



## Welcome to the Healthy Homes University manual!

This book is a collection of important information which we hope families will use as a supplement to our program. It contains educational material for a variety of topics related to asthma and home safety. It is our goal to educate families on the importance of a healthy home, and we urge families to use this manual as a reference for years to come!

### Healthy Homes University Timeline:

Introductory Visit (1 hr.)	1 <sup>st</sup> day
Baseline Visit (2 hrs.)	7-14 days after 1 <sup>st</sup> visit
3 Month Site Visit (1 hr.)	3 months after baseline visit
6 Month Site Visit (1 hr.)	6 months after baseline visit
12 Month Site Visit (*some families) (1 hr.)	12 months after baseline visit

If you have any questions or comments, please feel free to contact us!

Sincerely,

Courtney and Linda

Courtney L. Wisinski  
Linda Stewart  
MI Dept. of Community Health  
Healthy Homes Section  
P.O. Box 30195  
Lansing, MI 48909

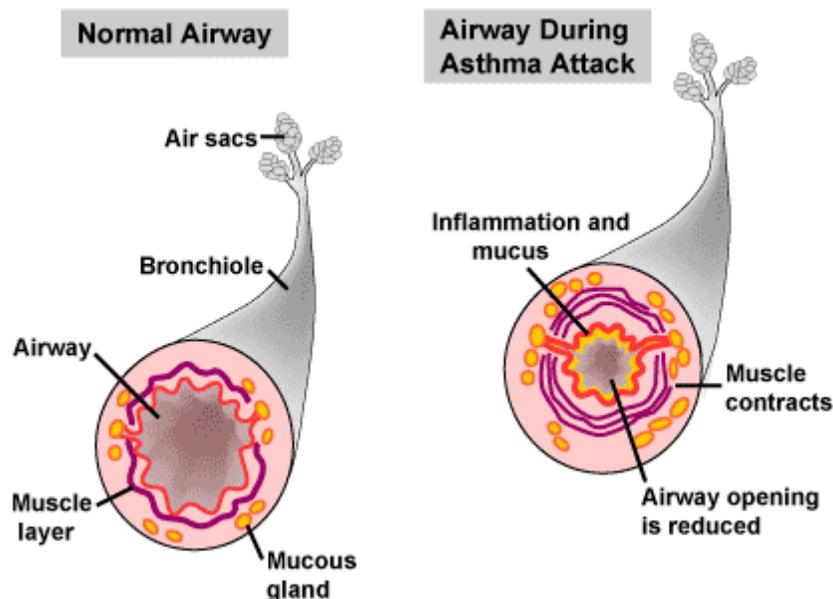
Phone: (517) 335-8252  
Phone: (517) 335-8867  
Fax: (517) 335-8800  
Email: [WisinskiC@michigan.gov](mailto:WisinskiC@michigan.gov)  
[StewartLin1@michigan.gov](mailto:StewartLin1@michigan.gov)



# What Is Asthma?

**Asthma** is a lifelong (chronic) breathing problem caused by swelling (inflammation) of the airways in the lungs. It cannot be cured, but it **can be prevented and controlled**. When you have asthma, your airways are super sensitive, or “twitchy.” They may react to many things. These things are called triggers. People who have asthma may wheeze or complain of feeling “tight” in the chest. They may also cough a lot when their asthma is not under control.

- **During an asthma attack or flare-up, three things happen to the airways to restrict breathing:**
  1. The inner lining of the airways swells and becomes irritated.
  2. The muscles around the airways tighten and make the airways smaller.
  3. More mucus (thick fluid) is produced and the airways become clogged.



- Because **children have smaller airways**, the above factors can cause **more restriction to breathing** than in an adult.

## Symptoms of an Asthma Attack can include:

- Severe wheezing when breathing both in and out
- Coughing that won't seem to quit
- Severe chest tightness, pain, or pressure
- Fast breathing or the feeling that you can't catch your breath
- Retractions, or tightening, of the muscles between your ribs and in your chest
- Blue color (cyanosis) in the lips and fingernails
- Pale, sweaty face
- Feeling anxious or panicky

## Who Gets Asthma?

- **Anyone can get asthma, at any age.** Sometimes it starts in infancy, other times it starts later in childhood or even adulthood. Although some children seem to “outgrow” asthma, the disease never really goes away—there may just be times when they are not having any breathing problems.
- **Asthma can also start at any time during adulthood,** including the senior years. Some people start having asthma symptoms after a bad cold or flu. Other people develop asthma after a work-related exposure. If you suspect that you have asthma, see your doctor or health care provider.

## What Can Be Done About Asthma?

- The most important thing to know about asthma is that **you can control it.** Asthma patients (or their parents) who learn what medicine to take and what triggers attacks can avoid them most of the time. That means *people with asthma can lead normal lives.*
- **Many types of medicine can treat asthma.** Keep in mind that no one medicine works best for everyone. You and your doctor have to work together to find the best medicine. Remember, it may take a while to find what medicine works best. Also, you must take the time to **find out what triggers an attack** in you or your child so that **you can prevent asthma** symptoms and attacks.

Sources: Asthma Initiative of Michigan - "Basic Asthma Information" factsheet  
Healthy Homes Partnership - "Asthma & Allergies" from [Help Yourself to a Healthy Home](#)

# Warning signs and Symptoms for Asthma

Asthma attacks or episodes hardly ever happen without warning. The warning signs for an attack are not the same for everyone. They may be mild, and may not seem to be related to asthma. Warning signs may start 24 to 48 hours before an asthma attack begins, and should be treated as early asthma symptoms.

You and your doctor or asthma counselor should include your warning signs on your Asthma Action Plan.

By knowing your warning signs and treating them quickly, you may be able to avoid an asthma attack.

Think back to your last asthma attack. Did you have any of the signs below? Check off the warning signs that have happened to you, and show them to your doctor and family.

## EARLY WARNING SIGNS

- Itchy chin
- A cough that doesn't go away, especially at night
- Itchy, scratchy, or sore throat
- Waking up at night
- Dark circles under eyes
- Runny, stuffy or congested nose
- Increased tiredness
- Peak flow readings in the "Yellow Zone"
- Mood change - grouchy or extra quiet
- Thirst
- Itchy, glassy or watery eyes
- Rubbing nose a lot
- Sneezing
- Stomach ache
- Headache
- Fever
- Feeling restless
- Change in face color—pale or flushed
- Throat clearing
- Eczema flare-up
- Other: \_\_\_\_\_

## SIGNS that an asthma attack is starting...ACT FAST!

- Cough
- Wheeze
- It feels hard to breathe out
- Chest feels "tight" or hurts
- Breathing faster than normal
- Get out of breath easy
- Drop in peak flow readings
- Other: \_\_\_\_\_

**If you experience any of the warning signs above, follow your Asthma Action Plan and contact your doctor if necessary.**

## DANGER SIGNS! Asthma is out of control....

- Bluish, gray or dusky color to lips and nail beds
- Trouble walking
- Trouble talking—can't speak in whole sentences
- Skin between ribs or above breastbone sucks in when breathing
- Fast heartbeat or pulse
- Peak flow reading in the "Red Zone"
- Nostrils flare when breathing
- Quick-relief medications do not work
- Other: \_\_\_\_\_

---

# Is your **Asthma Under Control?**

## **DO YOU OR YOUR CHILD...**

Miss school or work because of asthma?

•

Have trouble being active or exercising  
because of asthma?

•

Sometimes need to go to an urgent care facility  
or to the emergency room because of asthma?

•

Take your “quick-relief inhaler”  
**more than two times a week?**

•

Awaken at night with asthma symptoms  
**more than two times a month?**

•

Refill your “quick-relief inhaler”  
**more than two times a year?**

•

If you answered “**Yes**” to any of these questions, your  
asthma is **NOT UNDER CONTROL**. Talk to your  
doctor about your (or your child’s) asthma today!

# Asthma Medication

## The right medications can control asthma.

- Asthma medications are very safe and effective.
- Asthma medication is non-addictive.
- It is very important to use each asthma medication in the correct way.
- Some asthma medications must be taken every day in order for them to work.
- Asthma medications *do not* lose their effectiveness over time.



## There are two main kinds of asthma medications:

1. Quick relief medications
2. Long-term medications

## Quick Relief Medications

Other names for these medications include:

- Rescue medications
- Rescue inhalers
- Relievers
- Openers
- Bronchodilators

**Quick relief medications are mainly used to treat an asthma “attack”** (or episode). These types of medications usually come in the form of a spray or powder that is inhaled into the lungs through an inhaler. Quick relief medications **open airways quickly** during an asthma attack and help stop coughing, wheezing and troubled breathing; however, they work only for a short time (3 to 4 hours).

## Long-Term Medications

Other names for these medications include:

- Preventer medications
- Controller medications
- Anti-inflammatory medications
- Corticosteroid medications

**Long-term medications are inhaled steroids.** They are the major drugs used in the control of asthma. They usually come in the form of a spray or powder that is inhaled into the lungs through an inhaler, but may also come in the form of a liquid for use with a nebulizer. When taken every day, they **work continuously to reduce or prevent swelling of the airways** and help make the lungs react less strongly to irritants and triggers.

# Oral Corticosteroids

Examples: prednisone, prednisolone, dexamethasone and methylprednisolone

- Oral corticosteroids are often used with bronchodilators (or “rescue medication”) to treat moderate to severe asthma flare-ups. A doctor will usually prescribe them in “short bursts” of 5 days up to 14 days. This is the best way to reduce inflammation and get a child’s asthma back under control.
- **It is very important to finish taking the entire prescription of oral corticosteroids!** If they are used for more than a week or two, the dose should be gradually reduced so your child’s body can increase its own natural steroids again. **Follow the doctor’s instructions on how to gradually reduce dosage!**

## Do Asthma Medications Have Side Effects?

- **Quick relief medications** may have some side effects. Many people experience these common reactions to quick relief medications: shaking, faster heartbeat, nervousness and restlessness.
- **Long-term medications:**
  - There are some misconceptions about the use of inhaled and oral steroids. Some people think of them as the same drugs athletes abuse (anabolic steroids), which are drugs that cause unhealthy side effects. Inhaled or oral steroids taken for asthma control are NOT the same as steroids taken by athletes.
  - Using inhaled steroids at the dose levels that are prescribed for asthma does NOT cause weak bones, growth suppression, weight gain, or cataracts which are all associated with high doses of anabolic steroids.



- They do have some side effects that are not considered serious, which may include a hoarse voice, sore throat, or mild throat infection (thrush). These side effects can be minimized by rinsing out the mouth after every dose of inhaled steroid and by using a spacer.
- **Oral corticosteroids** are more likely to cause side effects than inhaled corticosteroids because they are carried to all parts of the body. Inhaled corticosteroids only go to the lungs. The possibility for side effects is low when a “short burst” (5-14 days) of oral steroids is used. Side effects might include increased appetite, mood changes or trouble sleeping.

## Proper Storage of Asthma Medications

- Always read the package inserts of the medication and follow the specific instructions for storage of the medication.
- Store inhalers at room temperature
- Liquid medications for the nebulizer should not be refrigerated.
- Store medications away from sunlight.
- Be careful not to leave inhalers or other asthma medication in the car. Extreme hot or cold temperatures can cause the medication to become ineffective.
- Some asthma medications come in special foil wrappers. These medications must be used only within a certain period of time once the foil pouches are opened. Also, these specially wrapped medications sometimes must be kept in their foil wrappers for storage. For foil-wrapped medications, it is important to keep track of when the foil pouch was opened.

**\* If you have questions about the storage of a specific medication, review the instructions or contact a pharmacist at your local drug store for more information.**



*Sources: "Asthma Medication", Asthma Information Handbook for Early Care and Education Providers, "Oral Corticosteroids", Palo Alto Medical Foundation website at: <http://www.pamf.org/asthma/medications/oral/corticosteroids.html>*

# Understanding Asthma Medications

## Your Asthma Control Plan is Just for You

With the right asthma control plan, most people with asthma can lead normal, active lives. The asthma control plan your doctor prescribed is just for you. Some people with asthma may have to take medicine every day. Other people with asthma may only need to take medicine as needed.

## Two Types of Medicine

There are two types of asthma medications—long-term control medicine to **prevent** asthma attacks, and quick-relief medicine to use **during** an asthma attack and when you have asthma symptoms.

### Long-term Control Medicine to Prevent Asthma

Some people with asthma will need to take medicine every day to prevent asthma attacks from starting. These may be: anti-inflammatory medicines, methylxanthines (theophylline), and long-acting beta<sub>2</sub>-agonists. It's important to take your medicines just as your doctor tells you to, even if you are not feeling symptoms.

- **Anti-inflammatory medicines** are used to prevent asthma attacks. They prevent and reduce swelling of the airways and buildup of mucus, so breathing is easier.

Some common anti-inflammatory medicines are:

- cromolyn sodium - sold under the name INTAL®
- nedocromil sodium – sold under the name TILADE®
- leukotriene modifiers - sold under the names ACCOLATE®, SINGULAIR® and ZYFLO®
- and inhaled corticosteroids – sold under the names AEROBID®, AZMACORT®, BECLOVENT®, FLOVENT®, VANCERIL®, PULMICORT TURBUHALER®, and PULMICORT RESPULSES®.

All of these medications must be taken regularly (not just during an asthma episode) for them to work well and prevent asthma episodes. Your doctor will tell you how often you need to take anti-inflammatory medicine.

**NOTE: Anti-inflammatories are not intended to be used to provide rapid relief of symptoms. These drugs are long-acting agents that cannot relieve symptoms once they have begun.**

- **Methylxanthine (theophylline)** is used to prevent asthma attacks. It helps to keep the airways relaxed and open, so breathing is easier. Some common brand names for theophylline are THEOLAIR and THEODUR®. Your doctor will tell you how often you need to take theophylline.

- **Long-acting beta<sub>2</sub>-agonists** are sometimes used to keep daily asthma symptoms under control (especially at night) and prevent asthma episodes. They relax the muscles surrounding your airways, allowing them to open more fully so you can breathe more freely. Some common brand names for long-acting beta<sub>2</sub>-agonists are SEREVENT® and FORADIL®. Your doctor will tell you how often you need to take long-acting beta<sub>2</sub>-agonists.

**NOTE: Long-acting bronchodilators should never be used to treat sudden symptoms. They cannot act fast enough to provide relief.**

### • Quick-relief Medicine to Use During an Asthma Episode

Short-acting beta<sub>2</sub>-agonists are most often used during an asthma episode. Your doctor will tell you when and how to use beta<sub>2</sub>-agonists. They quickly relax the muscles of the airways to make breathing easier. Short-acting beta<sub>2</sub>-agonists are usually inhaled and can start working in 5 to 15 minutes. Common names for short-acting beta<sub>2</sub>-agonists are:

- Albuterol (sold under the names PROVENTIL® and VENTOLIN®)
- Metaproterenol (sold under the names METAPREL® and ALUPENT®)
- Terbutaline (sold under the names BRICANYL® and BRETHAIRE®)
- Pirbuterol (sold under the name MAXAIR™ AUTOHALER™)

**NOTE: If you find that you are using a short-acting drug more than 2 or 3 times per week, this may be a sign that your asthma is not under control. You should talk with your doctor about better long-term asthma control techniques.**

- **Anticholinergic drugs**, such as ATROVENT®, may be an alternative if you cannot tolerate inhaled short-acting beta<sub>2</sub>-agonists. These drugs work by expanding your air passages and may also decrease mucus gland secretions, making it easier to breathe.

- **Oral corticosteroids**, such as Prednisone, are tablets or liquids that are swallowed (NOT inhaled) and they may be used during severe asthma attacks. Some people think that the corticosteroids used to treat asthma are the same steroids that weight lifters and other athletes use to build muscles. This is not true. The steroids used to treat asthma are completely different from the ones used to build muscle. Your doctor will tell you when and how you need to use corticosteroids.

### • Over-the-Counter Medications

**NOTE: Over-the-counter asthma medications do not contain the same ingredients as prescribed asthma medications. They have many more side effects, and may actually worsen your asthma symptoms. Tell your doctor if you use non-prescribed asthma medications for breathing trouble.**

## Taking Asthma Medications

It is important to remember which medicines to take daily, to **prevent** asthma attacks, and which to take **during** asthma attacks, when you have asthma symptoms. Your doctor will provide you with an asthma control plan that is right for you. Be sure to ask your doctor or asthma counselor any questions you have about your medications.

Some other medicines may interact with your asthma medicine, so always talk to your doctor before you take any medicines that your doctor has not prescribed. Each medicine you take may have side effects. Report any side effects to your doctor.

Asthma medicines should be taken as ordered by your doctor. Some people are afraid that they will become addicted to their asthma medicines. This is not true. Others are concerned that if medicine is taken all the time, it will no longer work. This is rare and it can be managed. Talk to your doctor if you think this is happening.

# Asthma Action Plan

An asthma action plan (also called a management plan) is a written plan that you develop with your child's doctor to help control your child's asthma.

- **Experts recommend using an asthma action plan as part of asthma treatment.** Following a written asthma action plan can help your child do normal everyday activities (such as sleeping, playing, or exercising) without having any asthma symptoms.
- **Each person's asthma is different, so each action plan will be, too.**
- **An important part of any action plan is the instructions for what needs to be done during an asthma flare-up.** If your child goes to school, this may include permission for him or her to take rescue medication at school. The action plan should also clearly tell you when to seek emergency care.
- **Many action plans use the "zone system," which is based on the red, yellow, and green colors of a traffic light.** Action plans use symptoms, peak flow readings, or both to help you figure out what zone your child is in:



- **The green zone**, or safety zone, explains how to manage your child's asthma on a daily basis, when he or she is feeling good.
- **The yellow zone**, or caution zone, explains how to look for signs that your child's asthma is getting worse. It also tells you which medications to add to bring your child's asthma back under control.
- **The red zone**, or danger zone, explains what to do when a flare-up or attack is severe.

**The color system makes it easy for kids and parents to quickly figure out which zone the child is in after finding out their peak flow meter reading.**

Your child's "personal best" peak flow reading is an important measurement to write on the plan so that you'll have something to compare the new numbers to.

**Asthma action plans may also include:**

- Emergency phone numbers and locations of emergency care facilities
- A list of triggers that bother your child and how to avoid those triggers
- If your child should take medicine before exercising
- A list of early flare-up symptoms to watch for and what to do when they happen
- The names and dosages of all your child's medications and when and how they should be used

**It's important to have all of this information in one place so that you - as well as your child's teachers, relatives, and caregivers - can do the right thing if they have an asthma flare up.**

- **Your child's action plan should also go everywhere your child goes. Keep a copy at home in a well-known spot and give one to the school nurse, teachers, or anyone else who cares for your child.** Offer to discuss the plan, so your child's caregivers will be sure to follow the plan exactly.
- **You should review the plan with your child's doctor at least once a year or more frequently if symptoms seem to happen more often than they used to.** Your child's plan may need changes as the dosages for his or her medicines change. The plan might also need to be updated if your child doesn't seem to need his or her rescue medications as often. Any time your child's action plan is changed, you should give new copies to anyone who has one.



**\*If your child does NOT have an Asthma Action Plan, take the following page with you during your next doctor's visit and ask your doctor to help you make an Asthma Action Plan for your child. It could save their life!**

# Asthma Action Plan

Name	Date of Birth	Effective Date / / to / /
Doctor	Parent/Guardian	
Doctor's Office Phone Number: Day	Parent's Phone	
Emergency Contact After Parent	Contact Phone	
Student is able to self medicate <input type="checkbox"/> Yes <input type="checkbox"/> No		

The colors of a traffic light will help you use your asthma medicines. Also pay attention to symptoms

	<b>Green means GO ZONE</b> Use preventive medicine _____	-
	<b>Yellow means CAUTION ZONE!</b> Add prescribed yellow zone medicine _____	-
	<b>Red means DANGER ZONE!</b> Get help from a doctor _____	-

## GO (GREEN)

Use these medicines every day.

You have **ALL** of these:

- Breathing is good
- No cough or wheeze
- Sleep through the night
- Can work or play



Peak flow above \_\_\_\_\_

Medicine	How Much to Take	When to Take It

For asthma with exercise, take:

--	--	--

## CAUTION (YELLOW)

Continue with green zone medicine and **ADD:**

You have **ANY** of these:

- First sign of a cold
- Exposure to known trigger
- Cough
- Mild wheeze
- Tight chest
- Coughing at night



And/or Peak flow from \_\_\_\_\_

to \_\_\_\_\_

Medicine	How Much to Take	When to Take It
<b>First</b> →		
<b>Next</b> →		

➔ **IF QUICK RELIEVER/YELLOW ZONE MEDICINE IS NEEDED MORE THAN 2-3 TIMES A WEEK, THEN CALL YOUR DOCTOR.**

## DANGER (RED)

Take these medicines and call your doctor.

Your asthma is getting worse fast:

- Medicine is not helping within 15-20 minutes
- Breathing is hard and fast
- Nose opens wide
- Ribs show
- Lips and/or fingernails blue
- Trouble walking and talking



And/or Peak flow below \_\_\_\_\_

Medicine	How Much to Take	When to Take It

**Get help from a doctor now! Do not be afraid of causing a fuss. Your doctor will want to see you right away. It is IMPORTANT! If you cannot contact your doctor, go directly to the emergency room. DO NOT WAIT. Make an appointment with your primary care provider within two days of an ER visit or hospitalization.**

Check all items that trigger your asthma and things that could make your asthma worse:

- |  |   |                                      |
|--|---|--------------------------------------|
| <input type="checkbox"/> Chalk dust                                | <input type="checkbox"/> Ozone alert days                   | <input type="checkbox"/> Foods _____ |
| <input type="checkbox"/> Cigarette Smoke and second hand smoke     | <input type="checkbox"/> Pests-rodents and cockroaches      | _____                                |
| <input type="checkbox"/> Colds/Flu                                 | <input type="checkbox"/> Pets-animal dander                 | _____                                |
| <input type="checkbox"/> Dust mites, dust, stuffed animals, carpet | <input type="checkbox"/> Plants, flowers, cut grass, pollen | _____                                |
| <input type="checkbox"/> Exercise                                  | <input type="checkbox"/> Strong odors, perfumes,            | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Sudden temperature change                 | <input type="checkbox"/> cleaning products                  | _____                                |
| <input type="checkbox"/> Mold                                      | <input type="checkbox"/> Wood Smoke                         | _____                                |

# Asthma Triggers



**FOR HEALTHY LUNGS**  
[www.GetAsthmaHelp.org](http://www.GetAsthmaHelp.org)

Doctor's Signature/Stamp





## Child Care Asthma / Allergy Action Card

and

## Asthma Education Checklist

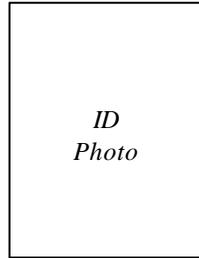
Please feel free to tear out the following pages (Child Care Asthma/Allergy Action Card, and Asthma Education Checklist) and fill them out.

- When you give a copy of the Asthma Action Plan to your child's school, also give them the Child Care Asthma/Allergy Action Card to keep on file so that they have even more information about your child's asthma.
- Use the Asthma Education Checklist to help you ask your child's doctor the right questions during your next visit.





**CHILD CARE ASTHMA/ALLERGY  
ACTION CARD**



Name: \_\_\_\_\_  
 Grade: \_\_\_\_\_ DOB: \_\_\_\_\_  
 Parent/Guardian Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone (H): \_\_\_\_\_ (W): \_\_\_\_\_  
 Parent/Guardian Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone (H): \_\_\_\_\_ (W): \_\_\_\_\_  
 Other Contact Information: \_\_\_\_\_  
 Emergency Phone Contact #1 \_\_\_\_\_  
 Name  
 Relationship \_\_\_\_\_ Phone \_\_\_\_\_  
 Emergency Phone Contact #2 \_\_\_\_\_  
 Name  
 Relationship \_\_\_\_\_ Phone \_\_\_\_\_  
 Physician Child Sees for Asthma/Allergies: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Other Physician: \_\_\_\_\_  
 Phone: \_\_\_\_\_

**DAILY ASTHMA/ALLERGY MANAGEMENT PLAN**

• **Identify the things that start an asthma/allergy episode**

(Check each that applies to the child)

- Animals    — Bee/Insect Sting    — Chalk Dust    — Change in Temperature
- Dust Mites    — Exercise    — Latex    — Molds
- Pollens    — Respiratory Infections    — Smoke    — Strong Odors
- Food: \_\_\_\_\_
- Other: \_\_\_\_\_

Comments: \_\_\_\_\_  
 \_\_\_\_\_

• **Peak Flow Monitoring** (for children over 4 years old)

Personal Best Peak Flow reading: \_\_\_\_\_

Monitoring Times: \_\_\_\_\_

• **Control of Child Care Environment** (List any environmental control measures, pre-mediations, and/or dietary restrictions that the child needs to prevent an asthma/allergy episode.) \_\_\_\_\_  
 \_\_\_\_\_

• **Daily Medication Plan for Asthma/Allergy**

	Name	Amount	When to Use
1			
2			
3			
4			

**OUTSIDE ACTIVITY AND FIELD TRIPS** The following medications must accompany child when participating in outside activity and field trips:

	Name	Amount	When to Use
1			
2			
3			

## ASTHMA EMERGENCY PLAN

Emergency action is necessary when the child has symptoms such as \_\_\_\_\_

or has a peak flow reading at or below \_\_\_\_\_

### • Steps to take during an asthma episode:

1. Check peak flow reading (if child uses a peak flow meter).
2. Give medications as listed below.
3. Check for decreased symptoms and/or increased peak flow reading.
4. Allow child to stay at child care setting if: \_\_\_\_\_  
\_\_\_\_\_
5. Contact parent/guardian
6. Seek emergency medical care if the child has any one of the following:

→ No improvement minutes after initial treatment with medication.  
 → Peak flow at or below \_\_\_\_\_.  
 → Hard time breathing with:  
     ➢ Chest and neck pulled in with breathing.  
     ➢ Child hunched over.  
     ➢ Child struggling to breathe.  
 → Trouble walking or talking.  
 → Stops playing and cannot start activity again.  
 → Lips or fingernails are gray or blue.

