

ENVIRONMENTAL HAZARDS IN THE HOME



A GUIDE FOR HOMEOWNERS, HOMEBUYERS, LANDLORDS & TENANTS





Dear Reader:

This booklet, entitled “*Environmental Hazards in the Home – A Guide for Homeowners, Homebuyers, Landlords & Tenants*”, is a joint project of the Connecticut Department of Public Health and the 16,000 members of the Connecticut Association of REALTORS®, Inc. It is an effort to provide homebuyers, home sellers/owners, landlords and tenants with important factual information concerning environmental conditions in real estate.

The fact that you have been asked to read this booklet should in no way imply that the particular property that you are interested in or the property that you might be selling has any of the conditions discussed in the booklet.

We hope you find the information in this handbook useful.

Very truly yours,

Robert J. Kennedy, Jr.
Executive Vice President
Connecticut Association of REALTORS®, Inc.

Jewel Mullen, MD, MPH, MPA
Commissioner of the Department of Public Health

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INTRODUCTION

The Connecticut Department of Public Health (CT DPH), in cooperation with the Connecticut Association of REALTORS®, Inc., prepared this booklet to inform the homeowner and prospective homebuyer, landlord and tenants about environmental hazards that may affect residential property.

The information contained in this booklet is an overview of potential environmental hazards at residential properties and should be used only for general guidance.

In Connecticut, sellers are required to disclose the presence of any known environmental hazard. A statement that the homeowner is unaware of environmental hazards is not a guarantee that the property is free of such hazards. It is in the homeowner's and prospective homebuyer's interests to know what hazards are common, how they may be identified, and how they might be corrected or mitigated.

Home inspectors hired at the time of a house sale are not required to look for environmental hazards. They will make note of water damage that could lead to mold growth and may note other obvious environmental hazards. Individuals who conduct asbestos and lead inspections must be licensed appropriately by CT DPH. Not all home inspectors hold those licenses. It is recommended that qualified radon measurement providers listed by CT DPH be hired to conduct radon testing in homes.

This booklet will provide homeowners and prospective homebuyers with the information needed to make an informed decision about environmental hazards that may be present on a property. Although the law requires the disclosure of known hazards, a prospective buyer may want an evaluation of the home environment to obtain further information. Interested parties may wish to obtain additional information on hazards of concern from the literature/websites cited in this booklet and other locations.

This publication is not meant to be all-inclusive. It deals only with environmental hazards that are more commonly found in residential properties. This material is presented with the understanding that the publisher is not engaged in offering legal or other professional advice. If legal or other expert assistance is required, the services of a skilled professional should be obtained.

The main sections cover topics that may come up during a real estate transaction at the time of inspection. Several other environmental concerns around the home are presented as general information to any homeowner, homebuyer, landlord or tenant.

PART I

WHAT YOU NEED TO KNOW BEFORE YOU BUY A HOUSE





ASBESTOS

WHAT IS ASBESTOS?

Asbestos is the name of a group of highly fibrous minerals. It is found both as a natural component within soils and rocks, and within over 3,000 commercial products. Asbestos is a known human carcinogen (cancer causing substance), capable of causing severe health conditions including lung cancer, asbestosis and mesothelioma. Given that it is both naturally occurring and commonly found in building products, asbestos is present in the air most of the time. Being exposed to asbestos does not mean that you will develop health problems. Nearly everyone has been exposed to very low levels of asbestos at some time in their life. However, most people do not become ill from such exposures. People are more likely to experience asbestos-related disorders when they are exposed to high levels of asbestos, are exposed for longer periods of time, and/or are exposed more often. Smoking greatly magnifies the danger of breathing asbestos fibers. Asbestos-containing materials (ACM) are found in building products within many older homes. A material must be analyzed by a certified, accredited laboratory in order to determine whether it contains asbestos.

WHAT TYPES OF PRODUCTS MIGHT CONTAIN ASBESTOS?*

- Boiler Insulation
- Pipe Insulation (corrugated air-cell, block, etc.)
- Breaching Insulation
- HVAC Duct Insulation
- Caulking/Putties
- Joint Compound
- Acoustical and Decorative Plaster
- Vermiculite Insulation
- Transite Siding (Shingles)
- Vinyl Wall Paper
- Ceiling Tiles and Lay-in Panels
- Textured Paints/Coatings
- Ceiling Tiles
- Mastic/Adhesives
- Roofing Shingles and Felts
- Fireproofing Materials

*The above list does not include every product that may contain asbestos. It is intended as a general guide to show some of the types of materials that may contain asbestos.

WHAT IS REQUIRED IN REAL ESTATE TRANSACTIONS?

Information regarding the presence of ACM in the home must be included by the seller in the seller's property disclosure report if its presence is known. It is not always obvious whether a building product contains asbestos. Homes built after 1975 are less likely to have ACM, but still may have some asbestos-containing products.

CT DPH does not require an inspection for the presence of ACM prior to the sale of a home. If the prospective buyer (or seller) requests an inspection, it must be conducted by an asbestos consultant licensed by CT DPH with certification in the inspector or management planner disciplines. A written inspection report will summarize the inspection findings and usually will provide recommendations. A building or home inspector is not qualified to make statements concerning the presence or condition of ACM unless he or she is licensed by CT DPH in one of these consulting disciplines.

CT DPH does not require that ACM be removed prior to a real estate transaction. If there has been abatement, CT DPH regulations require that the property owner retain records for 30 years. The prospective buyer can request to see such records.

WHAT SHOULD I DO IF ASBESTOS IS IDENTIFIED?

If the seller's disclosure report identifies the presence of asbestos, or if an inspection is conducted that finds asbestos, careful consideration should be given before a decision is made to remove the asbestos.

The handling or disturbance of ACM is subject to various regulatory agencies, including the CT DPH, the Connecticut Department of Environmental Protection (DEP), the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), and the U.S. Department of Environmental Protection (EPA).

It is the recommendation of the EPA and CT DPH that ACM be left alone as long as there is no apparent damage to the ACM and no planned renovation that may disturb the material. There is more likely to be a hazard if the ACM is disturbed by an unlicensed party than if the ACM is left in place. In general, ACM that can be easily crushed or pulverized by hand pressure (friable ACM, such as pipe insulation) presents a greater health hazard than ACM that is bound in a material that does not easily break (non-friable ACM, such as floor tile).



HOW CAN DAMAGED ASBESTOS MATERIAL BE REPAIRED?

If there is damage to the ACM, such as tears, abrasions, or water damage, the ACM should be repaired or removed. Repairing involves the use of either encapsulation or enclosure, but is still considered to be "abatement" by CT DPH and must be conducted by a licensed contractor, if the abatement involves more than 3 linear feet or more than 3 square feet of ACM. *Encapsulation* of ACM involves applying a substance to the surface to prevent fibers from becoming airborne. *Enclosure* involves building a permanent, airtight barrier around the ACM.

WHEN IS REMOVAL APPROPRIATE?

Removal is generally a more expensive option and creates the greatest potential for fiber release. However, removal may be necessary when the ACM is significantly damaged or when remodeling activities may disturb ACM. CT DPH regulations detail specific work practices for conducting asbestos abatement. In general, these work practices are designed to prevent the escape of asbestos fibers from the work area by the use of air-tight barriers and other engineering controls. The DPH is required to be notified of all asbestos abatement involving more than 10 linear feet or more than 25 square feet of ACM. In the case of non-emergency abatement, the notification must be postmarked or hand delivered at least ten days prior to the start of asbestos abatement. Contact the CT DPH Asbestos Program for more specific information.

Disposal of ACM is not allowed in the State of Connecticut unless permitted by CT DEP. For questions regarding the disposal of asbestos waste, contact the CT DEP Waste Engineering and Enforcement Division at 860-424-3366.

WHO IS LICENSED TO CONDUCT ASBESTOS ABATEMENT OR INSPECTIONS?

Asbestos professionals are licensed by CT DPH as contractors or consultants. Contractors are licensed to perform abatement, whether it is repair or removal. Licensed contractors are required for abatement involving more than 3 linear or 3 square feet of ACM. The DPH Asbestos Program may be contacted regarding the removal of exterior non-friable ACM, which may not require the use of a licensed contractor under certain conditions. Consultants perform inspections, design abatement projects and monitor abatement projects. Consultants also assist property owners by recommending abatement options and developing asbestos management plans.

All licensed entities must provide current licenses and current certification prior to engaging in any type of consulting or abatement services. CT DPH can be contacted to verify the status of a license. Refer to the Asbestos Program website for lists of licensed asbestos abatement contractors and asbestos consultants available for the public.

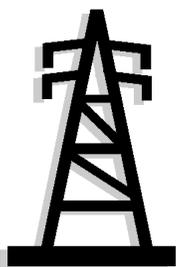
FOR MORE INFORMATION:

*CT Department of Public Health
Environmental Health Section
Asbestos Program
450 Capitol Avenue
Hartford, CT 06134-0308
860-509-7367*

<http://www.ct.gov/dph/asbestos>

U.S. EPA:

<http://www.epa.gov/asbestos>



ELECTRIC AND MAGNETIC FIELDS (EMF)

WHAT ARE ELECTRIC AND MAGNETIC FIELDS (EMF) AND WHAT ARE THEIR SOURCES?

Electric and magnetic fields are waves of energy that surround any electrical device. Power lines, electrical wiring, computers, televisions, hair dryers, household appliances and anything else that uses electricity are sources of EMF. EMF are commonly measured in units of milligauss (mG), which is a unit of magnetic field strength.

HOW HIGH ARE EMF LEVELS NEAR HIGH VOLTAGE POWER LINES?

Most power lines in neighborhoods are low voltage and not an important source of EMF. However, high voltage lines can cause EMF to be elevated directly underneath the lines and in nearby areas. High voltage lines are those with very high towers that transmit electricity over long distances, rather than to local neighborhoods.



Average EMF levels directly beneath power lines vary from approximately 30 to 90 milligauss (mG), depending on the voltage, height and placement of the lines. EMF levels decrease rapidly as one moves away from the power lines as shown below. These distances are approximate and you may be at background levels closer to the lines in some cases. However, 300 feet is a good general guideline to see if you might want to get measurements taken (> 300 feet, no measurement needed).

Distance from Line	Average EMF Level (mG)
50 feet	6 - 30
100 feet	2 - 13
300 feet	< 1.5 (this is background)*

*Background refers to a level of EMF that can be found in any home not near a power line, due to normal domestic electricity use.

HOW DO EMF LEVELS FROM POWER LINES COMPARE WITH EMF LEVELS IN MY HOME?

In a study that measured EMF in almost 1000 homes in the U.S., 50% of the homes had average EMF levels of 0.6 mG or less and 95% of the homes had average EMF levels of 3 mG or less. These levels are considerably lower than what is found close to high voltage lines. However, EMF can be higher (5 mG or more) when you are right next to household appliances. In general, one would need to be at least 300 feet from a high voltage line for it to not make a significant contribution to the average level within a home.

DOES EMF EXPOSURE POSE A HEALTH RISK TO MY CHILDREN OR ME?

Despite the fact that numerous studies and scientific reviews have been conducted on whether EMF can increase health risks, there is still *no definitive answer*. The best available science tells us that there may be a weak association between EMF measured in the home and childhood leukemia at average exposures above 3 mG. For cancers other than childhood leukemia, the available studies indicate no association. The few studies in adults with at-home exposure do not provide clear evidence for an association to cancer or other health effects.

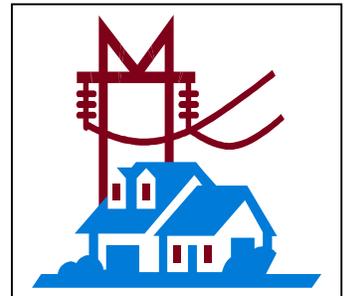
On the other hand, there is more research on *workplace* EMF. These studies evaluated occupations with levels of EMF exposure that are much higher than what occurs in the home. Some studies have found evidence suggesting a link between EMF exposure and both leukemia and brain cancer in electric utility workers, and leukemia in railway workers. However, other studies have not found such associations. These workers were exposed to average EMF levels of approximately 10 mG over the course of a working career.

Animal studies are usually important in showing the toxic effects of environmental agents. However, in the case of EMF, a wide variety of animal studies have failed to demonstrate cancer or other adverse effects. This evidence supports the idea that if EMF is a carcinogen, its effects are weak.

Given children's increased vulnerability to carcinogens in general, the suggestive evidence of a link between EMF and childhood leukemia is an ongoing concern.

WHAT SHOULD I DO IF A HOME I WANT TO PURCHASE HAS HIGH VOLTAGE LINES NEARBY?

- If the power lines are more than 300 feet away, there should be no problem. At this distance, EMF levels from the power lines are no different from typical EMF levels inside the home.
- If high voltage lines are less than 300 feet away from the home, EMF in the yard and home may be elevated relative to typical background. Thus, you may want to consider obtaining EMF measurements. Most electric utilities in Connecticut will take measurements for free. There are also private firms that will charge a fee for measurements. To understand your measurement, consider that typical EMF levels found in homes range from 0.1 to 4 mG. EMF levels above this range are not necessarily hazardous but indicate EMF levels above typical background.



FOR MORE INFORMATION:

CT Department of Public Health
Environmental Health Section
Environmental & Occupational Health
Assessment Program
410 Capitol Avenue MS#11EOH
Hartford, CT 06134-0308
860-509-7742
<http://www.ct.gov/dph/toxicology>



LEAD

WHAT IS LEAD?

Lead is a toxic metal that is poisonous to humans. It is particularly hazardous to children because it can cause serious and long-lasting physical and nervous system problems. Young children are more likely to be poisoned in the home than adults. The most common source of lead in the home is lead-based paint. Most homes built prior to 1978 have some lead paint inside the home or on the house exterior. Homes built prior to 1950 contain lead paint in even higher concentrations. Normally homes that were built after 1977 do not have lead paint. If your house was built after 1977, this section does not apply to you and most of the information below does not apply to your house.

HOW DO PEOPLE GET LEAD POISONING?

- Lead contaminated dust and soil: The most common way for young children to become lead poisoned is by ingesting lead contaminated dust or soil. This occurs because young children are likely to put their hands and toys in their mouths during play, and these objects may be coated with lead dust.
- Paint chips: Although less likely, children can also become poisoned by eating lead paint chips. Eating paint chips causes most of the severe cases of childhood lead poisoning because of a higher concentration of lead being ingested at one time.
- Inhalation: It is also possible to inhale lead. This is most common among workers who burn lead (and breathe the fumes) or create airborne lead dust when doing work such as power sanding or dry sanding lead paint. Children and pregnant women are also susceptible to lead poisoning by inhalation.

HOW IS LEAD HARMFUL AND HOW DO YOU KNOW IF SOMEONE HAS BEEN EXPOSED TO LEAD?

Children with high blood lead levels are at risk for major disabling conditions such as mental retardation, paralysis, kidney disease or seizures. In extreme cases, high levels of lead in the blood can kill a child.

