

# ENVIRONMENTAL HEALTH CONCERNS AND YOUR HOME

## A GUIDEBOOK FOR FAMILIES IN THE MID- ATLANTIC REGION

JUNE 2008

This guidebook was developed by the Mid-Atlantic Center for Children's Health & the Environment with funding from the Region 3 offices of the U.S. Agency for Toxic Substances & Disease Registry and the U.S. Environmental Protection Agency.

We acknowledge that important contributions to this guidebook were excerpted from the Centers for Disease Control and Prevention and U.S. Department of Housing and Urban Development, Healthy Housing Reference Manual (2006), [www.cdc.gov/healthyplaces/healthyhomes.htm](http://www.cdc.gov/healthyplaces/healthyhomes.htm).

*Special Note Regarding Internet Links Contained in this Guidebook:  
Note the contacts and Internet links were verified in this document as of June 2008. Please go back to the source/home Internet pages for the agency or organization if the link or contact is not up to date in the future.*

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## INTRODUCTION

Families in the Mid-Atlantic Region have questions about environmental problems that affect homes and may impact their health. Our mission is to improve the recognition, evaluation, and management of environmental health problems among the children of the Mid-Atlantic region, which includes Pennsylvania, Delaware, Maryland, West Virginia, Virginia and the District of Columbia. This guidebook is designed to answer questions about some of the most common environmental problems affecting families in their homes, including drinking water, household chemicals, indoor air pollution, and lead, and to provide families from this region with specific state and Federal contacts and Internet links for more information about these concerns.

### Why Focus on Children?

Everyone needs a healthy home. But there are special reasons to think about children:

- Children’s bodies are still growing. Their young brains, livers, and other organs are more likely to be harmed by environmental exposures as compared to adults. If children get sick, it may be harder for them to get well because their immune systems are still developing.
- For their size, children eat more food, drink more water, and breathe more air than adults do. When they get lead in their bodies or breathe in harmful gases, they get a bigger dose than an adult would.
- Children play and crawl on the ground. That means they are closer to many things that might cause health problems, like dust and chemicals. Babies and young children also put most everything in their mouths – things that might have chemicals or lead dust on them.<sup>1</sup>

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<sup>1</sup> Source: U.S. Department of Housing and Urban Development, Help Yourself to a Healthy Home, page 5.

## **DRINKING WATER**

Is your drinking water safe? The first place to start is to find out where your water comes from. If your water comes from a private well, then it is up to you to make sure you are drinking safe water. One basic step to ensuring safe drinking water is to have your well water tested yearly for contaminants that may make your family sick. If your water comes from a water company or utility (often referred to as “public water”), then your water is already being tested. The testing results are open to the public, so ask your water company or utility for a copy of the results. However, public water can still be a concern once it reaches your home.<sup>2</sup> In this section, you will learn more about drinking water and how to make it safe.

### ***How do I find out about the quality of my drinking water?***

The United States is fortunate to have one of the best supplies of drinking water in the world. Although publicly-supplied tap water that meets federal and state standards is generally safe to drink, threats to drinking water quality in the United States still exist. Furthermore, millions of Americans rely on private, household wells for drinking water. If you have a private well, it is important to know when to test and how to maintain your well properly to ensure your family's health.

If you have publicly supplied water, each year by July 1 you should receive in the mail a short report from your water supplier that tells where your water comes from and what is in it. Any community water system that serves more than 100,000 people is also required to make its water quality report available to customers on a publicly accessible web site.

The Environmental Protection Agency's rules that protect public drinking water systems do not apply to privately owned wells. Most states have rules for private wells, but these rules may not completely protect your private well. In other words, as a private well owner, it is up to you to make sure that your well water is safe to drink. Your local health or environmental department can help advise you regarding testing and interpretation of results. To have your

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<sup>2</sup> Source: U.S. Department of Housing and Urban Development, *Help Yourself to a Healthy Home*, page 3

water tested, contact either your county extension agent or a certified private laboratory. The following are guidelines to help you decide when to test your private well:

- **If you are using your well for the first time**, you should test your well for pesticides, organic chemicals, and heavy metals.
- Test **annually** for pH, nitrate and coliform bacteria. Be sure to check your well for mechanical problems every spring.
- Test **every two to three years** for chemical contamination.
- Test your well if you are aware of the following problems:
  - There have been problems with well water in your area.
  - You notice changes in odor, color, and/or taste.
  - You have experienced problems near your well (i.e. flooding, land disturbances, nearby waste disposal sites, etc.).
  - You replace or repair any part of your well system.

### ***What can contaminate my water and how can it be harmful?***

Health effects vary by contaminant, the amount of contaminant in the drinking water supply, the length of time the person was exposed, and the individual. Examples of common drinking water contaminants and health effects are:

- **Microorganisms** (bacteria, viruses, parasites, etc.) can cause illnesses. Many microorganisms can cause nausea and diarrhea shortly after drinking contaminated water. The effects could be short-term yet severe (similar to food poisoning) or might recur frequently or develop slowly over a long time. Shallow wells — those with water close to ground level — are at most risk of contamination from microorganisms.
- **Nitrates** cause a health threat in very young infants called methemoglobinemia, also known as “blue baby” syndrome. Babies with blue baby syndrome will often have blue or purple-colored faces due to a lack of oxygen in the blood, and should get medical attention right away. Nitrates are also believed to cause birth defects and miscarriages. The most common ways nitrates get into the water is by animal and human waste, and by fertilizers.<sup>3</sup>

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<sup>3</sup> Source: U.S. Department of Housing and Urban Development, *Help Yourself to a Healthy Home*, page 33

- Household plumbing materials (i.e. pipes, solder, and plumbing fixtures) are the most common source of **lead and copper** in home drinking water. Lead can cause serious damage to the brain, kidneys, nervous system, and red blood cells. Copper may also cause problems, such as nausea, vomiting, stomach cramps, and diarrhea. Corrosive water may cause metals in pipes or soldered joints to leach into your tap water. Temperature, pH level, and mineral content are contributing factors to corrosive water.

### ***Should I install a treatment system, just to be safe?***

Before you attempt a quick and possibly costly remedy by installing a treatment system on your home's drinking water supply, you must analyze your water to identify bacteria, minerals, or other pollutants that are present. Interpretation of the test results will help you determine whether the water needs to be treated and, if needed, the type of treatment for your problem. The intended use of the water (whether for drinking, laundry, or all household uses) will also help determine the extent of treatment required. No single water treatment device treats all problems, and all devices have limitations. A range of possible corrective options are available for common water quality problems, such as carbon filters, mechanical filters, water softeners, iron filters, and neutralizers, as described in the CDC link located in the contacts section below.

