levels were used where exposure to moisture is greatest: on windows, doors, and exterior walls. If paint with a high lead base is intact, it poses little risk. But if it is chipping, flaking, or is scraped or sanded during repairs, the risk of exposure is great. Lead dust, which is the form most easily ingested, is likely to come from weathering paint, especially from surfaces that rub or slide together, such as a window in its frame.

Soil around Your Home

Soils around the edge of your home may be contaminated by flaking lead-based paint. Larger areas of soil in older residential neighborhoods may have high lead levels resulting from years of exhaust from vehicles using leaded gasoline. Lead from this exhaust can be found in the first 2 to 3 inches of soil.

Lead-contaminated soil is a problem when:

- children play outdoors on bare soil.
- soil is tracked into the home.
- leafy vegetables grown in contaminated soil are eaten.

What kind of paint is used for the windows, doors, and exterior walls of your home?

- A. No windows and doors with lead-based paint or exterior walls with lead-based paint have been used.
- B. Lead-based paint on the home's exterior is present but intact.
- C. Exterior lead-based paint is chipping, peeling, or flaking.

What are the lead levels in the soil surrounding your home?

- A. Soil tests show lead levels less than 200 ppm.
- B. Lead levels range from 200 to 500 ppm.
- C. Lead levels are more than 500 ppm.
- D. No soil test for lead has been completed.

Testing your soil is one way to detect a lead problem. Cooperative Extension Service offices may be able to make special arrangements for testing or refer homeowners to local labs that can provide this testing. Relatively safe lead levels in soil range from non-detectable levels to 200 parts per million (ppm). Soils with levels of 500 ppm or more should not be used for growing vegetables. If high lead levels are found, planting grass or covering soil with mulch can help prevent your family from tracking the soil indoors. In extreme cases, replacement of heavily contaminated topsoil in the top 2 to 3 inches is recommended.

Sources for More Information About . . .

- **Lead Testing**
 - Your county health department (check local listing).
- **Soil Testing**
 - Your county office of the Cooperative Extension Service (check local listing).



Home 'A' Syst

What Is the KY-A-Syst for the Home Program?

The KY-A-Syst for the Home program is a series of publications that can help you be a good environmental steward of Kentucky and protect the health and well-being of your family. KY-A-Syst for the Home publications provide problem-solving information and also list agencies that can provide help in specific areas.

Action Checklist

Look back at the assessment questions and make sure you have answered all questions. Record all B, C, and D responses and list the improvements or changes you plan to make. You can use recommendations from this publication or from other sources to help you decide on action you are likely to take. Write down a date to keep you on schedule. Read back through the assessment questions from time to time to see if any responses have changed, and take any action needed to address new concerns.

Write all B, C, and D responses below.	What can you do to reduce risk?	Set a target date for action.
<i>Sample:</i> My children have never been tested for lead.	Contact my doctor to arrange to have my children's blood lead levels tested.	Two weeks from today: April 12.

The illustration on page 1 was taken with permission from *Home*A*Syst: An Environmental Risk-Assessment Guide for the Home* developed by the National Farm*A*Syst/Home*A*Syst program in cooperation with NRAES, the Northeast Regional Agricultural Engineering Service. Permission to use the illustration was granted by the University of Wisconsin, the copyright holder.

This publication is based on *Home*A*Syst: An Environmental Risk-Assessment Guide for the Home* developed by the National Farm*A*Syst/Home*A*Syst Program (author Karen Filchak, University of Connecticut Cooperative Extension) in cooperation with NRAES, the Northeast Regional Agricultural Engineering Service. Permission to use these materials was granted by University of Wisconsin, the copyright holder. Kentucky's modification of Home*A*Syst was coordinated by Kimberly Henken, Amanda Abnee, and Marla Hall. Technical editing was provided by William O. Thom. This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under special project number 99-EWQI-10515.

Contact: Kimberly Henken, Extension Associate, Family and Consumer Sciences