Children under the age of six run the highest risk of being lead poisoned because their bodies are still developing. The lead is stored in blood, bones, organs, and the brain. Lead inhibits normal growth and development. Children who are poisoned by lead are likely to have problems in school because of:

- Damage to the brain and nervous system;
- Loss of intelligence;
- Learning difficulties;
- Behavioral difficulties.

Pregnant women and women of childbearing age are also at risk for becoming lead poisoned. Pregnant women can inhale or ingest lead contaminated dust when proper precautions are not taken during and after renovation, remodeling, or repainting activities. Lead can be passed from the mother

to the fetus. The developing fetus can be very susceptible to lead taken in by a pregnant woman. Lead poisoning can cause:

- Miscarriages;
- Premature births;
- Low birth weight.

Other adults can also be lead-poisoned if exposed to high levels of lead. This type of exposure is most likely to occur at work with certain occupations that include renovation and remodeling, lead smelting, and bridge painting. Symptoms include loss of sex drive, impotence, nausea, weakness, anemia, irritability, and fatigue.

Lead poisoning often has no symptoms or symptoms that are easily overlooked. The best way to determine if lead is present in a person's body is by a blood test that measures the level of lead in the body. All children under three years of age must have an annual blood test and all children under six must be tested if they have not been previously tested.

Family members of children found to have high blood levels, should also be tested. Your doctor or health center can conduct this test. The test is covered by most health insurance plans.

For individuals who are lead poisoned, treatment must include identification of the source(s) of lead exposure. These sources of lead exposure must then be eliminated or properly contained.

WHERE IS LEAD FOUND IN A HOME?

If your home (or the home that you are considering buying or renting) was built before 1978 you should assume that painted surfaces contain lead paint, unless those surfaces have been tested and found not to contain lead. Lead paint that is peeling, chipping, flaking, chalking, or cracking is dangerous and requires immediate attention. Lead contaminated dust and paint chips will be produced if these conditions are not corrected. Lead paint may be dangerous when it is on areas with heavy wear such as windows, doorways, stairs, floors, and porches because it is likely to become loosened and turn to dust. Lead paint may also be dangerous when it is on surfaces that children can reach such as windowsills and railings because some children chew on molding.



Deteriorating exterior lead paint can contaminate soil. Soil may also have been contaminated from leaded gasoline emissions in the past (especially in high traffic areas). Lead in soil can be a hazard to children who play in that soil. People and pets can also track lead-contaminated soil into the home. Lead does not degrade or evaporate, but remains in soil permanently.

Lead can be present in older homes that have lead pipes or lead solder in the drinking water plumbing system. This may be a problem if there is lead in the plumbing and the water is corrosive. Public water supplies must meet state standards that prevent corrosion of pipes and release of lead. However, you may want to test your tap water for lead if you are on a private well.

HOW CAN I CHECK MY HOME FOR LEAD HAZARDS?

If you wish to have a lead inspection or a lead risk assessment conducted in the home, hire a Connecticut Department of Public Health (CT DPH) Licensed Lead Consultant Contractor. Refer to the CT DPH lead program website at: <http://www.elicense.ct.gov/> for a list of these contractors.

A comprehensive lead inspection identifies lead painted surfaces throughout your home and identifies any sources of serious lead exposure (such as peeling paint). A comprehensive lead inspection is usually conducted using a special instrument (an X-ray Fluorescence Analyzer or XRF) for lead in paint testing. The XRF will identify lead in any layer of paint, even those buried under many coats of paint. This type of testing provides immediate reliable on-site results and permits testing of intact painted surfaces. If a comprehensive lead inspection is not desired, more limited testing (e.g., paint testing within the interior of the home or paint testing of areas that are scheduled for repainting or remodeling) may be conducted by the Lead Consultant Contractor.

A risk assessment includes a visual examination of the property to identify potential hazards such as deteriorated paint. Deteriorated painted surfaces will be tested to determine if they contain lead paint. Dust wipe samples will be collected in selected locations to determine if lead dust hazards exist. A report explains actions that may be taken to address any identified lead hazards. Intact paint is not tested during a risk assessment.

If you wish to have a lead inspection, the CT DPH Licensed Consultant Contractor will use staff who are certified by DPH as Lead Inspectors or Lead Inspector Risk Assessors to conduct the inspection. If you want a lead risk assessment, the Licensed Consultant Contractor will use a DPH certified Lead Inspector Risk Assessor to conduct the risk assessment. A Home Inspector cannot provide either of these services unless he/she is also a CT DPH licensed and certified Lead Inspector or Lead Inspector Risk Assessor.

The federal government does not recommend the use of do-it-yourself lead test kits such as those you may have seen at a paint or hardware store. These tests are not reliable. Do not rely on these kits because they are not dependable.

The seller of the house must disclose, by law, known lead-based paint and lead-based hazards before the sale and provide available reports to buyers. Sellers must give buyers the pamphlet developed by EPA, Housing and Urban Development (HUD) and the CPSC, titled: "Protect Your Family from Lead in Your Home". The pamphlet can be downloaded from the EPA website: <http://www.epa.gov/lead/pubs/leadpdf.pdf>



HOW CAN I REDUCE LEAD HAZARDS SAFELY?

If your house has lead hazards, there are some simple steps that you can take to reduce your family's risk:

- a. You can reduce lead hazards by repairing damaged painted surfaces and planting grass to cover soil with high lead levels. Paint that is intact and in good condition does not present an immediate hazard but such surfaces will require ongoing monitoring and attention. Special precautions must be taken when repairing these surfaces (see the section below for additional information).

- b. To permanently remove lead hazards, you should hire a CT DPH Licensed Lead Abatement Contractor. Abatement includes removing, sealing, or enclosing lead paint with special materials. Painting over lead paint with regular paint is not a permanent solution. CT DPH certified lead abatement workers have the proper training to do this work safely. They have the proper equipment to clean up thoroughly. They are trained to follow state and federal safety guidelines.
- c. If there is lead paint in your home, keep your home as clean and dust free as possible. Clean floors, window frames, windowsills, window wells, and similar surfaces weekly. Use a mop and regular detergent to clean floors. Use damp paper towels or tack cloths to clean windows, windowsills, and window wells.
- d. To further minimize the risks to children, have children wash their hands often, especially before meals and at bedtime. Keep play areas clean. Wash bottles, pacifiers, toys, and stuffed animals regularly. Feed your children nutritious meals with foods high in iron and calcium.

WHAT PRECAUTIONS SHOULD I TAKE WHEN REMODELING OR REPAINTING MY HOME?

Before you begin any remodeling or renovations that will disturb painted surfaces (such as scraping or sanding paint, or tearing out walls) on a pre-1978 house, have the area tested for lead paint or assume that lead paint is present. To protect your family from unsafe renovation and painting hazards you may hire a Home Improvement Contractor licensed by the Connecticut Department of Consumer Protection. Verify that the contractor is in compliance with the EPA's new Lead Paint: Renovation and Remodeling Program and will use lead-safe work practices and workers who have been trained in those practices.

Also, federal law requires renovators, remodelers, and painters to provide the "Renovate Right" pamphlet before starting many projects in homes that were built before 1978. The pamphlet can be downloaded at:

<http://www.epa.gov/lead/pubs/renovaterightbrochure.pdf>. The contractor should never use dry sanding, dry scraping, or power sanding or a propane torch or heat gun at a high temperature setting (greater than 1100°F) to remove lead paint. These work practices create large amounts of toxic lead dust and fumes. The lead dust can remain in your home long after the work is completed and can make your family very sick. It is important to keep your family (especially children and pregnant women) out of the work area until the work is completed and the area has been properly cleaned. For extensive work, it is best to temporarily relocate until the project is completed and the area has been properly cleaned.



Other lead safety measures

The brochure, "The Lead Paint Safety Field Guide" can be obtained by calling 1-800-424-LEAD (1-800-424-5323) or downloading it at: http://www.ct.gov/dph/lib/dph/environmental_health/lead/pdf/lbpguide.pdf. This guide explains in detail what to do before, during, and after renovation and painting projects.

WHAT ARE MY RESPONSIBILITIES IF I AM SELLING OR RENTING A HOME THAT WAS BUILT BEFORE 1978?

In summary, homes built before 1978 should be evaluated by a lead inspector or lead risk assessor, especially if the home will contain young children. The inspector will tell you if there are significant amounts of lead paint in the home and how to address the problem.

If you are planning to sell or rent a home that was built before 1978, federal law requires sellers and landlords to disclose certain information prior to finalizing contracts.

A seller or landlord must:

1. Disclose known information on lead paint and lead paint hazards.
2. Give buyers and tenants a lead hazard pamphlet.
3. Include a federal form about lead paint in sales contracts and leases.

In addition, a seller must provide a buyer at least 10 days to conduct a lead inspection or risk assessment to identify lead paint and lead hazards.

FOR MORE INFORMATION:

The National Lead Information Clearinghouse:

1-800-424-LEAD (1-800-424-5323)

Your Local Health Department

CT Department of Public Health

Environmental Health Section
Lead Poisoning Prevention & Control Program
410 Capitol Avenue
Hartford, CT 06134-0308
860-509-7299
<http://www.ct.gov/dph/lead>

Centers for Disease Control and Prevention:

<http://www.cdc.gov/nceh/lead/lead.htm>

National Center for Healthy Housing:

<http://www.centerforhealthyhousing.org/>

U.S. Department of Housing and Urban Development:

<http://www.hud.gov/offices/lead/index.cfm>

U.S. Environmental Protection Agency:

<http://www.epa.gov/lead/>



MOLD & MOISTURE

Moisture is a critical factor in indoor spaces that can contribute to indoor bacteria and mold growth, as well as structural damage, insect infestations, and increased rates of volatilization of some chemicals like formaldehyde. These problems can trigger asthma attacks and may affect allergic or sensitive individuals. This section will focus on the mold-moisture relationship.

Mold must have water to grow. Mold does not grow actively in a dry house. Therefore, all efforts to tackle indoor mold begin with controlling moisture. This includes both water that may come inside from an outdoor source, and indoor activities that may generate moisture. The best way to prevent mold growth is to eliminate moisture.

<p>Outdoor Water Sources</p> <ul style="list-style-type: none"> • Rain • Snow • Floods • High water table • High humidity 	<p>Indoor Moisture Sources</p> <ul style="list-style-type: none"> • Steamy showers • Stove top cooking • Hanging wet laundry indoors • Clothes dryers improperly vented into attics or other indoor spaces • Condensation from air conditioners 
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If you see mold in a home that you are thinking about buying, should you be concerned? Here are some key things that you should know.

WHAT IS MOLD?

Fungi or mold are tiny, microscopic organisms that feed on dead, organic material like leaves, wood, and paper. They can also grow in paints, on plastic, and other natural and synthetic surfaces. Molds reproduce by forming spores. A cluster of spores can be seen with the naked eye, and may appear velvety or powdery. The spores can be various colors.



CAN MOLD MAKE ME SICK?

Some people may be sensitive to mold. These people may develop respiratory symptoms. Scientific studies have shown an association between exposure to damp indoor environments and asthma symptoms in sensitized persons. These studies have also shown an association between the presence of mold or other agents and asthma symptoms in sensitized persons. If you have concerns about mold exposure, you should discuss them with your doctor.

HOW DOES MOLD GET INSIDE?

Mold is everywhere! All houses have some mold, because it comes in from the outside. We carry spores in on our clothes and shoes. Pets bring them in on their paws. Spores come inside via open doors and windows, and through ventilation systems. The spores can't start actively growing and multiplying inside unless there is moisture.

What to look for:

Inside of the House:

- Leaks or evidence of water (water lines, stains/discolored areas) in basements, roofs, ceilings, window and door casings, cabinets under sinks, etc.
- Rotting wood around windows or doors.
- High humidity inside of the house (above 60%)
- White water lines or marks on porous materials like concrete, brick, or natural stone walls or floors - the white stuff is actually salt (mineral deposits) left after water evaporates, and is called spalling or efflorescence. It is often seen on foundation walls in the basement. If you see it on concrete floors, it might suggest either a past flood or chronic moisture coming up from the ground.
- Sump pumps in basement
- No dehumidifier in basement (all houses in southern New England should have one)

Outside of the House:

- Poor exterior drainage
- Gutters that direct water close to the foundation
- Land sloped in a manner that permits water to pool against the foundation

WHAT IF THE HOUSE WAS BUILT WITH DAMP MATERIALS?

Sometimes, building materials like lumber, sheetrock, and rolls of insulation get wet from rain or snow. This can happen if they are stored outside and not completely covered with tarps, or if during the construction process, roofs, windows, or doors are not sealed from the elements. Wet/damp materials support mold growth. Sometimes, mold can start growing on studs, in attics, and inside wall cavities before the house is completed. Porous materials like lumber should not be used unless they have been thoroughly dried within 48 hours of getting wet. Wet/damp sheetrock and insulation should not be used. If there is any question, most hard material can easily be checked by a home inspector by using a moisture meter.

What to look for:

- Bowed, warped, or wrinkled or crumbling wall board
- Warped, bent, bowed, cupped or rotting wood
- Visible mold growth and/or moldy, musty odor

SHOULD I BE CONCERNED ABOUT MOLD IN A HOME?

It depends on how much mold we're talking about. A few surface spots on a bathroom ceiling or tiles might be easily removed with a weak bleach or disinfectant cleanser. A little bit of surface mold on a windowsill might similarly be removed. If the windowsill is rotting, it should be inspected to see if water is coming in, and the sill and possibly the casing may need replacing. These are examples of minor repairs that should not affect the sale of a house.

If we are talking about an entire wall covered with mold, or for example, the wall area surrounding every baseboard on the first floor of the house, the problem may be considered moderate to extensive. It is difficult to define “extensive” strictly by talking about how much mold we can see, because sometimes, mold may be “hidden” inside of wall cavities, pipe chases, attics, crawl spaces, etc. In situations like these, there is usually a serious underlying water problem. This should trigger an investigation that begins with examining the building’s history (building materials, repair history, noting any extreme weather events that may have impacted the property, owner or tenant caused damage, etc.), a visual inspection looking for likely water sources, evidence of water damage, structural damage, and observable mold.

Extensive mold contamination can be hazardous to occupants who may breathe in mold spores that are being released in large amounts and on a regular basis. People exposed in this manner may develop allergies or other respiratory illnesses. Exposure to mold spores may trigger asthma attacks in people diagnosed with asthma. Mold growth can also damage your furnishings, such as carpets, sofas and cabinets. Clothes, shoes, and handbags stored in damp closets can become ruined. Extensive mold growth may require professionals to remove it and repair damage caused by water (see below).

DOES CONNECTICUT REGULATE CONTRACTORS THAT DO MOLD ABATEMENT?

While Connecticut does not regulate contractors who perform mold abatement, the CT DPH has [guidelines for mold abatement contractors](#) that should be followed to ensure that the work conforms with state of the art practice. **It is up to the person hiring the contractor to insist that these guidelines are followed.** For guidelines for contractors and another publication written for the public, [Get the Mold Out](#), refer to the CT DPH website at: <http://www.ct.gov/dph/ieq>.