### ***How do I reduce exposures to contaminants in drinking water?<sup>4</sup>***

There are many steps you can take to reduce exposure to contaminants in drinking water. Some steps you may take include:

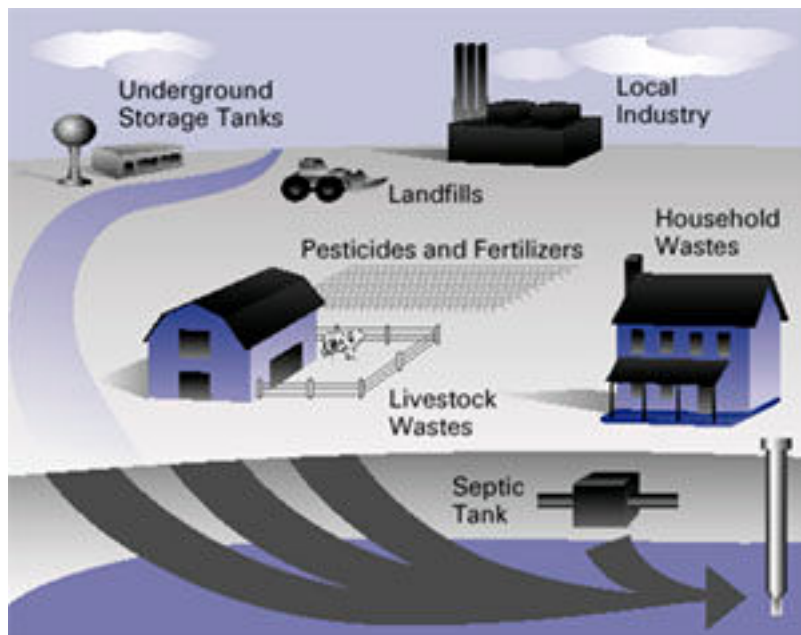
- **Clearing your pipes** – If you have not used your water for a while (in the morning or when you get home from work), you need to clear out the pipes. Let the cold water run for two or three minutes or until you feel the temperature change, before you drink it or use it for cooking. This will flush out water that has sat in the pipes and picked up lead or copper. It is best to not use hot water from the tap for cooking, drinking, or making formula because the heat helps dissolve the metals faster. Use cold water and heat it on the stove or in the microwave.

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<sup>4</sup> Source: U.S. Department of Housing and Urban Development, *Help Yourself to a Healthy Home*, pages 34-36

- **Protect your private well** – Make sure you routinely test the water and conduct proper maintenance on your well.
- **Protect your water supply** – Here are a few steps you can take to protect your water supply:
  - If you use poisons to kill bugs or weeds, follow the instructions on the label. Do not use more than the label says. Consider using less toxic and/or organic options.
  - Watch where you store chemicals (such as bleach, paint, or pesticides) outside. Make sure that the bottles are closed tightly and have labels that say what they are.
  - Do not throw chemicals in the garbage or down the drain. Read the label for disposal instructions. Give leftovers to someone who will use them or call your state environmental department to find out how to get rid of them.
  - Never dispose of motor oil by dumping it on the ground. Call a local auto repair shop or service station or your state environmental department for information on disposal.
  - Clean up after your dog. Do not leave pet waste on the ground where rain can wash the germs into rivers and lakes. It is best to flush it down the toilet.

## Contamination Sources that May Affect Your Drinking Water



This picture shows the several ways your water can be contaminated. Please be mindful of these and other hazards in your area when testing your private well.

Source: Environmental Protection Agency.

<http://www.epa.gov/safewater/privatewells/health.html>

### **Drinking Water Contacts and Internet Links**

#### **EPA Region 3**

[http://www.epa.gov/reg3wapd/drinking/contacts\\_epa.htm](http://www.epa.gov/reg3wapd/drinking/contacts_epa.htm)

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

<http://www.epa.gov/safewater/privatewells/index2.html>

<http://www.epa.gov/safewater/lead/index.html>

#### **ATSDR/CDC**

Phone: 1-800-CDC-INFO or 800-232-4636; TTY 888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)

<http://www.cdc.gov/ncidod/dpd/healthywater/privatewell.htm>

<http://www.cdc.gov/nasd/docs/d000901-d001000/d000981/d000981.html>

#### **Delaware**

Edward Hallock

Program Administrator

Office of Drinking Water, Division of Public Health

Delaware Health and Social Services

Blue Hen Corporate Center - Suite 203

Dover, DE 19901

Phone: 302-741-8590

Email: [edward.hallock@state.de.us](mailto:edward.hallock@state.de.us)

<http://www.dhss.delaware.gov/dhss/dph/hsp/hhinsidedw.html>

**District of Columbia**

Department of Health  
825 North Capitol Street, NE  
Washington, DC 20002  
Phone: 202-671-5000

District of Columbia Department of the Environment  
51 N Street, NE 6th Floor  
Washington, DC 20002  
Phone: 202-535-2600

**Maryland**

Saeid Kasraei  
Program Administrator, Water Supply Program  
Maryland Department of the Environment  
Montgomery Park Business Center  
1800 Washington Blvd.  
Baltimore, MD 21230  
Phone: 410-537-3702  
Email: [skasraei@mde.state.md.us](mailto:skasraei@mde.state.md.us)

**Pennsylvania**

Barry Greenawald  
Chief, Operations Monitoring and Training Division  
Bureau of Water Standards and Facility Regulation  
Pennsylvania Department of Environmental Protection  
P.O. Box 8467  
Harrisburg, PA 17105-8467  
Phone: 717-772-4018  
Email: [rgreenawal@state.pa.us](mailto:rgreenawal@state.pa.us)

**Virginia**

J. Wesley Kleene, Ph.D., P.E.  
Director, Office of Drinking Water  
Virginia Department of Health  
Madison Building, 6th floor  
109 Governor Street, Room 632  
Richmond, VA 23219  
Phone: 804-864-7500  
Email: [kleene@vdh.virginia.gov](mailto:kleene@vdh.virginia.gov)

**West Virginia**

Walter Ivey, P.E.  
Director, Environmental Engineering Division  
Bureau for Public Health

West Virginia Department of Health and Human Resources  
Office of Environmental Health Services  
Capitol and Washington Streets  
1 Davis Square, Suite 200  
Charleston, West Virginia 25301-1798  
Phone: 304-558-6715  
Email: [walterivey@wvdhhr.org](mailto:walterivey@wvdhhr.org)

**Information From Other States:**

University of Georgia Fact Sheet on Protecting your Well and Wellhead  
<http://www.fcs.uga.edu/pubs/PDF/HACE-858-1.pdf>

## HOUSEHOLD CHEMICALS

Some products can harm your family's health if you do not use them in the right way. Common chemicals like bleach, rat poison, paint strippers, and drain cleaners can be dangerous. Children can poison themselves if they get into products like these. Even very small amounts of some chemicals can cause health problems if you touch them or breathe them in. Remember – if you spray or pump something, it goes right into the air. When you and your family breathe, those chemicals go into your bodies.<sup>5</sup>

**IF YOU OR SOMEONE YOU KNOW ACCIDENTLY INGESTS A CHEMICAL, IMMEDIATELY CALL POISON CONTROL AT 1-800-222-1222.**

### ***What are common household chemicals?***

There are many chemical products used in and around the home that can be dangerous if they are not stored, used, or disposed of correctly. They include:

1. Automotive fluids (e.g., oil, gasoline, antifreeze)
2. Cleaning products (e.g., bleach, air freshener)
3. Laundry products (e.g., detergent, stain remover)
4. Lawn and garden products (e.g., fertilizer, pesticides, weed killer)
5. Barbeque products (e.g., propane, lighter fluid)
6. Home maintenance products (e.g., paint, mouse/rat poison)
7. Prescription and over the counter drugs

You should particularly pay attention to chemicals that are labeled corrosive or flammable.

**Corrosive chemicals** are strong acids or alkalis. They can damage the eyes, mucous membranes, upper gastrointestinal/respiratory tract, skin, the stomach and the lungs.

Examples include:

- Drain cleaners
- Oven cleaners
- Battery acids
- Pool and hot tub chemicals

**Flammable chemicals** can easily catch fire. Examples include:

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<sup>5</sup> Source: U.S. Department of Housing and Urban Development, *Help Yourself to a Healthy Home*, page 4

- Gasoline
- Cleaning solvents
- Paint thinners

You want to make sure that these chemicals are safely stored where children will not be able to reach them.

