FAMILY & CONSUMER *sciences*

Lead Abatement in Residential Dwellings

Approximately three-fourths of the nation's homes and apartments contain lead paint. Before 1950, paint was as much as 50 percent lead. While lead content has dropped, there is a good possibility that your home may contain lead paint if it was build before 1978. Lead, which poses a potential health threat to members of your family, especially young children aged 6 and under, was banned from use in residential paint in 1978.

Small doses of lead, once thought harmless, can cause serious damage in young children, affecting the developing nervous system, causing behavioral disorders, lowered IQ, delayed development, problems with reading and writing, and elevated blood pressure. Lead in pregnant women can retard the growth and development in her unborn child. Even if you do not have and are not planning to have children, lead paint issues can affect you. Because lead in homes is a potential health hazard, it may raise liability issues in real estate transactions, as well.

Title X — Residential Lead-Based Paint Hazard Reduction Act of 1992

If you are involved in the sale, purchase, or rental of a residential living unit, lead-based paint issues may affect you. The Residential Lead-Based Paint Hazard Reduction Act of 1992, or more commonly called Title X, was designed to help prevent lead poisoning in children and to reduce potential lead hazards in the nation's housing. This law affects the rental and sale of almost all residential properties built before 1978. Effective in 1996, the owners of residential dwellings must be aware of the lead hazard disclosure component of this law.

Property sellers and landlords must disclose information on all known lead hazards in their buildings or homes. While landlords and sellers of real estate are not required to remove the hazard before renting or selling, they are required to inform buyers or renters if there is a known lead hazard present. It is important to know that this does not mean that the landlords and sellers are required to test for lead hazards. Buyers of real estate are given 10 days to conduct a lead-based paint inspection and testing or risk assessment. This testing is to be done at the buyer's expense, unless agreed upon differently by contracting parties. Sellers and landlords are required to provide *Protect Your Family from Lead in Your Home*, a publication developed jointly by the U.S. Environmental Protection Agency, the U.S. Department of Housing and Urban Development, and the Consumer Product Safety Commission. For a copy of this brochure and more information

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about lead disclosure call the National Lead Information Clearinghouse (NLIC) at 1-800-424-LEAD, use the Internet to send an e-mail to ehc@cais.com, or visit their web site at http://ww.nsc.org/ehc/lead.htm.

Lead Hazards

Lead hazards are those materials or surfaces in the home that contain lead and that are readily accessible to children. Children under the age of 6 are capable of possibly being poisoned if they inhale lead dust, ingest chipping lead paint, or chew on materials covered with lead paint. (For more information on sources of lead, see *Lead In The Home: Sources, Hazards, and Solutions, FCS-401*, available from your local County Cooperative Extension Center.) There can be many lead hazards in a home, but typically they include:

- Lead paint that is peeling, flaking, or chalking.
- Lead paint on surfaces subject to friction or abrasion, such as window sashes, thresholds, stairs, floors, stops, headers, and sills.
- Lead paint on surfaces subject to impact, such as door edges and jambs.
- Lead paint on "mouthable surfaces," those protruding surfaces that are 4 inches from the exposed edge to a height of 5 feet from the floor, such as woodwork, door edges, door jambs, casings, and window sills.
- Lead paint in soil around the foundation of the house and near traffic corridors.

North Carolina State Law requires laboratories to report all elevated blood lead levels from children under the age of 6 to the Department of Environment, Health, and Natural Resources. State law also requires an environmental investigation and abatement of all lead hazards in homes, schools, or day care facilities with children who have elevated blood lead levels. Blood lead levels for children under the age of 6 should be checked during routine well-child medical visits. This routine blood test normally consists of a finger stick.

Determination of Lead Paint

There are several methods to test home surfaces for lead paint. These include X-ray florescence, paint sampling, surface dust tests, and do-it-yourself lead tests. Some tests are more accurate than others. The following is a brief description of each method of testing.

X-Ray Fluorescence (XRF) — This method uses portable lead detectors to X-ray surfaces and measure the amount of lead in all the layers of paint. The instrument exposes a radioactive source to the surface of the paint to determine the lead content. This test gives an immediate on-site reading that is very accurate. But it can be expensive and the operator must be experienced and licensed by the Radiation Protection Branch in North Carolina.

Paint Sampling — This method involves removing samples of paint from each household surface requiring testing. Samples are sent to a laboratory to determine the amount of lead in paint. This test is very accurate, but you may need to take many samples in order to test all of the needed surfaces in the home. Many samples can make the cost of laboratory sampling expensive, and it may take several days to weeks to get the results of the test back from the laboratory.