***IF THIS  
HAPPENS, GET  
EMERGENCY  
HELP NOW!***

→ **Mouth/Throat:** itching & swelling of lips, tongue, mouth, throat; throat tightness; hoarseness; cough  
 → **Skin:** hives; itchy rash; swelling  
 → **Gut:** nausea; abdominal cramps; vomiting; diarrhea  
 → **Lung\*:** shortness of breath; coughing; wheezing  
 → **Heart:** pulse is hard to detect; "passing out"  
 \*If child has asthma, asthma symptoms may also need to be treated.

### • Emergency Asthma Medications:

	Name	Amount	When to Use
1			
2			
3			
4			

### • Special Instructions:

\_\_\_\_\_  
 \_\_\_\_\_

## ALLERGY EMERGENCY PLAN

• **Child is allergic to:** \_\_\_\_\_

### • Steps to take during an allergy episode:

1. If the following symptoms occur, give the medications listed below.
2. Contact Emergency help and request epinephrine.
3. Contact the child's parent/guardian.

### • Symptoms of an allergic reaction include :

(Physician, please circle those that apply)

### • Emergency Allergy Medications:

	Name	Amount	When to Use
1			
2			
3			
4			

### • Special Instructions:

\_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_  
 Physician's Signature

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 Parent/Guardian's Signature

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 Child Care Provider's Signature

\_\_\_\_\_  
 Date

# Asthma Education Checklist

This form is to help you and your doctor talk about asthma. Please fill it out and hand it to your doctor. Thank you.

Patient's Name: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

## I. What questions do you have about asthma? Please check all that apply.

- What is asthma?
- What causes asthma?
- What triggers an asthma attack?
- How do the following affect asthma? Please check those you have questions about.
  - Allergies (pollens, feathers, mold, animals, food, dust)     Smoking
  - Changes in weather         Sports and exercise         Sleeping
  - Stress and excitement     Illness (cold, flu)         Paints and cleaners
- Do I/my child need to limit exercise and sports because of asthma?
- What changes can I make at home to help my/my child's asthma?
- What are the warning signs of an asthma attack?
- How do I know when to go to the emergency room?
- What medications are there to treat my/my child's asthma?
- How and when should I/my child take asthma medication?
- What are the side effects of my/my child's medication?
- What new treatments are available for asthma?
- How is a peak flow meter used?
- How often should I/my child come in for asthma check-ups?
- What should I tell my/my child's school/employer about asthma?
- What can I do to better manage my/my child's asthma?
- Will I/my child always have asthma?
- Where can I get information about asthma?
- Other: \_\_\_\_\_?

## 2. What ways do you learn best? Please check all that apply.

- One-on-one questions/answers
- Resource/lending library
- Video
- Telephone/hotline
- Internet
- Computer programs
- Written materials (pamphlets, books)
- Workshops/presentations
- Support groups
- Other: \_\_\_\_\_

What additional questions or concerns do you have about your asthma? (Please use other side if needed).



# How to Use your Metered-Dose Inhaler the Right Way



Using a metered-dose inhaler is a good way to take asthma medicines. There are few side effects because the medicine goes right to the airways inside the lungs.

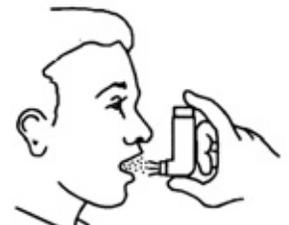
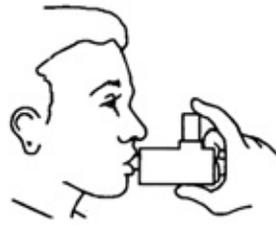
A spacer or valved-holding chamber attached to the inhaler can help make your inhaler easier to use and more effective. For patients taking inhaled steroids, a valved-holding chamber or spacer may help prevent irritation to the mouth.

For the next 2 weeks, read these steps aloud as you do them or ask someone to read them to you. Ask your doctor or asthma counselor to check how well you are using your inhaler.

Use your inhaler in one of the two ways pictured to the right (A or B).

**A. Preferred:** Use a spacer/holding chamber. These come in many shapes and can be useful to any patient.

**B.** Hold inhaler 1 to 2 inches in front of your mouth (about the width of two fingers).



## STEPS FOR USING YOUR INHALER

### Getting ready

1. Take off the cap and shake the inhaler
2. Breathe out all the way
3. Hold your inhaler the way your doctor or asthma counselor said (A or B)

### Breathe in slowly

4. As you start breathing in slowly through your mouth, press down on the inhaler one time. If you are using a spacer or valved-holding chamber, first press down on the inhaler. Within 5 seconds, begin to breathe in slowly.
5. Keep breathing in slowly, as deeply as you can.

### Hold your breath

6. Hold your breath as you count to 10 slowly, if you can.
7. For inhaled quick-relief medicine (beta<sub>2</sub>-agonists), wait about 1 minute between puffs. There is no need to wait between puffs for other medicines.

## Clean Your Inhaler as Needed

The inhaler should be cleaned often to prevent buildup that will clog the inhaler.

1. Once a day, clean the inhaler and cap by rinsing them in warm running water. Let them dry before you use it again.
2. Twice a week wash the plastic mouthpiece with mild dishwashing soap and warm water. Rinse and dry it well before putting it back.

## Know When to Replace Your Inhaler

If the canister is new, it is full. The number of puffs a canister contains is listed on the label. Do **NOT** put your canister in water to see if it is empty. This does not work.

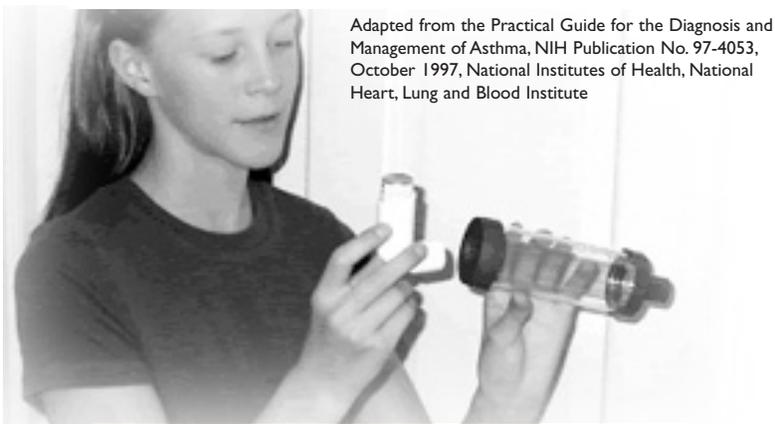
For a medicine you take each day: take the number of puffs in the canister when it is full, and divide it by the number of puffs you take every day. This will tell you how many days your inhaler will last. For example:

Your inhaler canister has 200 puffs in it, you are told to take 8 puffs total every day.

$$8 \text{ puffs per day } \overline{) 200 \text{ puffs in canister}} \quad \begin{array}{r} 25 \text{ days} \\ \hline \end{array}$$

So this canister will last 25 days. If you started using this inhaler on May 1, replace it on or before May 25. You can write the date on your canister.

**For quick-relief medicine**  
take as needed and count each puff.



Adapted from the Practical Guide for the Diagnosis and Management of Asthma, NIH Publication No. 97-4053, October 1997, National Institutes of Health, National Heart, Lung and Blood Institute

# How to Use a Diskus<sup>®</sup> Dry Powder Inhaler

Start by taking the Diskus<sup>®</sup> out of the box and foil and writing the “Pouch opened” and “Use by” dates on the label of the inhaler. The “Use by” date is one month from date of opening.

## 1. OPEN

When the inhaler is removed from the box, it will be “closed.” To open it, hold the outer case in one hand and put the thumb of your other hand on the thumb grip. Push your thumb away from you as far as it will go.

## 2. SLIDE

Hold the inhaler with the mouthpiece facing you. Slide the lever away from you as far as it will go until you hear and/or feel a click. The inhaler is now ready to use.

## 3. INHALE

- Hold the inhaler away from your mouth. Breathe out as far as is comfortable. Never blow into your Diskus<sup>®</sup>.
- Put the mouthpiece to your lips. Breathe in steadily and deeply—through the inhaler, not through your nose.
- Remove the inhaler from your mouth.
- Hold your breath for about ten seconds, or for as long as is comfortable.
- Breathe out slowly.

## 4. CHECK the dose indicator

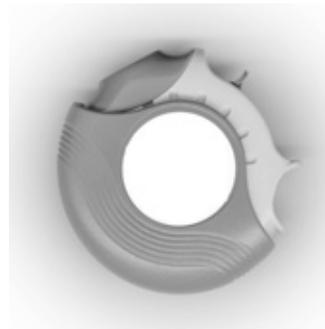
The dose indicator on top of the inhaler tells you how many doses are left.

## 5. CLOSE

To close the inhaler, put your thumb in the thumbgrip, and slide the thumbgrip back towards you, as far as it will go. When you close the inhaler, it clicks shut. The lever automatically goes back to its starting position and is reset. It is now ready to be used again.

## 6. STORE

Store your Diskus<sup>®</sup> at room temperature, 68° to 77° F, in a dry place away from direct heat or sunlight. Keep out of reach of children. The inhaler should be thrown away one month after it is taken from the foil pouch, or after every medication blister has been used (when the dose indicator reads “0”), whichever comes first.



### Diskus<sup>®</sup> tips:

- Never breathe out into the inhaler.
- Never try to take the inhaler apart.
- Always use the inhaler in a level, horizontal position.
- Never wash the mouthpiece or any part of the inhaler—keep it dry.
- Always store the Diskus<sup>®</sup> in a dry place.



# All About Nebulizers

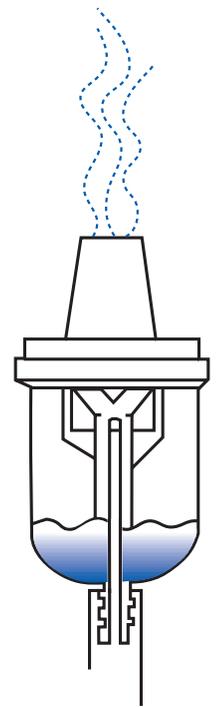
A nebulizer is a compressed air machine that turns liquid asthma medicine into a fine mist you can easily breathe. Nebulizers are good for young children, people who have trouble using metered dose inhalers, and people who have severe asthma. Nebulizers come in many forms. Your nebulizer may not look like the one pictured here, but they all work in about the same way.

## HOW TO USE A NEBULIZER

Read the instructions that came with your nebulizer since there are many types of nebulizers available.

### GENERAL INSTRUCTIONS

1. Measure the correct amount of normal saline solution using a clean eyedropper. Put it into the plastic attachment cup. If your medicine is premixed, do not add normal saline. Add it to the cup, then go to step 3.
2. Measure the correct amount of medicine using a clean eyedropper. Put it into the cup with the saline solution.
3. Fasten the mouthpiece to the T-shaped part of the nebulizer. Then fasten this unit to the cup, or fasten the mask to the cup. For a child over the age of two, use a mouthpiece unit because it will give more medicine than a mask.
4. Put the mouthpiece in your mouth and seal your lips tightly around it, or place the mask on your face.
5. Make sure the air tubing has been connected to the machine and the nebulizer. Turn on the machine.
6. Take slow, deep breaths in through your mouth.
7. Hold each breath 1-2 seconds before breathing out.
8. Continue until there is no more medicine in the cup (about 10 minutes).
9. Store the medicine as directed after each use.
10. Clean the nebulizer after each use.



## CLEANING A NEBULIZER

Regularly cleaning the nebulizer is important because a dirty nebulizer may cause an infection. A good cleaning routine also keeps the nebulizer from clogging up and helps it last longer.

### After each use:

1. Remove the mask or mouthpiece and T-shaped part from the cup. Rinse the mask or mouthpiece and T-shaped part in warm running water for 30 seconds.
  - If possible, use distilled or sterile water for rinsing.
  - The tubing should not be washed or rinsed.
2. Rinse the eyedropper in warm running water for 30 seconds.
3. After rinsing, shake off excess water. Air-dry pieces on a clean cloth or paper towel.
4. Put the mask or mouthpiece and T-shaped part, cup, and tubing back together and connect the device to the machine. Run the machine for 10-20 seconds to dry the inside of the nebulizer.
5. Disconnect the tubing from the machine. Store the parts in a zip-lock bag.

### Once every day when used:

1. Follow steps 1 through 5 above using mild dishwashing soap to clean the parts.
2. Be sure to dry all parts completely.

### Once every week when used:

1. After washing with mild dishwashing soap, soak the parts in a solution made of one part distilled white vinegar and two parts distilled water for 30 minutes.
2. Throw out the vinegar water solution after use. Do not reuse it.

**Never put the compressed air machine in water. Clean the surface of the machine with a damp cloth as needed.**

Adapted from Nebulizers Information Sheet, Astra Zeneca



# How to Use Your Peak Flow Meter

A peak flow meter helps you check how well your asthma is controlled. Peak flow meters are most helpful for people with moderate or severe asthma.

## This guide will tell you:

- how to find your personal best peak flow number
- how to use your personal best number to set your peak flow zones
- how to take your peak flow
- when to take your peak flow to check your asthma each day

## STARTING OUT

### Find Your Personal Best Peak Flow Number

It is important to find out your personal best peak flow number. Each person's asthma is different, so your personal best peak flow number may be different from another person's personal best number.

To find your personal best peak flow number, take your peak flow each day for two to three weeks. Your asthma should be under good control during this time. Take your peak flow as close to the times listed below as you can. (These times for taking your peak flow are **only** for finding your personal best peak flow. To check your asthma, each day you should take your peak flow in the morning.)

- Between noon and 2:00 p.m. each day.
- Each time you take your quick-relief medicine to relieve symptoms. Measure your peak flow **after** you take your medicine.
- Any other time your doctor or asthma counselor suggests.



Write down the number you get for each peak flow reading. The highest peak flow number you had during the two to three weeks is your personal best. Your personal best can change over time. Ask your doctor when to check for a new personal best.

## Your Peak Flow Zones

Your peak flow zones are based on your personal best peak flow number. The zones will help you check your asthma and take the right actions to keep it controlled. The colors used with each zone come from the traffic light.

### GREEN ZONE

(80-100 percent of your personal best) signals good control. Take your usual daily long-term-control medicines, if you take any. Keep taking these medicines even when you are in the yellow or red zones.

### YELLOW ZONE

(50-79 percent of your personal best) signals caution: your asthma is getting worse. Add quick relief medicines. You might need to increase other asthma medicines as directed by your doctor.

### RED ZONE

(below 50 percent of your personal best) signals medical alert! Add or increase quick-relief medicines and call your doctor now.

Ask your doctor to write an Asthma Action Plan for you that tells you:

- The peak flow numbers for your green, yellow, and red zones. Mark the zones on your peak flow meter with colored tape or a marker.
- The medicines you should take while in each peak flow zone.

## How To Take Your Peak Flow

1. Move the marker to the bottom of the numbered scale (zero).
2. Stand up or sit up straight.
3. Take a deep breath. Fill your lungs all the way.
4. Hold your breath while you place the mouthpiece in your mouth, between your teeth. Close your lips around it. **DO NOT** put your tongue inside the hole.



5. Blow out as hard and fast as you can. Your peak flow meter will measure how fast you can blow out air.

6. Write down the number you get. But if you cough or make a mistake, do not write down the number. Do it over again.

7. Repeat steps one through six two more times. Write down the highest of the three numbers. This is your peak flow number. If blowing out hard causes coughing and smaller numbers each time, write down the first number and make a note in your diary about what happened and why you wrote this number down.
8. Check to see which peak flow zone your peak flow number is in. Do the actions your doctor told you to do while in that zone.

Your doctor may ask you to write down your peak flow numbers each day. You can do this on a calendar or other paper. This will help you and your doctor see how your asthma is doing over time.

## Checking Your Asthma: When To Use Your Peak Flow Meter

- Every morning when you wake up, before you take medicine. Make this part of your routine.
- When you are having asthma symptoms or an attack, and after you take medicine for the attack. This can tell you how bad your asthma attack is and whether your medicine is working.
- Any other time your doctor suggests.

If you use more than one peak flow meter (such as at home and at school), be sure that both meters are the same brand.

## Bring to Each of Your Doctor's Visits

- Your peak flow meter.
- Your peak flow numbers if you have written them down each day.

Also, ask your doctor or asthma coordinator to check how you use your peak flow meter – just to be sure that you are doing it right.

Adapted from: Facts About Controlling Asthma, National Asthma Education and Prevention Program, National Heart, Lung and Blood Institute, National Institutes of Health Publication No. 97-2339



# Asthma Symptoms and Peak Flow Diary

\_\_\_\_\_ My predicted peak flow

\_\_\_\_\_ My personal best peak flow

\_\_\_\_\_ My Green (Good Control) Zone  
80-100% of personal best

\_\_\_\_\_ My Yellow (Caution) Zone  
50-79% of personal best

\_\_\_\_\_ My Red (Danger) Zone  
below 50% of personal best

Date:														
	a.m.	p.m.												
Peak Flow Reading														
No Asthma Symptoms														
Mild Asthma Symptoms														
Moderate Asthma Symptoms														
Serious Asthma Symptoms														
Medicine Used to Stop Symptoms														
Urgent Visit to the Doctor														

## DIRECTIONS

1. Take your peak flow reading every morning (a.m.) when you wake up. If the morning reading is less than 80% of your personal best, you should measure your peak flow more than once a day to check your progress. Try to take your peak flow readings at the same time each day. If you take an inhaled beta<sub>2</sub>-agonist medicine, take your peak flow reading **before** taking that medicine. Write down the highest reading of three tries in the box that says "peak flow reading."
2. Look at the box at the top of this sheet to see whether your number is in the Green, Yellow, or Red Zone.
3. In the space below the date and time, put an "X" in the box that matches the symptoms you have when you record your peak flow reading; see description of symptom categories on the right.
4. Look at your Asthma Action Plan for what to do when your number is in one of the zones or when you have asthma symptoms.
5. Put an "X" in the box beside "medicine used to stop symptoms" if you took extra asthma medicine to stop your symptoms.
6. If you made any visit to your doctor's office, emergency department, or hospital for treatment of an asthma episode, put an "X" in the box marked "urgent visit to the doctor." Tell your doctor if you went to the emergency department or hospital.

**No symptoms** = No symptoms (wheeze, cough, chest tightness, or shortness of breath) even with normal physical activity.

**Mild symptoms** = Symptoms during physical activity, but none at rest. It does not keep you from sleeping or being active.

**Moderate symptoms** = Symptoms while at rest; symptoms may keep you from sleeping or being active.

**Severe symptoms** = Severe symptoms at rest (wheeze may be absent); symptoms cause problems walking or talking; muscles in neck or between ribs are pulled in when breathing

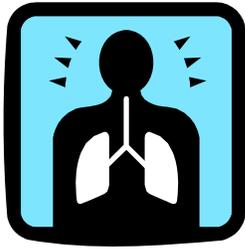
Nurses: Partners in Asthma Care, National Asthma Education and Prevention Program, National Heart, Lung, and Blood Institute. NIH Publication No. 95-3308. 1995. revised 1997.



# Pulmonary Function Tests (PFTs)

## What is a PFT?

A pulmonary function test (PFT) is a series of different breathing tests led by a trained pulmonary function technologist, usually done at a hospital or clinic. There are national standards and guidelines that help make sure



that everyone does and interprets pulmonary function tests in the same way. To learn about your lung health, your doctor may want you to have several pulmonary function tests done including spirometry, lung volumes, diffusing capacity, and arterial blood gases. Most of these breathing tests are done by blowing into a tube while sitting in a chair.

**Before you have PFTs, you *may* get specific instructions on how to get ready for the tests, such as:**

- Wear loose clothing which will not restrict your ability to breathe deeply.
- Avoid large meals prior to your test time which will make it more comfortable for you to breathe deeply.
- Don't use your inhalers for (up to) 4 days before the test, if possible.

**At your appointment:**

- The equipment will be set up for you after being cleaned and disinfected, including a clean mouthpiece.
- The technologist will tell you what to do before each test. Listen carefully and follow the coaching from the technologist. If you don't understand what to do, ask him or her to tell you in a different way.

## Spirometry

Spirometry is a painless study of air volume and flow rate within the lungs. It is a very common test to help you and your doctor understand your asthma better, and check how it is improving with treatment. It may be recommended that you have spirometry done at the beginning of your care, again as treatments are started, and at least every year for continuing care.



- Spirometry measures how much air you can **inhale** (breathe in) and **exhale** (breathe out) as well as how fast you can exhale. For this test, you may be asked to breathe quickly, forcefully, or slowly. The test is always repeated at least three times and often more to be sure that the test is reliable.
- **Forced vital capacity (FVC)** – this test measures the amount of air exhaled from full inspiration to full expiration (empty). You will be asked to breathe in as deeply as you can and immediately blow out as hard and fast as you can until you feel you cannot blow out any longer. With the help of a computer, the FVC effort will make a graph called a “flow volume curve” or “flow volume loop.” This graph will look different for everyone. The measurements taken from this test are key in helping your doctor diagnose asthma.
- Your doctor may order a bronchodilator to be given as part of spirometry. A **bronchodilator** is an inhaled medication that may dilate, or open up, your airways. Spirometry is often done before and after the bronchodilator to show any response to the medicine. Your response may help your doctor find out what kind and how much, if any, airway disease you may have, and whether you need medication to improve your breathing.

## Lung Volumes

The doctor may also order tests that measure your lung volumes. There are eight separate volumes of air that can be measured during the lung volumes test. The three most commonly used ways of measuring lung volumes are:

- **Body Box** – also known as plethysmography, is done while sitting in an enclosed clear chamber while asked to perform a series of very small panting breaths. This is the most accurate way to measure lung volumes.
- **Nitrogen Washout** – done by normal breathing of pure oxygen while exhaled gas is collected and analyzed
- **Helium dilution** – done by normal breathing of gas mixture of helium and oxygen

People with asthma may show changes in their lung volumes. This can help the doctor diagnose and treat asthma.

# Diffusing Capacity

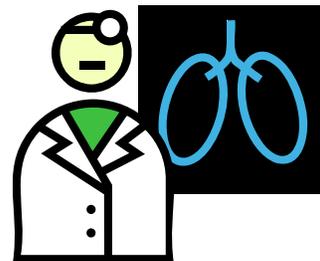
Diffusing capacity of the lungs measures how well gases such as oxygen move from the lungs into the blood. There are several ways to measure this, but the most common way is the **ten second single breath-hold** technique. Results of this test can tell your doctor about the amount of damage or abnormality that is present where the air and the blood meet. While this test does not specifically test for asthma, it may help your doctor to diagnose you correctly.

# Arterial Blood Gases (ABGs)

This is a **blood test** that *may* be ordered with your PFTs to give your doctor even more information about your lung health. ABGs can show how well your lungs are getting oxygen into your blood and carbon dioxide out of your blood. For this test, a sample of blood is drawn from your artery, from your wrist or elbow area.

## What can we learn from PFTs?

- A doctor will look over the results of your PFTs and see how you are doing by comparing them to predicted values normal for a person your age, height, weight, and sex. Height is important because taller people may have bigger lungs. There are many things that can change the results in PFTs. These include not only the health of your lungs but also the skill of the person testing you, your effort, differences in equipment, and differences in hospital or clinic procedures. A medical diagnosis is not likely to be made from PFTs alone.
- A PFT may be repeated as often as your doctor thinks it is needed. PFTs can check for change in lung health over time. Contact your insurance company to see how often PFTs are covered for you.





# Asthma Triggers

**Asthma triggers** are allergens and irritants that aggravate the lungs and can cause asthma attacks. One of the best ways to prevent an asthma attack is to help a child avoid things that trigger his/her asthma.