### ***How do I have and keep a healthy home?***

- LIST - Make a list of household products that you think may be harmful if they are inhaled, swallowed, or come into contact with your skin. Having a list of chemicals in your home will not only help you from accidentally purchasing unnecessary amounts of a chemical, but it is also a reminder of potential hazards in your home. Keep the list in a visible area (kitchen or near a phone) and be sure to have the Poison Control number listed at the bottom of the list. Try to keep the list up to date, if possible.
- READ – All household products should have labels that explain how to properly store, use, and dispose of them.
- FOLLOW – Follow all label instructions regarding use, storage and disposal.
- REPLACE – Consider replacing current products with safer alternatives for your home. If you need to use a consumer product, buy only the amount you need and follow the label instructions carefully. Do not transfer hazardous chemicals to another container, particularly unmarked containers.

## Household Products Use and Storage

Although you may not notice, there are potential chemical hazards in every room of your home. The picture on the left shows where household chemicals may be found in a home.



*Photo: Household products used around your home*

*Source: Environmental Protection Agency*

<http://www.epa.gov/kidshometour/index.htm>

### **Household Chemical Internet Links**

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

<http://www.epa.gov/oppt/pubs/opptcon.htm>

<http://www.epa.gov/reg3wcmd/faq.htm>

<http://hpd.nlm.nih.gov/>

<http://consumerlawpage.com/article/household-chemicals.shtml>

<http://toxtown.nlm.nih.gov/>

<http://emergency.cdc.gov/disasters/chemicals.asp>

### **Delaware**

<http://www.dhss.delaware.gov/dhss/dph/hsp/hhinside.html>

## **INDOOR AIR POLLUTION**

Is the air in your home healthy? The air inside can be more harmful to your family's health than the air outdoors. Air can be unhealthy if it has too many pollutants. Indoor air pollutants can be lots of things – from oven cleaner to cigarette smoke to mold. It is not always easy to tell if your home has unhealthy air. You may notice bad smells or see smoke, but you cannot see or smell other dangers, like carbon monoxide or radon.<sup>6</sup>

### ***What is Air Pollution?***

Air pollution consists of many things including: chemicals, tiny particles, bacteria, and/or mold in the air we breathe. These contaminants may come from indoor or outdoor sources. Indoor air pollution is important because people often spend the majority of their time inside.

### ***Where do Indoor Air Problems come from?***

Common indoor air pollutants include chemicals, particles, bacteria, and molds. Common indoor sources of air pollutants are furniture, carpet, pets and people. Air pollutants can also enter into homes from outside sources through cracks, leaks around windows, and everyday activities like opening and closing doors. Air pollutants like mold or carbon monoxide can come from a home's heating, cooling, and ventilation systems. A well insulated, poorly ventilated home can increase the levels of air pollution inside the home relative to the outdoor levels.

### ***What are Some Sources of Indoor Air Pollution?***

There are many sources of indoor air pollution in any home. These include the following:

- Fuels used for cooking and heating
  - Oil
  - Gas
  - Kerosene
  - Coal
  - Wood
- Tobacco products

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<sup>6</sup> Source: U.S. Department of Housing and Urban Development, *Help Yourself to a Healthy Home*, page 2

- Cigarettes
- Cigars
- Pipes
- Building materials, paint, and furnishings
  - Flaking, asbestos-containing insulation and flaking, asbestos-containing floor tiles
  - Wet or damp carpet
  - Cabinetry or furniture made of pressed wood products
- Products for household cleaning and maintenance
  - Soaps and detergents
  - Deodorizers and air fresheners
- Personal care products
  - Perfumes
  - Hairsprays
- Hobbies
  - Painting
  - Construction and Renovations
- Central heating and cooling systems and humidification devices
  - Carbon monoxide from an improperly functioning system
  - Dust and other airborne particles
- Radon
- Pesticides
- Outdoor air pollution.

### ***What are the Health Effects of Indoor Air Pollution?***

Indoor air pollution can cause different problems in different people, which may include:

- Irritation of the eyes, nose and throat (e.g., red eyes, runny nose, sore or scratchy throat).
- Allergy symptoms in people who are sensitive to pollutants in the air.

- Asthma attacks in people who have asthma.
- Respiratory tract infections like colds and pneumonia.
- Exposure to some indoor air pollutants over many years may increase the risk of cancer in some people. For example, second-hand tobacco smoke and radon can increase a person's risk of lung cancer.

It is important to keep in mind that children are especially vulnerable to indoor air problems. Children can spend up to 90% of their time indoors. For their size, children breathe up to twice as much air as adults. That means children are at greater risk for health problems that come from indoor air pollution.<sup>7</sup>

### ***Indoor Air Contacts and Internet Links***

#### **EPA Region 3**

Cristina Schulingkamp  
Indoor Air Coordinator

1650 Arch St, Mail Code 3AP23

Philadelphia, PA 19103

Phone: 215-814-2086

Email: [schulingkamp.cristina@epa.gov](mailto:schulingkamp.cristina@epa.gov)

<http://www.epa.gov/reg3artd/Indoor/iaq.htm>

<http://www.epa.gov/iaq/ia-intro.html#What%20Causes%20Indoor%20Air%20Problems>

#### **ATSDR/CDC/NIH**

Phone: 1-800-CDC-INFO or 800-232-4636; TTY 888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)

<http://www.cdc.gov/nceh/airpollution/airquality/default.htm>

<http://www.nlm.nih.gov/medlineplus/indoorairpollution.html>

<http://sis.nlm.nih.gov/enviro/indoorairpollution.html>

#### **Delaware**

Division of Public Health

417 Federal Street

Dover, DE 19901

Maria Rejai, IAQ Contact

Phone: (302) 744-4700 or 1-888-459-2943

E-Mail: [dhssinfo@state.de.us](mailto:dhssinfo@state.de.us)

<http://www.dhss.delaware.gov/dhss/dph/dpc/btd.html>

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<sup>7</sup> Source: U.S. Department of Housing and Urban Development, *Help Yourself to a Healthy Home*, page 6

[www.dhss.delaware.gov/dhss/dph/dpc/iaq.html](http://www.dhss.delaware.gov/dhss/dph/dpc/iaq.html)  
<http://www.dhss.delaware.gov/dhss/dph/hsp/hhinside.html>

### **District of Columbia**

Robert Johnson  
District Department of the Environment  
Air Quality Division  
51 N. Street, N.E. 3rd floor  
Washington DC 20002  
Phone: 202-535-2302  
<http://www.epa.gov/iaq/states/districtofcolumbia.html#Indoor%20Air%20Quality>

### **Maryland**

James A. Lewis  
Maryland Department of the Environment  
1800 Washington Blvd, ste 725  
Baltimore, MD 21230-1720  
Phone: 410-537-3808  
<http://www.epa.gov/iaq/states/maryland.html>

### **Pennsylvania**

PA Division of Environmental Health Epidemiology  
Health and Welfare Building  
Room 933, Harrisburg, PA 17108  
Phone: 717-787-1708  
<http://www.epa.gov/iaq/states/pennsylvania.html>

Scott Heidel  
Sanitarian Program Specialist  
Health and Welfare Bldg., Room 628  
7th and Forster Streets  
Harrisburg, PA 17120  
Phone: 717-787-4366  
Email: [scheidel@state.pa.us](mailto:scheidel@state.pa.us)

### **Virginia**

Virginia Department of Health  
P.O. Box 2448  
Richmond, Virginia 23218-2448  
109 Governor Street  
Richmond, Virginia 23219  
<http://www.epa.gov/iaq/states/virginia.html>

Your VA local health department may also be able to assist you with some indoor air quality problems. See <http://www.vdh.state.va.us/LHD/> for the health department office in your area.

**West Virginia**

Anthony Turner

Bureau for Public Health

Office of Environmental Health Services

Capitol and Washington Streets

1 Davis Square, Suite 200

Charleston, West Virginia 25301-1798

Phone: 304-558-2981

Email: [tturner@wvdhhr.org](mailto:tturner@wvdhhr.org)

<http://www.epa.gov/iaq/states/westvirginia.html>

## Indoor Air Pollution: ASBESTOS

### **What is asbestos?**

Asbestos is a naturally occurring mineral. It was commonly used in home construction materials because of its insulating and fire-resistant properties.