Surface Dust Tests — This method is used to test for levels of lead dust. Dust samples are collected from a measured surface area using a wet wipe. The wipe is sent to a laboratory for testing. The test is accurate and inexpensive but only recommended for dust.

Do-It-Yourself Lead Tests — These are available but they are not extremely reliable at detecting low levels of lead,

they can not tell you how much lead is present in the paint, and they may be unable to detect lead through many layers of paint unless the paint is scraped. This type of test is relatively inexpensive.

Controlling Lead Hazards

If you find that you have lead paint in your home, you may need to remove all possible hazards of lead, particularly if you have young children. There is a difference between the presence of lead paint in your home and a lead paint hazard and in how you react to each. Lead paint hazards pose immediate threats while lead paint in good condition might pose a hazard at some time in the future. Approaches to dealing with lead poisoning hazards range from temporary measures that reduce immediate exposure to lead, to abatement, the process of permanently removing lead hazards.

Short-term or Interim Controls

Immediate measures to take to reduce exposure to lead relate to housekeeping, child care, and child supervision. Do not vacuum unless you use a special —HEPA filter— vacuum cleaner. Some health departments loan these out. Vacuuming without a special HEPA vacuum cleaner or sweeping lead dust only spreads it throughout the home. If lead paint and dust are a problem, wet-mop all floors, and wet-clean all window sills and window wells at least twice a week with a cleaner containing phosphate. (Automatic dishwasher detergents contain phosphates.) You may also purchase trisodium phosphate (TSP) at local paint or hardware stores. Sponge mops will work better than rag or string mops, and when sweeping, use a damp broom. Wash mops thoroughly after each use to prevent recontaminating the cleaned area. Dispose of rags after each cleaning.

To reduce lead exposure to children, have children wash their hands regularly, particularly before meal, snack, nap, and bed time. Keep children's play areas clean and as dust-free as possible. Young children and babies should play on a clean blanket or carpet. Wash blankets often. Do not let children near chipping, peeling, or flaking paint. Children's digestive tracts absorb a higher proportion of lead than an adult's. The period of rapid growth and development in the early years of a child's life leaves his or her body systems most vulnerable to the effects of lead. Children should be fed a nutritious diet, rich in iron and calcium. Children who receive enough iron and calcium will absorb less lead. Make certain that children are not allowed to chew or suck on painted surfaces such as window sills, cribs, molding, playpens, or old painted toys. Wash children's pacifiers, toys, and stuffed animals often.

To prevent lead dust in soil around your house from being tracked in, use an outdoor mat to wipe shoes or feet before entering the home. Replace the mat regularly. Have family members take off their shoes at the door so that lead dust is not spread through the home.

Lead Abatement

Abatement includes the removal of the lead hazard, as well as the methods used to rid the house of lead, the preparation of the house for the abatement process, the clean up after the abatement, the protection of abatement workers, and the disposal of the lead hazard once removed from the home.

Lead abatement can be expensive, so it is important for homeowners to consider every available option. While the family must be protected, especially young children and pregnant women, it is important to choose an appropriate solution or combination of solutions, given the circumstances of the home and family.

There are four methods of lead abatement: encapsulation, enclosure, paint removal, and component removal and replacement. Each method has its advantages and disadvantages and each is appropriate in different circumstances.

Lead Abatement
Advantages and Disadvantages

Encapsulation:

Encapsulation involves sealing lead-based paint with a special coating to eliminate lead hazards. This method can be used on both interior and exterior surfaces, it creates minimal levels of hazardous waste and lead dust, and is often the easiest and least expensive of all methods. The disadvantage is that it doesn't really permanently eliminate the lead hazard — it just covers it up. It also requires periodic checking to make certain that the enclosure remains intact.

Enclosure:

Enclosure involves enclosing lead-based painted surfaces with a durable material, such as paneling, metal, drywall, or siding. This extremely effective method reduces the hazard while generating little hazardous waste or airborne dust, and the materials needed are readily available. The method works well for large, flat surfaces, such as ceilings and walls. Like encapsulation, however, it doesn't permanently remove the hazard: it just covers it up. It will also require skilled personnel to put up the enclosure. Sealing of the joints is critical and periodic checking of joints is a must.

Paint Removal:

This process involves separating the lead-based paint from the material it is covering and then disposing of the paint. Removal can be done in a number of ways including scraping, abrasive removal, and chemical stripping. Paint removal can be extremely labor intensive and some methods can create a great deal of airborne lead dust. Disposing of the stripped paint may also be of concern. Paint removal permanently removes the lead hazard, it works on a variety of household surfaces, and in many cases (depending on the method chosen) it is more affordable than some of the other methods of abatement.