**There are many different triggers**, and not every child has the same ones. For some children, a single trigger can set off an asthma attack. For others, several triggers can add up to cause an asthma attack.

It is very important to **find out what triggers your child's asthma** so that you can reduce or remove as many asthma triggers as you can from your home.

**Some common indoor triggers are listed below. Which ones do you have in your home?**

- Tobacco Smoke
- Dust Mites
- Pets
- Pests (mice, cockroaches, etc.)
- Mold
- Air Scents (air fresheners, candles, etc.)
- Pesticides
- Combustion Sources (wood-burning stoves, fireplaces, kerosene heaters, etc.)
- Cleaning Products

**Some other triggers are listed below. Which ones make your child's asthma worse?**

- Exercise
- Food Allergies
- Stress or Excitement
- Seasonal Allergies (pollen, mold, etc.)
- Cold Air (Winter) or Hot, Humid Air (Summer)
- Plants
- Air Pollution (car exhaust, dust particles, etc.)
- Colds, Viruses, and Infections



# Secondhand Tobacco Smoke and Children's Health



## What Is Secondhand Smoke?

In January 2006, the California Air Resources Board added secondhand tobacco smoke to its list of "toxic air contaminants." The Board based its decision on scientific studies that link secondhand smoke to heart disease, asthma, other respiratory diseases, and cancer among nonsmokers.

Secondhand smoke is also known as environmental tobacco smoke (ETS), passive smoke, or involuntary smoke. It is released into the air when tobacco products burn or when smokers exhale. Cigarettes, cigars, and pipes all can produce toxic secondhand smoke. This information summarizes some of the findings from a recent comprehensive review of hundreds of studies of secondhand smoke by the California EPA's Office of Environmental Health Hazard Assessment (OEHHA).

## Is Secondhand Smoke Dangerous? Yes!

This smoke is a mixture of gases and fine particles containing more than 4,000 chemicals. Many of these can cause harmful health effects. For example, secondhand smoke contains over 50 chemicals known to cause cancer, such as benzene, chromium, and formaldehyde. Other toxic chemicals in secondhand smoke include cyanide and carbon monoxide. Children may be exposed to secondhand smoke in homes and daycare, at outdoor smoking areas, in cars, and anywhere that people are smoking.

CHEMICALS FOUND IN SECONDHAND SMOKE	COMMON USES
ARSENIC	RAT POISON
BENZENE	FUEL
ACETONE	NAIL POLISH
METHANOL	ANTIFREEZE
NICOTINE	INSECTICIDE
AMMONIA	WINDOW/TOLIET CLEANER
CARBON MONOXIDE	AUTO EXHAUST
CYANIDE	GAS CHAMBER
FORMALDEHYDE	PRESERVES TISSUE
CADMIUM	BATTERIES
BUTANE	LIGHTER FLUID

## Is Secondhand Smoke More Harmful to Children? Yes!

Children are more likely than adults to suffer health effects from secondhand smoke because:

- Children breathe in more air than adults for their size and weight.
- Children's bodies continue to grow and develop as they get older and taller. During this time of growth, they can be more sensitive to the effects of secondhand smoke. It is especially dangerous to their developing lungs and immune systems.

### Lung Development

The lungs continue to develop throughout childhood. There is some evidence that exposure to secondhand smoke during childhood interferes with lung development. Damage to the lungs during this period can affect lung function (how well the lungs work) for the rest of a child's life.

### Chronic Respiratory Symptoms

Many of the chemicals in secondhand smoke are powerful respiratory irritants for both children and adults. Secondhand smoke can cause chronic symptoms like cough, phlegm, and wheezing, especially in infants and younger children. Children exposed to secondhand smoke have more visits to doctors for these complaints.

## Asthma

Asthma is a chronic health condition whose symptoms include coughing, wheezing, and shortness of breath. Asthma has become very common in children. In the U.S., it is the number one reason children are admitted to hospitals.

Secondhand smoke has been shown to cause new cases of asthma in children who did not have asthma before. It also has been shown to make children's existing asthma worse. Children with asthma who are exposed to secondhand smoke have more severe symptoms, use more medication, and miss more days of school than those not exposed.

Although many causes of asthma are not fully understood, secondhand smoke is one important cause and it is *avoidable*. Each year in California, secondhand smoke may cause up to 31,000 asthma attacks in children.

### COMMON WARNING SIGNS OF ASTHMA

Coughing	Tired
Wheezing	Weak
Tight Chest	Dizzy
Crankiness	Feeling sick
Restless	Snoring
Not sleeping well	Congested nose
Pale	Watery eyes
Difficulty breathing	Dry mouth
Stomach ache/nausea	Clammy skin
Loss of appetite	Headache
Raised shoulders	Other: _____

### Immune System Damage & Infections

Infants and young children who are exposed to secondhand smoke are at higher risk for infections. This may be the result of damage to their developing immune systems.

Secondhand smoke has been shown to cause *lower respiratory infections* in children, including pneumonia and bronchitis. These infections can be especially severe and even life-threatening in children who already have chronic illnesses such as asthma or cystic fibrosis. Secondhand smoke also has been shown to cause *ear infections* in children. Ear infections are more frequent and last longer in children exposed to secondhand smoke.

Each year in California, children's exposure to secondhand smoke results in more than 50,000 doctor visits for ear infections. Surgery may be necessary if children do not respond to other medical treatments. Ear infections are also the most common cause of hearing loss in children.

### Sudden Infant Death Syndrome (SIDS)

Sudden Infant Death Syndrome (SIDS), also called crib death, is the leading cause of death in children aged one month to one year. The causes of SIDS are not completely understood. However, it is known that the risk of SIDS is higher in infants exposed to secondhand smoke. Statewide, as many as 21 children may die each year from SIDS that is related to secondhand smoke.

### Are Developing Babies at Risk During Pregnancy? Yes!

Secondhand smoke can affect a pregnant woman's developing baby. Babies born to mothers who are exposed to secondhand smoke tend to weigh less than babies not exposed. They are also more likely to be born early (preterm). Each year in California, secondhand smoke is estimated to cause as many as 4,700 early births.

### Recipe for Healthier Lungs

The following foods contain vitamin C and vitamin A (Beta-Carotene) and minerals. These protect the lungs of children and adults.

#### VITAMIN C

oranges	cabbage
strawberries	parsley
lemons, limes	tomatoes
grapefruit	chili peppers
melon	kiwis

#### VITAMIN A

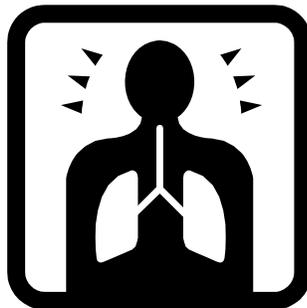
parsley	melons
tomatoes	spinach
cilantro	apricots
carrots	pumpkin
squash	chili peppers
sweet potatoes	

## Can Secondhand Smoke Increase the Risk of Cancer? Yes!

Secondhand smoke has been linked to lung cancer, nasal sinus cancer, and breast cancer. Cancer-causing chemicals may increase lifetime risk of cancer when exposure occurs during childhood, more so than in adulthood. About 3000 people die each year in the U.S. from lung cancer caused by secondhand smoke.

### MORE INFORMATION:

- Smokers Helpline (1-800-NO-BUTTS)  
[www.californiasmokershelpline.org/](http://www.californiasmokershelpline.org/)
- U.S. Centers for Disease Control  
[www.cdc.gov/tobacco/ets.htm](http://www.cdc.gov/tobacco/ets.htm)
- U.S. EPA – What to do about secondhand smoke  
[www.epa.gov/smokefree/pubs/etsbro.html](http://www.epa.gov/smokefree/pubs/etsbro.html)
- OEHHA Report:  
[www.oehha.ca.gov/air/environmental\\_tobacco/](http://www.oehha.ca.gov/air/environmental_tobacco/)
- California Clean Air Project (CCAP)  
<http://ccap.etr.org>
- Breathe California of Sacramento – Emigrant Trails  
[www.sacbreathe.org](http://www.sacbreathe.org)



## Is Secondhand Smoke Related to Breast Cancer? Yes!

Breast cancer is a major cause of disease and death in women. Although a family history of breast cancer has been identified as a risk factor for breast cancer, the causes of the disease are not completely understood.

However, recent studies have found that secondhand smoke is one cause of breast cancer in younger women, before the age of menopause (below age 50). Related studies have shown that the breast may be especially sensitive to toxic chemicals during times of development and change, such as puberty.

Therefore, it is particularly important for young women to avoid exposure to secondhand smoke when their breasts are developing, since chemicals in the smoke may cause changes that ultimately result in breast cancer.

Breast cancer is less common in young women than in older women, so only a small portion of breast cancer may result from secondhand smoke. Still, women (especially girls going through puberty) should avoid exposure to secondhand smoke since it remains one of the few *preventable* causes of breast cancer.

### RESOURCES:

Office of Environmental Health Hazard Assessment (OEHHA), California Environmental Protection Agency:  
[www.oehha.ca.gov](http://www.oehha.ca.gov)

Fresh Air for Little Noses: A guide on how to develop smoke-free policies at preschools and childcare centers, American Lung Association of the Easy Bay, 1997.



# 10 Myths About Smoking

**Myth #1: *“Quitting may be hard for other people, but I can do it any time I want to.”***

Nicotine is one of the most addictive substances on earth, and most people who try to quit cigarettes will have a hard time breaking its hold, according to the National Institute on Drug Abuse. The chemical goes directly from the lungs to the brain and stimulates the production of dopamine, a chemical that makes you feel happy. Although nicotine can make you feel more animated and energetic when you start smoking, your body will need more and more of it to feel the same way later on. If you do quit, you may find the craving to light up almost unbearable, and you're likely to get headaches and feel tired, sleepy, hungry, or irritable. In fact, 35 million people attempt to quit smoking every year, but only 7 percent of them actually succeed.

But that doesn't mean you can't do it: 2.5 million people quit smoking every year. The most successful quitters use support groups, nicotine replacement therapy (gum or patches), or a combination of approaches. Many of them have to try more than once to quit altogether.

**Myth #2: *“Smoking doesn't hurt anybody but me.”***

The dangers of secondhand smoke are well documented. If you light up, you're exposing your children, spouse, and other family members to substances that can cause lung cancer, heart disease, asthma, and other diseases. Secondhand smoke kills an estimated 35,000 to 65,000 nonsmokers each year. Up to 62,000 will die from heart disease, and about 3,000 will die from lung cancer, according to the National Cancer Institute. Tobacco smoke in the environment also makes nonsmokers more susceptible to ear infections, asthma attacks, and other respiratory problems.

If you're pregnant and smoking, you run a higher risk of having a miscarriage or a stillborn infant. Your baby also runs a higher risk of dying from Sudden Infant Death Syndrome, or SIDS. That's why one of the most important things you can do to ensure a safe pregnancy -- along with avoiding alcohol and getting prenatal care -- is to stop smoking.

**Myth #3: *"Cigar smoking and chewing tobacco are safe because you don't inhale."***

It's not only cigarette smoke that can kill you. Overall cancer death rates among men who smoke cigars are 34 percent higher than cancer death rates among nonsmokers, according to the American Lung Association. Cigar smokers have higher death rates from chronic obstructive pulmonary disease and are 4 to 10 times more likely to die from cancers of the throat, mouth, lips, larynx, and esophagus than nonsmokers.



People who chew tobacco don't get off lightly either. If you chew tobacco, you're more likely to get oral cancer, which affects the tongue, lips, cheeks, and gums. Moreover, a 1995 study of 6,300 smokeless tobacco users showed that they were twice as likely as nonusers to die of heart disease.

As with cigarette smoking, the sooner you quit, the better your chance of escaping these diseases.

**Myth #4: *"Smoking or chewing tobacco can lower blood pressure."***

No one knows where this one started, but many people believe that smoking or chewing tobacco actually helps them relax by lowering their blood pressure. This myth has no scientific merit. In 1998, a group of researchers in Stockholm, Sweden studied 135 healthy people who had never been diagnosed with high blood pressure. But after their blood pressure was measured, scientists found that those who smoked or chewed tobacco had higher pressure than those who didn't.

### **Myth #5: *"Smoking improves your mood."***

Some people believe smoking lifts the spirits, but it can sink your mood. If you're already down or depressed, cigarettes can put you at higher risk for clinical depression, hyperactivity, and attention deficit disorder, according to a recent report in the journal *Pediatrics*. Teens who smoke are four times as likely to be depressed as teens who don't.

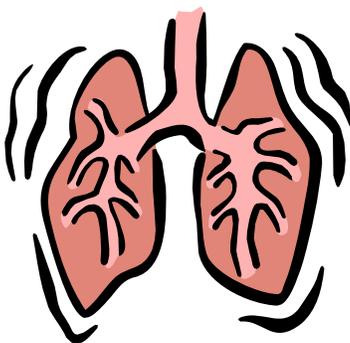
### **Myth #6: *"If I smoke only a few cigarettes a day, that's okay."***

Smoking isn't safe even if you're smoking one cigarette a day. Every cigarette contains about 1 to 2 milligrams of nicotine, and it reaches your brain 10 seconds after you inhale. Immediately after that first puff, you'll get a rush of adrenaline that may increase your blood pressure, your heart rate, and your breathing.

### **Myth #7: *"If I smoke only filtered, menthol, or low-tar cigarettes, I'll be safe."***

Smokers who puff on only one or a few cigarettes a day or smoke low-tar cigarettes have a tendency to take more drags on the few cigarettes they allot themselves each day because they sense they're getting less nicotine and need to fill that craving. Despite the filters, nicotine and other dangerous chemicals still get through when you smoke. People who smoke filtered or low-tar brands may inhale even more deeply, thereby getting more carbon monoxide and other substances into their lungs.

### **Myth #8: *"Lung cancer is the only disease I have to worry about from smoking."***



Unfortunately, this isn't the case. Smoking causes a number of other lung diseases, including emphysema, a degenerative disease that makes breathing more and more difficult. Smoking also increases your risk of heart disease, particularly if you have high blood pressure or high cholesterol, and aggravates many digestive disorders as well. It can also cause cancer of the mouth, larynx (voice box), and esophagus.

Smoking also plays a role in cancer of the pancreas, kidney, bladder, and, in women, cancer of the cervix.

**Myth #9: *"If I stop smoking, I'll definitely gain weight."***

It's true that many smokers gain weight once they stop smoking. Many of them substitute eating for the oral gratification that comes from puffing on a cigarette. On average, quitters gain only 5 to 10 pounds. But once you've stopped smoking, the weight gain doesn't have to be permanent. In fact, if you exercise, you may not only lose the weight you've gained, you may increase the stamina and lung capacity you lost when you were smoking. To help you keep the weight off, replace smoking with other activities besides eating: chewing gum, doodling, sucking on a straw, or just stretching and breathing deeply.

**And one last myth, perhaps the most important one of all:**

**Myth #10: *"I've smoked for years, so it won't help me to stop now."***

If you smoke, you're cutting years off your life. A 35-year-old man, for instance, will live about five years longer just by quitting smoking, according to the National Institute on Drug Abuse. The same holds true for women. The good news is that as soon as you stop smoking, you may not only begin to breathe easier, you will start to reverse many of the other damaging health effects of smoking, too. You can't turn back the clock, but if you quit smoking for a decade or more, your risk of cancer is much lower and your risk of heart disease may be almost the same as someone who has never smoked.

# What You Can Do...

- 1. If you smoke, the BEST thing you can do for yourself and your family is to QUIT! If you are ready to quit smoking, ask Healthy Homes University for a "Smoker's Quit Kit", or contact the Michigan Department of Community Health at 1-800-537-5666 and they will send you one for free.**
2. Protect your children from tobacco smoke at all times. Until you quit, do not smoke around your children. Smoke outdoors, and have other family members or visitors of your household do the same.
3. If you smoke outside, wear a "smoking jacket" or similar article of clothing which you can take off before you go back inside. After you go back into the house, wash your hands.
4. Until you quit, do not smoke where children can see you. If children see you smoke, they may come to believe that smoking is a healthy behavior.
5. Choose a child care provider whose home is smoke-free. Licensed child care centers are required by law to be smoke-free. However, unlicensed child care providers are not required to have a smoke-free home. The law only requires that they do not smoke when children are present. It is up to you to find out if people smoke at the home where your child is in care. If smoking is allowed in the home, you have the right to look for healthier child care options for your child.
6. Choose not to smoke in your car, and do not permit others to do so.

# Why Quit?

Besides improving the health of your child with asthma and the rest of your family, quitting will have many benefits for you as well!

## Here are just a few reasons why you should quit:

- **20 minutes after quitting:** Your heart rate and blood pressure decrease. The body temperature in your hands and feet increases.
- **8 hours after quitting:** The carbon monoxide level in your blood drops to normal. The oxygen level in your blood increases to normal.
- **24 hours after quitting:** Your chance of a heart attack decreases.
- **48 hours after quitting:** Your nerve endings start regrowing. Your ability to smell and taste improves.
- **2 weeks to 3 months after quitting:** Your circulation improves and your lung function increases. Walking becomes easier.
- **1 to 9 months after quitting:** Coughing, sinus congestion, tiredness, and shortness of breath all decrease. Cilia (tiny hair-like structures that move mucus out of the lungs) regain normal function in the lungs, which helps to clean the lungs, and reduce infections.
- **1 year after quitting:** Your risk of heart disease is half that of a smoker's.
- **5 years after quitting:** Your stroke risk is reduced to that of people who have never smoked.
- **10 years after quitting:** Your risk of lung cancer is about half that of a smoker's. The risk of cancer of the mouth, throat, esophagus, bladder, cervix, and pancreas decrease. Your risk of a stomach ulcer decreases.
- **15 years after quitting:** Your risk of heart disease is similar to people who have never smoked. Your risk of death returns to nearly the level of people who have never smoked.

# Resources to Help You Quit

**Nicotine addiction** is the physical dependence of your body to the powerful chemical nicotine which is in all cigarettes. If you use tobacco and you want to quit for your health and the health of others, **help is available.**

- **You can order the Michigan Department of Community Health's Smoker's Quit Kit.** The Smoker's Quit Kit will give you straight, useful advice to help you quit and stay cigarette free. It offers you real tips on how to prepare to quit, what to expect, how to stay on track once you have quit, and how to adjust to life as a non-smoker. To order a free Smoker's Quit Kit or an Expectant Mother's Quit Kit call 1-800-537-5666, or ask someone from Healthy Homes University.
- **A cessation program (or a quit smoking program) is an important part of the quitting process.** Types of cessation programs include:
  - Group Programs
  - Telephone Cessation Programs
  - One-on-one Counseling Programs
  - Twelve-step Programs
  - Self-Help Programs
  - Inpatient Programs
  - Computer-based / Internet Programs

**You can call the Ingham County Health Department (Health Promotion Office) at (517) 887-4315 for available smoking cessation programs in the Lansing area.**

- Telephone-based cessation counseling provides tobacco product users with support in counseling. **A free call to the Michigan Department of Community Health's "I Can Quit" helpline 1-800-480-QUIT (7848) can help you stop smoking.** It provides up to seven sessions with a personal health coach who will call and work with you in the comfort of your home or office to develop your personal plan to successfully quit smoking.
- **Prescription and Over-the-Counter Tobacco Cessation Medications.** The Food and Drug Administration has approved six medications to assist smokers in quitting. Five are nicotine replacement therapies that relieve withdrawal symptoms. They include **nicotine gum, patch, nasal spray, inhaler, and lozenge.** The sixth medication, bupropion SR (sustained release), is a non-nicotine medication that is thought to decrease the urge to smoke by affecting the same chemical messengers in the brain that are affected by nicotine.

<u>Type</u>	<u>Form</u>	<u>Common Brand Name(s)</u>	<u>Availability</u>
<b>Nicotine Replacement Therapy</b>	Gum	Nicorette	Over-the-counter (OTC)
	Patch	Nicoderm, Habitrol, Prostep, Nicotrol	OTC and prescription
	Inhaler	Nicotrol	Prescription
	Nasal Spray	Nicotrol	Prescription
	Lozenge	Commit	OTC
<b>Bupropion (Non-nicotine medication)</b>	Pill	Zyban, Wellbutrin	Prescription

- **Helpful Websites for Smoking Cessation**

Other helpful resources are cessation web sites. Here is a list of web sites that offer information about quitting, and two that offer computer-based cessation programs.

- **Michigan Department of Community Health:**

[www.michigan.gov/mdch/0,1607,7-132-2940\\_3182\\_22973--,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2940_3182_22973--,00.html)

Gives information on how to order Quit Kits (self-help materials) to help stop tobacco use and information on smoking around children. Contains Michigan's Guide to Stop Smoking Programs, which lists cessation programs by county.

- **American Lung Association (Freedom from Smoking):** [www.lungusa.org/ffs/index.html](http://www.lungusa.org/ffs/index.html)

American Lung Association's cessation program, which can be done online for free.

- **Dr. Koop Online:** <http://www.drkoop.com/ency/93/002032.html>

Contains facts, information and research to help people stop smoking.

- **Massachusetts Dept. of Health:** [www.trytostop.org](http://www.trytostop.org)

Massachusetts Department of Health's online cessation program called Quit Wizard. It is completely private and free.

- **Mayo Clinic:** <http://www.mayoclinic.org/nicotine-rst/>

Contains facts, information and research about quitting

- **Smoke free Families (Pregnancy):** [www.smokefreefamilies.org/](http://www.smokefreefamilies.org/)

Contains facts, information regarding smoking and pregnancy

Source: Asthma Initiative of Michigan (AIM) – "Tobacco Smoke and Asthma" website located at: <http://www.getastmahelp.org/tobacco.asp>



# Dust Mites

If you or your child are sensitive to house dust, you know that even a single whiff of dusty air can trigger allergy and asthma symptoms. But dust itself probably isn't the cause of your misery. Instead, dust mites—microscopic creatures that live in dust—are most likely to blame!



## What are Dust Mites?

- **Dust mites are tiny insects that are invisible to the naked eye.** They are microscopic, eight-legged creatures that are always in close contact with us, but they are not parasitic and do not bite. They don't burrow under the skin or live in skin follicles.
- **Every home has dust mites.** They feed on human skin flakes and are found in mattresses, pillows, carpets, upholstered furniture, bedcovers, clothes, stuffed toys, fabric, and fabric-covered items.

## Why are they unhealthy for my child with asthma?

- Dust mite allergies are one of the most common indoor asthma triggers. As the dust mites build up in your home, so do their body parts and droppings. Body parts and droppings from dust mites can trigger asthma attacks in individuals with dust mite allergies, and exposure to dust mites can even cause asthma in children who have never shown asthma symptoms. Symptoms associated with dust mite allergies include sneezing, itchy, watery eyes, nasal stuffiness, runny nose, stuffy ears, respiratory problems, and eczema. Many people notice these symptoms when dust is stirred up during cleaning activities.
- Although dust mites are found in every room in the house, they mainly live in the **bedroom** (in mattresses, pillows, and bedding). In your child's mattress and pillows, there are millions of dust mites! Your child spends a lot of time in close contact with dust mites when they are sleeping, so it is very important to protect your child from dust mites as best you can.

## What can I do to protect my child from dust mites?

- ☑ Use pillow covers and mattress covers in your child's room to protect their bedding from dust mites. This keeps existing dust mites trapped inside, and prevents new ones from getting in.
- ☑ Wash all bedding (sheets, blankets) in hot water (above 130 degrees) once a week.



- ☑ Pillows and bedding should not contain feathers. Besides holding dust mites, feather pillows and blankets can be asthma triggers as well.
- ☑ If possible, replace wall-to-wall carpets in bedrooms with bare floors (linoleum, tile or wood). If you cannot get rid of your carpeting, vacuum often with the HEPA vacuum. Try not to vacuum while your child is in the room, because the dust that is stirred up in the air can affect your child's asthma.
- ☑ Replace heavy, lined curtains or drapes with washable window coverings. Wash window coverings in hot water. Use plain window shades instead of mini-blinds.
- ☑ Dust all surfaces often, including lampshades and windowsills, with a damp cloth.
- ☑ Use a damp mop or rag to remove dust from bare floors and surfaces. This traps the dust mites rather than stirring them up in the air.
- ☑ Vacuum fabric-covered furniture with the HEPA vacuum attachment to reduce dust mites. If possible, use leather furniture.
- ☑ Get rid of stuffed animals in your child's room, OR replace traditional stuffed animals with washable stuffed animals. Wash the stuffed animals in hot water (above 130 degrees), OR put them in a plastic bag and freeze them overnight to kill dust mites.
- ☑ Keep clutter under control. Toys and books should be stored in enclosed bookshelves, drawers, or closets. This gives the dust mites fewer places to live.
- ☑ Keep all clothing in drawers and closets. Keep drawers and closets closed.
- ☑ Since dust mites love humid environments, try to keep indoor humidity low (less than 50 %). Use air conditioning or a dehumidifier if you have one.
- ☑ Regularly change filters on furnaces, heaters, air conditioners, and HEPA air filters.