### ***Why is asbestos a problem?***

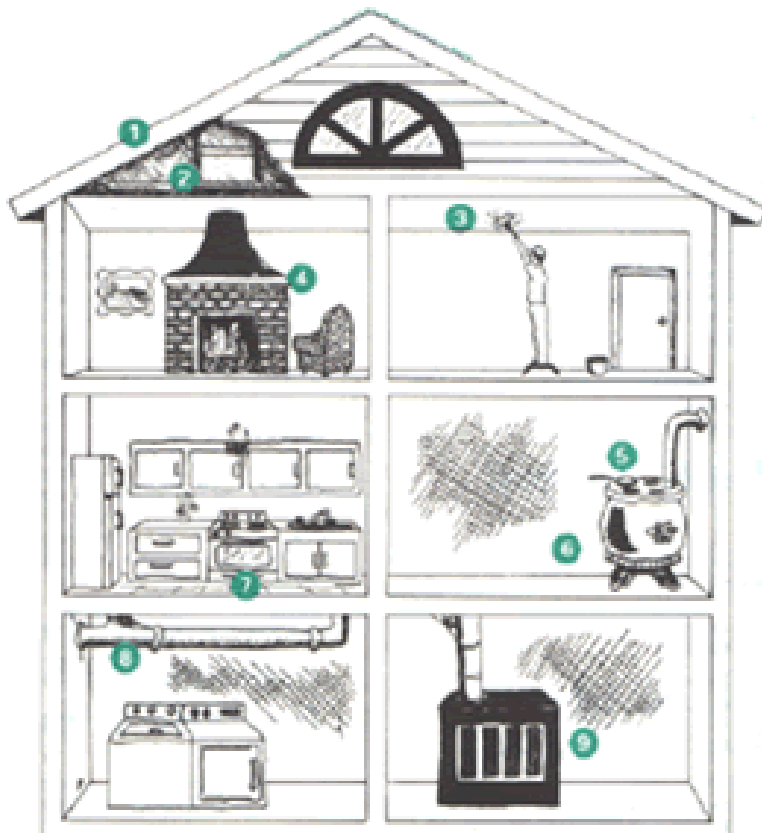
Asbestos-containing materials that are sanded, ground, or scraped may release asbestos fibers into the air. These tiny fibers can stay in the lungs after they are inhaled. After many years, exposure to asbestos fibers in the air may cause scars to develop in the lungs, which could interfere with breathing. Exposure to asbestos fibers in the air can also cause cancer. The more asbestos someone inhales, the higher the risk of problems.

### ***What should I do about asbestos in my home?***

Asbestos that is in good repair is safe. If you think asbestos may be in your home, just leave it alone. The best way to deal with slightly damaged material is to not disturb it, and to keep people out of the area. It is important to know if you have asbestos in your home before doing any type of home improvement. The construction could disturb the asbestos and can create a hazard for your family and the workers. If you need to remove asbestos from your home, please contact a professional asbestos abatement contractor. They will have the expertise to safely remove any asbestos in your home.

## Common Sources of Asbestos in Your Home

1. Roof coverings
2. Attic Insulation
3. Joint compounds and acoustical plasters
4. Fireplace insulation
5. Wood burning stoves
6. Wall/floor coverings
7. Oven insulation
8. Pipe insulation
9. Boiler insulation



*Photo: Where Asbestos can be found in your home*

*Source: State of Delaware – Division of Air & Waste Management*

<http://www.awm.delaware.gov/AQM/Asbestos/Homeowners.htm>

### **Asbestos Contacts and Internet Links**

#### **EPA Region 3**

Stephen Forostiak

Asbestos Programs Coordinator

Phone: 215-814-2136

Email: [forostiak.stephen@epa.gov](mailto:forostiak.stephen@epa.gov)

<http://www.epa.gov/reg3wcmd/asbestos.htm>

<http://www.epa.gov/asbestos/pubs/abcsfinal.pdf>

#### **ATSDR/CDC**

Phone: 1-800-CDC-INFO or 800-232-4636; TTY 888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)

<http://www.atsdr.cdc.gov/asbestos/>  
<http://www.cdc.gov/health/asbestos.htm>

### **Delaware**

Doyle Tiller

Phone: 302-739-5644

Email: [doyle.tiller@state.de.us](mailto:doyle.tiller@state.de.us)

<http://dfm.delaware.gov/envsrv/asbestos/index.shtml>

<http://www.dhss.delaware.gov/dhss/dph/hsp/hhinsideasbestos.html>

### **District of Columbia**

Asbestos Abatement Program

Phone: 202-535-2257

[http://app.doh.dc.gov/services/administration\\_offices/environmental/services2/air\\_quality/servicesaa.shtml](http://app.doh.dc.gov/services/administration_offices/environmental/services2/air_quality/servicesaa.shtml)

### **Maryland**

Maryland Department of the Environment Air and Radiation Management Administration

Phone: 800-633-6101 ext.3200

[http://www.mde.state.md.us/Programs/AirPrograms/Asbestos/about\\_asbestos/index.asp](http://www.mde.state.md.us/Programs/AirPrograms/Asbestos/about_asbestos/index.asp)

### **Pennsylvania**

<http://www.dep.state.pa.us/dep/deputate/airwaste/aq/asbestos/asbestos.htm>

### **Virginia**

Virginia Department of Health Toxic Substances

Phone: 804-786-1763

<http://www.vdh.virginia.gov/Epidemiology/PublicHealthToxicology/documents/pdf/asbestos.pdf>

### **West Virginia**

Radiation, Toxics and Indoor Air Division

Asbestos Compliance Program

Contact: Lee Miller [leemiller@wvdhhr.org](mailto:leemiller@wvdhhr.org)

(304) 558-6718-Voice

<http://www.wvdhhr.org/rtia/asbestos.asp>

## **Indoor Air Pollution: CARBON MONOXIDE**

### ***What is carbon monoxide?***

Carbon monoxide is a colorless and odorless toxic gas. Carbon monoxide (CO) is produced from burning materials that contain carbon, such as gasoline or propane.

### ***Should I be concerned about carbon monoxide in my home?***

Carbon monoxide claims the lives of more than 500 people in the U.S. each year. As the weather gets colder, and heaters are turned on, your chances of being exposed go up.

Because it is impossible to see, taste or smell CO, exposure to elevated levels can kill you before you are aware it is in your home. At lower levels of exposure, CO causes mild effects that are often mistaken for the flu. These symptoms include headaches, dizziness, disorientation, nausea and fatigue. The effects of CO exposure can vary greatly from person to person depending on age, overall health, the concentration of exposure, and length of exposure. If you feel dizzy, nauseous, or light headed and you think you may have been exposed to CO, immediately move to a well ventilated area or step outside for fresh air. IMMEDIATELY CALL 911; your local fire department should be able to determine if there is a CO problem in your home, or some other gas that may be making your family sick.

### ***What can I do about carbon monoxide levels in my home?***

You can protect your family and prevent carbon monoxide poisoning by taking a few simple steps:

- Have a qualified technician check your heating system, water heater, and any other gas, oil, or coal burning appliances every year.
- Install a battery-operated carbon monoxide detector in your home. Change the batteries each season when you change the time on your clocks in the spring and fall. If the detector sounds, leave your house immediately and call 911.
- Do not burn anything in a stove or fireplace that does not have a vent, and do not heat your house with a gas oven.

- Never use a generator, charcoal grill, or similar device indoors or near a window or door.
- Do not warm up your car or truck in a garage attached to the house, even if the garage is open.