Component Removal and Replacement:

This process involves removing the painted material (such as a door jamb) with the lead paint still attached and then replacing with new materials. This completely eliminates the lead hazard, and if done correctly doesn't generate much dust. The problem with component removal and replacement is that it requires skilled persons to remove and replace materials, and it is more expensive than some other methods of abatement.

Cautions Against Do-It-Yourself Lead Abatement

Lead abatement should only be undertaken by trained professionals. The Consumer Product Safety Commission cautions homeowners against do-it-yourself lead abatement projects. Improper removal of lead paint can cause hazardous levels of lead dust and fumes. Lead abatement is a serious and complicated process that requires special equipment and expertise. Only a contractor who has special training and the necessary equipment should perform lead abatement projects. Untrained individuals may create a more serious lead problem than there was in the beginning.

Choosing a Lead Abatement Contractor

Currently, there are no certification requirements in North Carolina for lead abatement contractors, however many contractors certified in asbestos abatement are also trained in lead abatement procedures. The U.S. Environmental Protection Agency sponsors national lead abatement training courses for contractors. Before selecting a contractor, ask to see proof that he or she has been trained in lead abatement procedures.

Ask your contractor to give you the names of at least three former customers for whom he or she has done similar work. Be certain to contact these references.

The contractor should follow the U.S. Department of Housing and Urban Developments guidelines *Lead Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing*. Find out if your contractor is familiar with these guidelines. Make certain that the work your contractor plans to do follows any state or local regulations by familiarizing yourself with guidelines offered by HUD or

the North Carolina Department of Environment, Health, and Natural Resources. You will find addresses and phone numbers in the "For More Information" section of this publication. Your contractor should give you a written detailed plan of work for your abatement project. The plan should include a description of the surfaces that will be abated, the method of abatement that will be used for each lead hazard that has been identified, how workers will be protected during the abatement process, the clean-up methods for the project and what waste disposal methods will be used during the abatement process. It should also include a description of the tests that will be conducted after the work is finished. Any sampling and testing for lead before and after the abatement should be conducted by an independent testing facility and not the contractor. **It is important to note that homeowners whose homes have been identified as a potential source of lead exposure to a child with an elevated blood lead level must submit a written plan for lead abatement to the local health department.** This plan must comply with federal abatement standards, OSHA worker protection standards, and the North Carolina Department of Labor regulations.

Before beginning the abatement, ask your contractor to provide a certificate of insurance. Check this document for insurance coverage of lead-based paint hazards, effective date of the policy, the policy expiration date, liability limits, and the name of the insurance company issuing the policy.

For More Information:

National:

National Lead Information Center —1-800-LEAD-FYI, for information about lead hazard information.

National Lead Information Center Clearinghouse — 1-800-424-LEAD, for lists of laboratories that can analyze paint and dust samples for lead.

State:

Division of Epidemiology, DEHNR, P.O. Box 27687, Raleigh, NC 27611-7687, 919-733-0820. Responsible for training provider accreditation; certification of workers, supervisors, inspectors/risk assessors, and project designers; and the permitting of abatement projects.

Attorney General's Office, Department of Justice, P.O. Box 629, Raleigh, NC 27602-0629, 919-715-2897, Responsible for legal and enforcement issues for the childhood lead poisoning prevention program.

Division of Laboratory Services, DEHNR, P.O. Box 28047, Raleigh, NC 27611-8047, 919-733-3937, Responsible for blood lead analysis.

Division of Solid Waste, DEHNR, P.O. Box 27687, Raleigh, NC 27611-7687, 919-733-2178, Responsible for management and disposal of hazardous waste, including lead.

Division of Laboratory Services, DEHNR, P.O. Box 28047, Raleigh, NC 27611-8047, 919-733-7308, Responsible for environmental sample analysis.

Division of Community Assistance, Department of Commerce, 1307 Glenwood Ave., Suite 250, Raleigh, NC 27604, 919-73-2850, Administers the HUD Lead-Based Paint Hazard Reduction Program.

Division of Environmental Health, P.O. Box 27687, Raleigh, NC 27611-7687, 919-715-3293, Responsible for all childhood lead poisoning prevention activities including screening policy, medical and environmental intervention, data analysis and distribution, public education efforts, medical and environmental data collection and management, and assuring follow-up of lead poisoned children.

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