Note that home improvement contractors must obtain a certificate of registration from the Connecticut Department of Consumer Protection (CT DCP). This includes [mold] abatement contractors if their scope of work includes replacing building materials and/or structural elements such as window casings, sills, frames, sheetrock or plaster walls, studs, beams, etc. If the abatement contractor is solely involved in cleaning and/or demolition, they do not have to register with CT DCP as a Home Improvement Contractor. For further questions, refer to the CT DCP website at: <http://www.ct.gov/dcp> or call 860-713-6110 or 1-800-842-2649.

CAN I CLEAN UP SMALL MOLDY AREAS MYSELF?

Yes, if you are not asthmatic. If you have asthma or are sensitive to mold, ask another household member to do it for you. Remember, the key to preventing mold from coming back is finding the water source and stopping it. Further information may be found at <http://www.ct.gov/dph/mold>.

1. Identify and remove the source of moisture.
 - Fix leaks
 - Repair roofs
 - Use a basement dehumidifier

How To Do It

- Air it out
- Clean it out
- Dry it out
- Throw it out

2. Clean-up

Clean the area with a general cleanser first to remove dirt and grime. Next, scrub mold off of hard, non-porous surfaces such as plastic, glass and metal with either a disinfectant designated

as fungicidal (check the label) or a 10 % bleach solution (1 part bleach plus 9 parts water). Bleach can irritate your eyes, nose and throat, so be sure to ventilate the area well. Always wear rubber gloves and eye protection when handling bleach. Allow the bleach solution to air dry. **Remember, NEVER mix bleach with ammonia; the vapors are toxic!**

3. Dry the area

If it is dry outdoors, open windows and allow fresh air to circulate to speed the drying process. You can also put fans in the windows facing outward to draw the damp air outside. If it is rainy and/or very humid, you do not want to bring more humidity indoors, so only crack the windows open slightly.

Monitor the indoor humidity with a hygrometer, an instrument that measures humidity. Keep humidity below 60% to minimize mold growth. This can be achieved by using basement dehumidifiers and air conditioning. Both take moisture out of the air. Hygrometers may be purchased at any hardware store.

4. Discard

Throw out porous contaminated materials. This may include ceiling tiles, sheetrock, plaster, wood products, cardboard boxes, carpets, and other home furnishings. If there has been flood damage, replace all sheetrock and insulation damaged by water up to at least 12 inches above the high water mark. When handling moldy materials, wear a respirator with a HEPA filter (not a dust mask) to protect you from breathing airborne spores and wear rubber gloves.

SHOULD I HAVE THE HOUSE TESTED FOR MOLD? WHO CAN I CALL TO DO THAT?

No. Most health professionals including the Connecticut Department of Public Health do not advise testing for mold. Air tests can be particularly misleading, because mold is everywhere, as previously discussed. If you test, you will find mold! Also, air testing almost never affects the final recommendations. More importantly, there are no standards for levels of mold indoors. Health experts agree that if you can see or smell mold indoors, there is probably a problem in the building with moisture and mold. Instead of testing, the recommended first step is to perform a visual inspection to look for water, stop it at the source, and remove any porous materials that are wet or moldy. For more information, refer to the CT DPH publication, [Indoor Air Quality Testing Should Not Be The First Move.](#)

FOR MORE INFORMATION:

CT Department of Public Health
Division of Environmental Health
Environmental & Occupational Health
Assessment Program
410 Capitol Avenue, MS# 11EOH
Hartford, CT 06134-0308
860-509-7742
<http://www.ct.gov/dph/mold>

U.S. EPA:

<http://www.epa.gov/mold/index.html>

California Department of Public Health:
<http://www.cal-iaq.org/cal-iaq%20moldinformation.htm>

NYC Health Dept (Assessment and Remediation):
<http://www.nyc.gov/html/doh/html/epi/moldrpt1.shtml>



PRIVATE WELL WATER

Many homes in Connecticut use private wells as a source of drinking water. A good source of drinking water is critical to your health and the value of the property. When purchasing a home with a private well it is important to consider whether the drinking water is acceptable from both an aesthetics (odor, taste, staining) and health point of view. Owners of homes with public water do not have to consider the issues discussed below because the water company tests their water regularly.

Some factors to consider when buying a home supplied by private well water are:

- 1) Is the supply plentiful, even in dry weather?
- 2) What is the water hardness level?
- 3) Does the water contain minerals (e.g., sulfates, iron, manganese) which can cause it to have an odor or taste, or which can leave a stain on porcelain or clothing?
- 4) Is the water contaminated with infectious bacteria?
- 5) Does the water have high levels of nitrates?
- 6) Is the water contaminated with pesticides or organic solvents?
- 7) Is the water contaminated with naturally occurring elements such as arsenic, uranium, radon, or radium?

A basic water quality survey usually conducted at the time of a house purchase, consists of a test for bacteria and tests of the physical/chemical nature of the water. The testing results may be reviewed by the local health department in your town, and they compare the data to standards in the Public Health Code Section 19-13-B101. This battery of tests is required for new wells to obtain a certificate of occupancy, and is typically required by lenders to approve a mortgage. The initial test for bacteria reports the presence/absence of total coliform bacteria found in 100 milliliters (ml) of water. The physical/chemical series consists of tests for iron, manganese, chloride, sodium, hardness, nitrite, nitrate, sulfates, pH (acidity), apparent color, odor, and turbidity. Testing for pesticides, organic solvents, and naturally occurring metals and radioactive elements (questions #6 & #7 above) is at the discretion of the buyer or can, under certain circumstances, be required by the local health department for new wells.

For more information about interpreting well sampling results refer to the CT DPH website: www.ct.gov/dph/privatewells

DOES THE WELL PROVIDE A SUFFICIENT AMOUNT OF WATER?

Although most of Connecticut's domestic wells provide sufficient water for normal home use, there are areas in Connecticut where this is not true. Check with your local health authorities. Well yields are determined when wells are first drilled prior to local health approval. Wells drilled after 1970 should have a permit on file as well as a completion report that identifies the well yield. (Check local

health records first, then check with the Department of Consumer Protection, Well Drilling Licensing Unit.) A home inspector may be able to check the water flow from each of the various fixtures in the home and check the time that flow is maintained. This is not a yield test but may help identify inadequate supply and/or storage. Marginal wells may need a yield test and/or a recovery test conducted by a State licensed well driller or pump installer if water quantity appears to be a problem. The solution to the yield problem may be complicated. It may require any number of solutions in combination: more storage, different pumps, deepen well, hydrofracting, drilling a new well or connection to a public water system. Consult a professional well driller and/or pump installer for advice. If all options have failed to increase supply, it may be necessary to minimize daily water usage and provide additional storage and recognize that your well may not meet all your domestic needs.

IS THE HARDNESS VALUE ACCEPTABLE?

Water hardness relates to the capacity of water to interact with soap; hard water requires considerably more soap to produce lather. Major sources of hardness in water are dissolved calcium and magnesium ions from sedimentary rocks, or run off through certain soils. Hardness is commonly measured in milligrams of calcium carbonate equivalent per liter.

Hard water is not a common problem in Connecticut, and most wells are well below the 150-200 milligrams per liter (mg/l) range where water can be classified as hard. Hard water can be a problem because soap does not clean efficiently and deposits can form inside pipes and boilers. This condition is commonly treated with a water softener. We recommend treating the hot water supply only if it has been determined that softening is needed. Note: Treatment backwash is prohibited for discharge into the septic system.

STAINING OF PLUMBING FIXTURES: WHAT ARE THE IRON & MANGANESE LEVELS?

Iron and manganese are found in Connecticut rocks and soils, and high concentrations of these metals are a frequent cause of concern for well owners. Iron compounds are easily dissolved in acidic water, and while small amounts are not a problem, high levels can cause rust stains to form on laundry and plumbing fixtures. High iron in water can also affect the taste of food and cause potatoes to blacken. Iron/manganese at any level can also promote the growth of iron/manganese-eating bacteria. Though not harmful, iron-eating bacteria can cause rust-colored water, clog valves and filters, and occasionally show a visible oil like sheen in the toilet tanks. As a general guideline, iron concentrations less than 0.3 mg/l do not pose a problem. High iron/manganese can be treated with an oxidation-filtration system (manganese green sand filter). High iron in drinking water is rarely a health concern, however people with hemochromatosis, a rare genetic condition, can be affected by high levels of iron in the water. Check with your physician if you think that you are having health effects.



High manganese concentrations may impart a bitter taste to foods and cause black stains on plumbing fixtures and laundry. As a general guideline, manganese concentrations below 0.05 mg/l do not pose a problem for staining. When concentrations are ten times higher (over 0.5 mg/l) this may be unhealthy to consume as manganese can affect the nervous system. Manganese, like iron, can be treated with an oxidation-filtration system (manganese green sand filter) in conjunction with a pH adjustment system.

HYDROGEN SULFIDE: IS THERE A “ROTTEN EGG” SMELL IN THE WATER?

Water containing hydrogen sulfide does not pose a health risk, but does give water a "rotten egg" smell and taste. Hydrogen sulfide is formed by a type of bacteria that may occur naturally in water and is often also associated with iron and manganese. These bacteria use the sulfur in decaying plants, rocks, or soil as their food or energy source and as a by-product produce hydrogen sulfide. Treatment options include oxidation through either chlorination, aeration, or passage through a manganese oxide-based mineral bed. Chemical analysis is usually not necessary because the nose is able to detect very low concentrations. If only the hot water is affected, the problem may be that the hot water heater should be flushed. *

*Water heaters may also be a potential source of hydrogen sulfide gas. Some water heaters contain a magnesium rod in the tank to prevent corrosion, the rod can chemically reduce naturally occurring sulfates to hydrogen sulfide. If this is happening, you may want to replace the magnesium rod (the sacrificial anode) with one made of aluminum or zinc. Check with a licensed plumber or heating system professional.

IS THE NITRATE LEVEL ACCEPTABLE?

High nitrates, resulting from contamination with surface runoff containing animal fecal material or chemical fertilizer can also be a cause for concern. High nitrates have the potential to cause harm to infants consuming formula made with contaminated water. Nitrate (formed from nitrite) can affect the oxygen-carrying capacity of blood in babies under six months of age. This effect (methemoglobinemia) is commonly called “blue baby syndrome”, and in years past, has caused several deaths in this country. Adults are rarely at risk. No adverse effects have been reported in infant’s drinking water with a nitrate concentration of 10 mg/l or less. For this reason, 10 mg/l is the maximum allowable nitrate concentration. Nitrate in well water is commonly derived from farming, lawn fertilizers, and failing septic systems. Shallow wells are typically most susceptible.

IS THE WATER CONTAMINATED WITH COLIFORM BACTERIA?

Coliform is a type of bacteria that includes many different species found throughout the environment. Normally, groundwater is not contaminated with coliform bacteria because soil and sediment filters out these organisms. If coliform bacteria are found it suggests that the well is not constructed properly because unfiltered water is getting into it. Other possible causes of contamination include nearby unsealed wells or outcrops of fractured bedrock, which can act as a conduit to deliver surface water directly to groundwater. A failed or malfunctioning septic system is another possible source of contamination. Effluent from septic systems contains a type of coliform bacteria typically utilized as indicator organisms (e.g., E. coli., fecal coliform) which by their presence can be indicative of disease producing organisms .

If a well tests positive for total coliforms, it should be disinfected with chlorine and retested. It should be further screened for E. Coli bacteria or fecal coliforms. If contamination reoccurs frequently, the well needs to be repaired or abandoned. Contact the local health department for more information about disinfecting a well or if contamination reoccurs. Though problem wells should be sampled more frequently, all wells should be tested for coliform bacteria annually or after any maintenance or repair work that has involved well equipment.

IS THE WELL POLLUTED WITH PESTICIDES OR ORGANIC SOLVENTS?

Some of the most common organic chemical contaminants (often called VOCs or volatile organic chemicals) in Connecticut wells are trichloroethylene (TCE), and tetrachloroethylene (PERC). TCE and PERC are solvents for degreasing and cleaning. Though it is uncommon, pesticide

contamination does occur, primarily in active or former agricultural areas (farms and nurseries). Testing for organic chemical contamination or pesticides is not part of the standard water test when you buy a house. Such testing can cost several hundred dollars. It is usually up to the homeowner to have the testing done. TCE, and PERC are detected with a laboratory “volatile organics scan”, while pesticides are detected with a “pesticide scan”. Your local health department can help owners/buyers decide if testing is needed. They can also provide help interpreting the test results. Additionally if nitrate levels exceed 5mg/l this may also be a good reason to test for herbicide/pesticides since they are often associated with nitrates.

The federal government has set standards for many chemicals found in groundwater. Many of these have been adopted and are listed in Section 19-13-B101 and B102 of the Connecticut Public Health Code. The State of Connecticut also has a separate list of drinking water Action Levels. Concentrations below these federal or state targets do not present a health risk. Results of private well tests are compared to these targets to determine if the water is safe to drink. Current Action Levels are posted on the CT DPH web page at:
http://www.ct.gov/dph/LIB/dph/environmental_health/EOHA/pdf/Action_Level.pdf

If your private well is contaminated above the Action Level, you may be eligible to receive bottled water or a treatment system from the CT DEP (860-424-3705). Treatment to remove organic chemicals usually includes installation of an activated carbon filter at the supply line. For health questions about a particular contaminant, contact the CT DPH Environmental and Occupational Health Assessment Program (860-509-7740). For more information about water treatment systems, contact the CT DPH Private Well Program (860-509-7296) or refer to the Private Well Program website at: www.ct.gov/dph/privatewells

SHOULD I TEST THE WELL WATER FOR NATURALLY OCCURRING CHEMICALS?

Groundwater in Connecticut sometimes contains naturally occurring elements (arsenic, uranium, radium, and radon) that have dissolved (leached) from bedrock. Because contamination with these elements is not a generalized problem statewide, testing is not routinely recommended. The CT DPH had recommended testing for arsenic, radium and uranium in some towns in newly constructed wells due to a growing concern over its discovery in well water around New England. It would be wise to check with your local health authorities to decide if testing is warranted. When naturally occurring elements are tested for, it is usually done at the buyer’s discretion and cost.

Radioactive elements that can occur naturally in Connecticut wells include uranium, radium and radon. Uranium is a metal that can cause kidney toxicity at high levels. There is little, if any, risk from radiation from drinking water with naturally occurring uranium. Exposure to high levels of radium in drinking water may, in the long term, increase the risk of certain types of cancer. For further guidance on when and how to test for radon in well water, refer to the radon section of this document.



Homebuyers may also find relevant information in the CT DPH fact sheets on radioactivity at:
http://www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/radium_in_private_wells010809.pdf and uranium at: http://www.ct.gov/dph/LIB/dph/environmental_health/EOHA/pdf/uranium3.pdf in drinking water.