## ***Carbon Monoxide Contacts and Internet Links***

### **EPA Region 3**

Cristina Schulingkamp

Indoor Air coordinator

1650 Arch St, Mail Code 3AP23

Philadelphia, PA 19103

Phone: 215-814-2086

Email: [schulingkamp.cristina@epa.gov](mailto:schulingkamp.cristina@epa.gov)

<http://www.epa.gov/iaq/co.html>

### **ATSDR/CDC**

Phone: 1-800-CDC-INFO or 800-232-4636; TTY 888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)

<http://www.cdc.gov/co/basics.htm>

<http://www.atsdr.cdc.gov/interactionprofiles/IP-12/ip12-a.pdf>

### **Delaware**

<http://www.dhss.delaware.gov/dhss/dph/hsp/hhinsideco.html>

## **Indoor Air Pollution: MOLD**

### ***What is mold?***

Molds are a type of fungi that can be found almost anywhere. Molds produce spores, which spread easily through the air. Mold spores form new mold growth when they find the right conditions: moisture and nutrients. As a result, molds can grow on many substances, including wood, paper, carpet, insulation and foods.

### ***Should I be concerned about mold in my home?***

All buildings have some mold. Small amounts are generally not a concern. Large amounts of mold should not be permitted to grow and multiply indoors. When this happens, health problems can occur in some people. In addition to health problems, mold may also cause property damage.

### ***What are some of the health effects from exposure to mold?***

People who are sensitive and/or allergic to mold may experience the following:

- Stuffy nose
- Irritated eyes
- Wheezing
- Skin irritation
- Difficulty in breathing and shortness of breath
- Tiredness
- Headaches

If you or your family members have health problems after exposure to mold, contact your doctor or other health care provider.

### ***How can mold be reduced in my home?***

The best way to prevent the growth of mold is to prevent the accumulation of moisture.

Common indoor moisture sources include:

- Roof and plumbing leaks.
- Condensation (caused by indoor humidity that is too high or surfaces that are too cold).

- Movement of water through basement walls and floor.
- Overflow from tubs, sinks or toilets.

Some tips to help prevent mold from growing in your home include:<sup>8</sup>

- Use downspouts to direct rainwater away from the house. Make sure your gutters are working.
- Slope the dirt away from your house's foundation. Make sure the dirt is lower six feet away from the house than it is next to it.
- Repair leaking roofs, walls, doors, or windows.
- Keep surfaces clean and dry – wipe up spills and overflows right away.
- Store clothes and towels clean and dry – do not let them stay wet in the laundry basket or washing machine.
- Do not leave water in drip pans, basements, and air conditioners.
- Check the relative humidity in your home. You can buy a kit to do this at a home electronics or hardware store. Stop using your humidifier if the relative humidity is more than 50%.
- If the humidity is high, do not keep a lot of houseplants.
- Wipe down shower walls with a squeegee or towel after bathing or showering.
- Cut down on steam in the bathroom while bathing or showering. Run a fan that is vented to the outside or open a window.
- Run a fan vented to the outside while cooking.
- If you have a dryer, make sure it is vented to the outside.
- Use a dehumidifier or air conditioner to dry out damp areas.
- If you use a humidifier, rinse it out with water every day. Every few days, follow the manufacturer's directions for cleaning it or rinse it out with a mix of ½ cup chlorine bleach and one gallon of water.
- When you use your air conditioner, use the “auto fan” setting.
- Throw away wet carpeting, cardboard boxes, insulation, or other things that have been very wet for more than two days.

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<sup>8</sup> Source: U.S. Department of Housing and Urban Development, *Help Yourself to a Healthy Home*, page 19

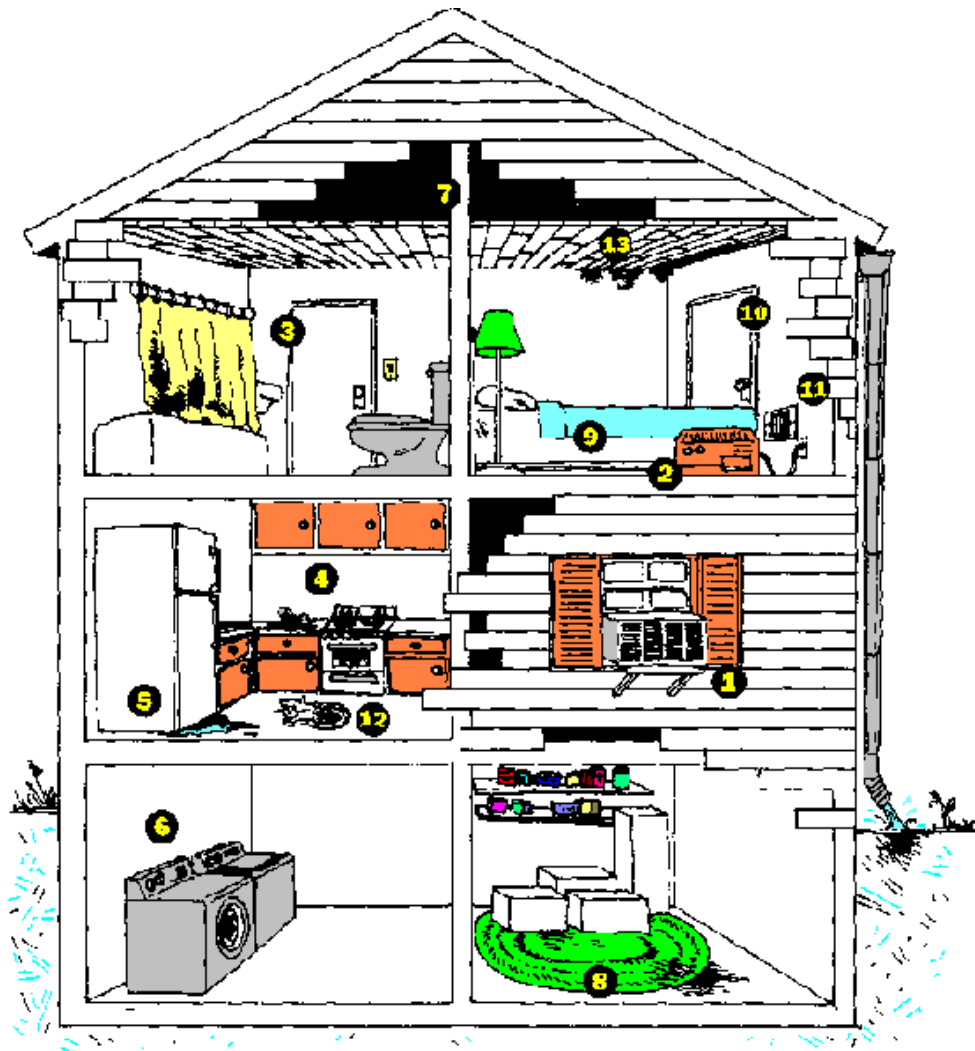
- Increase airflow in problem areas – open closet doors and move furniture away from outside walls where mold is growing. Move your furniture around once in awhile.
- Prevent moisture from collecting on windows by using storm windows. If you live in an apartment, talk to your landlord about putting on storm windows.
- Cover window wells if they leak.

Once mold has started to grow a few steps can solve the problem:

- Identify and correct the moisture sources that allowed the growth in the first place.
- Keep indoor surfaces as dry as possible.
- Try to maintain the home's relative humidity between 30-50 percent year-round.
- Clean up and dry all surfaces within 24 to 48 hours. Use chlorine bleach (1 cup of bleach to ten cups of water) to clean the surfaces.
- Remove all porous items that have been wet for more than 48 hours and that cannot be thoroughly cleaned and dried.