# Pets & Asthma



**BEING A PET OWNER IS NEVER EASY.** While pets bring us joy and companionship on a daily basis, they also require training, veterinary care, time, love, attention, and even tolerance. Tolerance is especially necessary when a pet owner is allergic to his or her companion animal.

All cats and dogs are allergenic (allergy-causing) to people who are allergic to animals. Cats tend to be more allergenic than dogs for allergic people, although some people are more sensitive to dogs than cats. Contrary to popular belief, there are no "non-allergenic" breeds of dogs or cats; even hairless breeds may be highly allergenic.

Dogs with soft, constantly-growing hair—the Poodle or the Bichon Frise, for example—may be less irritating to some individuals, although this may be because they are bathed and groomed more often. One dog or cat of a particular breed may be more irritating to an individual allergy sufferer than another animal of that same breed.

The source of irritation to pet-allergic humans? Glands in the animal's skin secrete tiny allergy-triggering proteins, called allergens, that linger in the animal's fur but also float easily in the air. Allergens are present in the animal's saliva and urine, too, and may become airborne when saliva dries on the fur. The severity of reaction to these allergens varies from one person to the next, ranging from mild sniffing and sneezing to life-threatening asthma, and can be complicated by simultaneous allergies to other irritants in the environment.

If your or a family member's allergies are simply miserable, but not life-threatening, take these steps to reduce the symptoms:

- **Create an "allergy free" zone in the home**—preferably the bedroom—and keep the pet out of it. Use a high-efficiency HEPA air cleaner (available at almost any home and garden store or discount department store) in the bedroom. Use dust mite covers for the mattress and pillows because allergen particles brought into the room on clothes and other objects can accumulate in them.
- Use HEPA air cleaners throughout the rest of the home, and try to avoid using things that catch dust and dander such as cloth curtains, blinds, and carpeted floors. **Clean often to remove dust and dander**, and wash things such as couch covers and pillows, curtains, and pet beds.
- **Bathing your pet on a weekly basis** can reduce the level of allergens on fur by as much as 84 percent. Even cats can become accustomed to being bathed; check with your veterinarian or a good book on pet care for directions about how to bathe your pet properly.

- **Don't be quick to blame the family pet for allergies.** Ask your allergist to specifically test for allergies to pet dander—it may not be your pet that is causing allergies after all. Also, many people with allergies are sensitive to more than one allergen. So if you're allergic to dust, insecticides, pollen, cigarette smoke, *and* cat dander, you'll need to reduce the overall allergens in your home by concentrating on getting rid of all of the allergens, not just the pet allergy.
- **Immunotherapy (allergy shots) can improve symptoms but cannot get rid of them entirely.** They work by gradually making a person less sensitive to the pet allergens. Allergy-causing proteins are injected under the person's skin, which causes the body to produce antibodies (protective proteins) which keep the pet allergen from causing an allergic reaction. Patients are usually given one shot per week for a few weeks to months (depending on how bad the allergy is). Then they can decrease dosage to one shot per month.

There are additional treatments for allergies to pets, such as steroidal and antihistamine nose sprays and antihistamine pills. For people with asthma, there are multiple medications, sprays, and inhalers available to help decrease symptoms of pet allergies. It is important to find an allergist who understands your commitment to living with your pet. A combination of approaches—medical control of symptoms, good housecleaning methods, and immunotherapy (allergy shots)—is most likely to allow an allergic person to live with pets.

Of course, if you do not currently have a pet and are considering getting one, and know you or one of your family members is allergic to pets or has asthma, be sure to consider carefully whether you/they can live with the allergy or asthma symptoms before you bring a new pet home. Except in the case of children, who sometimes outgrow allergies, few people with allergies become accustomed to pets to whom they are allergic.



*Too many allergic owners get pets without thinking through the difficulties of living with them. And too often, they end up giving up the pets, a decision that is difficult for the owner and can be life-threatening for the pet. Before you get a pet for your family, make sure it will not make anyone's asthma or allergy symptoms worse!*

# A Healthy Home is A Pest Free Home. Keep Your Home Pest Free.

Integrated Pest Management (IPM) is a safe way to help get rid of cockroaches, mice, rats, ants, and other pests. IPM uses environmental change to help get rid of these pests and reduces the need for poisons or pesticides, which can be dangerous to your family's health.

**Residents, landlords, and pest control contractors all have a role in IPM.**

## Prevent Pests from Entering Your Home

- Repair or replace torn window screens
- Fill and seal holes, cracks, and gaps
- Install or repair weather stripping around doors and windows
- Report conditions that need attention to maintenance or your landlord.

## What to Expect of Your Landlord

- A home free of leaks, cracks, holes, and torn window screens
- A home free of pests
- Outdoor trashcans with covers (to discourage rodents and other animals)
- Clean out empty apartments
- Help follow these guidelines to get rid of any pests

## What To Expect of Your Pest Control Contractor

- Check every room of your home
- Check drawers, closets, cabinets
- Leave traps in high pest areas
- Remove old traps and bait

## Prevent Pests in the Kitchen

- Keep all food in sealed plastic or glass containers
- Use a covered wastebasket for trash
- Take the trash out every night
- Clean cooking grease from stove, walls, and cabinets
- Keep sink clear of dirty dishes and water
- Clean floors often, especially around refrigerator and stove
- Clean pet bowls between meals; don't leave food or water out overnight
- Replace worn, cracked refrigerator seals

## Prevent Pests in the Bedroom

- DO NOT allow eating in the bedroom
- Remove dirty plates, food, and wrappers
- Repair flaking paint, loose or curling wallpaper
- Get rid of clutter in closets, underbeds
- Place dirty laundry in a bag or hamper

## Prevent Pests in the Bathroom

- Repair leaks around the sink, toilet, & tub
- Seal openings around the toilet and pipes

## Prevent Pests around Water

- Repair leaks under the sink
- Keep the sink dry when not in use

## Reduce Places that Pests Can Hide

- Reduce clutter, especially in closets, cupboards, and cabinets
- Recycle or throw away unused bags, paper, and newspaper

## Prevent Pests from Returning

- Vacuum roach and rodent feces
- Vacuum cabinets where pests are found
- Give everything a good soapy wash! (especially inside cabinets and drawers)
- Keep basements, attics, stairwells, and hallways clean and free of clutter
- Seal infested food, traps and vacuum bags in a plastic bag and put outdoors in a closed trash can

For more information, contact the  
Center for Asthma Education,  
Management and Policy  
Detroit Department of Health and  
Wellness Promotion,  
1151 Taylor, Room 506A Detroit, MI  
48202  
313-876-0154 (phone)  
Toomere@health.ci.detroit.mi.us

## Home SAFE – System for an Asthma Free Environment

Pests like cockroaches and rodents, and the chemicals used to treat them, are triggers for asthma.



# SAFE PEST CONTROL

U.S. Department of Housing and Urban Development • Office of Healthy Homes and Lead Hazard Control

*"For years, cockroaches have defeated our best efforts to get rid of them. We sprayed and sprayed, but they always came back. Now we understand there are better methods and products that really work"*

Environmental Health Watch

## Did you know...?

- Many pesticides for home use are toxic?
- There are alternative pest management methods that limit the use of toxic substances?
- Mice, cockroaches, and cockroach "dust" can trigger asthma attack?

## What is it?

Integrated pest management (IPM) is a way to remove pests, like cockroaches, mice, and rats from a home. IPM is a common sense approach that:

- Denies pests food, water, shelter and a way to enter the home.
- Uses baits and powders, such as gel baits, traps and borate powder.

## Why use IPM?

- IPM is safer. IPM does not use as many harmful pesticides as traditional pest control.
  - Avoiding pesticides is especially important in homes. Pesticides can contain long lasting, toxic chemicals or lung irritants that cause asthma attacks. Children are among those most vulnerable to exposure. IPM strategies apply pesticides only as needed and use the least hazardous pesticides to control pests.

*continued on back*



U.S. Department of Housing and  
Urban Development

Office of Healthy Homes and  
Lead Hazard Control

# SAFE PEST CONTROL

## Non-toxic traps can be part of an IPM strategy.

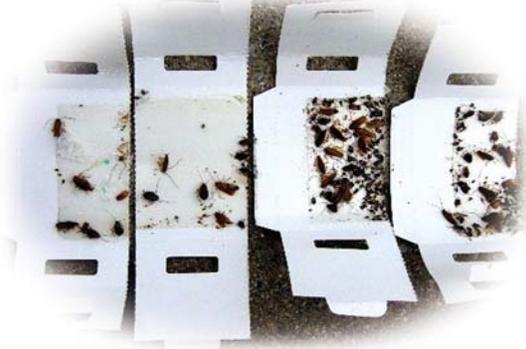


Photo by: January E. Jones, Improving Kids' Environment

- IPM works better. IPM is better at keeping the roaches and other pests away for long periods of time compared to spraying of pesticides or other poisons. IPM works by addressing the cause of the problem and taking a long-term approach to reducing pests. Using pesticides can cause pests to build up a resistance to the poison so that the chemicals do not work as well over time, and do not stop the pests from coming back to your home.

## What you can do

**Look.** Pay attention to where there are pests in your home, how they enter, and how many there are. By watching and tracking pests in your home, you can better decide what actions to take.

**Keep a clean home.** Keeping a clean house is the best way to keep pests out. Some important things to pay attention to are:

- Clean-up food and drink spills right away.
- Remove clutter (such as cardboard boxes or paper) so pests have fewer places to hide.
- Put food in tightly sealed containers, such as plastic with tight lids. Do not leave open containers of food on counters or in cabinets. Put pet food dishes away overnight.
- Keep trash in a closed container and take it out frequently—every day if possible. Don't let trash pile up outside.
- Fix plumbing or other water leaks. Pests need water sources to survive.
- Seal cracks and holes. Use a caulk gun to seal cracks around baseboards, shelves, pipes, sinks, and bathroom fixtures.

### Use roach baits properly and only if necessary. Place baits out of the reach of children and pets.

- Put the bait close to the pests' hiding places. It must be closer than other sources of food.
- Good spots for baits are next to walls, baseboards, under sinks, in cabinets and near plumbing fixtures. Place baits in areas of roach activity.
- Do not spray any pesticides. This will keep the pests away from the baits.

**If needed, call a pest control professional who uses IPM practices.** If you have taken all the steps described above and still have a pest problem, you may need a professional to help.

- If you live in an apartment or rent a home, speak to your landlord or property manager about using an IPM professional. Talk to other tenants about the importance of IPM for long-term solutions to your building's pest problems.
- IPM professionals utilize various methods to identify, monitor, and solve the pest problem without using lots of pesticides.

### For more information...

Visit HUD's website at [www.hud.gov/offices/lead](http://www.hud.gov/offices/lead) for more information about addressing health hazards in homes or to learn if HUD has a Healthy Homes program in your community. From this website, you can download a copy of "Help Yourself to A Healthy Home" for more practical steps you can take to make your home a healthy home.

### Other Federal Resources

**US Centers for Disease Control and Prevention**

[www.cdc.gov/od/oc/childhealth](http://www.cdc.gov/od/oc/childhealth)

**US Environmental Protection Agency**

[www.epa.gov/children](http://www.epa.gov/children)

### Other Resources

Environmental Health Watch has several resources on IPM and cockroach control [www.ehw.org](http://www.ehw.org)

Children's Environmental Health Coalition's HealthHouse also has several resources on using IPM in the home

[www.checnet.org/healthhouse/](http://www.checnet.org/healthhouse/)

### Place baits near baseboards, out of reach from children.



Photo by: January E. Jones, Improving Kids' Environment

# Pest-Specific IPM Tips

Here are some basic ways to control specific types of common household pests using IPM techniques. You can see that homeowners can accomplish many of the steps on their own. Your pest control technician will have more information.

## Bats

Bats eat hundreds of insects, including mosquitoes, each night but they are not good to have in the house. Inspect the outside of your home for openings larger than a quarter of an inch in height and seal them. If bats are in your home, light your attic or offer a "bat house" away from areas where your family spends time. Always avoid direct contact with bats.

## Carpenter Ants

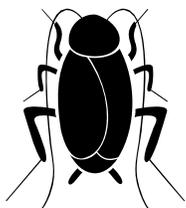


Carpenter ants often excavate wet or damaged wood. Fix the problem that is causing the moist wood and replace damaged wood. Baits for carpenter ants are available.

## Clothes Moths

They feed on untreated fibers, food stains, perspiration, and oils. Clean all clothes before storing them; put clothes in tightly closed plastic bags. The oil in cedar wood will repel clothes moths, but may not kill them.

## Cockroaches



Get rid of places cockroaches could hide (stacks of cardboard, paper bags, and clutter in warm, moist locations); empty garbage every evening (roaches feed at night); keep drawers, counters, and stovetops clean; store food in the refrigerator instead of on the counter; empty refrigerator defrost pan often.

## Fleas

Vacuum regularly and place anything infested with fleas outdoors in a trash bin. Treat pets with fleas under the advice of your veterinarian. Insect growth regulators, available in some flea control formulations, prevent fleas from maturing to adults.

## Flies



Fix screens; get rid of breeding areas like garbage, grass piles, etc.; hang fly paper to trap flies.

## Indianmeal Moth

Keep nuts, dried fruits, flour, and cereal products in glass or plastic containers with tightly closing lids. "Pantry pest" pheromone traps catch only males.

## Mice

Close all openings in your home's foundation that are larger than a quarter of an inch wide; use a snap trap or glue board to catch mice; keep an energetic cat as a pet.

## Mosquitoes



Prevent water from collecting in low spots in the yard, old trees, garbage cans, pool covers, rain gutters, tires, sandbox toys, and potted plant saucers. Replace bird bath water every few days; keep window and door screens tight and in place until winter.

## Spiders



Scoop them into a container and empty them outside, or use a fly swatter to get rid of them in your house. Most spiders are beneficial, killing many kinds of insects.

## Termites

Know the difference between termites and carpenter ants. Termites have thick waists and straight antennae; ants have thin, pinched waists and "bent elbow" antennae. The best controls are designing homes to exclude termites, reducing moisture, and hiring a professional to use baits.

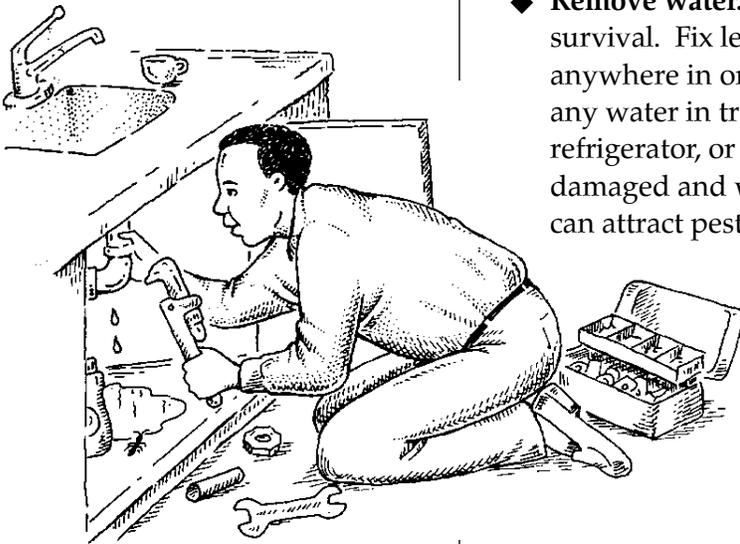
Source: "Secrets to a Pest Free Home", Richard C. Burton, [www.1-800-pestcontrol.com](http://www.1-800-pestcontrol.com)

# Preventing Pests

 **PESTS SEEK PLACES TO LIVE** that satisfy basic needs for air, moisture, food, and shelter. The best way to control pests is to try to prevent them from entering your home or garden in the first place. You can do this by removing the elements that they need to survive. Take the following preventive actions:

## Indoor Prevention

◆ **Remove water.** All living things, including pests, need water for survival. Fix leaky plumbing, and do not let water accumulate anywhere in or around your home. For example, do not leave any water in trays under your houseplants, under your refrigerator, or in buckets overnight. Remove or dry out water-damaged and wet materials. Even dampness or high humidity can attract pests.

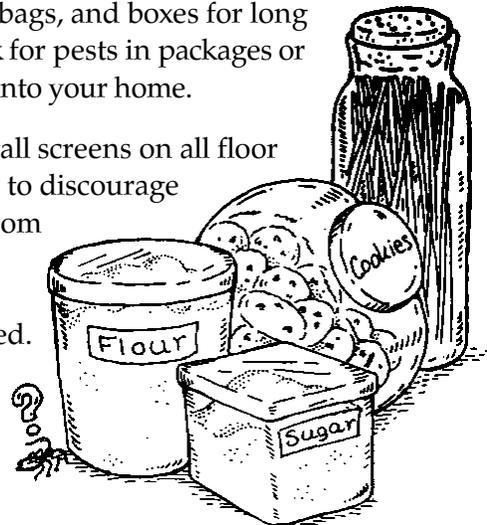


Pests need water to survive. Fix leaky pipes.

◆ **Remove food.** Store your food in sealed glass or plastic containers, and keep your kitchen clean and free from cooking grease and oil. Do not leave food in pet bowls on the counter or floor for long periods of time. Put food scraps or refuse in tightly covered, animal-proof garbage cans, and empty your garbage frequently.

◆ **Remove or block off indoor pest hiding places.** Caulk cracks and crevices to control pest access. Bathe pets regularly and wash any mats or surfaces they lie on to control fleas. Avoid storing newspapers, paper bags, and boxes for long periods of time. Also, check for pests in packages or boxes before carrying them into your home.

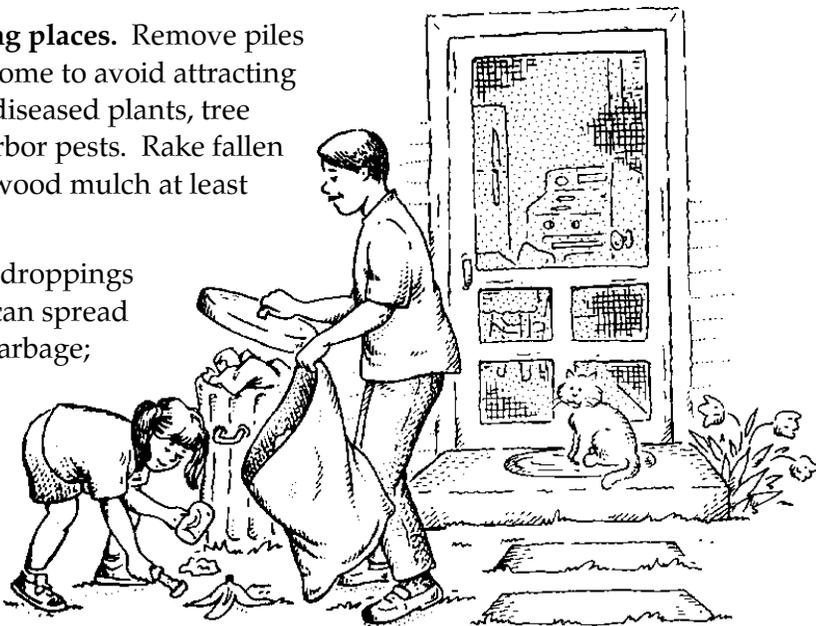
◆ **Block pest entryways.** Install screens on all floor drains, windows, and doors to discourage crawling and flying pests from entering your home. Make sure any passageways through the floor are blocked. Place weatherstripping on doors and windows. Caulk and seal openings in walls. Keep doors shut when not in use.



Store food in sealed containers.

## Outdoor Prevention

- ◆ **Remove or destroy outdoor pest hiding places.** Remove piles of wood from under or around your home to avoid attracting termites and carpenter ants. Destroy diseased plants, tree prunings, and fallen fruit that may harbor pests. Rake fallen leaves. Keep vegetation, shrubs, and wood mulch at least 18 inches away from your house.
- ◆ **Remove breeding sites.** Clean up pet droppings from your yard; they attract flies that can spread bacteria. Do not accumulate litter or garbage; it draws mice, rats, and other rodents. Drain off or sweep away standing puddles of water; water is a breeding place for mosquitos and other pests. Make sure drain pipes and other water sources drain away from your house.
- ◆ **Take proper care of all outdoor plants.** These include flowers, fruit and shade trees, vegetable and other plants, and your lawn. Good plant health care reduces pest control needs—healthy plants resist pests better than do weak plants. Plant at the best time of year to promote healthy growth. Use mulch to reduce weeds and maintain even soil temperature and moisture. Water adequately. Native flowers, shrubs, and trees often are good choices because they adapt well to local conditions and require minimal care.



Remove breeding sites.  
Clean up litter or garbage.

## Gardening

- ◆ Select healthy seeds and seedlings that are known to resist diseases and are suited to the climate where you live. Strong seeds are likely to produce mature plants with little need for pesticides.
- ◆ If your garden is large, alternate rows of different kinds of plants. Pests that prefer one type of vegetable (carrots, for example) may not spread to every one of your carrot plants if other vegetables (not on the pests' diet) are planted in the neighboring rows.
- ◆ Don't plant the same crop in the same spot year after year. That way your plants are not as vulnerable to pests that survive the winter.
- ◆ Make sure your garden plot has good drainage. Raised beds will improve drainage, especially of clay soils. If a heavy clay soil becomes compacted, it does not allow air and water to get to the roots easily, and plants struggle to grow. To loosen

# Poisoned by Pesticides: Don't Let This Happen to Your Child!

A 5-year-old boy drinks from a bottle of bleach that he found under the bathroom sink.

A 3-year-old girl tries to spray her hair the way mommy does, but sprays an aerosol disinfectant in her eyes instead.

A baby who has just begun to crawl eats green pebbles from behind the sofa. They look like candy, but are really rat poison.

## Where do you store your pesticides?

A 1992 nationwide study conducted by EPA revealed that almost half (approximately 47 percent) of surveyed households with children under the age of 5 had at least one pesticide stored within their reach.

These accidents could happen to your children or to children visiting your home if you don't store pesticides out of their reach or if you don't read the label carefully before using the pesticide product.

The dangers are real. In 1993 alone, an estimated 80,000 children were exposed to or poisoned by a household pesticide product that was used or stored incorrectly.

Whether or not you have young children in your home, take the following precautions to protect all children from unintentional pesticide poisonings or exposures:

- ◆ Always store pesticides out of children's reach, in locked cabinet or garden shed. Installing child-proof safety latches or padlocks on cupboards and cabinets is a good idea. Safety latches are available at your local hardware store or building supply warehouse.
- ◆ Before applying pesticides—indoors or outdoors—remove children and their toys, along with any pets and their toys, from the area. Keep them away from the area that has been treated until the pesticide has dried and for at least the length of time recommended on the pesticide label.
- ◆ If you are interrupted while applying a pesticide—by a phone call, for example—be sure to close the pesticide container properly and put it out of reach of any child who may come into the area while you are gone.

- ◆ Never remove labels from containers, and never transfer pesticides to other containers. Children may mistake them for food or drink.
- ◆ Never put rodent or insect baits where small children can find them, pick them up, and put them in their mouths.
- ◆ Make sure you close any container marked “child resistant” very tightly after you use the product. Check periodically to make sure the product is securely closed. Child resistant does not mean child proof, so you should still be careful with products that are sold in child-resistant packaging.
- ◆ Make sure others—especially babysitters, grandparents, and other caregivers—know about the potential hazards of pesticides.
- ◆ Teach children that “pesticides are poisons”—something they should never touch or eat.
- ◆ Keep the telephone number of your nearest poison control center near each phone. Have the pesticide container handy when you call.
- ◆ Always keep Syrup of Ipecac on hand (in your medicine cabinet) to use to induce vomiting. (Be sure the date is current.) But do not give it to your child until a physician or poison control center advises you to do so. The pesticide label may not recommend using Syrup of Ipecac.



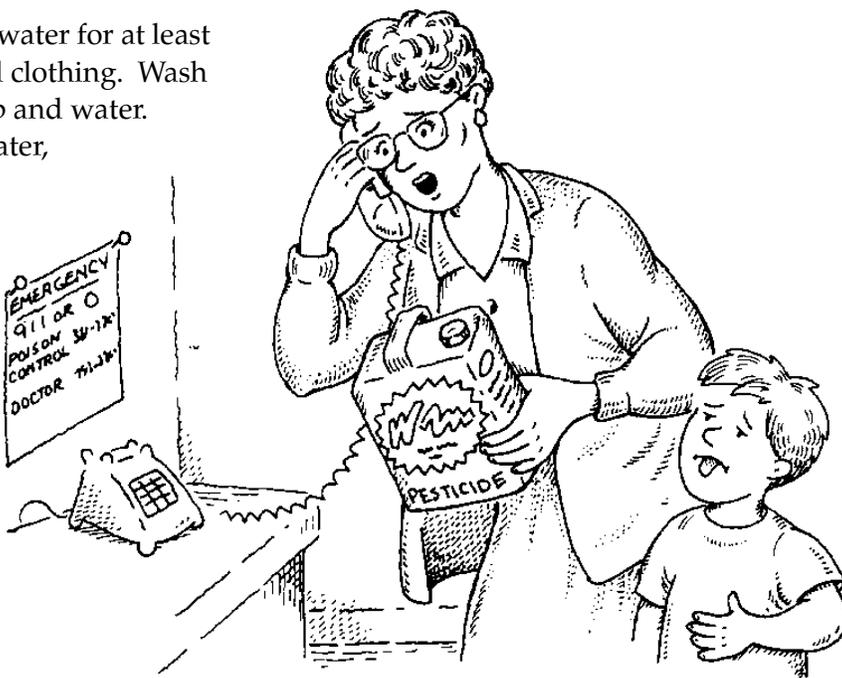
Store pesticides out of children's reach.