Arsenic is a carcinogen, and some people who drank water containing high concentrations for long periods of time have developed skin cancer and other health problems. Though not a major problem statewide, elevated arsenic in well water has been found in some isolated wells in certain towns throughout Connecticut. Testing is therefore not routinely recommended; and the decision to test is made at the homebuyer’s discretion and cost. Check with your local health department to determine if

you should test for arsenic. If the arsenic concentration exceeds the federal standard of 10 micrograms per liter, then a reverse osmosis filtration system should be installed on the household's drinking water tap (e.g. the kitchen sink). Because arsenic is not volatile or absorbed through the skin, it is not necessary to treat the water before it enters the house in a whole house water treatment unit. Further information on arsenic testing and treatment can be found in the CT DPH fact sheet on arsenic in private wells at: http://www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/Arsenic.pdf For a listing of laboratories that can test for arsenic, refer to CT DPH's list of approved laboratories at: http://www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/radium_in_private_wells010809.pdf.

For a listing of laboratories that can test for uranium, radium, or arsenic, refer to CT DPH's list of approved laboratories (<http://www.ct.gov/dph/environmentallabs>).

Additional publications are available on the CT DPH website under the Private Wells Program and Environmental and Occupational Health Assessment Program.

WHERE CAN I HAVE MY WATER TESTED?

A state approved water-testing laboratory should perform water analyses. Information on the state approved laboratory nearest you can be obtained from your local health department or CT DPH at: <http://www.ct.gov/dph/privatewells>.

HOW OFTEN SHOULD I HAVE THE WATER TESTED?

If basic physical and chemical properties are acceptable, and there are no bad odors or taste, then a bacteriological test every three years may be adequate. With a shallow water well that is not adequately constructed or if the well is in a location subject to possible contamination, an annual water test is suggested. If there appears to be a noticeable change in the drinking water quality for some reason, water testing may be needed at that time to determine the cause or if there is a problem.

FOR MORE INFORMATION:

For questions about water treatment systems and regulations:

CT Department of Public Health
Private Well Program
450 Capitol Avenue
Hartford, CT 06134-0308
860-509-7296
http://www.ct.gov/dph/private_wells

For questions about health effects of contaminants:

CT Department of Public Health
Environmental & Occupational Health Assessment Program
410 Capitol Avenue
Hartford, CT 06134-0308
860-509-7740
<http://www.ct.gov/dph/environmentalhealth>

**For questions about groundwater contamination,
responsible parties and short and long term
solutions to contaminated drinking water systems:**

Connecticut Department of Environmental Protection

Remediation Division: 860-424-3705

<http://www.ct.gov/dep/cwp/view.asp?A=2715&Q=324994>

EPA: What Every Realtor Should Know about Private Drinking Water Wells

<http://www.epa.gov/NE/eco/drinkwater/pdfs/realtorprivatewell.pdf>

EPA Hotline 800-426-4791

Water Quality Association

Hotline 1-888-395-1033

www.watersystemscouncil.org

Provides information about certified well caps and pitless adapters also has extensive fact sheets for the homeowner

Department of Consumer Protection

Information of well drillers(roster) and well drilling code requirements

www.ct.gov/dcp

University of Connecticut(UCONN) Cooperative Extension System

<http://www.sustainability.uconn.edu/>

Provides extensive information for the homeowner



RADON

WHAT IS RADON?

Radon is an invisible, odorless and tasteless radioactive gas. It is formed from the radioactive decay of radium and uranium, which occur naturally in bedrock worldwide. Radon is measured in units of radioactivity in both air and water as “picoCuries per liter” (pCi/L).

The U.S. Environmental Protection Agency (EPA) has set an *action level* of 4.0 pCi/L for radon in indoor air. The *action level* is a level at which EPA recommends action be taken. Radon levels in a home should be reduced if they are equal to or greater than the 4.0 pCi/L action level. More recent studies show an increased risk for lung cancer at average radon concentrations in indoor air of approximately 3.0 pCi/L. The EPA recognizes that radon exposure at any level poses some health risk; therefore, a homeowner may want to consider reducing radon levels that are between 2.0 pCi/L and 4.0 pCi/L.

WHERE IS RADON FOUND?

Radon is commonly found in soil, rock and water. Higher concentrations are possible near certain types of bedrock (granite, shale) that have high uranium content. This would suggest that radon potential in Connecticut could be predicted based upon the type of bedrock and soil in an area. However, test data indicate that high radon concentrations can occur sporadically in all parts of the state. The only way to know if you have an indoor air radon problem is to test your home.

SHOULD I BE CONCERNED ABOUT RADON IN MY HOME?

Yes, the U.S. Surgeon General has warned that exposure to elevated levels of radon in indoor air is the leading cause of lung cancer in nonsmokers. In 2005, the University of Iowa conducted the largest North American residential radon study to date. Data showed compelling, direct evidence of an association between lung cancer and prolonged residential radon exposure. The EPA estimates that approximately 25,000 lung cancer deaths each year in the United States are attributed to radon in indoor air. Breathing radon over prolonged periods can present a significant health risk. If you smoke and reside in a home with high radon levels, your risk of developing lung cancer is especially high.

ARE THERE ANY SYMPTOMS ASSOCIATED WITH RADON EXPOSURE?

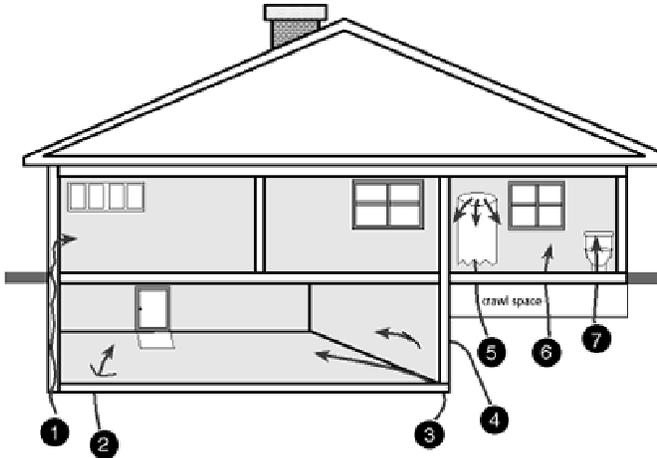
No, exposure to radon does not cause any symptoms. Long-term exposure to high levels increases a person’s risk for developing lung cancer. This cancer can take up to 30 years to develop. Because radon does not have an odor and does not cause symptoms, you may not know you are exposed. Therefore, all homes should be tested and action should be taken to reduce high levels.

HOW DOES RADON ENTER THE HOME?

Radon is drawn into the home through cracks and other openings (e.g., sump pits) in the foundation. Air pressure inside the home is usually lower than the pressure in the soil around the foundation. This pressure difference draws radon gas into the home, especially during the colder months of the

year when the heating system is on and the home is closed-up. Therefore, radon levels may be much higher in the winter months.

Radon may also be present in well water and can be released into indoor air during tap water use, such as, showering, laundering clothes, and dishwashing. The transfer ratio for radon from well water to indoor air has been estimated as follows: 10,000 pCi/L in water may increase the level of radon in the air by 1.0 pCi/L.



How Radon Enters A Home

1. Cavities inside walls
2. Cracks in solid floors
3. Construction joints
4. Cracks in walls
5. The water supply
6. Gaps in suspended floors
7. Gaps around service pipes

SHOULD I TEST MY HOME FOR RADON?

Yes. All homes should be tested for radon in indoor air. This includes newly constructed homes built with radon resistant new construction (RRNC) features. The EPA recommends that homes be tested for radon in air prior to being placed on the market. This will provide time to have the home fixed or “mitigated” to reduce elevated radon levels. Testing for radon in water is not recommended unless the property is served by a private well. After the air testing has been completed, a homeowner should consider testing the water for radon.

HOW IS A HOME TESTED FOR RADON?

There are two testing procedures: a short-term test (lasting 2-90 days) and a long-term test (lasting 91 days-1 year). According to EPA protocol, testing during a real estate transaction varies slightly from testing one’s own home. Short-term testing is usually conducted during real estate transactions, because it provides a quick result for potential buyers to make an informed decision. Testing involves the simultaneous placement of two test devices or one electronic continuous radon monitor to measure radon in the air. All windows and doors in the house must be closed 12 hours prior to beginning the test and remain closed throughout the entire testing period, except for normal entry and exit. The protocol for real estate transactions is to test in the lowest level suitable for occupancy, which a buyer could use for living space. Both the potential buyer and radon measurement professional make the determination for test placement based on the buyer’s intended use of the space. Test devices must be left in place for a minimum of 48 hours. Multiple-round testing is not compliant with EPA protocol for a real estate transaction. The average result of two short term tests or the result of a continuous radon monitor is adequate to make an informed decision on whether to mitigate a home. It is recommended that a qualified radon measurement professional conduct testing for a real estate transaction (refer to the CT DPH Radon Program website for a list of measurement professionals).

The protocol for testing a home that is not involved in a real estate transaction is as follows: A homeowner should test in the lowest lived-in area of the home. If the basement is not occupied more

than three hours per day, then radon testing should be done on the first floor of the home. Long-term testing is an option that will provide radon test results that more accurately reflect year-round airborne exposure to radon for occupants of a home. The average result of two short-term tests or one long-term test should be compared to the EPA action level of 4.0 pCi/L.

WHAT DO THE RESULTS MEAN?

For Short-Term Testing Conducted in a Home During a Real Estate Transaction:

1. If the average of two short-term tests or a continuous radon monitor radon test result is below 4.0 pCi/L, then follow-up testing is not necessary at this time. However, radon levels fluctuate and may change over time. A homeowner may want to test in the future, especially if living patterns change (e.g., a lower level of the home is renovated and used more frequently). Radon testing should be performed during the colder months. If initial testing was performed during the spring or summer, retesting during the heating season is recommended.
2. If the average result of a short-term test is equal to or greater than 4.0 pCi/L, then it is recommended that a homeowner or homebuyer reduce the levels of radon in the home by having a radon reduction (mitigation) system installed by a qualified mitigation professional (refer to the CT DPH Radon Program website for a list).

For Testing a Home NOT Involved in a Real Estate Transaction:

1. If the long-term or short-term test result is below 2.0 pCi/L, then a follow-up test is not necessary. However, radon levels change over time. A homeowner may want to test in the future, especially if living patterns change (e.g., a lower level of the home is renovated and used more frequently).
2. If the initial short-term test result is equal to or greater than 2.0 pCi/L, a follow-up test should be performed in the same location within one month. If the average of the initial and follow-up test is between 2.0 pCi/L and 3.9 pCi/L, a homeowner may want to consider mitigation because exposure to radon at any level poses some health risk.
3. If the average of the initial and follow-up test is 4.0 pCi/L or greater, a homeowner should reduce the levels of radon in the home by having a radon reduction (mitigation) system installed by a qualified mitigation professional (refer to the CT DPH Radon Program website for a list).

HOW CAN RADON BE REDUCED IN A HOME?

A homeowner should hire a qualified radon mitigation professional to decrease airborne radon levels to well below 4.0 pCi/L, ideally the level can and should be reduced to below 2.0 pCi/L. A radon mitigation contractor takes steps including, but not limited to, installing ventilation systems, sealing entry routes for radon gas and installing sub-slab depressurization systems to reduce radon levels in homes. CT DPH compiles a list of qualified mitigation professionals who can evaluate properties and install radon reduction systems. These contractors have attended specialized courses, passed an examination provided by the National Environmental Health Association (NEHA) or the National Radon Safety Board (NRSB) and also maintain a Home Improvement Contractors registration through the CT Department of Consumer Protection. The list of contractors can be found on the Radon Program website under the “Radon Professionals” heading.

Most radon removal systems are quite effective and fairly simple involving PVC pipe and a fan that vents radon into the outside air where it is quickly diluted. The average cost for a residential radon mitigation system is approximately \$1,200.

IS RADON IN DRINKING WATER A CONCERN?

Drinking water that contains radon is not believed to be a significant health risk compared to inhaling radon in air. The concern with radon in tap water is that some radon can enter the air and be inhaled, contributing to airborne radon levels. Radon in air is a much greater health risk than radon in water. Therefore, water testing should not occur until after radon in the air has been tested.



CT DPH recommends testing a home's water for radon when the following two conditions are met: 1) the home is served by a private well; and 2) the indoor air has already been tested for radon. The water sampling technique is critical in obtaining accurate results and should be performed by a qualified radon measurement professional (see the CT DPH Radon Program website for a list). The water sample must be analyzed by a laboratory that is approved by the CT DPH Environmental Laboratory Certification Program to test for radon in the water. Results reported by laboratories that are not approved by CT DPH are not considered valid results.

AT WHAT LEVEL SHOULD ACTION BE TAKEN FOR RADON IN WATER AND HOW IS RADON IN WATER REDUCED?

CT DPH has set a *guideline* of 5,000 pCi/L for radon in water. A homeowner should consider reducing radon levels in their well water if the average of two or more tests is equal to or greater than 5,000 pCi/L. Two systems are currently available for reducing radon levels in private wells: the granular activated carbon (GAC) filter system and the aeration system.

The GAC will effectively treat radon in water at levels between 5,000 and 10,000 pCi/L. This system uses special charcoal filters to remove radon from the water. These filters must be changed every 12 to 18 months (or according to manufacturer's recommendations) to avoid a decrease in filter efficiency. The average cost of a GAC system is between \$1,500 to \$3,000.

The aeration system will reduce radon levels that are above 10,000 pCi/L. This system bubbles air through the water so that the radon is released into the air and vented away from your home. It is recommended that the aeration system be cleaned annually. The average cost of an aeration system is \$3000 to \$5000.

Both of these systems are under constant development and a number of variations of each system are on the market. Radon mitigation contractors listed on the CT DPH Radon Program website are trained to install and maintain radon reduction systems for drinking water.

DOES CONNECTICUT HAVE LAWS THAT REQUIRE RADON TESTING AND MITIGATION?

No. The EPA and CT DPH recommend that all homes be tested and mitigated for radon if elevated levels are found. The same recommendation applies for homes involved in real estate transactions. The cost of mitigation during a real estate transaction is often negotiated between the buyer and seller.