## Sources of Moisture/Mold in Your Home

1. Air Conditioners
2. Humidifiers
3. Bathroom without vents
4. Kitchen without vents
5. Refrigerator drip pans
6. Laundry room with unvented dryer
7. Unventilated attic
8. Carpet on damp basement floor
9. Bedding
10. Closet on outside wall
11. Heating/air conditioning system
12. Dog or Cats
13. Water damage (around windows, roof, basement)



*Photo: Where Mold can be found in home*

*Source: Consumer Product Safety Commission*

<http://www.cpsc.gov/cpscpub/pubs/425.html>

## ***Mold Contacts and Internet Links***

### **EPA Region 3**

Cristina Schulingkamp  
Indoor Air Coordinator  
1650 Arch St, Mail Code 3AP23  
Philadelphia, PA 19103  
Phone: 215-814-2086  
Email: [schulingkamp.cristina@epa.gov](mailto:schulingkamp.cristina@epa.gov)  
<http://www.epa.gov/reg3artd/Indoor/mold.htm>

### **ATSDR/CDC**

Phone: 1-800-CDC-INFO or 800-232-4636; TTY 888-232-6348  
E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)  
<http://www.cdc.gov/mold/>

### **Delaware**

Division of Public Health  
417 Federal Street  
Dover, DE 19901  
Maria Rejai, IAQ Contact  
Phone: (302) 744-4700 or 1-888-459-2943  
E-Mail: [dhssinfo@state.de.us](mailto:dhssinfo@state.de.us)  
<http://www.dhss.delaware.gov/dhss/dph/dpc/exwater.html>  
<http://www.dhss.delaware.gov/dhss/dph/hsp/hhinsidemold.html>

### **District of Columbia**

District Department of the Environment  
Air Quality Division  
51 N. Street, N.E. 3rd floor  
Washington DC 20002  
Phone: 202-671-5000  
<http://rrc.dc.gov/rrc/lib/rrc/pdf/mold.pdf>

### **Maryland**

Maryland Department of the Environment  
1800 Washington Blvd, ste 725  
Baltimore, MD 21230-1720  
Phone: 410-537-3808  
<http://www.cha.state.md.us/oeh/html/mold.html>

### **Pennsylvania**

Division of Environmental Health Epidemiology  
Pennsylvania Department of Health  
Phone: 717-787-1708  
<http://www.dsf.health.state.pa.us/health/cwp/view.asp?a=171&q=231318>

**Virginia**

Virginia Department of Health

P.O. Box 2448

Richmond, Virginia 23218-2448

109 Governor Street

Richmond, Virginia 23219

<http://www.vdh.virginia.gov/weather/Mold.htm>

**West Virginia**

Bureau for Public Health

Office of Environmental Health Services

Capitol and Washington Streets

1 Davis Square, Suite 200

Charleston, West Virginia 25301-1798

Phone: 304-558-2981

<http://www.wvdhhr.org/bhhf/flood%5Fweb/mold.pdf>

## **Indoor Air Pollution: SECONDHAND TOBACCO SMOKE**

### ***What is secondhand tobacco smoke?***

Secondhand smoke is a mixture of the smoke given off by the burning end of a cigarette, pipe, or cigar, and the smoke exhaled by smokers. Secondhand smoke is also called environmental tobacco smoke (ETS) and exposure to secondhand smoke is sometimes called involuntary or passive smoking. Secondhand smoke contains more than 4,000 substances.

### ***What are some of the health effects from exposure to secondhand tobacco smoke?***

Exposure to secondhand smoke can cause lung cancer in adults who do not smoke. EPA estimates that exposure to secondhand smoke causes approximately 3,000 lung cancer deaths per year in nonsmokers. Exposure to secondhand smoke has also been shown in a number of studies to increase the risk of heart disease. Secondhand tobacco smoke can make people with asthma wheeze. Pregnant women exposed to secondhand smoke have an increased risk of having a low birth weight infant. Breathing secondhand smoke can be particularly harmful to children's health, and health effects of concern for children include asthma, Sudden Infant Death Syndrome (SIDS), bronchitis, pneumonia, and ear infections. Children are more likely than adults to suffer health effects from secondhand smoke because of the following:

- They breathe in more air than adults for their size and weight.
- Their lungs and immune systems are still developing.

### ***How do I reduce exposure to secondhand tobacco smoke in my home?***

To reduce secondhand smoke exposures, smoking should not be allowed in the home with children. Children should not be in buildings where smoking is allowed. Make sure you choose a daycare where smoking is not allowed. Take steps to keep your child in a smoke-free environment. If smoke from a neighbor's home or common areas of your building is affecting your home, you should first inform your neighbor that your child is being affected. Another option would be to inform your landlord or management. You could also consult with an HVAC specialist regarding increasing the ventilation options for your living areas.

## Tobacco Smoke in Your Home



*Photo: Effects of Secondhand smoke in home  
Reprinted with permission from American Lung Association  
<http://www.lungusa.org/>*

### **Secondhand Smoke and Smoking Cessation Contacts and Internet Links**

#### **EPA Region 3**

Janice Lewis

Smoke Free Homes and Cars Program

Phone: 215-814-2185

Email: [lewis.janice@epa.gov](mailto:lewis.janice@epa.gov)

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

#### **ATSDR/CDC/HHS**

Phone: 1-800-CDC-INFO or 800-232-4636; TTY 888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)  
<http://www.surgeongeneral.gov/library/secondhandsmoke/>  
<http://smokefree.gov/>  
<http://www.cdc.gov/tobacco/>

**Delaware**

<http://www.dhss.delaware.gov/dhss/dph/dpc/tobsmoke.html>

**District of Columbia**

DC Department of Health Tobacco Control Program  
<http://doh.dc.gov/doh/cwp/view,a,1374,q,580779.asp>  
Phone: 202-442-5433

**Maryland**

Department of Health and Mental Hygiene's Center for Health Promotion, Education and Tobacco Use Prevention  
<http://www.fha.state.md.us/ohpetup/>

**Pennsylvania**

<http://www.dsf.health.state.pa.us/health/cwp/browse.asp?A=174&BMDRN=2000&BCOB=0&C=38777>

**Virginia**

Virginia Department of Health's Tobacco Use Control Project  
109 Governor St., 10th Flr., Richmond, VA 23219  
Phone: 804-864-7874  
<http://www.vahealth.org/cdpc/TUCP/>

**WV Division of Tobacco Prevention**

West Virginia Bureau for Public Health  
350 Capitol Street, Room 206, Charleston, WV 25301-3715  
Phone: 304-558-0644  
<http://www.wvntp.org/>

## Indoor Air Pollution: UNDERGROUND SOURCES

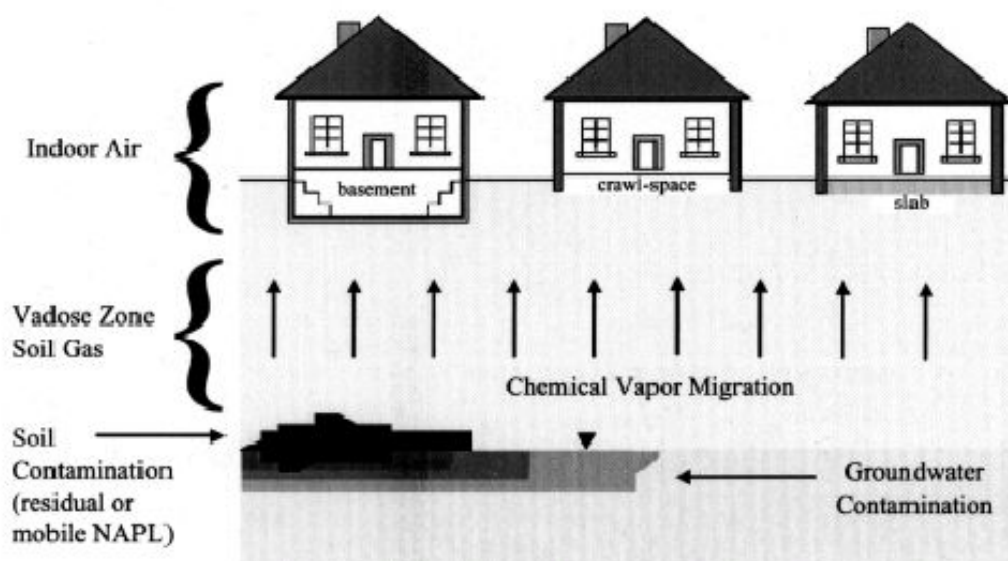
### ***What are underground sources of indoor air pollution?***