## First Aid for Pesticide Poisoning

When you realize a pesticide poisoning has occurred or is occurring, try to determine what the victim was exposed to and what part of the body was affected before you take action—taking **the right action** is as important as taking **immediate action**. If the person is unconscious, having trouble breathing, or having convulsions, ACT FAST! Speed is crucial. Give needed first aid immediately. Call 911 or your local emergency service. If possible, have someone else call for emergency help while you give first aid. If the person is awake or conscious, not having trouble breathing, and not having convulsions, read the label for first aid instructions. Call a doctor, a poison control center, a local emergency service (911), or the National Pesticide Telecommunications Network (toll free at 1-800-858-7378). Give first aid.

Read the *Statement of Practical Treatment* section on the product label. The appropriate first aid treatment depends on the kind of poisoning that has occurred. Follow these general guidelines:

- ◆ **Swallowed poison.** A conscious victim should drink a small amount of water to dilute the pesticide. Always keep Syrup of Ipecac on hand (in your medicine cabinet) to use to induce vomiting. Be sure the date on the bottle is current. Induce vomiting **only** if a poison control center or physician advises you to do so, or if instructions on the pesticide label say so. If there is no label available to guide you, do **not** induce vomiting. Never induce vomiting if the victim is unconscious or is having convulsions.
- ◆ **Poison on skin.** Drench skin with water for at least 15 minutes. Remove contaminated clothing. Wash skin and hair thoroughly with soap and water. Dry victim and wrap in blanket. Later, discard contaminated clothing or thoroughly wash it separately from other laundry.
- ◆ **Chemical burn on skin.** Drench skin with water for at least 15 minutes. Remove contaminated clothing. Cover burned area immediately with loose, clean, soft cloth. Do not apply ointments, greases, powders, or other drugs. Later, discard contaminated clothing or thoroughly wash it separately from other laundry.



If a poisoning has occurred, call for help, and be ready to read information from the pesticide label.

- ◆ **Poison in eye.** Hold eyelid open and wash eye quickly and gently with clean cool running water from the tap or a hose for 15 minutes or more. Use only water; do not use eye drops, chemicals, or drugs in the eye. Eye membranes absorb pesticides faster than any other external part of the body, and eye damage can occur in a few minutes with some types of pesticides.
- ◆ **Inhaled poison.** If the victim is outside, move or carry the victim away from the area where pesticides were recently applied. If the victim is inside, carry or move the victim to fresh air immediately. If you think you need protection like a respirator before helping the victim, call the Fire Department and wait for emergency equipment before entering the area. Loosen the victim's tight clothing. If the victim's skin is blue or the victim has stopped breathing, give artificial respiration (if you know how) and call 911 for help. Open doors and windows so no one else will be poisoned by fumes.

### What To Do After First Aid

- ◆ First aid may precede but should not replace professional medical treatment. After giving first aid, call 911 or your local emergency service immediately. Have the pesticide label at hand when you call.
- ◆ Take the pesticide product container **with its label** to the doctor's office or emergency room where the victim will be treated. Carry the container in your trunk or flatbed away from the passengers in your vehicle. The doctor needs to know what active ingredient is in the pesticide before prescribing treatment. This information is on the label, which sometimes also includes a telephone number to call for additional treatment information.

**National Pesticide  
Telecommunications Network  
(NPTN)**

**Call Toll Free 1-800-858-7378**



Another good resource in a pesticide emergency is NPTN, the National Pesticide Telecommunications Network, a toll-free telephone service that operates Monday through Friday, from 6:30 a.m.– 4:30 p.m. Pacific time (9:30 a.m.– 7:30 p.m. Eastern time). NPTN provides information on pesticides and how to recognize and respond to pesticide poisonings. If necessary, staff at NPTN can transfer your call directly to a local poison control center. Call NPTN toll free at 1-800-858-7378.

NPTN staff answer questions about animal poisonings, too. To keep your pets from being poisoned, follow label directions on flea and tick products carefully. If you are concerned about the chemicals used in these products, consult your veterinarian.

# Handling a Pesticide Emergency

## “Help! Someone’s Been Poisoned!” What To Do in a Pesticide Emergency



**If the person is unconscious, having trouble breathing, or having convulsions . . .**  
***ACT FAST! Speed is crucial.***



Give needed first aid immediately.



Call 911 or your local emergency service. If possible, have someone else call for emergency help while you give first aid.



**If the person is awake or conscious, not having trouble breathing, and not having convulsions . . .**



Read the label for first aid instructions.



Call a doctor, a poison control center, a local emergency service (911), or the National Pesticide Telecommunications Network (toll free at 1-800-858-7378).



Give first aid.

# Mold

## What is mold?

**Mold** is found in all indoor and outdoor environments. Indoors, mold can damage property and sometimes make you and your family sick. **Visible mold inside your home should be cleaned up as soon as possible.** Outdoors, mold plays an important role in helping to break down dead leaves, wood, and other things found in nature.

Mold produces **spores**, very tiny particles that cannot be seen by the naked eye. Spores are the "seeds" of mold and are common in every home. They can only grow into new mold when they land on a wet surface or on food.

## How can I tell if I have a mold problem in my house?

You can find a mold problem by using your eyes and your nose.



### **If you see:**

- Signs of moisture or water damage such as water leaks, standing water, water stains, discoloration on walls or other surfaces
  - White, gray, brown, black, yellow, orange or green growths with a cottony, velvety, granular, or leathery texture or smell:
  - Musty or earthy odors
- ...you may have a mold problem.**

- To find some mold growths, you may need to look underneath flooring, behind furniture, near stored items, or you may need to make an opening in a wall.
- *If you have not had an obvious water leak or high moisture problems in your home and you do not see mold growing in your home, you are not likely to have a mold problem.*

## Does exposure to mold affect my health?

Exposure to mold does not usually result in health problems. The average healthy person's immune system usually provides enough protection from the harmful effects of mold. Most health problems caused by mold are from allergic reactions to it. For example, allergic reactions have occurred among farm workers handling large amounts of moldy hay. **People with special health concerns (infants, children, and people with respiratory conditions like asthma) may be more sensitive to mold allergy than the general population.**

### The most common health problems due to mold exposure are:

- runny nose
- sinus congestion
- eye irritation
- cough and congestion
- sore throat
- sneezing
- upper respiratory infections
- headaches
- worsening asthma
- fatigue



These are common health problems that can be caused by many health conditions. See your doctor if you feel that exposure to mold is making you sick.

### How can I prevent mold from growing in my home?

The best way you can prevent exposure to mold is to control moisture.

- Promptly attend to leaking pipes, flooded basements, roof leaks, and other ways that water can get into your home.
- **Run exhaust fans** in showers, baths, indoor pool areas, and cooking areas to allow moisture and steam to escape outdoors.
- Not all moisture problems are the result of leaks, condensation, or floods. Humidity levels above 60 percent for an extended time period can create conditions for mold growth. In humid months, try using an **air conditioner or dehumidifier** to keep the humidity in your home below 50 percent.
- Humidifiers increase the moisture in your home. If you use a humidifier, be sure that it is set properly to prevent excessive humidity.
- Be sure your clothes dryer is vented outdoors. If the humidity in your home is high, avoid drying clothing indoors on drying lines or racks.
- **Clean bathrooms with mold-killing products** like bleach mixed with water, or Simple Green. Be sure to read the product label first to see if there are any health precautions or recommendations for the product that you are using. NEVER mix chemicals.
- Insulate water pipes and install chimney liners to limit condensation.
- Use storm windows to limit indoor window condensation.
- Cover crawlspaces with a vapor barrier (like plastic sheeting) and ventilate to prevent moisture build-up.
- Use area rugs that can be washed often. A vapor barrier may be necessary under carpet that is installed over concrete.
- Have your heating and cooling systems inspected and serviced regularly.



## How can I clean up mold?



1. Locate and fix the water leak or moisture problem. If you do not do this first, the mold will continue to grow even after you clean it.
2. Wear disposable rubber gloves, goggles that don't have ventilation holes, and a respirator available at your local hardware store (ask for a N-95 or HEPA cartridge type) to reduce your exposure to mold spores. If you have respiratory problems (like asthma or emphysema) or the area is large (over two square feet), check with your doctor before starting cleanup or have someone else do the cleanup.
3. Be sure the area is well ventilated. Open windows and doors and use fans to create a path of fresh air directly from the cleanup area through the closest door or window leading to the outdoors. Avoid blowing mold spores through the rest of the house.
4. When mold is growing on porous material (for example, ceiling tiles, leather, cloth, drywall, plaster, paneling, wood products, paper, carpet, or padding) you must remove the material, put it in a bag, and throw it away. When removing drywall, cut at least 12 inches beyond the area of visible mold. Hard (non-porous) material such as glass, plastic, or metal does not need to be thrown out. It can be cleaned and disinfected.
5. Use bleach mixed in hot water (1 cup of bleach in 10 cups of water) or Simple Green solution to scrub non-porous areas like glass, plastic, tile, metal, or cement. (You can also try this method on walls and window sills.) Use a stiff brush or cleaning pad on block walls or uneven surfaces. **Do not** use pure bleach – it will make the problem worse. Avoid getting the bleach solution on areas you don't want to clean. Wear old clothing – bleach can ruin clothes. **NEVER** mix bleach with any solution containing ammonia – this can create deadly fumes.
6. Thoroughly rinse the area with hot water. Using a wet-dry vacuum is an easy way to pick up excess water. Remove the filter so that it doesn't get wet and create a place for mold to grow.
7. Allow the area to completely dry. This can take two or three days. Raising the room temperature and running a dehumidifier in the area will help.
8. Vacuum your home thoroughly with a HEPA vacuum. If you have a HEPA air purifier, turn it on because this will also help remove mold spores from the air inside your home.
9. If you still have mold odors after cleaning and ventilating, it is possible the mold is hidden within walls or behind wall coverings. It is important that these areas are found and either cleaned or replaced.
10. If you have mold damage caused by sewage or other contaminated water, call in a contractor who has experience in cleaning up this kind of building damage.
11. If you choose to hire a contractor to do cleanup, make sure the contractor has experience in cleaning up mold. Check the contractor's references.

*\*The State of Michigan does not certify or license contractors for mold removal. It is up to you to use your best judgment when hiring a contractor.*





# Why Choose Non-Toxic Cleaning Products?

While there are many effective household cleaning products available in your local supermarket or discount store, you may see some surprising ingredients if you read the label closely.

Many of these products contain harmful chemicals such as chlorine bleach, ammonia, petrochemicals, and volatile organic compounds (VOC's). It is risky to have these chemicals in your home in the case of accidental ingestion or physical contact. Breathing the fumes of some chemicals, especially over time, can be bad for your health. Also, small amounts of residual product can be left on surfaces or in the air after cleaning, which affects your home's air quality.

## **Important reasons to consider using non-toxic cleaning products:**

- **Protect children and pets from accidental poisoning (since non-toxic cleaning products are natural, they are not dangerous if swallowed).**
- **Protect yourself (or the person who cleans the house) from contact with the harmful ingredients in many cleaning products.**
- **Protect your home's indoor air quality.**

## **Disposal of Leftover Toxic Cleaning Products**

It is important to properly dispose of any leftover toxic cleaning products after switching to nontoxic cleaning products. Improper disposal, such as pouring them down the drain, on the ground outside, into storm sewers, or throwing them out in the trash can pollute the environment and can be a threat to human health. Many communities have places to safely dispose of toxic cleaning products, known also as "household hazardous waste." Check with your local environmental, health, or solid waste agency for information.

## **The EPA suggests the following options for disposing of your toxic cleaning products:**

- See if your community has a facility that collects household hazardous waste year-round.
- Check to see if there are certain days in your area for collecting solid waste at a central location.
- You may be able to drop off certain products at local businesses for recycling or proper disposal.
- Always read product labels for proper disposal instructions.

**(see following page for a list of non-toxic cleaning recipes that you can make at home)**





# Non-Toxic Cleaning Recipes

**Tub and sink cleaner:** Baking soda,, liquid oil soap  
(i.e. Murphy's liquid oil soap)

- Sprinkle baking soda on porcelain fixtures and rub with a wet rag.
- Add a little soap to the rag for more cleaning power.
- Rinse surfaces well to avoid leaving a film.

**Window and mirror cleaner:** White vinegar, water

- Pour ¼ cup of white vinegar in a spray bottle and fill to the top with water.
- Spray on surfaces and wipe with a lint-free rag
- Outdoor windows: use a sponge and wash with warm water with a few drops of liquid Murphy's soap. Rinse well with a squeegee and dry.

**Linoleum floor cleaner:** White vinegar, water

- Mop using a mixture of ½ cup vinegar in a bucket of warm water (The vinegar odor will dissipate after floor dries.)

**All purpose cleaners** (tile, linoleum, woodwork, etc.) liquid oil soap

- Add a few drops of liquid soap to a wet cloth and rub surface briskly.

**Oven Cleaner:** Baking soda, water, liquid oil soap

- Mix 1 cup of baking soda with enough water to make a paste.
- Apply to oven surfaces and let stand a little while (preferably overnight).
- Use a scouring pad for scrubbing most surfaces.
- After cleaned, put a few drops of liquid soap on a sponge and wash sides and top of oven.
- Do NOT use on self-cleaning ovens!

**Drain Cleaner:** Baking soda, white vinegar, boiling water

- This recipe to free minor clogs and prevent future clogs.
- Pour ½ cup of baking soda down the drain first, add ½ cup vinegar.
- Let it fizz for 10-15 minutes.
- Poor down a teakettle full of boiling water. Repeat if necessary.
- If clog is stubborn, use a plunger. If very stubborn, use a mechanical snake.



**Grease Cutter:** Baking soda liquid oil soap, vinegar, water

- Mix ½ tsp baking soda, ¼ to ½ tsp liquid soap, 3 tbsl vinegar and 2 cups of hot water in a spray bottle.
- Spray and scrub. Wipe clean.

**Dish soap:** non-phosphate soap

- TIP: Try using only half the amount of automatic dishwashing detergent. It should make little to no difference.

**Tile Floor Cleaners:** Vinegar, hot water

- Mix 1 cup of vinegar with 1 pail of hot water and apply to floors.
- Wipe clean.

**Wood Floor Cleaners:** liquid oil soap, water

- Mix 1/8 cup of liquid soap with 1 gallon of water and apply to wood floors.
- Wipe clean.

OR

- Mix ¼ cup olive oil, ¼ cup vinegar and a drop or two of lemon oil and apply to wood floors.
- Wipe clean.

**Floor Wax:** lemon juice, linseed oil

- Mix 1 part lemon juice and 2 parts food-grade linseed oil and apply with a rag.
- Let rest overnight until the floor is dry.
- Buff completely smooth.

**Pot and Pan Cleaner:** baking soda, salt, water

- Mix 3 tbsl of baking soda, salt and water ni a small bowl to form a paste.
- Use a sponge to apply the paste to the pan.
- Let dry then rinse with hot water.



**Toilet bowl cleaner:** baking soda

- Sprinkle baking soda in and around toilet bowl
- Let sit for a few minutes then scrub clean

**Scouring Powder:** baking soda, vinegar

- Mix 1 cup baking soda and ¼ cup vinegar in a small bowl.
- Rub on surfaces with a damp sponge.
- Let stand for a few minutes then rinse well.

**Soft Scrubber:** baking soda, liquid oil soap

- Mix ¼ cup baking soda and liquid oil soap to form a paste.
- Apply with sponge and wipe clean.

**Carpet Deodorizer:** baking soda

- Sprinkle one box of baking soda over carpet and let rest overnight.
- Vacuum.



**Carpet Stain Remover:** club soda

- Apply to stain and scrub.
- OR
- Mix ¼ vinegar and ¼ cup water and rub on carpet.
  - Rinse with water.

**Wood Furniture:** linseed, vinegar and lemon juice

- Mix 1/8 cup linseed, 1/8 cup vinegar and ¼ cup lemon juice.
- Rub into wood using a soft cloth.

**Leather cleaner:** olive oil, lemon juice

- Mix ¼ cup of olive oil and a few drops of lemon juice.
- Saturate cloth and apply.

**Vinyl cleaner:** vinegar, liquid oil soap, water

- Mix ¼ cup vinegar, ¼ tsp. liquid oil soap and water.
- Saturate cloth and apply.

**Laundry Soap:** use non-phosphate liquid detergents or laundry soaps

**Laundry bleach:** lemon juice

- Add ¼ cup of lemon juice to laundry



**Laundry starch:** cornstarch, cold water

- Mix 1 tbs. Cornstarch and 1 pint cold water in a spray bottle and shake to dissolve cornstarch.

**AIR FRESHENERS**

**General fresheners:**

- Place of couple tbs. of baking soda in a dish and leave on counter.
- OR
- Place slices of your favorite citrus fruit (lemon, grapefruit or orange) in a pot.
  - Add enough water to cover the fruit.
  - Simmer over low heat for an hour or two.
- OR
- Boil some cinnamon and cloves in water.

**Kitchen and cooking odors:**

- Boil 1 tbs. white vinegar and 1 cup of water in a small pot.
- OR
- Place pure vanilla on a cotton ball in a small saucer. Place where needed
  - NOTICE: vanilla contains alcohol and should be kept away from children

**PEST CONTROLS**



**Ants:**

- Crumble and place dried bay leaves in doorways and window seals to eliminate ants.
- OR
- Wash countertops with equal parts of vinegar and water.
- OR
- Find where ants are entering and squeeze lemon juice in the hole or crack
  - Put the peeling around the entrance.

**Cockroaches:**

- Mix equal parts of powdered sugar and baking soda and sprinkle where cockroaches might live.

**Houseflies:**

- Scratch the skin of an orange and leave out.
- Hang a cluster of cloves
- Flies are repelled by both of these ingredients.

**METAL CLEANER**

**Aluminum cleaners:** Cream of tarter, vinegar

- Mix 2 tbs. cream of tarter and vinegar to make a stiff paste.
- Rub on metal and let dry.
- Wash paste off with hot water and dry with a cloth.

**Copper Cleaner:** White vinegar, water, salt

- Mix a tablespoon of vinegar and a tablespoon of salt and apply to the surfaces with a rag.
- Rinse thoroughly with water afterwards to avoid corrosion. Do NOT use on lacquered finishes

**Chrome Cleaner:** baking soda, water

- Mix 3 tbs. baking soda and water to make a paste.
- Apply to metal and rinse.

**Silver Cleaner:** baking soda, aluminum foil, water.

- Put foil in the bottom of a big pan.
- Add 2 to 3 inches of water (enough to cover the silver), 1 tbs. baking soda and salt.
- Bring to a boil.
- Add silver pieces and boil 2 to 3 minutes.
- Remove from pan, rinse well and dry.

**Stainless steel cleaner** (baking soda, water)

- Mix 3 tbs. baking soda and water to make a paste.
- Apply with a scouring pad.
- Rinse well to remove all residue.



# Hazardous Household Products

## Should You Be Concerned?

**D**o you have these products in your home? Bleach, rat poison, mothballs, charcoal lighter fluid, oven cleaner, batteries, mercury thermometers, gas, oil, wood polish, toilet and drain cleaners, shoe polish, bug spray?

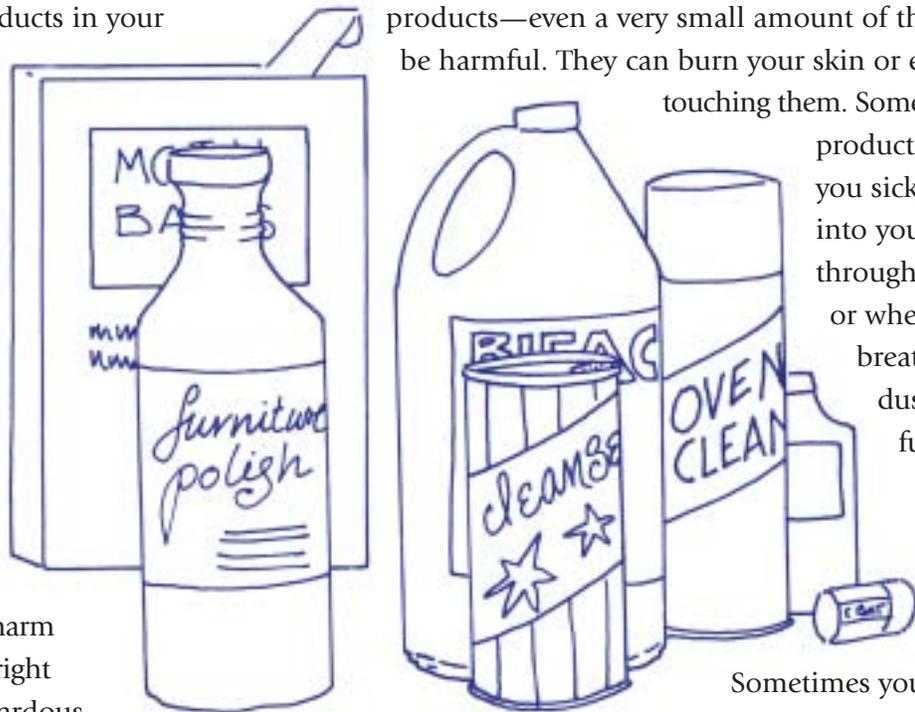
*Household products like these are dangerous for your children!*

Household products are called hazardous if they can harm people when not used in the right way. Not every product is hazardous and some are more dangerous than others.

You can use most products safely if you follow the directions on the label. Doing things that are not on the label is risky for your health and your family's. People run into trouble by using too much of a product, or by mixing two products together, for example.

Children can be poisoned if products are stored or thrown away unsafely. Children's bodies are small, so even a little bit of some chemicals can cause big problems.

Eating or drinking a hazardous product is dangerous, of course. Also, just touching or breathing some



products—even a very small amount of them—can be harmful. They can burn your skin or eyes just by touching them. Some hazardous products can make you sick if they get into your body through your skin or when you breathe in their dust or fumes.

Sometimes you know right away if you or your child has come into contact with a hazardous product. You may feel sick to your stomach or dizzy. Your skin may itch or burn. Your eyes may water or hurt.

Other problems don't show up until later, like cancer or harm to your lungs. Also, coming into contact with chemicals can affect a child's growing body.

You can protect your children and yourself from illness and injury. Use hazardous products safely. Store them carefully. Dispose of them properly. *The following pages will help you learn more.*

## In Case of Emergency

You can reach your local Poison Control Center by calling 1-800-222-1222 from anywhere in the country. Put this number next to all of your telephones and where you store your hazardous products.

**In 2000, nearly 20,000 children were exposed to or poisoned by household chlorine bleach.**

# Hazardous Household Products

## Questions to Ask

### Use Safely

*Do you use hazardous household products safely?*

- Read the label. That is one of the most important steps in using products.
- Look for words like **caution**, **warning**, **flammable**, **harmful**, **danger**, **poison**. These tell you that a product may be hazardous. If you see these words on a label, take extra care.
- Look for special instructions on the label such as: "Work in well ventilated area." This means work outside or with the windows open. The fumes can make you sick if you do not have enough fresh air.
- "Wear protective clothing." This means wear goggles or safety glasses, gloves, long sleeves, or other coverings. The right clothing can prevent burns or keep chemicals from going into your body through the skin.
- Never mix products unless the label says it is safe to do it. For example, never mix products containing chlorine bleach with products containing ammonia. You will make a deadly gas by mixing these together.
- Keep children and pets away while you use hazardous products.
- Always put the cap back on and put away the product right after you finish using it.