FOR MORE INFORMATION:

CT Department of Public Health
Environmental Health Section
Radon Program

450 Capitol Avenue, MS# 51-RAD
Hartford, CT 06134-0308
860-509-7367

<http://www.ct.gov/dph/radon>

U.S. Environmental Protection Agency:

<http://www.epa.gov/iaq/radon>

<http://www.epa.gov/radon/pubs/index.html>

K.S.U. National Radon Program Services:

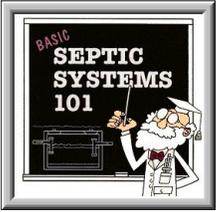
<http://www.sosradon.org>

Radon Professional Training Programs:

<http://www.NRSB.org>

<http://www.radongas.org>

http://www.cpe.rutgers.edu/programs/radon_indoor_air_quality.html



SEPTIC SYSTEMS

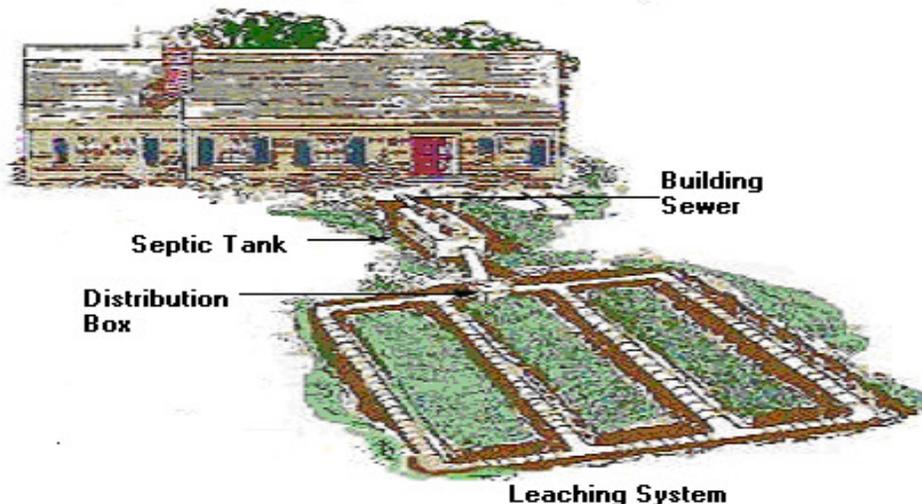
WHO HAS A SEPTIC SYSTEM?

Approximately 30 percent of Connecticut's population is served by on-site subsurface sewage disposal systems (a.k.a. septic systems). This means a large percentage of the state's population is served by other means of sewage disposal such as municipal sewers. If it is unclear how sewage is disposed of from a particular building or residence, please contact your Local Health Department or Water Pollution Control Authority for information pertaining to your property.

WHAT IS A SEPTIC SYSTEM?

The purpose of a septic system is to dispose of domestic wastewater or sewage from a building in such a manner as to protect public health and the environment. There are four main components to a septic system:

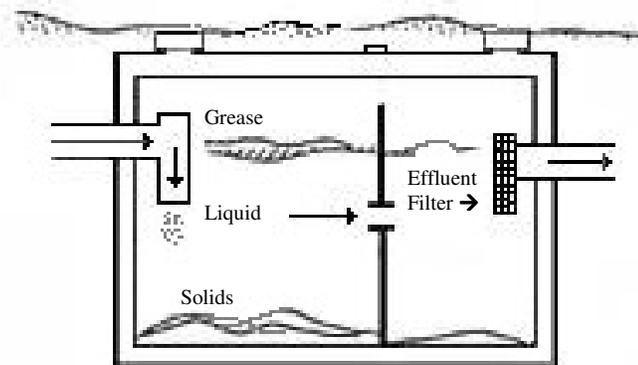
1. **Building sewer** connects the building plumbing to the septic tank.
2. **Septic tank** allows for the settling of solids and provides the initial treatment of the sewage. This is where waste material is broken down by bacterial action. A properly functioning septic tank will reduce pollutant levels and produce an effluent of fairly uniform quality.
3. **Distribution piping** directs the flow of sewage effluent to the leaching system in a manner that assures full utilization of the system. Sewage effluent can flow through the distribution piping by means of gravity, or with the assistance of a mechanical pump or siphon.
4. **Leaching system** disperses the sewage effluent into the surrounding soil. There are many types of leaching systems. The specific type utilized on a property is usually dependant on the soil conditions on that site. Most residential installations utilize stone-filled leaching trenches or hollow structures surrounded by stone.



WHAT IS THE PURPOSE OF A SEPTIC TANK?

The septic tank is a watertight receptacle that retains and delays the wastewater from proceeding directly to the leachfield. It serves as the primary physical treatment of the wastewater by settling out the heavier solids and preventing the floating scum and greases from escaping into the leachfields. The standard septic tank has a minimum 1,000-gallon minimum liquid capacity and can be made out of concrete, steel or plastic. Newer tanks are equipped with inlet and outlet baffles, an interior compartment wall, and an effluent filter, all which will assist in retaining scum/solids inside the septic tank. The efficiency of the septic tank as a settling unit is reduced when the velocity of the liquid moving through the tank increases. This can occur if a tank that is undersized or has a reduced storage capacity due to an excessive amount of solids. A relatively stable biological system within the septic tank helps promote the conversion of organic solids to soluble organic chemicals and gases, which helps provide a uniform quality of effluent with reduced pollutant levels.

Typical Septic Tank



HOW DOES A LEACHING SYSTEM FUNCTION?

A properly functioning leaching system should disperse sewage effluent into the surrounding soils without breaking out onto the ground surface or backing up into the septic tank or building plumbing. The system should be capable of working during peak demand periods and under adverse conditions such as heavy rain events. The bottom of a leaching system must be located a minimum 18 inches above the seasonal high groundwater table. Soil permeability, slope of the area, and the length of the system being provided are all important factors in designing a system and ensuring that the volume of sewage effluent discharged does not overload the capacity of the leaching system and surrounding soils.

Many older homes are served by undersized septic systems or cesspools that are unable to handle the amount of water being used, especially in cases where the original home has been enlarged without proper expansion of the septic system. Leaching systems for residential homes are sized based on the potential number of bedrooms in a dwelling and soil conditions of the property. In order to protect your septic system from being overloaded, the daily flow from the building should not exceed the design flow of the system. When available, this information may be found on the Permit to Discharge issued by the Local Health Department.

WHAT ARE COMMON SYMPTOMS THAT A SYSTEM IS EXPERIENCING DIFFICULTIES?

Patches of lush green grass, strong sewage odors, or pooling of wastewater on the ground surface are all indications of a possible septic system failure. Sewage overflowing onto the ground surface warrants immediate attention. Plumbing fixtures may exhibit difficulty in releasing its contents (slow draining or gurgling, plumbing backups, etc.). This condition may be septic system related or an indication of a clog in the building sewer or internal building plumbing. In such cases, you should have the plumbing checked before proceeding further with an investigation of the septic system.

Runback from the leachfields into the septic tank after pumping may be an indication that the leachfields are fully saturated and nearing failure. Large volume discharges (such as washing machines and bathtubs) can also cause a backup or overflow of sewage above the septic tank or leachfields. This condition is usually at its worst following heavy rain periods. A CT licensed septic installer should further evaluate the septic system in these cases.

Foul septic odors in storm drainage piping, catch basins, footing drain piping or curtain drain discharges may also be an indication that untreated sewage is entering into these surface water or groundwater control systems. It is important that you contact your Local Health Department to report a possible septic system failure or if you witness any of the above-mentioned problems with septic systems in your area.

WHERE CAN I GET INFORMATION ABOUT MY SEPTIC SYSTEM?

Local Health Departments have property files that may contain important septic system information such as copies of permits, design plans, as-built drawings, and soil test data. This information is available to be viewed by the public, or you may ask the town sanitarian to review the files with you (as their time allows). Refer to the CT DPH web site at: <http://www.ct.gov/dph> to obtain contact information from your Local Health Department. If your home is served by a septic system, then you must contact your Local Health Department when you are planning a building addition, home winterization, renovation of an unfinished space, or adding a garage, deck, sunroom, pool, shed, etc. These types of projects require approval from both the Building Department and Local Health Department prior to construction. It is recommended that you first discuss your plans with the Local Health Department so that they can inform you on the necessary permit requirements and advise you on possible site limitations on your property. There are cases when building projects cannot be approved due to septic system regulations.

WHAT MAINTENANCE IS REQUIRED FOR SEPTIC SYSTEMS?

Pumping your septic tank is probably the single most important thing you can do to protect your septic system. CT DPH recommends pumping your septic tank every 3-5 years. More frequent pumping is suggested if you use a garbage disposal, have a large family, or have an undersized septic tank. Failure to pump your septic tank on a regular schedule may result in an excessive buildup of solids inside the tank. In Connecticut, homeowners must hire a licensed septic pumper or installer to pump-out and service the system. This requirement is to ensure septage is disposed of properly, as well as for the homeowner's safety. Septic tanks produce harmful fumes that can be dangerous. This is one of the reasons why individuals should never enter a septic tank as toxic fumes can quickly overcome you.

Keep a record of maintenance on your system. It is suggested that you include who maintained the system, what was done, the date of the work, and the current status of the system. The use of additives to help maintain a septic system is not recommended by CT DPH. Additives do not extend

the amount of time required between septic tank pumping. Improperly maintained septic systems can cause environmental and public health concerns such as contaminating groundwater or surface water resources.

WHAT CAN'T I PUT IN MY SEPTIC SYSTEM OR ON MY SYSTEM?



It is important not to put excess solids into the system. Excess solids will increase the frequency of pumping and could cause your effluent filter to clog. Oils, greases, industrial/commercial wastes, toxic chemicals, cigarette butts, condoms, sanitary napkins, cat-litter, and backwash from water softeners or water treatment systems must not be put into your septic system. Putting any of these items in your system can potentially cause problems and will increase the likelihood of premature failure. It is also noted that the CT Public Health Code does not allow backwash from water treatment systems to be discharged into septic systems.

Be aware of how much water you are using and avoid using excess water. Toilet flushing can constitute 25 percent of water usage in a household. Newer toilets use less water than some of the older models, therefore using a newer model will decrease the amount of water that is used. Set your washing machine on the proper load setting so that you are not using more water than needed.

Do not park vehicles or place other large objects on your septic system. This may compact the soil and reduce its ability to treat wastewater. It may also damage the network of pipes within the system. Avoid planting water-loving shrubs with deep root systems or trees near the leaching system, as roots could damage the pipes or clog the leaching system. Water from sump pumps, roof leaders, yard drains, etc. must always be discharged away from the septic system area.

The repair of failing septic systems can pose a significant expense on property owners, or to the local tax payers if municipal sewer lines need to be extended to a particular area. It is far less expensive to properly maintain a septic system than to replace one.

FOR MORE INFORMATION:

CT Department of Public Health
Environmental Health Section
Environmental Engineering Program
450 Capitol Avenue
Hartford, CT 06134-0308
860-509-7296

<http://www.ct.gov/dph/subsurfacesewage>

US EPA Septic Systems
<http://cfpub.epa.gov/owm/septic/index.cfm>

National Small Flows Clearing House
<http://www.nesc.wvu.edu/wastewater.cfm>

CT eLicensing Website
<https://www.elicense.ct.gov/>



UNDERGROUND STORAGE TANKS (USTs)

INTRODUCTION: WHAT ARE USTs?

When considering the purchase of a home, you should be aware of the possibility that underground storage tanks (USTs) may be buried on the property. USTs are large metal containers placed underground typically for the purpose of storing fuel oil for home heating. Rather than the tank being in the basement, it was not unusual for it to be buried in the soil outside the basement. Pipes would bring the oil through the basement wall or floor and into the furnace. A typical size for home heating oil USTs was 500 to 1,000 gallons.

WHY MIGHT USTs BE A CONCERN?

Even though most residential USTs are no longer in service, they may create environmental issues for property owners. If a UST leaked fuel in the past, the soil would likely still be contaminated. There is also the possibility for groundwater contamination. Some of the ingredients in fuel can vaporize and move as a gas through the soil and enter basements. This could lead to contamination of indoor air, which may be noticed as a fuel odor in the basement or elsewhere in the home. While these vapors are not highly toxic, they can lead to discomfort and increased symptoms (e.g., headache, irritation). If groundwater is contaminated, this can affect the quality of drinking water in the home where the spill occurred and in neighboring homes if the area is supplied by private wells.

The property owner is liable for any contamination of soil and groundwater stemming from a UST on that property. The Connecticut Department of Environmental Protection (CT DEP) investigates spills from USTs and makes sure the responsible party addresses the contamination. Therefore, purchase of a home that is or was heated with oil should involve an evaluation of whether a buried tank is present and if so, whether it had leaked in the past.

HOW DO I KNOW IF A PROPERTY CONTAINS A UST?

Since it would have been buried, there may be no above ground evidence of a UST. One aid is that real estate transaction forms now have a disclosure statement regarding USTs. Double-check to make sure the seller has properly addressed this statement. If they say there are no USTs on the property, this may not be a guarantee unless the seller had investigated the issue. They may simply be unaware of any tanks on-site since there may not have been a disclosure requirement when they bought the house. Should you sell the house in the future, you would have to also disclose your knowledge of USTs on the property.

With the help of your home inspector, you can make an independent evaluation of whether USTs are buried on the property. The following steps can help you in this evaluation:

- Perform a records search for the property with the following authorities:

- Town fire marshal: Many towns have a requirement that underground fuel tanks be registered with the fire marshal.
 - Town engineer: This office keeps maps of properties as they are being developed; such maps may show the location of buried tanks.
- During the home inspection notice whether there is an extra pipe leading into the basement from outside; this may be from a UST. If the tank had been removed in the past, the pipe may be gone but there may be a patched area on the wall indicating where the pipe had formerly entered the basement. It is also possible that the fill pipe for a current fuel tank in the basement uses the same pipe from the outside as had once been used for the UST. Thus, if there is no extra pipe, this is not a guarantee that there are no USTs on-site.
 - During the home inspection notice whether there are fuel odors in the basement, particularly in sump pits if they exist. A home with an in-basement fuel tank may have a slight fuel oil odor just because fuel is stored there. However, a strong odor or one that is most concentrated in sump pits may indicate soil or groundwater contamination.

You can consider hiring an environmental engineering firm that can scan the subsurface with a powerful metal detector that is able to find buried USTs.

Note: The property may have had a UST that was removed in the past. If so, it would be good to obtain documentation of this and any related activities (e.g., soil test results) for your records.

WHAT SHOULD I DO IF I LEARN THERE IS A TANK ON THE PROPERTY?

There are 2 options for tanks left on a property:

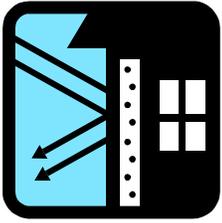
- 1) Remove the tank and any contaminated soil. This is the preferred choice since removing the tank is needed to assess whether it leaked in the past and caused soil contamination. An environmental contractor is recommended to carry this out.
- 2) Leave the tank in place but properly seal it by following the requirements of the local fire marshal and NFPA Codes 30 and 31. This involves pumping out any tank contents and refilling it with an inert fill material (e.g., clean sand). An environmental contractor is also recommended for this option. You may need to obtain a permit from the town to leave a UST in place.

In summary, it is important to obtain information from the seller and other sources to find out whether UST issues may exist on a given property. If there is evidence that a tank exists and that it leaked in the past, this should be reported to CT DEP's Oil and Chemical Response Division. You can call CT DPH (860-509-7740) if you have health-related questions.