The indoor air of your home can be affected by underground sources. Chemicals in soil or groundwater from underneath your home can travel into the indoor air of your home in a process called “vapor intrusion.” This can occur from gases that occur naturally, such as radon, or from chemicals that are spilled on the ground and then enter the soil and groundwater. Some of the most common chemicals contaminating indoor air from underground sources are petroleum constituents from leaking residential or commercial underground storage tanks.

Chemical vapors from underground sources enter your home through the following routes:

- Hollow block walls
- Cracks in the foundation floor and walls
- Openings around floor drains
- Pipes
- Sump Holes

### **How Vapor Intrusion Can Affect a Home**



*Photo: How chemicals enter your home through vapor intrusion*

*Source: Environmental Protection Agency*

<http://www.epa.gov/correctiveaction/eis/vapor/guidance.pdf>

### ***Are there any health concerns with exposures to underground sources/vapor intrusion?***

Health effects will depend on the type of chemical involved, the amount of chemical reaching the living spaces in the home, and how long people are exposed to these levels. For example, if exposures to petroleum constituents are high enough, people might experience the following short term health effects:

- Headaches
- Nausea
- Eye and respiratory irritation.

If people breathe low levels of chemicals for many years, there may also be other health concerns. For example, when radon levels are elevated in the indoor air of a home, this can increase the risk of individuals in the home developing lung cancer, particularly smokers. Please consult with your personal health provider or a public health professional regarding your specific situation to determine if health effects from your exposure are possible.

### ***What should I do if an underground source/vapor intrusion problem exists?***

You may want to consider speaking with one of the relevant health and environmental contacts below to find out if there are any underground contamination problems affecting your neighborhood. If you live in an area with an underground contamination problem under investigation by an environmental agency, you should expect the following:

- The area may be evaluated for the possibility of vapor intrusion.
- You may be contacted by the person(s) responsible for cleanup.
- Your cooperation and consent will be asked for before any testing is done on your property.

You may ask the person contacting you any questions about the work being done, or you may contact your local or state environmental or health department.

Homeowners can test for the presence for radon in their homes on their own. Because radon is colorless, odorless, and tasteless, the only way to know the radon level in your home is to

do a test. Luckily, radon testing is inexpensive and easy. There are “do-it-yourself” radon test kits you can get through the mail, at hardware stores, and other retail outlets.

The following methods may be used to reduce levels of radon or other chemical underground sources affecting the air in your home:

- Sealing – seal cracks and openings in basements for *temporary* reduction
- House/room pressurization
  - Installed by a certified Radon Contractor.
  - A fan blows air into the basement or living area from either upstairs or outdoors to create enough pressure at the lowest level indoors (e.g., basement), to prevent radon from entering into the house.
- Soil Suction
  - Installed by a certified Radon Contractor.
  - A vacuum is installed to suck the radon from below the house and vent it to the air above the house where it is quickly diluted.

## Sources of Radon in a Home

RADON GETS IN  
THROUGH:

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



*Photo: How Radon enters  
your home*

*Source: Environmental Protection Agency*

<http://www.epa.gov/radon/pdfs/citizensguide.pdf>

## ***Underground Sources/Radon Contacts and Internet Links***

### **EPA Region 3**

Cristina Schulingkamp

Indoor Air/Radon Coordinator

1650 Arch St, Mail Code 3AP23

Philadelphia, PA 19103

Phone: 215-814-2086

Email: [schulingkamp.cristina@epa.gov](mailto:schulingkamp.cristina@epa.gov)

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

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

<http://www.epa.gov/correctiveaction/eis/vapor.htm>

### **ATSDR/CDC/NIH**

Phone: 1-800-CDC-INFO or 800-232-4636; TTY 888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)

<http://www.atsdr.cdc.gov/tfacts145.html>

<http://www.atsdr.cdc.gov/toxfaq.html>

<http://www.nlm.nih.gov/medlineplus/radon.html>

**Delaware**

Kurt Olinger  
Radon Program  
417 Federal Street  
Dover, DE 19901  
Phone (302) 744-4546 or DE Helpline 1-800-464-4357  
E-Mail: [dhssinfo@state.de.us](mailto:dhssinfo@state.de.us)  
<http://www.dhss.delaware.gov/dhss/dph/hsp/hhinsideradon.html>

**District of Columbia**

Keith Keemer  
Radon Program  
Health Department  
825 North Capitol Street, NE  
Washington, DC 20002  
Phone: 202-535-2999 or 202-535-2302  
[http://app.doh.dc.gov/services/administration\\_offices/environmental/services2/air\\_quality/radonprogram.shtm](http://app.doh.dc.gov/services/administration_offices/environmental/services2/air_quality/radonprogram.shtm)

**Maryland**

MD does not have a radon program.  
If you have questions about radon, you should contact the EPA regional office in Philadelphia for assistance or if you are a Montgomery County resident please contact:  
Department of Environmental Protection  
[www.montgomerycountymd.gov](http://www.montgomerycountymd.gov)  
Division of Policy & Compliance  
Contact: T. Michelle Courville  
255 Rockville, Maryland 20850-4166  
(240) 777-7757

Maryland Geological Survey  
Jeffrey P. Halka, Acting Director  
2300 St. Paul Street, Baltimore, MD 21218  
Phone: 410-554-5500  
<http://www.mgs.md.gov/esic/brochures/radon.html>

**Pennsylvania**

PA Dept. of Environmental Protection  
Bureau of Radiation Protection  
Rachel Carson State Office Bldg.  
P.O. Box 8469  
Harrisburg, PA 17105-8469  
Phone: 1-800-23RADON (1-800-237-2366) (Pennsylvania only)  
[www.depweb.state.pa.us/dep/site/default.asp](http://www.depweb.state.pa.us/dep/site/default.asp)

Michael Pules, Division Chief

Phone: 717-783-3594

Email: [mpyles@state.pa.us](mailto:mpyles@state.pa.us)

### **Virginia**

Ryan Paris, Radon Coordinator

VA Radiological Health Program

109 Governor Street, Room 730

Richmond, VA 23219

General Phone: 804-864-8161/1-800-468-0138

Email: [Ryan.Paris@vdh.virginia.gov](mailto:Ryan.Paris@vdh.virginia.gov)

<http://www.vdh.virginia.gov/Epidemiology/RadiologicalHealth/Radon/>

### **West Virginia**

WV Department of Health and Human Resources

Radon Toll Free (in-state) 800-922-1255

Dan Hill, Radon Contact

Phone: 304-558-6772

Email: [danhill@wvdhhr.org](mailto:danhill@wvdhhr.org)

[http://www.wvdhhr.org/rtia/radiological\\_health.asp](http://www.wvdhhr.org/rtia/radiological_health.asp)

### **Vapor Intrusion Information From Other States:**

[http://www.health.state.ny.us/environmental/investigations/soil\\_gas/svi\\_guidance/](http://www.health.state.ny.us/environmental/investigations/soil_gas/svi_guidance/)

<http://www.state.nj.us/dep/srp/guidance/vaporintrusion/vig.htm>

## LEAD IN HOMES

Lead poisoning is one of the most serious health threats for children in and around the home. Your children can be poisoned if they get lead in their bodies. Lead may cause learning and behavior problems. It may damage hearing and the nervous system, including the brain.<sup>9</sup>

### ***What is lead?***

Lead is a naturally occurring chemical element.