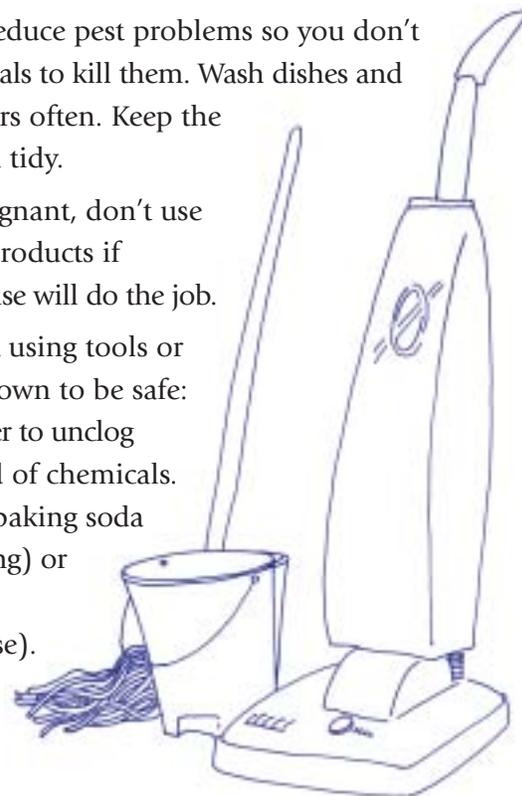


- Never leave the product or container where children can see it or reach it.
- Don't eat, drink, or smoke when using hazardous products.
- Be ready in case there's an accident: Put the Poison Control Center telephone number, 800/222-1222, where you can find it quickly in case of an emergency. Tape it to the wall by your kitchen phone, for example.
- Buy *Syrup of Ipecac* at your local drugstore and keep it handy. This medicine makes a person throw up. But only use it when a doctor or the Poison Control Center tells you. Sometimes throwing up makes the poisoning worse.

### Use Less

*Can you cut down on the hazardous products in your home?*

- Do you buy only what you need, so you don't have extras?
- Prevent or reduce pest problems so you don't need chemicals to kill them. Wash dishes and wipe counters often. Keep the garbage area tidy.
- If you're pregnant, don't use hazardous products if something else will do the job.
- Think about using tools or products known to be safe: Use a plunger to unclog sinks instead of chemicals. Clean with baking soda (for scrubbing) or vinegar (for cutting grease).



# Hazardous Household Products

## Questions to Ask

### Store Safely

*Do you store hazardous household products safely?*

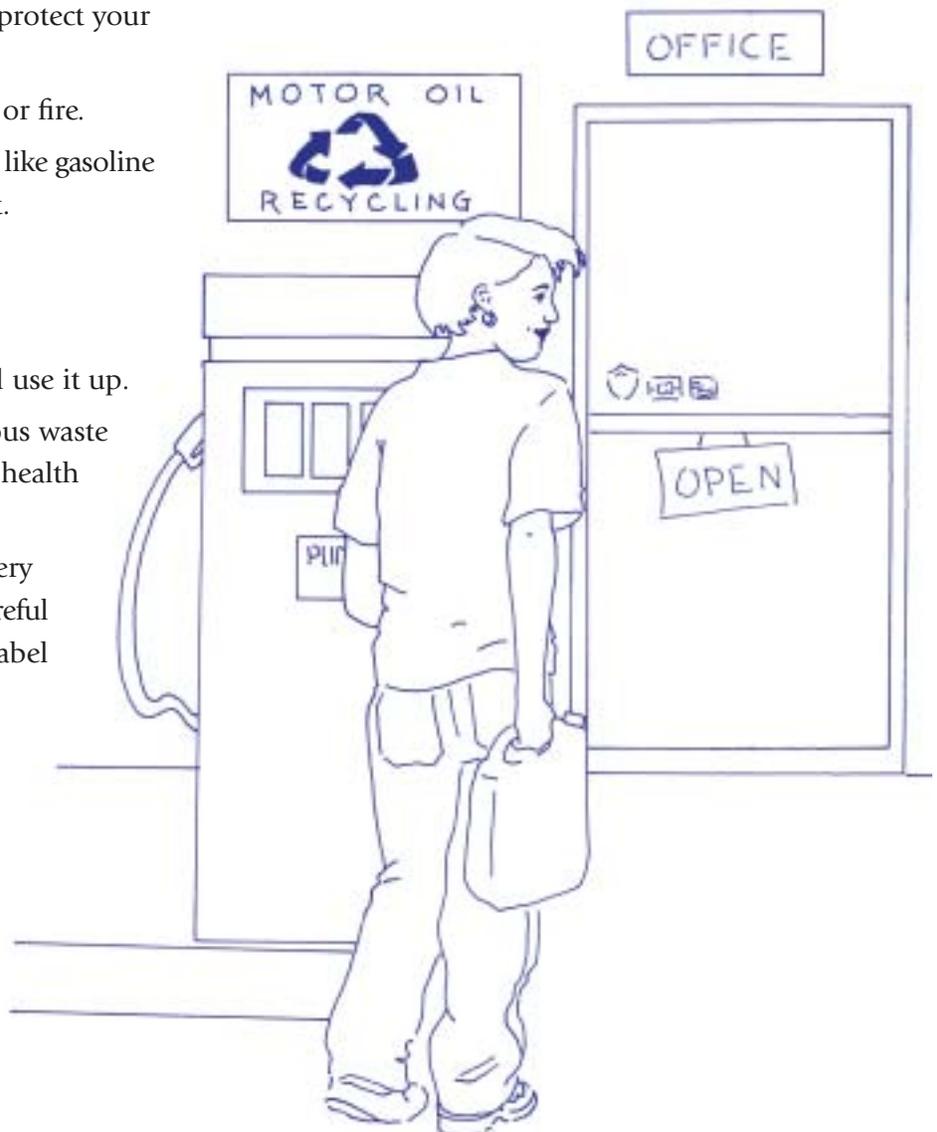
- Keep them away from children. A locked, secure place is best.
- Store them in the package, can, or bottle they came in. Never put them in another container (especially one for food or drink)! This helps prevent poisoning and keeps the label instructions with the product.
- Keep containers and packages dry. Close them tightly.
- Set containers inside a plastic bucket in case of leaks.
- Store products at least 150 feet away from your well, cistern, or water pump. This will protect your water supply and your health.
- Keep products away from heat, sparks, or fire.
- Store batteries and flammable chemicals like gasoline in the shade, away from direct sunlight.

### Safe Disposal

*How do you get rid of leftover products?*

- Share the extra with someone who will use it up.
- Take leftovers to a community hazardous waste collection point. Ask your local or state health department where this is.
- Some products—like pesticides—are very hazardous. You will even need to be careful how you dispose of the container. The label will tell you what to do.
- Never dump or burn hazardous products on your property. Dumping or burning them near a water supply is very dangerous.

- Never burn hazardous wastes in a barrel or stove. Burning may let off toxic gases and make hazardous ash and smoke. And, it's against the law in many states.
- Recycle used motor oil or antifreeze. Many communities have places for you to do this.
- Mercury is a threat to health. Products that have mercury in them are fluorescent bulbs, thermometers, thermostats, and blood pressure meters. Call your local trash department or health department to find out where to recycle products with mercury.



## ACTION STEPS

### **Here are some ways to protect your family's health.**

- Buy only what you need to do the job.
- Use products known to be safe when possible.
- Read and follow directions on product labels—always!
- Post the Poison Control Center telephone number next to the phone.
- Never mix two products together unless you are certain it is safe to do so.
- Never mix bleach and ammonia
- Keep all hazardous products, including bleach, in a cabinet out of reach of children.
- Buy products in childproof containers.
- Keep hazardous products in their original containers.
- Give leftover products to someone else to use.
- Find out about your community's hazardous waste collection points.
- Recycle products that you can—oil, antifreeze, products with mercury.
- Never burn or dump leftover products or containers.

### **When In Doubt, Check It Out!**

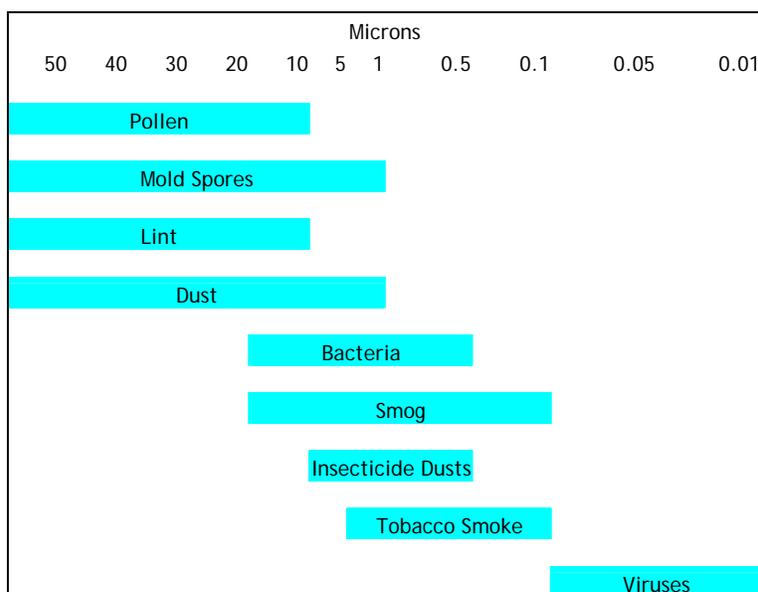
- Call your local Poison Control Center 800/222-1222
- Call your local Cooperative Extension office
- Call your local or state health department
- Contact the Consumer Products Safety Commission: 800/638-2772—[www.cpsc.gov](http://www.cpsc.gov)
- Contact Healthy Indoor Air for America's Homes: 406/994-3451 or visit the website at [www.montana.edu/wwwcxair/](http://www.montana.edu/wwwcxair/)
- The *Home\*A\*Syst* handbook gives more details about this and other healthy home topics 608/262-0024—[www.uwex.edu/homeasyst](http://www.uwex.edu/homeasyst)
- EPA's Consumer Labeling Initiative —[www.epa.gov/opptintr/labeling/index.htm](http://www.epa.gov/opptintr/labeling/index.htm)

## Notes



# Asthma & the HEPA Vacuum

- **One of the most important things for an asthmatic to do is to vacuum regularly.** Carpeting, upholstered furniture, drapes, and even hard floors accumulate and hold asthma triggers like dust mites and pet dander. Using a HEPA vacuum cleaner to remove asthma triggers from these locations is very important.
- One of the things an asthmatic needs to look for in a vacuum cleaner is a good filtration system. Vacuums typically have either true HEPA filters or HEPA type filters. **True HEPA filters eliminate at least 99.97% of particles from the air that are 0.3 microns in size or larger.** Looking at the chart below, you will see that the HEPA vacuum can filter everything except viruses from the air when you vacuum your home.



- A **HEPA vacuum** has a high quality filtration system that gets rid of asthma triggers that get stirred up while you vacuum your floor. Normal vacuums do not filter the air – the asthma triggers that get stirred up remain in the air and can make a person with asthma sick. For this reason, a HEPA vacuum is very important for a healthy home.
- With your HEPA vacuum, you can vacuum carpet, hardwood floors, furniture, ceilings/walls, curtains – just make sure you use the proper settings and attachments! Refer to the instruction manual if you have questions.
- **REMEMBER** to check the front filter about once a month to see if it is getting dirty. Eventually, you will need to buy a replacement filter at the store. If you keep using a filter that is very dirty, the HEPA vacuum will not work properly.

## HEPA Vacuum – Tips To Remember:

- Vacuum your home with the HEPA vacuum once a week or more often if you can. Each time you vacuum, you are getting rid of asthma triggers in your home and helping your child stay healthy.
- Use the HEPA vacuum (on Bare Floor setting) to clean non-carpeted floors (wood, linoleum, etc.) instead of dry sweeping. This will help prevent dust and debris from being stirred up in the air.
- Check the vacuum filter bag once a month, and put a new bag in when it gets close to the fill line.
- Check the HEPA filter (front of vacuum) each time you change the filter bag. REPLACE the HEPA filter at least 2 times each year, or after every 6 filter bag changes.  
\*Note: Changing the filter bag often will extend the life of the more expensive HEPA filter!
- Use setting other than “Low” because the lowest setting often brings the vacuum too close to the carpet and can damage your carpeting/floor.
- **Do not** vacuum up water or wash the HEPA filter! It can cause mold to grow in the vacuum and you will not be able to use it anymore.



# Scents

## What Do We Mean By “Scents”?

When we talk about scents, we mean fragrances, aromas or perfumes – anything that adds a smell to something else.

- **Scents can usually be found in personal care products**, such as perfumes, aftershaves, colognes, shampoos and conditioners, soaps, body lotions and deodorants.
- **Scents are also found in household items**, such as air fresheners, deodorizers, candles, some laundry detergents, fabric softeners and cleaning products.
- **Scents can also be found in the workplace** (e.g. cleaning products, adhesives, caulking).

**DID YOU KNOW? More than 80% of the ingredients in fragrances have never been tested for their harmful effects on humans.**

## How Can Scented Products Affect My Child’s Health?

- Chemicals used to add scents to products can cause serious health problems for some people, especially for people with lung diseases such as asthma. Being near a scented product – perfume, scented candles or even laundry detergent – can make some people sick.
- People most severely affected by fragrances are those with asthma, allergies, migraine headaches, dermatitis (skin sensitivity), and rhinitis (sinus sensitivity).
- Fragrance chemicals can enter the body through the nose by inhalation, through the mouth by ingestion, or the skin by absorption (contact). These chemicals can affect the lungs, nose, skin, eyes, and brain.

### Examples of what this means:

**Lungs:** Studies have shown that shortness of breath or asthma-like symptoms can be caused by fragrances. Most of the fragrance chemicals consist of volatile organic compounds (VOCs), which are known to be respiratory irritants.

**Nose:** Since the nose is a chemical receptor, people exposed to scents can be affected with sneezing and sinus problems.

**Skin:** The number one cause of adverse skin reactions to cosmetics and laundry products is fragrance. The skin reactions to fragrance chemicals can produce rashes, hives, dermatitis, or eczema.

**Brain:** Inhaling fragrances can cause circulatory changes and electrical activity in the brain. These changes can trigger migraine headaches, the inability to concentrate, dizziness, and fatigue.

While some people could be only mildly affected by scents, others could have severe reactions.

<p><b>Some common symptoms include:</b></p> <ul style="list-style-type: none"><li>• shortness of breath</li><li>• chest tightness</li><li>• watery eyes</li><li>• headaches</li><li>• feeling dizzy</li><li>• feeling tired or weak</li><li>• nausea</li><li>• cold-like symptoms</li></ul>	<p><b>More serious symptoms include:</b></p> <ul style="list-style-type: none"><li>• kidney/liver damage</li><li>• nausea/vomiting/abdominal pain</li><li>• anxiety</li><li>• having problems concentrating</li><li>• feeling confused</li><li>• loss of appetite</li><li>• feeling depressed</li><li>• seizures</li><li>• muscle pain</li><li>• numbness</li></ul>
---	---

**DID YOU KNOW?** It is estimated that 72% of people with asthma have more asthma symptoms and/or asthma attacks when they are around fragrances.

### What Exactly is in Scents?

- Scents are made from a mixture of natural and man-made chemicals. A typical fragrance can contain between 100 to 350 ingredients. The problem with scented products is not so much the smell itself as the chemicals that produce the smell.
- Scented products contain several toxic chemicals that constantly turn into vapor in the air and attach themselves to hair, clothing, and surroundings. Most (95%) of the chemicals used are synthetic compounds made from petroleum. These include chemicals made from benzene, aldehydes and many other known toxins and sensitizers.
- One commonly used chemical is *diethyl phthalate*, which is used to make scents last longer. It can cause allergic skin reactions and is classified as a skin sensitizer and a reproductive toxin, which means that it harms a person's reproductive system!

*Fragrance products also add to air and water pollution in our environment!*

## What You Can Do At Home:

- Use fragrance-free household cleaning products. Or better still, make your own, using a list of non-toxic cleaning recipes.
- Use fragrance-free personal care products. To find safer personal care products on the web, visit the Skin Deep Database, a site that assesses and compares the safety of many brands of shampoos, skin creams, baby wipes, etc.  
Visit: <http://www.cosmeticsdatabase.com/index.php?nothanks=1>
- Keep your home well ventilated. If you don't have an air exchange system, open a window to get fresh air in and stale air out. Or put a fan in a window to draw air out and open another window so that air circulation is increased.
- If you choose to wear perfumes:
  - Don't keep perfumes or scented products in your bedroom.
  - Wear a lighter fragrance (or no fragrance at all), during warm weather. Fragrance intensifies with heat.
  - Make sure you wear a reasonable amount of fragrance. No one more than an arm's length away from you should be able to smell your fragrance.
- Keep detergents and soaps in sealed containers or a cupboard with a door that closes completely. Make sure the room they are stored in is well ventilated.

**DID YOU KNOW?** You should always buy products that say "Fragrance-Free" on the label. Products that say "Scent-Free" or "Unscented" may still contain some masking fragrances.





# Seasonal Allergies

*If you are one of the millions of Americans with seasonal allergies, you know that a serious allergy is nothing to sneeze at!*

## What are Seasonal Allergies?

Seasonal allergies, usually called “**hay fever**,” have little to do with hay and nothing to do with fevers! Farmers coined the phrase at the turn of the century because they saw the same symptoms year after year during harvest season. Your doctor will probably use the medical term “**allergic rhinitis**.”

Seasonal allergies or hay fever is like having a cold, but without germs. Like a cold, hay fever can cause sleepless nights, non-stop sneezing, tiredness, and nasal congestion.

During hay fever season, the tissues lining your nose become inflamed, causing congestion or that stuffy feeling. Other common symptoms include:

- Sneezing, often with a Runny Nose
- Scratchy Throat
- Red, Itchy Eyes
- Postnasal Drip and Coughing
- Dark Circles under the eyes
- Constant rubbing of the nose

## What Causes Seasonal Allergies?

People with seasonal allergies have allergic reactions to plant pollens or mold spores. These allergy-causing things are called “**allergens**.”

- **Weeds, grasses, and trees** all release tiny grains of pollen. Plants produce most of their pollen during the spring and fall months. What plants you are allergic to, and when those plants pollinate will determine when you start to sneeze. Trees release their pollen earliest in the season. Grasses come next, followed by weeds. Ragweed – the most common plant allergen – makes late summer and fall especially miserable for people who are allergic to its pollen.



Different people are allergic to the pollen of different plants, but people who develop allergies to one plant are very likely to develop allergies to others as well. The most common plants which produce allergenic pollen and the time of year that they pollinate are listed in the following chart:

Trees	Grasses	Weeds
Early Spring to Early Summer	Late Spring to Late Summer	Late Summer to Early Fall
ash birch cedar cypress elm hickory maple oak poplar sycamore walnut	bermuda blue orchard red top rye sweet vernal timothy	cockleweed pigweed ragweed Russian thistle sagebrush tumbleweed

Source: National Allergy Supply, Inc., "Pollen Allergies and Minimizing Symptoms" [www.natallergy.com](http://www.natallergy.com)

- **Outdoor mold spores** are also common allergens that cause hay fever. Like pollen, these tiny particles are carried in the air and breathed in. Molds live in damp, dark places – in soil, on rotting wood, in grain bins, on fallen leaves, etc. Molds usually appear after the spring thaw, are at their highest levels in the late summer and fall months, and may hang around until the late fall.

Since pollen grains and mold spores are tiny enough to be carried in the air, wind easily spreads them over a wide area. In fact, ragweed pollen can travel 500 miles! So beware of hot, dry, windy weather – your hay fever symptoms may get worse.

The good news is that rainy, cloudy days usually *reduce* pollen allergy symptoms because the particles get washed away. The bad news is that *mold growth increases* after rainy weather. **If your hay fever is worse when the weather is rainy, chances are you are more allergic to mold spores than to plant pollen.**

### Daily Pollen & Mold Counts

Pollen and mold counts measure the amount of outside allergens in the air. Wherever you live, you can keep track of daily pollen and mold counts in the weather section of the newspaper, on the radio, on television, or online (see Air Quality section of HHU manual). Keep in mind that by the time they are published or announced, pollen and mold counts are at least a day old. Because weather affects the amount of allergens in the air, these counts may change greatly from day to day. Still, pollen and mold counts will give you a general idea of what the air holds for allergy sufferers.

# Treatment for Seasonal Allergies

The first step is to figure out what you are allergic to. Start by keeping notes on when and where you notice allergy symptoms. (Your calendar can be a handy place to keep notes on daily symptoms.) If your allergies only bother you during the spring or fall, you are probably allergic to pollens and molds.

Your doctor can look at your notes and do tests to figure out what you are allergic to. Together, you can work out a treatment plan which can include three things: avoiding or reducing contact with allergens, taking medicines, and, for some people, getting allergy shots (immunotherapy).

## Medicines for Allergies

Non-prescription antihistamines and decongestants are the most common medicines used for allergies.

- **Antihistamines** help relieve your sneezing, itching, and runny nose, especially when taken on a regular basis. For example, if you start taking an antihistamine each day at the beginning of pollen season, you will probably reduce severe allergy symptoms. Because some antihistamines dry out mucous membranes, they may cause a dry mouth. Many non-prescription antihistamines also cause drowsiness and should be used with caution due to this side effect.

**Non-sedating antihistamines**, sometimes called second generation antihistamines, are similar in many ways to the other antihistamines. Currently, these medicines need a doctor's prescription. One major difference is that non-sedating antihistamines do not make you drowsy.

**Topical antihistamines**, nasal sprays or eye drops, are effective in treating some symptoms (itchy nose and eyes).



- **Decongestant Pills, Nasal Sprays, and Nose Drops** reduce stuffiness by shrinking swollen membranes in the nose. Side effects may include sleeplessness, a nervous, jittery feeling, a fast heartbeat, and a fast pulse.

*\*If you have high blood pressure (hypertension), a heart condition, thyroid disease, diabetes, or prostate or thyroid problems, check with your doctor before taking decongestants.*

*\*It is also important to remember that using a non-prescription nasal decongestant spray more than three days in a row may cause the swelling and stuffiness in your nose to become worse, even after you stop using the medicine. This is called a "rebound" reaction.*

- **Corticosteroid nasal sprays** (Some brand names are: *Beconase, Vancenase, Nasacort, Nasalide, and Nasonex*) help reduce the inflammation that causes nasal congestion without the chance of the “rebound” effect found in non-prescription nasal sprays. They also relieve itching and sneezing. **They are the most effective medicines for seasonal allergies** (allergic rhinitis). They work best if you start using them two weeks before the allergy season starts and continue using them throughout the season. Common side effects may include sneezing, and a burning feeling or an irritation in the nose and throat.
- **Oral Corticosteroids** may be used for 3-7 days to gain rapid control of severe symptoms. Corticosteroid nasal sprays are used thereafter to maintain control of the symptoms.

*\*Please note that corticosteroids are NOT the same thing as anabolic steroids, which some athletes use to build muscles. Corticosteroid medicines are very safe and effective when used at recommended doses.*

**New prescription drugs are approved periodically. If the prescription you are taking is not on this list, ask your doctor which category (above) it falls into.**

- **Allergy Shots**

Although allergy shots may help control hay fever, you will need to receive a shot every 1 to 4 weeks over a period of 3 to 5 years. Your symptoms would probably be less severe during the first allergy season after your shots were started. Allergy shots are helpful for many patients, but may not work for everyone. **Ask your doctor whether you should receive allergy shots.**

**You should see a doctor for your Seasonal Allergies if:**

- You can't avoid your allergens and non-prescription allergy medicines don't work.
- You are taking non-prescription allergy medicines for more than 3 months (total) in a year.
- You have bad side effects from your non-prescription allergy medicines.
- You have allergies all year round.
- Your symptoms are severe.

# Tips on Avoiding Seasonal Allergens

- If possible, keep home and car windows closed and use air conditioning when the pollen count or humidity is high, especially on windy days and between 9:00 a.m. and sundown.
- Use a dehumidifier, especially in the basement, to keep air inside your home dry and prevent mold growth.
- Minimize outdoor activities on days when the pollen or mold counts are high, or on windy days when pollen and mold spores are blown about.
- Use a paper mask to cover your nose and mouth when mowing the lawn or raking leaves/grass, because these activities stir up pollens and molds.
- Dry sheets and clothing in a dryer if possible; Avoid hanging them outside to dry during allergy season – pollens and mold collect on them.
- Take a shower after spending time outdoors to remove pollen and mold that may be on your skin and hair, especially before going to sleep.
- Wash and brush outdoor pets often – their fur collects pollen and mold spores when they spend a lot of time outdoors.
- Take your vacations to areas that have less pollen and mold, like the beach.
- Take allergy medicines as prescribed by a doctor, in the correct dosage. Do not take more medication to get rid of severe symptoms after you have already taken the correct dosage.



# Symptoms of Food Allergy

For some people, an allergic reaction to a food may be uncomfortable but not serious. For other people, an allergic reaction to a food can be scary and even life-threatening.

## The most common signs and symptoms of a true food allergy include:

- Tingling in the mouth
- Hives, itching or eczema
- Swelling of the lips, face, tongue and throat, or other parts of the body
- Wheezing, nasal congestion or trouble breathing
- Abdominal pain, diarrhea, nausea or vomiting
- Dizziness, lightheadedness or fainting

Signs and symptoms of a food allergy usually develop within a few minutes to an hour after eating the food.

In a severe allergic reaction to food — called **anaphylaxis** — you may have more extreme symptoms including these life-threatening signs and symptoms:

- Constriction of airways, including a swollen throat or a lump in your throat, that makes it difficult to breathe
- Shock, with a severe drop in blood pressure
- Fast heartbeat
- Dizziness, lightheadedness or loss of consciousness

Emergency treatment is very important for treating anaphylaxis. Food anaphylaxis causes thousands of emergency room visits and as many as 200 deaths in the United States each year.