FOR MORE INFORMATION:

**CT Department of
Environmental Protection**
Oil and Chemical Response Division
79 Elm Street
Hartford, CT 06106-5127
860-424-3338

<http://www.dep.state.ct.us/wst/oilspill/index.htm>



UREA FORMALDEHYDE FOAM INSULATION (UFFI)

UFFI was a concern to homeowners and potential homebuyers in the early 1980s because of its potential to release formaldehyde gas in homes insulated with UFFI. UFFI was banned in Connecticut in 1981. Today, UFFI is not considered to be a problem. Testing has shown that UFFI homes have formaldehyde levels similar to non-UFFI homes. Information on UFFI is included here because questions about its safety are still sometimes raised at the time of sale if UFFI is known or suspected to be present. UFFI is not present in most Connecticut homes, but the exact number of homes insulated with the product is uncertain.

WHAT IS UREA FORMALDEHYDE FOAM INSULATION (UFFI)?

UFFI was a material used in the 1970s and early 1980s to insulate existing homes. It was generally not used in new construction. The material was injected into the wall cavity by drilling holes on the exterior and/or interior walls. The material was mixed on-site (formaldehyde was used as a binder) and pumped into the cavity where it expanded into foam that dried and became relatively rigid. The foam looks like dry shaving cream and can be seen inside the walls from convenient viewing points, such as behind light switch plates.

WHAT IS FORMALDEHYDE?

Formaldehyde is a chemical commonly used as a preservative and disinfectant. It is also in glues used to bond plywood, particleboard, carpets and fabrics, and it contributes to "that new car smell." As the glue dries, formaldehyde vapors can be released. These vapors are pungent and can be irritating. Formaldehyde is in tobacco smoke, car exhaust and the smoke from furnaces, fireplaces and wood stoves. Therefore, exposure to low levels of formaldehyde is very common.

WHAT HEALTH EFFECTS CAN FORMALDEHYDE CAUSE?

While small amounts of formaldehyde are harmless, higher levels can cause irritation to eyes, nose and throat, persistent cough and respiratory distress, skin irritation, nausea, headache, and dizziness. It is also suspected to increase the risk of cancer, but the greater health concern has been the short-term irritating effects.

CT DPH recommends a level of 0.1 parts per million (ppm) in air as an action level for formaldehyde in homes. For comparison, levels of 0.07 to 0.08 ppm have been found inside mobile homes and up to 0.05 ppm inside conventional non-UFFI homes.

SHOULD YOU BE CONCERNED ABOUT UFFI TODAY?

Tests show that UFFI is not a significant source of exposure to formaldehyde after the initial curing and release of excess gas. Since it was no longer installed after 1981, it should not be causing excess indoor formaldehyde in Connecticut homes today. Houses with UFFI show no higher formaldehyde levels than those without it. Air testing for formaldehyde in homes with UFFI is not recommended.

In many homes, formaldehyde levels may be increased by new carpets or wood composite materials, such as plywood, particleboard and wafer board that can be in cabinets and furnishings. These are the most likely sources of high formaldehyde levels in the home today (see EPA website on formaldehyde listed below).

FOR MORE INFORMATION:

CT Department of Public Health
Environmental Health Section
Environmental & Occupational Health
Assessment Program
410 Capitol Avenue, MS #11CHA
Hartford, CT 06134-0308
860-509-7742

<http://www.ct.gov/dph/environmentalhealth>

U.S. Environmental Protection Agency: “Sources of Indoor Air Pollution-Formaldehyde”
www.epa.gov/iaq/formalde.html

The State of Massachusetts list of contractors certified to remove UFFI:
www.state.ma.us/dph/dcs/uffire.htm

The American Lung Association:
www.lungusa.org/air/air00_form.html

The National Safety Council’s Environmental Health Center:
www.nsc.org/library/facts/formalde.htm

The California Department of Health Services:
www.dhs.ca.gov/ohb/HESIS/formal.htm

PART II

WHAT YOU NEED TO KNOW AFTER THE HOME IS OCCUPIED





ALLERGENS & ASTHMA

WHAT IS ASTHMA?

Asthma is a serious chronic lung disease affecting more than 14 million people in the United States. Of these, an estimated 4-6 million are children. People with asthma have sensitive airways that may react to things like smoke, dust, mold, and pollen.

When this occurs the lining of the airways become swollen or inflamed and thick mucus starts to line the airways. The airways narrow or become blocked, the muscles around the airways tighten, narrowing the airways even more. When this happens, the flow of air is blocked making it hard to breathe.

WHAT ARE ALLERGENS?

Allergens are substances that for some people trigger an allergic response and promote formation of antibodies. Allergens may occur in nature or be manmade. Allergens can include: pollen, mold spores, dust, animal dander, insect debris, foods, blood serum, and drugs.

Most people with year round allergies such as asthma, hay fever or other outdoor allergies don't think of their home as a source of their allergies. The inside of your home can be filled with allergens, making these substances impossible to avoid.

Although many allergens in your environment can trigger allergic symptoms, house dust is the main indoor allergen. House dust is an airborne mixture that might contain fine particles of soil and plant material from indoors or outdoors, particles of human and animal skin (dander) and hair, fabric fibers, mold spores, dust mites, fragments of insects that have died and their waste, food particles, and other debris.

WHAT IS AN ASTHMA TRIGGER AND WHERE ARE TRIGGERS FOUND?

Things that cause your asthma attacks are called your "triggers" and these asthma triggers can be found throughout your home. Allergens can be asthma triggers.

Common Triggers:

Tobacco smoke and other smoke

Smoking tobacco or being near people who are smoking causes health problems for people with asthma. Other smoke can be a trigger, too, such as smoke from wood stoves or outdoor smoke. Smoky smells that stay in clothing, carpets, and furniture cushions can be an asthma trigger. People with asthma shouldn't smoke and if they do they should quit. If you need help to quit smoking call the CT DPH Quitline at 1-800-QUIT-NOW. Don't smoke in your home or car and don't allow others to.

Animals with fur or feathers

This includes cats, dogs, birds, hamsters, and other animals with fur or feathers. Skin flakes, urine, and saliva from pets can be asthma triggers for some. You can decrease exposure to pet allergens by: keeping pets outdoors or find them a new home, keep pets out of the bedroom and keep the bedroom door closed, and keeping pets off fabric-covered furniture, carpets, and stuffed toys.

Dust mites

Dust mites are very tiny creatures that live in dust (they are much too small to see). Dust mites are in beds, pillows, and furniture cushions. They are also in dust that gets stirred up from sweeping, vacuuming, or dusting. To decrease exposure you can do the following: wash sheets and blankets once a week in hot water, keep stuffed toys off beds, buy washable stuffed toys and wash them often in hot water and thoroughly dry them, cover mattresses and pillows in dust-proof zippered covers.

Strong smells and sprays

This includes perfume, hairspray, strong-smelling deodorants, household cleaning products, and other things with a chemical smell. Limit the use of these types of products if you or a family member is sensitive to them. Be considerate of others that can be affected in the work place or school.

Pollen from trees, flowers, and plants If pollen bothers your asthma, you may need to take medicine during times of the year when pollen is bad. To avoid exposure to allergens you can do the following: stay inside, close the windows and use an air conditioner to reduce your exposure.

Mold or mildew growing in places that are damp

Fix leaky plumbing and other places where water can get into your home, wash mold from surfaces and dry well, keep drip pans in air conditioning units, refrigerators and dehumidifiers dry and clean, vent your clothes dryer to the outside and use exhaust fans in the kitchen and bathroom to reduce moisture.

Pests

Body parts and droppings from pests like cockroaches and rodents can be asthma triggers. You can reduce exposure to these by doing the following: Do not leave food or garbage out, store food in air tight containers, clean all food crumbs and spilled liquids right away, try poison baits, boric acid (for cockroaches) or traps first before using pest sprays. If you do use sprays, use only in the infested area, carefully follow instructions on the label, make sure there is plenty of fresh air when spraying and keep the person with asthma out of the room or home.

SHOULD I BE CONCERNED ABOUT ASTHMA TRIGGERS IN MY HOME?

To help prevent asthma attacks, do your best to stay away from your triggers that may be in your home. Triggers are different for each person with asthma so to help keep your asthma under control, you need to know what things cause asthma attacks for you. These are your “triggers.” To learn what your triggers are, try thinking like a detective. Whenever you have an asthma attack, notice where you are, what you are doing, and what is going on around you. This will give you clues about what might be causing your asthma attacks.

ARE THERE ANY SYMPTOMS ASSOCIATED WITH ASTHMA TRIGGER EXPOSURE?

People with asthma may experience coughing, wheezing (whistling noise when breathing), chest tightness and shortness of breath. Asthma varies from person-to-person and symptoms can be mild or severe. Asthma can be controlled and most people with asthma can live full active lives. Asthma that is not controlled can cause missed days from school and work, ER visits, hospital stays, or even death.

FOR MORE INFORMATION:

CT Department of Public Health
Public Health Initiatives Section
Asthma Program
410 Capitol Avenue, MS# 11 HLS
Hartford, CT 06134-0308
860-509-8251
<http://www.ct.gov/dph/asthma>

Centers for Disease Control and Prevention:
<http://www.cdc.gov/asthma>

EPA Asthma Program:
<http://www.epa.gov/asthma/programs.html>

American Lung Association:
<http://www.lungusa.org/associations/charters/new-england>



CARBON MONOXIDE

WHAT IS CARBON MONOXIDE?

Carbon Monoxide (CO) is a colorless, odorless and deadly gas produced by the incomplete burning of fossil fuels. These fuels can be natural gas, oil, kerosene, coal or wood. Carbon monoxide replaces oxygen in the blood, interfering with the transport of needed oxygen to cells in the body.

The first physical symptoms of CO poisoning may include headache, dizziness, fatigue, and nausea. These symptoms can sometimes be confused with those of the flu. Higher concentrations of CO can cause a loss of consciousness, brain damage, and death.

WHAT ARE THE SOURCES OF CARBON MONOXIDE IN MY HOME?

CO is produced by all fuel burning appliances. In the home, sources can be gas or oil furnaces and wood, kerosene, or pellet stoves. In addition, water heaters, gas dryers, stoves/ovens, unvented fireplaces, gas or charcoal grills and gas-powered portable generators and equipment can produce CO. Automobile exhaust in attached garages can be another source.

HOW CAN I PREVENT CO POISONING?

- Install a CO detector. The detector should be certified by Underwriter Laboratories (UL). A digital readout detector that alarms at 50 ppm or less is recommended. Detectors can be battery-operated or plug in with a back-up battery system. Replace every 5 years. They should be placed outside of sleeping areas. CO detectors can be purchased at hardware or home supply stores for under \$50.
- Have your heating system and chimney inspected and cleaned yearly, making sure that the furnace is properly ventilated to the outside.
- Do not run cars, lawn mowers, generators, snow blowers or other internal combustion engines in enclosed spaces such as a garage, porch or basement.
- Do not use alternative heating sources such as a kerosene heater inside the house or garage.

Homebuyers: Check the maintenance history of the furnace/stove, gas appliances, hot water heater & chimney. Make sure there is an operating CO detector less than 5 years old by the sleeping areas and on each floor.

WHAT SHOULD YOU DO IF YOU SUSPECT CO IN YOUR HOME OR IF THE ALARM SOUNDS?

Leave the house immediately and call 911 or the Poison Control Center (800-222-1222) from a cell phone or neighbors home. Call your local fire department to have the home tested for CO or call your fuel supplier or licensed heating contractor for an emergency inspection.

FOR MORE INFORMATION:

CT Department of Public Health
Environmental Health Section
Environmental & Occupational Health
Assessment Program
410 Capitol Avenue, MS #11EOH
Hartford, CT 06134-0308
860-509-7742
<http://www.ct.gov/dph/ieq>

Connecticut Poison Control Center at the UCONN Health Center
1-800-222-1222
<http://poisoncontrol.uchc.edu>

Centers for Disease Control and Prevention
<http://www.cdc.gov/co/default.htm>



HOUSEHOLD HAZARDOUS WASTE

Many products used around the home have hazardous ingredients. Paints, paint thinner, varnish, glues, driveway sealant, motor oil, and other products may contain small amounts of toxic chemicals. Many lawn and garden products contain pesticides. It is important to store these products in a safe place away from children. When purchasing such products, buy the least amount needed for the job. Any unused material that you do not intend to use or that is past its expiration date should be removed from your home to prevent accidental spills. Improper disposal may affect soil or water quality on your property, lead to unnecessary exposures, and potentially harm the environment. Therefore, bring these unused chemical-containing products to your town's hazardous waste collection day. To find the next collection day, call your town offices or go to:

http://www.ct.gov/dep/cwp/view.asp?a=2718&q=325448&depNav_GID=1646

When buying a home it is expected that the previous owner will remove their belongings before the closing. However, it is not unusual to find items such as paint and other coatings, adhesives and sealants, lighter fluid and lawn and garden items left behind in a shed, garage, basement or attic. The previous owner may believe these items "go with the house." Since many such items contain hazardous chemicals they present a special disposal issue that you may not want to inherit. Therefore, let the current owners know they have to properly remove any such items that you saw during inspection that you do not want.

More information on household hazardous waste programs, disposal, and recycling options in Connecticut can be found at: <http://www.ct.gov/dep/hhw>

FOR MORE INFORMATION:

CT Department of Public Health
Environmental Health Section
Environmental & Occupational Health
Assessment Program
410 Capitol Avenue
Hartford, CT 06134-0308
860-509-7742

CT Department of Environmental Protection:

<http://www.dep.state.ct.us/wst/hhw/hhw.htm>

U.S. Environmental Protection Agency:

<http://www.epa.gov/epaoswer/non-hw/muncpl/hhw.htm>



INJURY PREVENTION

Injury is a leading cause of death and disability for Connecticut residents. Injuries are responsible for approximately 1,600 deaths, 18,000 hospitalizations and 324,000 emergency department visits each year in the state. The home is the second most common location for fatal injuries after motor vehicle crashes. Older adults and young children have the highest risk for injuries in the home setting, but people of any age are at risk of being injured at home.

WHAT ARE THE LEADING CAUSES OF INJURY IN THE HOME SETTING?

Falls, poisoning, fire/burns, choking/suffocation and drowning are the leading causes of fatal unintentional injury in the home setting.

HOW CAN I MAKE MY HOME SAFER?

There are simple steps that can be taken to make the residential environment safer for everyone. This chapter is not intended provide a complete home safety assessment, but provides basic information on key safety practices, devices and equipment. Check with your local building and fire officials for specific information on state and local regulations.

Falls

- Make sure there are sturdy handrails on both sides of stairs and steps. Stairs, steps and carpet should be in good repair.
- There should be adequate lighting throughout the home, especially at the top and bottom of stairs.
- Remove tripping hazards (throw rugs, electric cords, toys etc) from stairs, hallways and walkways inside and around the home.
- Install grab-bars in the bathroom, especially in homes where older adults live.
- In homes where young children live or visit, stair gates installed at the top and bottom of the stairs can help prevent falls. Gates that are attached to the wall are more secure than pressure mounted gates.
- Install and maintain 9-12 inches of shock absorbing protective surfacing such as wood mulch or chips, under and around back yard play equipment. The surfacing should extend at least 6 feet in all directions around the equipment. Platforms over 30 inches should have guardrails or barriers. Openings between slats in barriers should be less than 3 ½ inches.
- Screens will not prevent children from falling out of windows. Install window guards or window stops. For windows on the 6th floor and below, install window guards that adults and older children can open easily in case of fire. Alternatively, install window stops so that windows open no more than 4 inches. When ever possible open windows from the top not the bottom. Keep cribs and furniture away from windows to discourage children from climbing.