### ***What are the sources of lead in a home?***

Common sources of lead include the following:

- **House paints** – Homes built prior to 1978 could have used lead-based paints.
- **Soil** – Because lead used to be in gasoline, soil near heavily used roads may contain elevated levels of lead. Soil near old homes may also have elevated levels of lead if the paint on the house started to chip.
- **Drinking water** – If a home has lead piping or plumbing materials, lead can enter the water if the materials begin to corrode.
- **Others** – toys, inks, mini-blinds, children's jewelry.

### ***What are the symptoms of lead poisoning?***

Most people have no symptoms of lead poisoning. Therefore, it is very important to prevent contact with the sources of lead. Lead can cause damage without anyone realizing it. After the exposure, children can develop learning problems, attention problems, behavior problems, and very high exposures can be fatal, if left untreated.

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<sup>9</sup> Source: U.S. Department of Housing and Urban Development, *Help Yourself to a Healthy Home*, page 29

### ***Who is at risk from lead poisoning?***

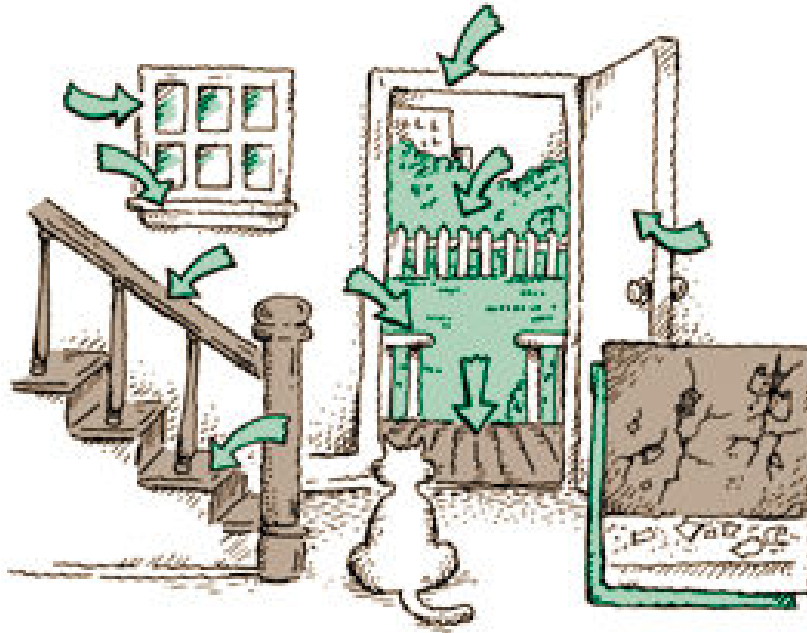
Anyone can be poisoned by lead. However, fetuses in the womb and young children are most at risk because of the incomplete development of their brain and nerves. Babies still developing inside their mother may be exposed to lead through their mother (e.g., ingestion of lead-contaminated water, or inhalation of lead dust through remodeling of areas painted with lead-containing paint). Children may get lead dust from paint or lead-contaminated soil on their hands. They may then put their hands in their mouth and swallow the contamination. Children may also teeth on or swallow lead-contaminated toys or jewelry.

Young children should be tested for lead exposure. This is especially true if you live in an older home, if your home has recently been remodeled, or if a brother, sister, or a playmate has tested high for lead. Ask your doctor to test your children beginning at six months of age, and then every year until age six.

### ***How do I reduce exposure to lead in my home?***

- Keep areas where children play clean and free of dust.
- Mop floors and wipe window ledges with a solution of dishwasher detergent in warm water.
- Have your child wash his or her hands before meals, nap time, and bed time.
- Make sure your child does not chew on painted or glossy surfaces (cribs, playpens, window sills).

## Finding Lead Hazards in Your Home



1. Window and window sills
2. Doors and door frames
3. Stairs, railings, and banisters
4. Porches and fences

*Photo: Finding lead hazards in your home*  
*Source: Environmental Protection Agency*  
<http://www.epa.gov/lead/pubs/leadrev.pdf>

### **Lead Contacts and Internet Links**

#### **EPA Region 3**

Demian Ellis  
Regional Lead Program Coordinator  
Waste & Chemicals Management Division  
Toxics Programs & Enforcement Branch (3WC33)  
1650 Arch Street  
Philadelphia, PA 19103  
Phone: 215-814-2088  
Email: [ellis.demian@epa.gov](mailto:ellis.demian@epa.gov)  
<http://www.epa.gov/reg3wcmd/lead.htm>  
<http://www.epa.gov/reg3wcmd/lp-websitecontacts.htm>

#### **ATSDR/CDC**

Phone: 1-800-CDC-INFO or 800-232-4636; TTY 888-232-6348  
E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)  
<http://www.cdc.gov/nceh/lead/>

<http://www.atsdr.cdc.gov/tfacts13.html>

**Delaware**

DE Office of Lead Poisoning Prevention (OLPP)

Phone: 302-744-4546

<http://dhss.delaware.gov/dhss/dph/hsp/lead.html>

**District of Columbia**

DC DOH Childhood Lead Poisoning and Prevention Program

Phone: 202-535-2626

[http://app.doh.dc.gov/services/administration\\_offices/environmental/lead\\_hazards.shtm](http://app.doh.dc.gov/services/administration_offices/environmental/lead_hazards.shtm)

**Pennsylvania**

Bureau of Family Health

Division of Child & Adult Health Services

Lead Poisoning Prevention and Control Program

Health and Welfare Building

7th and Forster Streets

7th Floor, East Wing

Harrisburg, Pennsylvania 17120

Phone: 717-772-2762 or Contact the PA Lead Information Line at 1-800-440-LEAD (5323) for lead information and materials

<http://www.dsf.health.state.pa.us/health/cwp/view.asp?a=179&Q=201197&healthPNavCtr=&TNID=4666#4666>

**Virginia**

Lead Safe Virginia Program

Toll free number: Toll free 877-668-7987

<http://www.vahealth.org/leadsafe/index.htm>

**West Virginia**

Anthony Turner

Phone: 304-558-6716

Email: [tturner@wvdhhr.org](mailto:tturner@wvdhhr.org)

<http://www.wvdhhr.org/rtia/lead.asp>

## CONCLUSION

It is up to you to help make your home a safe and healthy place for your family. The information and contacts in this guidebook can help make it easier for you to address the kinds of environmental hazards that may exist in your home.

Here is a short summary of tips from this guidebook:

- Make sure to test your private drinking well periodically and perform appropriate maintenance to the well.
- Do not buy more chemicals than you need at a time. Store unused chemicals in appropriate containers in a well-ventilated location.
- Don't make your home too air tight. Fresh air will help prevent both build up of chemicals in the air and mold growth.
- Install and maintain a battery-operated carbon monoxide detector in your home.
- Test your home for radon.
- Make your home smoke free, particularly if children are in the home.
- If you smell a chemical odor that does not seem to be from an indoor source, contact your state or local health department. For very strong odors, your local fire department can determine if there is a fire or explosion hazard.
- Fix all leaks promptly, as well as other moisture problems that encourage mold growth.
- Make sure all major appliances and fireplaces are in good condition. Have them checked annually by a professional.
- Address hazards from lead in your home. Test young children for lead exposure. Ask your doctor to test your children beginning at six months of age, and then every year until age six.