*\*Speak to your doctor about whether your child needs an EpiPen, which is used for allergic emergencies. It is very important to learn how to use it properly! If your child's doctor prescribes an EpiPen, read the EpiPen patient insert.*





# Clean Air

## **Why is clean air important?**

The short and long-term effects of air pollution on the environment are varied and profound. Acid rain, global warming, smog, and the depletion of the ozone layer are just a few of the most alarming results of pollution. Air pollution also poses a significant human health risk, causing serious respiratory and other illnesses.<sup>1</sup>

## **Can air pollution make asthma symptoms worse and trigger attacks?**

If you or your child has asthma, have you ever noticed symptoms get worse when the air is polluted? Air pollution can make it harder to breathe, and it can cause symptoms like coughing, wheezing, chest discomfort, and a burning feeling in the lungs.

Two key air pollutants can affect asthma. One is ozone (found in smog). The other is particle pollution, or particulate matter (found in haze, smoke, and dust). When ozone and particle pollution are in the air, people with asthma are more likely to have symptoms.

## **How can I find out how clean the outside air is?**

The Air Quality Index, or AQI, is an easy way to understand how clean the outside air is. It is a simple tool that provides a color-coded "picture" of current air pollution levels and health effects. The AQI allows people to take action to protect their health when we have more air pollution than we should.

## **What air pollutants are reported by the AQI?**

AQI pollutants include fine particles, ground-level ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide. Air monitor data is collected every hour. A computer analyzes the information and automatically determines how clean the air is. The AQI tells people whether the air they breathe is currently "good," "moderate," "unhealthy for sensitive groups," "unhealthy," "very unhealthy," or "hazardous". During summer months, ground-level ozone is most likely to be the pollutant that has the most effect on the AQI.



## **How can I find out what today's AQI is?**

The AQI is available on the Michigan Department of Environmental Quality (DEQ) "Michigan's Air" web page. Go to <http://www.deqmiair.org>. The color-coded map of Michigan shows AQI locations across the state. The AQI is updated every hour throughout the day. You can also choose to view detailed AQI numerical values and the controlling pollutant at each monitor location. If you do not have access to the Internet, you can call the DEQ Environmental Assistance Center during office hours at 1-800-662-9278. Ask that your call be forwarded to the Air Quality Division.<sup>2</sup>

### **How can I find out how clean the air will be tomorrow or the next day?**

EnviroFlash is a service that automatically delivers air quality forecasts directly to the public. It provides information so people can adjust their daily activities when poor air conditions are expected. People enrolled in EnviroFlash get the information they choose to receive via computer, e-mail, or a cell phone with text messaging capability. Using the same scale found in the AQI, DEQ meteorologists determine whether the air quality level for the next few days is likely to be "good," "moderate," "unhealthy for sensitive groups," "unhealthy," "very unhealthy," or "hazardous".

### **What air pollutants are reported by EnviroFlash?**

Forecast pollutants include ground-level ozone and fine particulate matter. EnviroFlash automatically sends the forecast message at the air quality you select, as well as notice when an "Action!" day (air quality advisory) is announced. Those with small children and people with cardio-pulmonary health problems (such as asthma) may choose to be notified when the air is predicted to be unhealthy for sensitive groups. People who work or exercise strenuously are also in this category due to increased deep respiration. People who do not have health risks and who are not as concerned about outdoor air quality may choose to be notified only when the forecast is "unhealthy" or worse.



### **How do I sign up for EnviroFlash?**

Current air quality information is already available at DEQ's website <http://www.deqmiair.org> and AIRNow's website <http://www.airnow.gov>. EnviroFlash is an additional service that sends air information directly to your computer or cell phone. To sign up, go to [www.michigan.gov/deqair](http://www.michigan.gov/deqair) and click on the EnviroFlash icon. Then, click on "Enroll in EnviroFlash" and follow the steps as instructed.<sup>3</sup>

## What steps can I take to protect my child's health from air pollution?

1. Get to know how sensitive your child is to air pollution.
  - Notice their asthma symptoms when they are physically active. Do they happen more often when the air is more polluted? If so, they may be sensitive to air pollution.
  - Also, notice any asthma symptoms that begin after they have been outdoors in polluted air. Air pollution can make them more sensitive to indoor asthma triggers like mold and dust mites. If they are more sensitive than usual to indoor asthma triggers, it could be due to the air pollution outdoors.
2. Know when and where air pollution may be bad.
  - Ozone is often worst on hot summer days, especially in the afternoons and early evenings.
  - Particle pollution can be bad any time of year, even in winter. It can be especially bad when the weather is calm, allowing air pollution to build up. Particle levels can also be high:
    - Near busy roads, during rush hour, and around factories.
    - When there is smoke in the air from wood stoves, fireplaces, or burning leaves or other vegetation.
3. Get up-to-date information from the Air Quality Index (<http://www.deqmiair.org>) and sign up for air quality forecasts from EnviroFlash (<http://www.michigan.gov/deqair>).
4. Plan activities when and where pollution levels are lower.
5. Control your child's activity level when the air is polluted. Try to have them slow down if they are active outdoors. This will reduce how much pollution they breathe.
6. If they get asthma symptoms when the air is polluted, stop their activity. Find another, less intense activity.
7. Keep their quick-relief medicine on hand when they are active outdoors.
8. Consult their health provider if they have symptoms when the air is polluted.

---

<sup>1</sup> Source: "Air Pollution Effects" web site, US Environmental Protection Agency: <http://www.epa.gov/ebtpages/airairpollutioneffects.html>

<sup>2</sup> Source: "Air Quality Index" fact sheet, Michigan Department of Environmental Quality.

<sup>3</sup> Source: Michigan DEQ EnviroFlash website found at [http://www.michigan.gov/deq/0,1607,7-135-3310\\_4195-101321--,oo.html](http://www.michigan.gov/deq/0,1607,7-135-3310_4195-101321--,oo.html)

# THE AIR QUALITY INDEX

## What is the Air Quality Index?

The Air Quality Index, or AQI, is an easy way to understand how clean the outside air is. It is a simple tool that provides a color coded “picture” of current air pollution levels and health effects. A daily AQI allows people to take action to protect their health when we have more air pollution than we should.

## What air pollution is reported by the AQI?

AQI pollutants include fine particles, ground-level ozone, carbon monoxide, sulfur dioxide and nitrogen dioxide. Air monitor data is collected every hour. A computer analyzes the information and automatically determines how clean the air is. The AQI tells people whether the air they breathe is currently “**good**”, “**moderate**”, “**unhealthy for sensitive groups**”, “**unhealthy**”, “**very unhealthy**” or “**hazardous**”. Fine particles or ground-level ozone are the pollutants most likely to control the AQI.

## How bad is our air? Has the AQI ever reached “hazardous” levels in Michigan?

Michigan’s air quality usually falls in the “**good**” or “**moderate**” air quality range. Sometimes, the AQI will reach the orange “**unhealthy for sensitive groups**” level. Michigan hardly ever experiences air quality concentrations in the “**unhealthy**” range. The AQI here has never reached hazardous levels.

## How does the AQI work?

Air monitors analyze air samples. Each sample is given a numerical value. If a location monitors more than one kind of air pollutant, the one with the highest value (worst air measured) becomes the AQI. An AQI number above 100 means a pollutant has reached unhealthy levels.

## Why report the AQI?

Back in 1976, the federal Clean Air Act required state and local communities to communicate air quality information in a consistent manner. The index was updated in 1999 to provide better information about health risks linked with air pollution. Today’s air quality is reported the same way across the country.

## How is the updated index different?

The AQI added a category called “**unhealthy for sensitive groups**” to better protect children, people with lung disease or asthma, and others who are more sensitive to air pollution than the general public. An AQI forecast has also been added. It allows air agencies to notify the public ahead of time when poor air quality is predicted. These improvements help people to better protect their health – they can avoid prolonged, strenuous activity or reduce physical exertion when there is too much pollution in the air. People can also reduce air pollution levels by driving less and using products that conserve energy.

## How can I find out what today's AQI is?

The current AQI is available on the DEQ “Air” webpage. Go to [www.michigan.gov/deqair](http://www.michigan.gov/deqair). Mouse click on the AQI icon. The color-coded map shows monitor locations across the state. Index values are updated every hour during the day. You can also choose to view a detailed summary of AQI numerical values and the controlling pollutant for each monitor location. If you don’t have access to the Internet, you can call the DEQ Environmental Assistance Center during office hours at 1-800-662-9278. Another choice is the AIRNow webpage at [www.airnow.gov](http://www.airnow.gov) for national and regional AQI information.

## What is EnviroFlash?

**EnviroFlash** is a new service that automatically sends out e-mail or text messages of AQI forecasts. Participants receive air quality messages at the health level they select. (Most people choose the “**orange**” level.) It also includes information when air quality “*Action!* Day” advisories are issued. For more information and to enroll, go to the DEQ “Air” webpage and click on the **EnviroFlash** icon.

# THE AIR QUALITY INDEX COLORS AND HEALTH STATEMENTS

AQI Color, Category & Value	PARTICULATE MATTER	OZONE	CARBON MONOXIDE	SULFUR DIOXIDE	NITROGEN DIOXIDE
	( $\mu\text{g}/\text{m}^3$ ) 24-hour	(ppm) 8-hour / 1-hr	(ppm) 8-hour	(ppm) 24-hour	(ppm) 1-hour
<b>GREEN: Good 1- 50</b>	None	None	None	None	None
<b>YELLOW: Moderate 51- 100</b>	People who are unusually sensitive to air pollution should consider reducing prolonged or heavy exertion.	People who are unusually sensitive to air pollution should consider limiting prolonged outdoor exertion.	None	None	None
<b>ORANGE: Unhealthy For Sensitive Groups 101- 150</b>	People with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion.	Active children and adults, and people with lung disease, such as asthma, should reduce prolonged or heavy outdoor exertion.	People with cardiovascular disease, such as angina, should limit heavy exertion and avoid sources of CO, such as heavy traffic.	People with asthma should consider limiting outdoor exertion.	None
<b>RED: Unhealthy 151- 200</b>	People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion. Everyone else should reduce prolonged or heavy exertion.	Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged or heavy outdoor exertion; everyone else, especially children, should reduce prolonged outdoor exertion.	People with cardiovascular disease, such as angina, should limit moderate exertion and avoid sources of CO, such as heavy traffic.	Children, asthmatics, and people with heart or lung disease should limit outdoor exertion.	None
<b>PURPLE: Very Unhealthy 201- 300</b>	People with heart or lung disease, older adults, and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.	Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children should limit outdoor exertion.	People with cardiovascular disease, such as angina, should avoid exertion and sources of CO, such as heavy traffic.	Children, asthmatics, and people with heart or lung disease should avoid outdoor exertion; everyone else should limit outdoor exertion.	Children and people with respiratory disease, such as asthma, should limit heavy outdoor exertion.
<b>MAROON: Hazardous 301- 500</b>	Everyone should avoid all outdoor exertion; people with heart or lung disease, older adults, and children should remain indoors.	Everyone should avoid all outdoor exertion.	People with cardiovascular disease, such as angina, should avoid exertion and sources of CO, such as heavy traffic; everyone else should limit heavy exertion.	Children, asthmatics, and people with heart or lung disease should remain indoors; everyone else should avoid outdoor exertion.	Children and people with respiratory disease, such as asthma, should limit moderate or heavy outdoor exertion.

FOR MORE INFORMATION ON THE AQI, CONTACT THE AIR QUALITY DIVISION  
INTERNET WEBSITE: [www.michigan.gov/deqair](http://www.michigan.gov/deqair) • Telephone: 517-373-7023



# Exercise & Asthma

Having asthma does not mean you or your child cannot be active. Many people who have asthma will have symptoms, like coughing and wheezing, when they are active. Other people have asthma that is triggered by exercise (Exercise-Induced Asthma, or EIA). In both cases, symptoms of asthma can almost always be prevented. People can often avoid these symptoms by keeping their asthma under control with long-term control asthma medications, or by taking their quick-relief (rescue) inhaler before they exercise. Your child's doctor can help create a written Asthma Action Plan that includes ways to control their asthma triggered by exercise so they can stay active.

## Should People With Asthma Exercise?

YES. People with asthma should definitely exercise, just like people without asthma. Experts think it is important for people with asthma to get regular exercise to make their lungs stronger. Basically, the fitter you are, the better your lungs work. The better your lungs work, the fewer problems you will have with your asthma. The fewer problems you have with your asthma, the better you'll feel and the more you'll be able to do. There are many ways to get exercise. Find an activity that you like, and work with your doctor to keep your asthma under control.

## What Is Exercise-Induced Asthma (EIA)?

When asthma is triggered only by physical activity, it is called exercise-induced asthma (EIA). Just as with other asthma triggers, a person who is triggered into an asthma attack by exercise has airways that narrow and tighten after they begin to exercise. The main cause of EIA is the cold, dry air that is breathed into the lungs during exercise. When people are very active or exercising, they breathe quickly, shallowly, and through the mouth. This means that the air reaching the lungs has missed the warming and humidifying effects that happen when you breathe more slowly through your nose, like when you are at rest. If a person has EIA, their lungs are very sensitive to this sudden change in temperature and humidity of air. Their lungs become irritated, and this triggers asthma symptoms.

## What are the Symptoms of Exercise-Induced Asthma?

Symptoms of EIA include wheezing, tightness or pain in the chest, coughing, and in some cases, prolonged shortness of breath after exercising.

A child may have exercise-induced asthma if he or she:

- Feels out of breath or tired easily during or after play/exercise
- Coughs when he or she comes inside from playing outdoors
- Takes a long time to catch their breath after running for more than a few minutes without stopping

Children with exercise-induced asthma often begin experiencing symptoms 5 to 10 minutes after they start exercising. Symptoms usually are the worst 5 to 10 minutes after stopping the activity and may take up to an hour or longer to subside. Some people with EIA even have symptoms for hours after they exercise. Also, even though symptoms often appear while the child is active, sometimes they appear only after the activity has stopped.

**Remember:** There is a difference between someone with EIA and someone who is not physically fit and is simply out of breath after exercising. A person who is not physically fit can catch his or her breath within minutes, while it takes much longer for a person with EIA to recover from physical activity.

### **How is EIA Diagnosed by a Doctor?**

If your child's doctor suspects EIA, he or she may ask a lot of questions about the family's asthma and allergy history and about your child's symptoms and what has triggered them in the past. They may ask your child to do a breathing test after exercising. The exercising can be done in the office on a treadmill or exercise bike, after your child has run outside for 6 to 8 minutes, or after participating in whichever activity has triggered the EIA in the past.

### **How is EIA Treated?**



If your child has EIA, their doctor may recommend that they take medication before exercise or activities. Talk to your doctor about what (if any) medication your child should take before exercising.

If your child still has breathing trouble during exercise, their medication dosages may need to be changed for better control. Also, let your child's doctor know of any changes in your child's breathing trouble.

# Nutrition

It is very important for you and your family to eat healthy. Good nutrition not only helps make your child's asthma better—it helps your family stay free from many other health problems like colds and flus, heart disease, and cancer.



Eating healthy is easier than you might think! The U.S. Department of Agriculture's My Pyramid plan is a helpful tool to see if your family is eating right. It also can give you ideas on how to add more healthy foods into your family's diet.

Here is some helpful information from MyPyramid.gov:

## Grains

### What foods are in the Grain group?



Any food made from wheat, rice, oats, cornmeal, barley or another cereal grain is a grain product. **Bread, pasta, oatmeal, breakfast cereals, tortillas, and grits** are examples of grain products.

Grains are divided into 2 groups: **Whole Grains** and **Refined Grains**.

- **Whole Grains** contain the entire grain kernel, and are very healthy for you. Examples include:
  - Whole wheat flour
  - Cracked wheat
  - Oatmeal
  - Whole cornmeal
  - Brown rice
  - Popcorn
- **Refined Grains** have been processed to give them a finer texture and longer shelf-life, but this removes fiber, iron, and many B vitamins, so unless they are "enriched", they are not as healthy as whole grains. Examples include:
  - White flour
  - White bread
  - White rice
  - Tortillas
  - Pasta
  - Crackers

## How many servings of Grains should my family eat?

The amount of grains you need to eat depends on your age, gender, and level of physical activity. Recommended daily amounts are listed in the chart. Most Americans eat enough grains, but few are whole grains. At least ½ of all the grains eaten should be whole grains.

		Daily recommendation*	Daily minimum amount of whole grains
<b>Children</b>	2-3 years old	3 ounce equivalents*	1 ½ ounce equivalents*
	4-8 years old	4 – 5 ounce equivalents*	2 – 2 ½ ounce equivalents*
<b>Girls</b>	9-13 years old	5 ounce equivalents*	3 ounce equivalents*
	14-18 years old	6 ounce equivalents*	3 ounce equivalents*
<b>Boys</b>	9-13 years old	6 ounce equivalents*	3 ounce equivalents*
	14-18 years old	7 ounce equivalents*	3 ½ ounce equivalents*
<b>Women</b>	19-30 years old	6 ounce equivalents*	3 ounce equivalents*
	31-50 years old	6 ounce equivalents*	3 ounce equivalents*
	51+ years old	5 ounce equivalents*	3 ounce equivalents*
<b>Men</b>	19-30 years old	8 ounce equivalents*	4 ounce equivalents*
	31-50 years old	7 ounce equivalents*	3 ½ ounce equivalents*
	51+ years old	6 ounce equivalents*	3 ounce equivalents*

### \*What counts as an ounce equivalent in the chart?

In general, 1 slice of bread, 1 cup of ready-to-eat cereal, or ½ cup of cooked rice, cooked pasta, or cooked cereal can be considered as 1 ounce equivalent from the grains group. So for example, a woman should have 3 servings of grains every day.

### Tips to include more Grains in your family's diet:

- Eat wheat bread instead of white bread.
- Try brown rice or whole-wheat pasta instead of white rice and pasta. Try brown rice stuffing in baked green peppers and whole-wheat macaroni and cheese.
- Use whole wheat or oat flour for up to half the flour in pancakes, waffles, muffins, or other flour-based recipes.
- Use whole-grain bread or cracker crumbs in meatloaf.
- Try rolled oats or crushed, unsweetened whole grain cereal as breading for baked chicken, fish, or pork.
- Freeze leftover cooked brown rice or barley. Heat and serve it later as a quick side dish.
- Snack on ready-to-eat whole grain cereals like Cheerios.
- Try a whole-grain snack chip, like baked tortilla chips.
- Popcorn, a whole grain, can be a healthy snack with little or no added salt and butter.
- Add whole-grain flour or oatmeal when making cookies or other baked goods.
- Teach older children to read the ingredient list on food labels and choose foods with whole grains at the top of the list.

# Vegetables

## What foods are in the Vegetable group?



Any vegetable or 100% vegetable juice is a member of the vegetable group. Vegetables may be raw or cooked; fresh, frozen, canned, or dried; and may be whole, cut-up, or mashed.

### There are 5 groups of vegetables:

- **Dark green vegetables** like broccoli, collard greens, green leafy lettuce, spinach, and kale
- **Orange vegetables** like acorn and butternut squash, carrots, sweet potatoes, and pumpkin
- **Dry beans and peas** like black beans, kidney beans, pinto beans, split peas and chickpeas
- **Starchy vegetables** like corn, potatoes, and green peas
- **Other vegetables** include artichokes, asparagus, beets, cabbage, cauliflower, celery, cucumbers, eggplant, green beans, peppers, iceberg lettuce, onions, tomatoes, turnips, wax beans, and zucchini

## How many vegetables should my family eat every day?

You should eat vegetables from all of the groups, but you do not need to eat vegetables from each group every day. However, over one week, try to eat the amounts listed in each group. Here are the amounts you should eat every **week**:

		Dark green vegetables	Orange Vegetables	Dry beans and peas	Starchy vegetables	Other vegetables
AMOUNT PER WEEK**						
<b>Children</b>	2–3 years old	1 cup	½ cup	½ cup	1 ½ cups	4 cups
	4–8 years old	1 ½ cups	1 cup	1 cup	2 ½ cups	4 ½ cups
<b>Girls</b>	9–13 years old	2 cups	1 ½ cups	2 ½ cups	2 ½ cups	5 ½ cups
	14–18 years old	3 cups	2 cups	3 cups	3 cups	6 ½ cups
<b>Boys</b>	9–13 years old	3 cups	2 cups	3 cups	3 cups	6 ½ cups
	14–18 years old	3 cups	2 cups	3 cups	6 cups	7 cups
<b>Women</b>	19–30 years old	3 cups	2 cups	3 cups	3 cups	6 ½ cups
	31–50 years old	3 cups	2 cups	3 cups	3 cups	6 ½ cups
	51+ years old	2 cups	1 ½ cups	2 ½ cups	2 ½ cups	5 ½ cups
<b>Men</b>	19–30 years old	3 cups	2 cups	3 cups	6 cups	7 cups
	31–50 years old	3 cups	2 cups	3 cups	6 cups	7 cups
	51+ years old	3 cups	2 cups	3 cups	3 cups	6 ½ cups

\* In general, 1 cup of raw or cooked vegetables or vegetable juice, or 2 cups of raw leafy greens can be considered as 1 cup from the vegetable group.

### **Tips to include more Vegetables in your family's diet:**

- Buy fresh vegetables when they are in season. They cost less and will have the best flavor.
- Stock up on frozen vegetables for quick and easy cooking in the microwave.
- Buy vegetables that are easy to prepare. Pick up pre-washed bags of salad greens and add baby carrots or grape tomatoes for a salad in minutes. Buy packages of veggies such as baby carrots or celery sticks for quick snacks.
- Use a microwave to quickly “zap” vegetables. White or sweet potatoes can be baked quickly this way.
- Vary your veggie choices to keep meals interesting for your family.
- Try crunchy vegetables: either raw or lightly steamed.
- Prepare more foods from fresh ingredients to lower the amount of salt you take in. Most salt in a person's diet comes from packaged or processed foods.
- Plan some meals around a vegetable main dish, such as a vegetable stir-fry or vegetable soup.
- Include a green salad with your dinner every night.
- Shred carrots or zucchini into meatloaf, casseroles, quick breads, and muffins.
- Order a veggie pizza with toppings like mushrooms, green peppers, and onions, and ask for extra veggies.
- Use pureed, cooked vegetables like potatoes to thicken stews, soups and gravies. These add flavor, nutrients, and texture.
- Many vegetables taste great with a dip or dressing. Try a low-fat salad dressing with raw broccoli, red and green peppers, celery sticks or cauliflower.
- Keep a bowl of cut-up vegetables in a see-through food container in the refrigerator. Try carrot and celery sticks, broccoli, cucumber slices, or red or green pepper strips.
- Wash vegetables before preparing or eating them. Under clean, running water, rub vegetables with your hands to remove dirt and bacteria on the surface.



### **Vegetable tips for children:**

- Set a good example for children by eating vegetables with meals and as snacks.
- Let children decide on the dinner vegetables or what goes into salads.
- Depending on their age, children can help shop for, clean, peel, or cut up vegetables.
- While shopping, allow children to pick a new vegetable for the family to try.
- Use cut-up vegetables as part of afternoon snacks.
- Children often prefer foods served separately. So, rather than mixed vegetables try serving two vegetables separately.

# Fruits

## What foods are in the Fruit group?



Any fruit or 100% fruit juice counts as part of the fruit group. Fruits may be fresh, canned, frozen, or dried, and may be whole, cut-up, or pureed.

### Some common Fruits include:

- Apples
- Bananas
- Strawberries
- Cherries
- Grapes
- Watermelon
- Oranges
- Pears
- Raisins
- Pineapple
- Fruit Cocktail
- 100% Fruit Juice

## How many Fruits should my family eat every day?

The amount of fruit you need to eat depends on age, gender, and amount of physical activity. Recommended daily amounts are shown in the chart.

Daily recommendation*		
Children	2-3 years old	1 cup*
	4-8 years old	1 to 1 ½ cups*
Girls	9-13 years old	1 ½ cups*
	14-18 years old	1 ½ cups*
Boys	9-13 years old	1 ½ cups*
	14-18 years old	2 cups*
Women	19-30 years old	2 cups*
	31-50 years old	1 ½ cups*
	51+ years old	1 ½ cups*
Men	19-30 years old	2 cups*
	31-50 years old	2 cups*
	51+ years old	2 cups*

\* In general, 1 cup of fruit or 100% fruit juice, or ½ cup of dried fruit can be considered as 1 cup from the fruit group.

### Tips to include more Fruits in your family's diet:

- Keep a bowl of whole fruit on the table, counter, or in the refrigerator.
- Buy fresh fruits when they are in season. They cost less and will have the best flavor.
- Buy fruits that are dried, frozen, and canned (in water or juice) as well as fresh, so that you always have a supply at home.
- Try to eat whole or cut-up fruit rather than juice, so you get more dietary fiber.
- When buying canned fruits, get fruit canned in 100% fruit juice or water rather than syrup.