Falls among older adults are related to a number of risk factors besides home hazards, so it is crucial to also address those issues. Important steps you can take to reduce your risk of falling include: 1) exercise regularly; exercise programs that increase strength and improve balance are especially helpful, 2) ask your doctor or pharmacist to review all your medicines, both prescription and over-the-counter, to check for side effects and interactions that may increase your risk of falling, 3) have your vision checked by an eye doctor at least once a year, 4) wear supportive low heeled shoes and see your health care provider for any foot problems.

Poisoning

Most poisonings involve drugs, medications, household products and chemicals but carbon monoxide is also a source of poisoning in the home environment. For more information, refer to the Carbon Monoxide section of this document.

- Store medications, household products and chemicals locked up, out of sight and reach of children.
- Store poisons in their original containers. Always read the labels and use medications, household products and chemicals according to directions.
- Use child-resistant packaging, but remember that no container is childproof.

For poison exposures contact the Poison Control Center at 1-800-222-1222 immediately.

Fires

Properly installed and maintained smoke alarms can greatly increase your chances of surviving a home fire. The majority of residential fire deaths occur in homes without working smoke alarms.

- Smoke alarms should be installed on every level of the home including the basement and near all sleeping areas. For extra protection, since many fatal fires occur at night, it is recommended that smoke alarms be installed both inside and outside sleeping areas. There are two basic types of smoke alarms, ionization and photoelectric, which detect different types of fires. The US Fire Administration recommends installing both types, or installing dual sensor smoke alarms. Smoke alarms should be tested monthly and the batteries in the types of alarms using 9-volt batteries should be replaced at least once a year.
- Home fire sprinkler systems offer further protection from fire. The combination of working smoke alarms and home fire sprinklers reduces the likelihood of death from fire by more than 80%. Home sprinkler systems contain or extinguish a fire almost as soon as it starts resulting in less damage from smoke, fire and water. Check with your local fire officials for additional information.
- Have heating systems, wood stoves, fireplaces and chimneys inspected and cleaned annually.
- Closely supervise children around all sources of heat and fire. Develop and practice family fire escape drills.

Burns

- Set hot water heater temperature to no more than 120 degrees Fahrenheit. Anti-scald devices can also be installed on tub faucets and showerheads that will turn off the water if the temperature is too hot.

Drowning

- Back yard swimming pools should be completely surrounded by a fence or barrier that is at least 4-feet high, with a self-closing and latching gate. If your house forms one side of the barrier, doors leading to the pool should be protected with alarms to alert you if the door is unexpectedly opened. Steps and ladders leading to above ground pools should be secured and locked or removed when not in use.
- Provide constant supervision for children in and around all sources of water. Refer to <http://www.PoolSafety.gov> for additional information on pool and spa safety and drowning prevention.

Choking/suffocation

- Check all window shades, blinds and curtains to make sure there are no accessible cords which children can become entangled in. The US Consumer Product Safety Commission recommends using cordless window coverings in homes where young children live or visit. Refer to <http://www.cpsc.gov> for information on recalled window coverings.

FOR MORE INFORMATION:

CT Department of Public Health
Public Health Initiatives Branch
Injury Prevention Program
410 Capitol Avenue, MS #11HLS
Hartford, CT 06134-0308
860-509-7791
<http://www.ct.gov/dph/injury>

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control
“What You Can Do To Reduce Falls”
“Check for Safety: A Home Fall Prevention Checklist for Older Adults”
<http://www.cdc.gov/injury>

CT Poison Control Center
For **poisoning emergencies:**
1-800-222-1222
For non-emergency information on poisons:
1-860-679-3531
<http://poisoncontrol.uchc.edu>

United States Fire Administration

For information on smoke alarms, residential fire sprinklers and other fire safety information:

<http://www.usfa.dhs.gov/smokealarms>

CT Department of Public Safety - Division of Fire, Emergency and Building Services

Office of the State Fire Marshall and Office of the State Building Inspector

<http://ct.gov/dps>

Safe Kids Connecticut

For information on preventing injuries to children:

<http://ctsafekids.org>

US Consumer Product Safety Commission (CPSC)

For product safety information and safety recalls:

<http://www.cpsc.gov>

“Preventing Window Falls”

<http://www.cpsc.gov/cpsc/pub/pubs/5124.html>

“Outdoor Home Playground Safety Handbook”

<http://www.cpsc.gov/cpsc/pub/pubs/324.pdf>

CPSC Pool/Spa Safety and Drowning Prevention Information

<http://www.PoolSafety.gov>

“Are Your Window Coverings Safe?”

<http://www.cpsc.gov/cpsc/pub/pubs/5009a.pdf>

Home Safety Council

General home safety information

<http://www.homesafetycouncil.org>



MERCURY

WHAT IS MERCURY?

Metallic mercury is a shiny, silvery liquid at room temperature. When the liquid is exposed to air, some of it evaporates and forms a gas or vapor that you cannot see or smell. The higher the temperature, the more vapor is formed. Breathing the vapor is dangerous and can cause serious health problems, especially to the brain and central nervous system.

WHERE IS METALLIC MERCURY FOUND IN THE HOME?

Mercury has been removed from many products and replaced with safer alternatives. The red liquid in many thermometers is an example of a mercury-free substitution for the old silver mercury thermometers. However, there are still many older, mercury-containing products in use, such as:

- ◆ Some thermometers, barometers, thermostats, electrical switches, gauges
- ◆ Some types of home medical equipment
- ◆ Some light bulbs and fixtures, including compact fluorescent, high intensity, mercury vapor, high pressure sodium and metal halide bulbs
- ◆ Some clock pendulums
- ◆ Some batteries, athletic shoes, toys and cards that light up or make noise

HOW CAN METALLIC MERCURY AFFECT THE BODY?

Breathing mercury vapor is very dangerous - much more dangerous than swallowing it. This is because inhaled mercury vapor is almost completely absorbed by the body. It can then easily enter the blood stream, travel to the brain and affect the central nervous system (CNS). Swallowing or handling metallic mercury are not usually important routes of exposure, because it is poorly absorbed from the stomach, intestines, and through the skin.



Symptoms of CNS involvement include shakiness, tremors, personality changes like excessive shyness or irritability, tingling of the extremities, limb weakness and impaired motor control. Mercury can also accumulate in the kidneys and cause kidney damage.

WHO IS AT HIGHEST RISK?

Children and pregnant women are at highest risk if exposed, because the central nervous system is not fully matured in children and fetuses.

WHAT IF I WAS EXPOSED OR HAVE SYMPTOMS?

If you or other household occupants have been exposed to mercury and are experiencing any symptoms described above, **contact your doctor**. Be sure to tell him/her about your exposure to metallic mercury.

HOW DO I DISPOSE OF ITEMS CONTAINING METALLIC MERCURY?

Mercury and mercury-containing items should be disposed of at your town's hazardous waste collection day. For the schedule for household hazardous waste collection in your area call your local public works department or town hall, or go to: <http://www.ct.gov/dep/hhw>

WHAT IF I HAVE A MERCURY SPILL AT MY HOUSE?

If you are not pregnant, you can clean up small spills (i.e., broken thermometer, compact fluorescent light bulbs (CFLs) from hard surfaces by following directions in the CT DPH publications, *Guidelines for Clean-up of Broken Thermometers from Hard Surfaces* and *Compact Fluorescent Light Bulbs: What To Do If A Bulb Breaks* found at <http://www.ct.gov/dph/mercury> .

If you do have a mercury spill, it is critical that you:

- Never vacuum or sweep mercury beads!
- Keep infants, children, pregnant women, and pets away from the spill; avoid spreading mercury on shoes and paws.

Note that larger spills may require professional help.

FOR MORE INFORMATION:

CT Department of Public Health
Environmental Health Section
Environmental & Occupational Health
Assessment Program
410 Capitol Avenue, MS #11EOH
Hartford, CT 06134-0308
860-509-7742
<http://www.ct.gov/dph/mercury>



PESTICIDES IN PRESSURE -TREATED WOOD

WHAT IS PRESSURE-TREATED WOOD?

Many homes have outdoor wood structures such as decks, playscapes or tree houses made out of pressure-treated wood. Pressure-treatment of wood involves injection of a preservative into the wood under high pressure for maximum penetration. Prior to 2005 this type of wood was typically treated with an arsenic-based pesticide called chromated copper arsenate (CCA) that prevented the wood from rotting. Many of these decks and outdoor wood structures are still in service. Therefore, even though the arsenic-based pesticide has been phased out, it is still in many yards around Connecticut.

CAN THE PESTICIDE GET OUT OF THE WOOD?

Yes. Some of the arsenic leaches out of the wood when it rains and forms a thin layer on the surface. This surface residue of arsenic can easily get onto hands and clothing. Further, arsenic that leaches from the wood can drip to the ground and contaminate soil. Human exposure to arsenic is possible from touching the wood or from working/playing under CCA-treated decks or playscapes. CCA-treated wood has also been used by some to terrace garden beds. The soil right next to this wood can have elevated levels of arsenic. Some arsenic can get into vegetables, especially root crops, but the greatest concerns are from direct exposure to contaminated decks and soil.

WHO IS MOST LIKELY TO BE EXPOSED?

Children who play on decks or play structures made from CCA-wood are likely to receive the greatest exposure. Young children frequently put their fingers in their mouth and so are most likely to transfer arsenic from the wood or soil into their bodies.

WHAT ARE THE HEALTH RISKS FROM ARSENIC EXPOSURE?

Arsenic is a known human carcinogen that can increase the risk for cancer when ingested on a regular basis over long periods of time. Children are likely to be most susceptible. Many people know that arsenic is acutely toxic and was used to poison people (e.g., "Arsenic and Old Lace"). The type of exposure possible from routine use of decks and playscapes would not be great enough for risk of death or acute symptoms. However, due to the cancer risk, it is prudent to minimize your family's exposure to arsenic.

HOW DO I KNOW IF MY YARD HAS PRESSURE-TREATED WOOD?

Until January of 2005, most wood used in decks and playscapes was made from CCA-treated wood. It typically has a green tinge when new, although it may be difficult to tell apart from other types of wood when old or after it had been stained. A small portion of the wood could be sampled and tested for arsenic content. Unless you know otherwise, you should assume that wood used outdoors in structures built before 2005 contains CCA.

WHAT STEPS CAN I TAKE TO PREVENT THIS EXPOSURE AND RISK?

The following recommendations will help ensure that CCA wood that may be in your yard is not a potential hazard for your family.

- Seal existing structures every year with a weather-resistant coating such as an oil-based stain. Sealants form a barrier on the wood surface that can keep arsenic from leaching out.
- Keep children and pets out of under-deck areas where arsenic may have leached in the past.
- Do not sand CCA structures or power wash by highly abrasive means. If you cut CCA wood for any reason, only do this outdoors, wear protective clothing, and carefully clean up sawdust.
- Never burn pressure-treated wood.
- If you used CCA-based wood for compost bins or garden terracing, replace these with new structures that are free of CCA. Sealants are less likely to work on these applications.

WHAT SHOULD I DO WITH A DECK ON MY PROPERTY THAT WAS BUILT WITH CCA-TREATED WOOD?

While it is best to have non-CCA structures in your yard, it is not necessary to remove existing CCA-treated wood structures. These structures can be made safe by following the precautions presented in this booklet, especially with respect to sealing on a regular basis to prevent arsenic leaching.

WHAT MATERIALS SHOULD I USE IN NEW CONSTRUCTION IN MY YARD?

Today's outdoor wood products are free of CCA. Lumberyards are now carrying a number of safer products including wood-plastic composites and wood that is pressure-treated with alternative preservatives (e.g., ACQ).

FOR MORE INFORMATION:

CT Department of Public Health
Environmental Health Section
Environmental & Occupational Health
Assessment Program
410 Capitol Avenue, MS #11CHA
Hartford, CT 06134-0308
860-509-7742

<http://www.ct.gov/dph/environmentalhealth>

Pesticides Used in Pressure-Treated Wood:

http://www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/pressure_treated_wood.pdf

WHAT IS SECONDHAND SMOKE?

When a person smokes near you, you breathe secondhand smoke (SHS). SHS is a mixture of gases and particles coming from the burning end of a cigarette, pipe or cigar. Secondhand smoke can also come from the smoke being exhaled from smokers. No amount of secondhand smoke is safe. Breathing secondhand smoke hurts your health.

WHAT IS THIRDHAND SMOKE?

The residue of tobacco smoke settles into the environment and coats surfaces, staying there long after a cigarette is extinguished. This particulate matter contaminates the environment with poisonous particle matter that contains toxic metals, cancer causing chemicals and poisonous gases, and clings to clothes, hair, drapes and upholstery. The exposure to these toxins has many of the same health effects as secondhand smoke.

HOW DOES TOBACCO SMOKE GET INTO YOUR HOME?

Tobacco smoke, caused by smoking in the home, can also enter other dwelling units in multi-unit housing. Smoke moves through light fixtures, open windows, ceiling crawl spaces, crevices between plumbing, ventilation shafts and doorways. Even with the windows open, tobacco smoke can take as long as ten hours before the gases and particles from the tobacco smoke escape outside or settle on surfaces in the home.

HOW CAN TOBACCO SMOKE AFFECT THE BODY?

- SHS causes irritation to the skin, eyes, nose, throat and lungs.
- Even short exposure can cause blood platelets to become stickier, damage the lining of blood vessels, decrease blood flow and reduce heart rate variability, potentially increasing the risk of heart attack.
- Children exposed are more likely to have respiratory infections, ear infections, severe asthma, bronchitis, wheezing, coughing and pneumonia.
- SHS is a known cause of Sudden Infant Death Syndrome (SIDS).
- Chemicals found in SHS are known to cause lung cancer, respiratory illness, heart disease, and cardiovascular disease.
 - Cancer causing chemicals include **Formaldehyde**, used to embalm dead bodies; **Benzene**, found in gasoline; and **Polonium-210**, that is radioactive and very toxic.

- Toxic Metals in SHS include **Chromium**, used to make steel; **Arsenic**, used in pesticides; **Lead**, once used in paint; and **Cadmium**, that is used in making batteries.
- Poisonous Gases in SHS include **Carbon Monoxide**, found in car exhaust; **Hydrogen Cyanide**, used in chemical weapons; **Butane**, used in lighter fluid; and **Ammonia**, that is used in household cleaners.

WHO IS AT HIGHEST RISK?

Infants, children, pregnant women, older people and people with heart or breathing problems are at the highest risk for exposure. There is no safe level of exposure to secondhand smoke.

WHAT IF I LIVE WITH A SMOKER?

- Share information with the smoker about the dangers of smoking and SHS and help them to quit. Call the Connecticut telephone Quitline for free tobacco use cessation assistance at 1-800-QUIT-NOW or log onto <http://www.becomeanex.org/> for free online cessation services.
- If the smoker is not ready to quit, talk to the smoker about the dangers of SHS and ask them to smoke outside.

WHAT IF OTHER PEOPLE'S SMOKE COMES INTO MY APARTMENT?

- Start by talking to the smoking neighbor; as they may not realize there is a problem and may be willing to change their habits.
- Ask your landlord to improve air filtration; seal off your apartment and the smokers apartment with door sweeps, insulate the air spaces around plumbing pipes, electrical outlets and fill in cracks in the wall.
- Request that the property be made tobacco free.
- Ask the landlord to move you to another unit that does not have any smoking neighbors.

FOR MORE INFORMATION:

CT Department of Public Health
 Public Health Initiatives Branch
 Tobacco Use Prevention & Control Program
 410 Capitol Avenue, MS #11HLS
 Hartford, CT 06134-0308
 860-509-8251
<http://www.ct.gov/dph/tobacco>

The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General

<http://www.surgeongeneral.gov/library/secondhandsmoke/>

Fair Housing Laws and Presidential Executive Orders:

<http://www.hud.gov/offices/ftheo/FHLaws/index.cfm>

Smoke-free Environments Law Project:

<http://www.mismokefreeapartment.org/>

Technical Assistance Legal Center (TALC):

<http://www.phi.org/talc/>

Americans for Nonsmokers' Rights

<http://www.no-smoke.org/>

U.S. Fire Administration/National Fire Data:

<http://www.usfa.dhs.gov/downloads/pdf/tfrs/v5i5.pdf>

Additional quitting resources:

Become an EX

<http://www.becomeanex.org/>





ADDITIONAL INFORMATION

HOW DO I FIND A LICENSED HOME INSPECTOR?

All home inspectors must be licensed by the CT Department of Consumer Protection (CT DCP). Go to <http://www.ct.gov/dcp/> or call (860) 713-6050. Licensed Home Inspectors may be affiliated with one or more of the organizations below. Some of these organizations allow you to search online for member home inspectors in your area by entering your zip code.

- American Society of Home Inspectors: <http://www.ashi.org/>
- National Association of Certified Home Inspectors: <http://www.nachi.org/>
- CT Association of Certified Home Inspectors: <http://www.ctinspectors.com/>

OUR REALTOR JUST SHOWED US A FORECLOSURE THAT WE ARE INTERESTED IN. ARE THERE THINGS WE SHOULD BE AWARE OF?

Foreclosed properties can be a great deal for the savvy buyer. There are some things to look for so that you can budget repairs realistically. Always think about the potential for water damage! Water can lead to mold and possible structural damage. Here are some important questions to ask that may impact the environmental aspect of the house.

- How long has it been vacant?
- How long have the utilities be turned off?
- Have there been any extreme weather episodes during the vacant period?

Things to look for:

- Sump pump & no electricity (this might result in flooding in the basement)
- Broken pipes in a wall
- Broken/leaking plumbing fixtures
- Broken windows, doors, siding or roof problems that may have allowed rain or snow to collect inside

Other things to check:

- Insect and/or rodent damage (insects tend to follow water)
- Heating/Cooling Systems- these should be properly drained if a house is to be left vacant. Have a heating/cooling contractor inspect all parts of the system
- Septic system – contact the Local Health Department for information on file and have the system inspected by a licensed septic installer.
- If the water is supplied by a private well, consider adding volatile organic compounds (VOCs), pesticides, and radon to the standard potability test. These three tests cost extra and must be requested.

HEALTHY HOMES WEB SITES:

National Center for Healthy Housing:

<http://www.nchh.org/>

U.S. Dept. of Housing and Urban Development (HUD)

<http://www.hud.gov/offices/lead/hhi/index.cfm>

Centers for Disease Control and Prevention (CDC) Healthy Housing Reference Manual

http://www.cdc.gov/nceh/publications/books/housing/figure_list.htm

EPA Healthy Homes Booklet:

<http://www.epa.gov/region1/healthyhomes>



APPENDIX

Disclosure Statements

The seller of the house must disclose, by law, known lead-based paint and lead-based hazards before the sale and provide available reports to buyers. Refer to the lead warning statements on following pages.

Residential Property Condition Disclosure Report – Refer to the form following the lead warning statements.

DISCLOSURE OF INFORMATION ON LEAD-BASED PAINT AND LEAD-BASED PAINT HAZARDS
(PURCHASE AND SALE)

Lead Warning Statement

Every purchaser of any interest in residential real property on which a residential dwelling was built prior to 1978 is notified that such property may present exposure to lead from lead-based paint that may place young children at risk of developing lead poisoning. Lead poisoning in young children may produce permanent neurological damage, including learning disabilities, reduced intelligence quotient, behavioral problems, and impaired memory. Lead poisoning also poses a particular risk to pregnant women. The seller of any interests in residential real property is required to provide the buyer with any information on lead-based paint hazards from risk assessments or inspections in the seller's possession and notify the buyer of any known lead-based paint hazards. A risk assessment or inspection for possible lead-based paint hazards is recommended prior to purchase.

Seller's Disclosure

(initial)

_____ (a) Presence of lead-based paint and/or lead-based paint hazards (check one below):

Known lead-based paint and/or lead-based paint hazards are present in the housing (explain).

Seller has no knowledge of lead-based paint and/or lead-based paint hazards in the housing.

_____ (b) Records and reports available to the seller (check one below):

Seller has provided the purchaser with all available records and reports pertaining to lead-based paint and/or lead-based paint hazards in the housing (list documents below).

Seller has no reports or records pertaining to lead-based paint and/or lead-based paint hazards in the housing.

Purchaser's Acknowledgment

(initial)

_____ (c) Purchaser has received copies of all information listed above.

_____ (d) Purchaser has received the pamphlet "**Protect Your Family from Lead in Your Home.**"

_____ (e) Purchaser has (check one below):

_____ Received a 10-day opportunity (or mutually agreed upon period) to conduct a risk assessment or inspection for the presence of lead based paint and/or lead based paint hazards; or

_____ Waived the opportunity to conduct a risk assessment or inspection for the presence of lead-based paint and/or lead-based paint hazards.

Agent's Acknowledgment

(initial)

_____ (f) Agent has informed the seller of the seller's obligations under 42 U.S.C. 4852d and is aware of his/her responsibility to ensure compliance.

Certification of Accuracy

The following parties have reviewed the information above and certify, to the best of their knowledge, that the information provided by the signatory is true and accurate.

Purchaser Date

Seller Date

Purchaser Date

Seller Date

Agent Date

Agent Date

DISCLOSURE OF INFORMATION ON LEAD-BASED PAINT AND LEAD-BASED PAINT HAZARDS FOR TARGET HOUSING RENTALS AND LEASES

Lead Warning Statement

Housing built before 1978 may contain lead-based paint. Lead from paint, paint chips, and dust can pose health hazards if not taken care of properly. Lead exposure is especially harmful to young children and pregnant women. Before renting pre-1978 housing, landlords must disclose the presence of known lead-based and lead-based paint hazards in the dwelling. Lessees must also receive a federally approved pamphlet on lead poisoning prevention.

Lessor's Disclosure

- _____
(initial)
- _____
(a) Presence of lead-based paint and/or lead-based paint hazards (check one below):
- Known lead-based paint and/or lead-based paint hazards are present in the housing. (explain)
- Lessor has no knowledge of lead-based paint and/or lead-based paint hazards in the housing.
- _____
(b) Records and reports available to the seller. (check one below):
- Lessor has provided the lessee with all available records and reports pertaining to lead-based paint and/or lead-based paint hazards in the housing (list documents below).
- Lessor has no reports or records pertaining to lead-based paint and/or lead-based paint hazards in the housing.

Lessee's Acknowledgment

- _____
(initial)
- _____
(c) Lessee has received copies of all information listed above.
- _____
(d) Lessee has received the pamphlet "**Protect Your Family from Lead in Your Home**".

Agent's Acknowledgment

- _____
(initial)
- _____
(f) Agent has informed the lessor of the lessor's obligations under 42 U.S.C. 4852d and is aware of his/her responsibility to ensure compliance.

Certification of Accuracy

The following parties have reviewed the information above and certify, to the best of their knowledge, that the information provided by the signatory is true and accurate.

Lessor Date

Lessee Date

Lessor Date

Lessee Date

Agent Date

Agent Date

**STATE OF CONNECTICUT
DEPARTMENT OF CONSUMER PROTECTION
165 Capitol Avenue + Hartford, CT 06106**



RESIDENTIAL PROPERTY CONDITION DISCLOSURE REPORT

Seller's Name:		
Property Street Address:		
Property City:	State:	Zip Code:

The Uniform Property Condition Disclosure Act Connecticut General Statutes Section 20-327b requires the seller of residential property to provide this disclosure to the prospective purchaser prior to the prospective purchaser's execution of any binder, contract to purchase, option or lease containing a purchase option. These provisions apply to the transfer of residential real property of four dwelling units or less made with or without the assistance of a licensed broker or salesperson. The seller will be required to credit the purchaser with the sum of \$300.00 at closing if the seller fails to furnish this report as required by this act.

Please note that Connecticut law requires the owner of any dwelling in which children under the age of 6 reside to abate or manage materials containing toxic levels of lead

Pursuant to the Uniform Property Condition Disclosure Act, the seller is obligated to disclose here any knowledge of any problem regarding the following:

YES	NO	UNKN		I. GENERAL INFORMATION	
-----	----	------	--	------------------------	--

1. How long have you occupied the property? _____ Age of structure _____

YES NO UNKN 2. Does anybody other than yourself have any right to use any part of your property or does anybody else claim to own any part of your property? If yes, explain

YES NO UNKN 3. Is the property in a flood plain area or an area containing wetlands?

YES NO UNKN 4. Do you have any reason to believe that the municipality may impose any assessment for purposes such as sewer installation, sewer improvements, water main installation, water main improvements, sidewalks or other improvements?

YES NO UNKN 5. Is the property located in an historic village or special tax district? Explain _____

YES NO UNKN

II. SYSTEM/UTILITIES

6. HEATING SYSTEM problems? Explain _____
a. Heating System and Fuel Type _____
b. Is there an underground fuel tank? If yes, location and age _____

7. HOT WATER HEATER problems? Explain _____
Type of hot water heater _____ Age _____
8. PLUMBING SYSTEM problems? Explain _____

9. SEWAGE SYSTEM problems? Explain _____
a. Type of sewage disposal system
(central sewer, septic, cesspool, etc.) _____
b. If private: (a) Name of service company _____
(b) Date last pumped _____ Frequency _____
c. If public:
(1) Is there a separate charge made for sewer use? yes ___ no ___
(2) If separate charge, is it a flat amount or metered? _____
(3) If flat amount, please state amount and payment dates

(4) Are there any unpaid sewer charges, and if so state
the amount _____
10. AIR CONDITIONING problems? Explain _____
Air Conditioning type: Central _____ Window _____ Other _____
11. ELECTRICAL SYSTEM problems? Explain _____
12. DRINKING WATER problems? Quality or Quantity? Explain _____

If public drinking water:
a. Is there a separate charge made for water use? Yes _____ No _____
b. If separate charge, is it a flat amount or metered? _____
c. If flat amount, please state amount and payment dates

d. Are there any unpaid water charges, and if so state the amount _____
13. ELECTRONIC SECURITY SYSTEM problems? Explain _____
14. CARBON MONOXIDE OR SMOKE DETECTOR problems? Explain _____
15. FIRE SPRINKLER SYSTEM problems? Explain _____

YES NO UNKN

III. BUILDING/STRUCTURE/IMPROVEMENTS

16. FOUNDATION/SLAB problems/settling? Explain_____
17. BASEMENT Water/Seepage/Dampness? Explain amount, frequency and location.

18. SUMP PUMP problems? If yes, explain_____
19. ROOF leaks, problems? Explain _____
Roof type _____ Age _____
20. INTERIOR WALLS/CEILING problems? Explain_____
21. EXTERIOR SIDING problems? Explain_____
22. FLOOR problems? Explain_____
23. CHIMNEY/FIREPLACE/WOOD OR COAL STOVE problems? Explain:_____
24. Any knowledge of FIRE/SMOKE damage? Explain_____
25. PATIO/DECK problems? _____
If made of wood, is wood treated or untreated?_____
26. DRIVEWAY problems? Explain_____
27. TERMITE/INSECT/RODENT/PEST INFESTATION problems? Explain_____
28. IS HOUSE INSULATED? Type _____ Location _____
29. ROT AND WATER DAMAGE problems? Explain_____
30. WATER DRAINAGE problems? Explain_____
31. Are ASBESTOS CONTAINING INSULATION OR BUILDING MATERIALS present?_____
If yes, location_____
32. Is LEAD PAINT present? If yes, location_____
33. Is LEAD PLUMBING present? If yes, location_____
34. Has test for RADON been done? If yes, attach copy.
State whether a radon control system is in place_____

The Seller should use this area to further explain any item above. Attach additional pages if necessary and indicate here _____ the number of additional pages attached.

I. Seller's Certification

To the extent of the Seller(s) knowledge as a property owner, the Seller acknowledges that the information contained above is true and accurate for those areas of the property listed. In the event a real estate broker or salesperson is utilized, the Seller authorizes the broker or salesperson to provide the above information to prospective buyers, selling agents or buyer's agents.

DATE _____ SELLER _____ SELLER _____
(Signature) (Type or Print)

DATE _____ SELLER _____ SELLER _____
(Signature) (Type or Print)

II. Responsibilities of Real Estate Brokers

This report in no way relieves a real estate broker of his or her obligation under the provisions of Section 20-328-5a of the Regulations of Connecticut State Agencies to disclose any material facts. Failure to do so could result in punitive action taken against the broker, such as fines, suspension or revocation of license.

III. Statements Not to Constitute a Warranty

Any representations made by the seller on this report shall not constitute a warranty to the buyer.

IV. Nature of Disclosure Report

This residential disclosure report is not a substitute for inspections, tests, and other methods of determining the physical condition of the property.

V. Information on the Residence of Convicted Felons

Information concerning the residence address of a person convicted of a crime may be available from law enforcement agencies or the department of public safety.

VI. Buyer's Certification

The buyer is urged to carefully inspect the property and, if desired, to have the property inspected by an expert. The buyer understands that there are areas of the property for which the seller has no knowledge and this disclosure statement does not encompass those areas. The buyer also acknowledges that the buyer has read and received a signed copy of this statement from the seller or seller's agent.

DATE _____ BUYER _____ BUYER _____
(Signature) (Type or Print)

DATE _____ BUYER _____ BUYER _____
(Signature) (Type or Print)

Questions or Comments? Consumer Problems?

Contact the Department of Consumer Protection at (860) 713-6150 or occprotrades@po.state.ct.us