- At breakfast, put bananas or strawberries on your cereal; add blueberries to pancakes; drink 100% orange or grapefruit juice. Or, try a fruit mixed with low-fat or fat-free yogurt.
- For dessert, have baked apples, pears, or a fruit salad.
- As a snack, spread peanut butter on apple slices or top frozen yogurt with berries or slices of kiwi fruit.
- Many fruits taste great with a dip or dressing. Try low-fat yogurt or pudding as a dip for fruits like strawberries or melons.
- Make a fruit smoothie by blending fat-free or low-fat milk or yogurt with fresh or frozen fruit. Try bananas, peaches, strawberries, or other berries.

#### **Fruit tips for children:**

- Set a good example for children by eating fruit everyday with meals or as snacks.
- Depending on their age, children can help shop for, clean, peel, or cut up fruits.
- While shopping, allow children to pick out a new fruit to try later at home.
- Offer raisins or other dried fruits instead of candy.
- Pack a juice box (100% juice) in children's lunches instead of soda or other sugar-sweetened beverages.
- At fast food restaurants, choose fruit options if possible, such as sliced apples, mixed fruit cup, or 100% fruit juice.

## Milk

### **What foods are included in the milk, yogurt, and cheese (Milk) group?**



All fluid milk products and many foods made from milk are part of this food group. Foods made from milk that retain their calcium content are part of the group, while foods made from milk that have little to no calcium, such as cream cheese, cream, and butter, are not.

#### **Some common foods in the Milk group are:**

- All types of milk (skim, 1%, 2%, Whole)
- Flavored milks (chocolate, strawberry)
- Lactose-free milk
- Puddings made with milk
- Yogurt
- Frozen yogurt
- Ice cream
- Cheese

## How much food from the Milk group should my family eat every day?

The amount of food from the Milk Group you need to eat depends on age. Recommended daily amounts are shown in the chart.

Daily recommendation		
Children	2-3 years old	2 cups*
	4-8 years old	2 cups*
Girls	9-13 years old	3 cups*
	14-18 years old	3 cups*
Boys	9-13 years old	3 cups*
	14-18 years old	3 cups*
Women	19-30 years old	3 cups*
	31-50 years old	3 cups*
	51+ years old	3 cups*
Men	19-30 years old	3 cups*
	31-50 years old	3 cups*
	51+ years old	3 cups*

\*In general, 1 cup of milk or yogurt, 1 ½ ounces of natural cheese, or 2 ounces of processed cheese can be considered as 1 cup from the milk group.

### Tips to include more Milk products in your family's diet:

- Serve milk as a drink at meals.
- Add fat-free or low-fat milk instead of water to oatmeal and hot cereals.
- Use fat-free or low-fat milk when making condensed cream soups (such as cream of tomato).
- Have fat-free or low-fat yogurt as a snack.
- Make a dip for fruits out of yogurt.
- Make fruit-yogurt smoothies in the blender.
- For dessert, make chocolate or butterscotch pudding with fat-free or low-fat milk.
- Top casseroles, soups, stews, or vegetables with shredded low-fat cheese.

### Tips for people who choose not to have milk products:

- If you or someone in your family cannot have milk because of **lactose intolerance**, the best way to get the health benefits of milk is to choose lactose-free products within the milk group, such as cheese, yogurt, or lactose-free milk. Or, take the enzyme lactase before having milk products.
- If you or someone in your family chooses not to have milk products, they can get calcium other ways:
  - Buy calcium-fortified juices, cereals, breads, soy beverages, or rice beverages
  - Try canned fish (sardines, salmon with bones), soybeans and other soy products (soy-based beverages, soy yogurt, tempeh), some other dried beans, and some leafy greens (collard and turnip greens, kale, bok choy). The amount of calcium that can be absorbed from these foods varies.

# Meat & Beans

**What foods are included in the meat, poultry, fish, dry beans, eggs, and nuts (Meat & Beans) group?**



All foods made from meat, poultry, fish, dry beans or peas, eggs, nuts, and seeds are considered part of this group.

Most meat and poultry choices should be lean or low-fat. Fish, nuts, and seeds contain healthy oils, so choose these foods often.

**Some common choices in the Meat and Beans group are:**

- **Meats:** lean cuts of beef, ham, lamb, pork, veal
  - **Lean ground meats:** beef, pork, lamb
  - **Game meats:** venison (deer), bison (buffalo), rabbit
- **Poultry:** chicken, duck, goose, turkey, ground chicken and turkey
- **Eggs**
- **Dry Beans and Peas:** black beans, black-eyed peas, chickpeas, kidney beans, lentils, lima beans, pinto beans, split peas, tofu, white beans
- **Nuts and Seeds:** almonds, cashews, hazelnuts, mixed nuts, peanuts, peanut butter, pecans, pistachios, pumpkin seeds, sesame seeds, sunflower seeds, walnuts
- **Fish:** catfish, cod, flounder, halibut, herring, mackerel, pollock, salmon, snapper, trout, tuna, walleye
  - **Shellfish:** clams, crab, crayfish, lobster, mussels, oysters, scallops, shrimp
  - **Canned fish:** anchovies, clams, tuna, sardines

**How much food from the Meat & Beans group should my family eat every day?**

The amount of food from the Meat and Beans Group you need to eat depends on age, gender, and level of physical activity. Most Americans eat enough food from this group, but need to choose leaner meats and eat a variety of foods in this group. Recommended daily amounts are shown in the following chart.

Daily recommendation*		
Children	2-3 years old	2 ounce equivalents*
	4-8 years old	3 – 4 ounce equivalents*
Girls	9-13 years old	5 ounce equivalents*
	14-18 years old	5 ounce equivalents*
Boys	9-13 years old	5 ounce equivalents*
	14-18 years old	6 ounce equivalents*
Women	19-30 years old	5 ½ ounce equivalents*
	31-50 years old	5 ounce equivalents*
	51+ years old	5 ounce equivalents*
Men	19-30 years old	6 ½ ounce equivalents*
	31-50 years old	6 ounce equivalents*
	51+ years old	5 ½ ounce equivalents*

\*In general, 1 ounce of meat, poultry or fish, ¼ cup cooked dry beans, 1 egg, 1 tablespoon of peanut butter, or ½ ounce of nuts or seeds can be considered as 1 ounce equivalent from the meat and beans group.

### **Tips to include more foods from the Meat & Beans group in your family's diet:**

- Start with a lean choice:
  - The leanest beef cuts include round steaks and roasts (round eye, top round, bottom round, round tip), top loin, top sirloin, and chuck shoulder and arm roasts.
  - The leanest pork choices include pork loin, tenderloin, center loin, and ham.
  - Choose extra lean ground beef. The label should say “90% lean” or higher. You may be able to find ground beef that is 93% or 95% lean.
  - Buy skinless chicken parts, or take off the skin before cooking.
  - Boneless skinless chicken breasts and turkey cutlets are the leanest poultry choices.
  - Choose lean turkey, roast beef, ham, or low-fat luncheon meats for sandwiches instead of luncheon meats with more fat, such as regular bologna or salami.
  - Trim away all of the visible fat from meats and poultry before cooking.
  - Broil, grill, roast, poach, or boil meat, poultry, or fish instead of frying.
  - Drain off any fat that appears during cooking.
  - Prepare foods without high fat sauces or gravies.
- Choose fish more often for lunch or dinner. Look for fish that have a lot of omega-3 fatty acids, such as salmon, trout, and herring. Some ideas are:
  - Salmon steak or filet
  - Salmon loaf
  - Grilled or baked trout
- Choose dry beans or peas as a main dish or part of a meal more often. Some choices are:
  - Chili with kidney or pinto beans
  - Split pea, lentil, minestrone, or white bean soups
  - Baked beans
  - Rice & Beans
- Try nuts as a snack, on salads, or in main dishes. Some ideas are:
  - Add slivered almonds to steamed vegetables.
  - Sprinkle a few nuts on top of low-fat ice cream or frozen yogurt.
  - Add walnuts or pecans to a green salad instead of cheese or meat.

### **Food safety tips for working with raw meat:**

- **Always** keep raw meat separate from cooked food and ready-to-eat food like fruits and vegetables.
- Do not wash or rinse meat or poultry.
- Wash cutting boards, knives, utensils and counter tops with hot soapy water after preparing each food item and before going on to the next one.
- Store raw meat, poultry and seafood on the bottom shelf of the refrigerator so juices don't drip onto other foods.
- Cook foods to a safe temperature to make sure bacteria are killed. Use a meat thermometer, which measures the temperature of cooked meat and poultry, to make sure that the meat is cooked all the way through.
  - **USDA Safe Internal Temperatures:**
    - Steaks & Roasts: 145 °F
    - Fish: 145 °F
    - Pork: 160 °F
    - Ground Beef: 160 °F
    - Egg Dishes: 160 °F
    - Chicken Breasts: 165 °F
    - Whole Poultry: 165 °F
- Refrigerate or freeze perishable food, prepared food, and leftovers within 2 hours.
- Plan ahead to defrost foods. Never defrost food on the kitchen counter at room temperature. Defrost food by putting it in the refrigerator, putting air-tight packaged food in cold tap water, or defrosting on a plate in the microwave.
- Do not eat raw or partially cooked eggs or foods containing raw eggs and raw or undercooked meat and poultry. These may make you very sick.

*Sources: US Department of Agriculture – [www.mypyramid.gov](http://www.mypyramid.gov)  
US Department of Agriculture – “Is It Done Yet?” brochure located at:  
[http://www.fsis.usda.gov/Is\\_It\\_Done\\_Yet/Brochure\\_Text/index.asp](http://www.fsis.usda.gov/Is_It_Done_Yet/Brochure_Text/index.asp)*

# Home Safety Checklist

## Room by Room

### **BEDROOM**

- Install smoke alarms outside bedrooms and on every level of the home. For added protection, consider installing smoke alarms in each bedroom. Test them at least once a month and change batteries at least once a year.
- Practice fire escape routes and identify an outside meeting place.
- Place a baby to sleep on his or her back in a crib with no pillows or soft bedding underneath.
- Use a crib that meets national safety standards and has a snug-fitting mattress.
- Never use an electric blanket in the bed or crib of a small child or infant.
- Keep small toys, balloons, and small balls away from young children.
- Check age labels for appropriate toys. Make sure toy storage chests have safety lid supports.
- To prevent small children from accidentally being strangled, use pull-cord wind-ups for miniblinds and avoid strings on children's toys and pacifiers.
- Install carbon monoxide (CO) alarms outside bedrooms to prevent CO poisoning.

## **BATHROOM**

- ☑ To prevent poisonings, lock away all medicines and vitamins, even those with child-resistant packaging.
- ☑ Have syrup of ipecac on hand (it causes vomiting in the event that someone accidentally ingests poison), but use only at the recommendation of a poison control center or physician.
- ☑ Never leave a young child alone in the bathroom, especially in a bath.
- ☑ Before bathing a child, always test bath water with your wrist or elbow to make sure it's not too hot.
- ☑ To prevent scalds, set the water heater thermostat to 120° F and install anti-scald devices.
- ☑ Make sure bathtubs and showers have non-slip surfaces (bath mat) and grab bars.
- ☑ Keep electrical appliances, like hair dryers and curling irons, out of the reach of children and away from water.

## **KITCHEN**

- ☑ Keep knives, plastic bags, lighters, and matches locked away from children.
- ☑ Avoid fires and burns by never leaving cooking food unattended, turning pot handles to the back of the stove, and keeping hot liquids and foods away from the edges of tables and counters.
- ☑ Make sure you and your children know the STOP, DROP, and ROLL procedure in case their clothes catch on fire (lie on the ground, cover face with hands, and roll until the flames are out).
- ☑ Keep appliance cords unplugged and tied up. Replace any frayed cords and wires.
- ☑ Securely strap young children in high chairs, swings, and other juvenile products.
- ☑ Do not give young children hard, round foods that can get stuck in their throats — like hard candies, nuts, grapes, popcorn, carrots, and raisins.
- ☑ Avoid scald burns by keeping children away from the hot water taps on drinking water coolers.

## **LIVING AREAS**

- ☑ To prevent asthma attacks, eliminate sources of mold, dust, and insects, such as cockroaches. If you have a pet, keep it and its bedding clean, and keep the pet off the furniture.
- ☑ If you must smoke, avoid smoking in the house, and especially around children.
- ☑ Make sure furnaces, fireplaces, wood-burning stoves, space heaters, and gas appliances are vented properly and inspected annually.
- ☑ Use safety gates to block stairways (and other danger areas), safety plugs to cover electrical outlets, and safety latches for drawers and cabinets.
- ☑ Install window guards (on windows that are not fire emergency exits).
- ☑ To prevent falls, keep hallways and stairways well-lit and use non-slip backing for area rugs.
- ☑ Keep cleaning solutions, pesticides, and other potentially dangerous substances in their original, labeled containers, and out of the reach of children.
- ☑ Test homes built before 1978 for lead paint. Call 1-888-LEADLIST for certified inspectors. Ask your doctor or health department if your child should be tested for lead.
- ☑ If you have guns or rifles in your home, store the firearms and ammunition in separate containers and lock them out of the reach of children.
- ☑ Learn First Aid and Cardiopulmonary Resuscitation(CPR). You can do this at your local Red Cross.
- ☑ Keep an updated list of emergency telephone numbers, including your local poison control center, physician and hospital emergency room, next to every phone in your home.
- ☑ Have your home tested for radon. If levels are above EPA's recommended level, call the National Radon Helpline at 1-800-557-2366 to find out about ways to reduce the levels.
- ☑ Make sure your family knows what to do during a natural disaster. In an earthquake, drop to the floor and get under something sturdy for cover. During a tornado, take shelter in a basement or an interior room without windows. During a hurricane, stay away from windows. Have handy supplies such as canned food, flashlights, and bottled water.

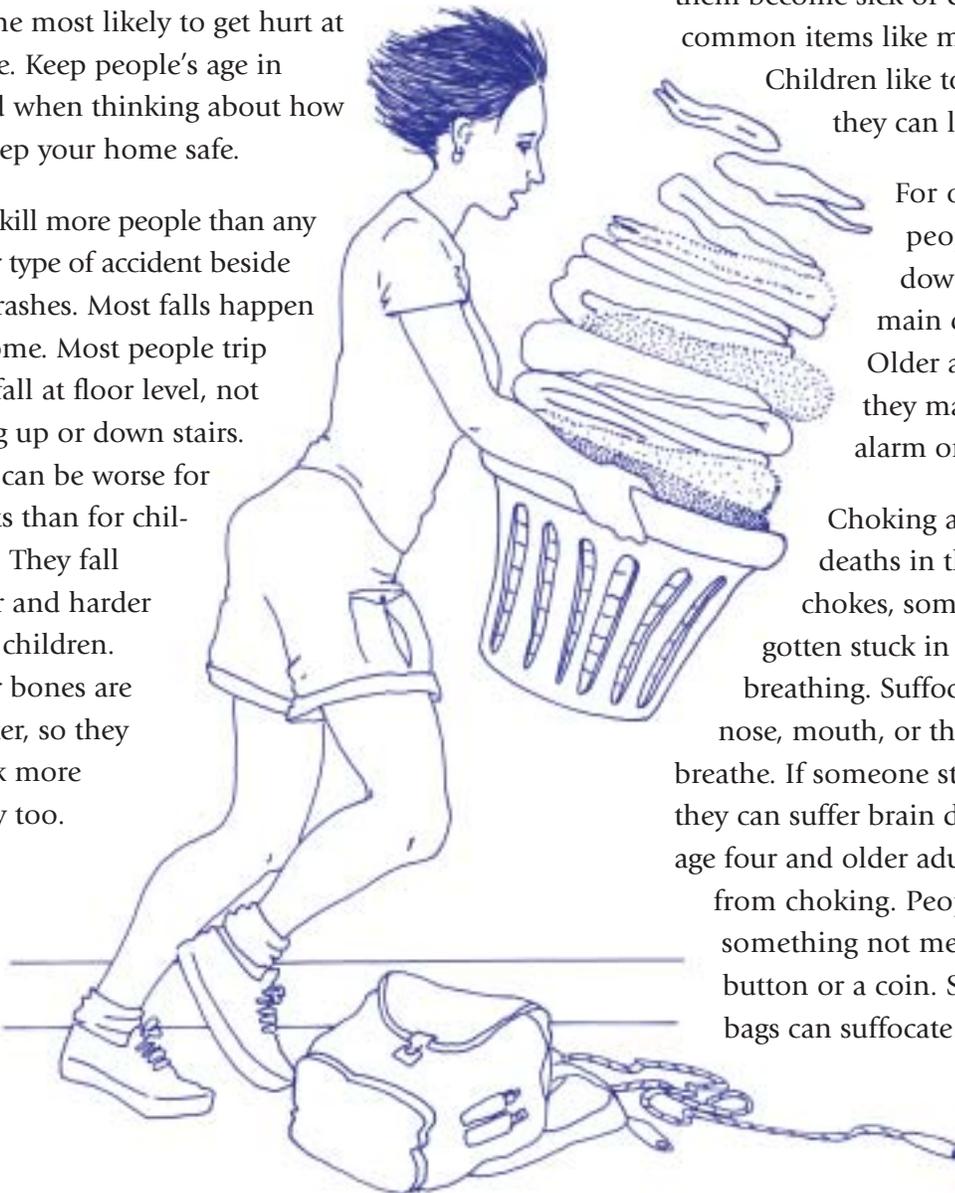
# Home Safety

## Should You Be Concerned?

**D**id you know that your chances of getting hurt at home are much higher than they are at work or school? The leading causes of death in the home are falls, drowning, fires, poisoning, suffocation, choking, and guns. The good news is that there are simple steps you can take to protect yourself and your family. This section will help you ask questions to find out if your home is a safe place to live and how to make it even safer.

Very young children and older adults are the most likely to get hurt at home. Keep people's age in mind when thinking about how to keep your home safe.

Falls kill more people than any other type of accident beside car crashes. Most falls happen at home. Most people trip and fall at floor level, not going up or down stairs. Falls can be worse for adults than for children. They fall faster and harder than children. Their bones are weaker, so they break more easily too.



***In the U.S., more than one million children age five and under are poisoned each year.***

Young children are curious and get into everyday things that can hurt or even kill them. Over half of them become sick or die from eating or drinking common items like medicine, makeup, and plants.

Children like to play with these things because they can look or smell good.

For over a decade, the number of people who die in fires has gone down. Yet fires are still one of the main causes of death in the home. Older adults are most at risk because they may not be able to respond to an alarm or get out of a building quickly.

Choking and suffocation also cause many deaths in the home. When a person chokes, something like a piece of food has gotten stuck in their throat and stopped their breathing. Suffocation happens when a person's nose, mouth, or throat is blocked and they can't breathe. If someone stops breathing long enough they can suffer brain damage or die. Children under age four and older adults are the most likely to die from choking. People can choke on food, or something not meant to be eaten at all, like a button or a coin. Sheets, blankets, and plastic bags can suffocate people who get caught in them.

# Home Safety

Drowning kills more than 1,000 children ages 14 and under each year. For every child who drowns, another 20 children go to the hospital or emergency room because they almost drowned.

It takes just a few easy, fairly low-cost steps to keep

your children safe from many everyday dangers. The questions below and on the next page will help you find safety problems at home. Page 51 will give you ideas about what to do. Remember, making your home safer for everybody may mean taking more than one step.

## Questions to Ask

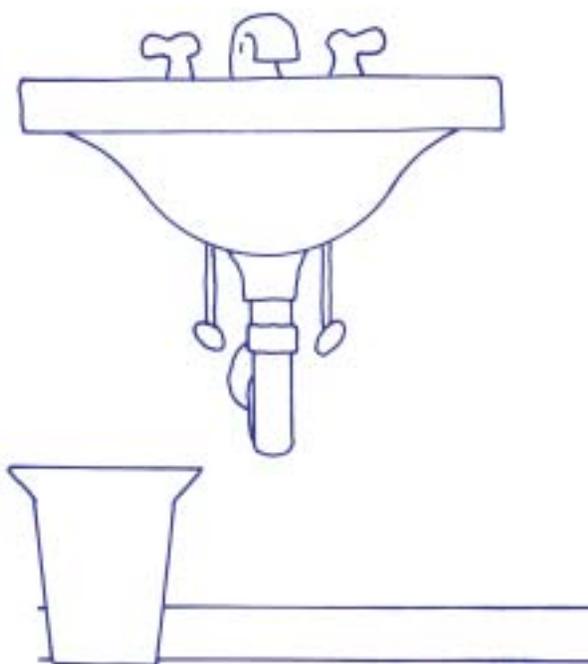
### Slips, Trips, and Falls

- Do you keep your floors—especially hallways and stairs—free of things that might make people slip or trip?
- Are your stairs in good shape?
- Are there throw rugs in your home?
- Do you know the safe way to carry big loads?
- Is your home well lighted?

### Is Your Home Poison-Proof?

To poison-proof your home, look through each room through the eyes of a child. Is anything that can hurt your child within her or his reach?

*Any room can have something in it that can hurt a child:* the kitchen, bathroom, bedrooms, living room, basement, garage, or laundry room. Most poisonous products are where people keep cleaning supplies. (See the chapters on Hazardous Household Products page 38 and Pesticides page 42 for more information.)



# Home Safety

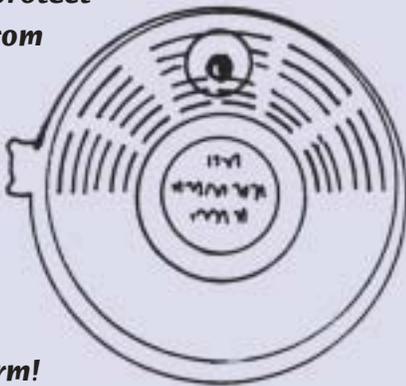
## Questions to Ask

### Fires and Burns

- Does your house or apartment have at least one smoke alarm?
- Where do you store matches and lighters?
- Have you talked about fire safety with your children?
- Do you have a fire exit plan in case your home catches fire?
- Do you use space heaters safely?

**Carbon monoxide is deadly gas you can't see or smell. It comes from combustion appliances like gas heaters, furnaces, stoves or dryers. Car exhaust also has carbon monoxide. See the chapter on carbon monoxide on page 23 to learn how to protect your family from this hidden danger.**

**To protect your family, put in a carbon monoxide alarm!**



### Watch Out Around Water

- Do you have a pool or does your child go swimming a lot?
- Does the pool you use have a fence around it?
- Do you ever leave toys in the pool?
- Does your child run around the pool?
- Do you ever visit lakes, beaches, or rivers?
- Do you watch your young children in the bathtub?

Pools are very dangerous for infants and toddlers. A toddler who falls in may die or get brain damage. Toddlers love to play in the water. But they don't know that even shallow water can hurt or kill them. Running children can fall down and hurt themselves badly. Children need to be watched around water at all times.



### Choking

- Do you keep a close eye on young children at meals and at playtime?
- Do you pick out toys that are right for your child's age?

Young children like to put things in their mouths. Balloons, toys, and toy parts that are small enough to fit into a child's mouth may cause choking. You also may not be able to get them out if they get stuck.

# ACTION STEPS

### **Prevent Slips, Trips, & Falls**

- Keep your floors clear of anything that may cause tripping. Pick up hazards such as toys, shoes and magazines.
- Clean up spills right away so people won't slip.
- Repair any stairs that are cracked or worn.
- If there are rugs in your home, use non-skid mats and throw rugs.
- When carrying large or heavy loads, make sure you can see where you're going. Ask for help if you need it.
- Keep your home well lit so you can see where you're walking at night.

### **Other tips**

- Don't use chairs or tables as makeshift ladders.
- Wear shoes with non-skid soles and put young children in non-skid socks.
- Teach your children not to run indoors or jump down stairs.
- Teach your children and other family members about the dangers of falling and how to stay safe.



### **Poison-Proof Your Home**

Use this guide to poison-proof your home room-by-room:

- **Kitchen**  
Your kitchen is one of the most dangerous places for a child. Drain openers, detergents, oven cleaners, and other cleaners can hurt you and your children. Put safety latches on all cabinets and drawers with harmful products. Even better, put them in a place that children can't reach. Children often get into dangerous products while someone is using them. If you can, keep your children out of the room while you're cleaning.
- **Bathroom**  
Things in your medicine chest—like medicine, makeup, mouthwash, first aid supplies, deodorants and cleaners can hurt children. Keep these out of their reach. Put a safety latch on your medicine chest.
- **Bedroom**  
Keep medicine, medications, perfumes, makeup, and cigarettes out of children's reach.
- **Living Room**  
Things to look for in the living room are: liquor, cigarettes, furniture polish, lamp oil, and some plants. Keep these out of reach.
- **Garage, Basement, and Laundry Room**  
These are some of the most dangerous places in your home. There are lots of chemicals and poisons in them that can hurt or kill a child: bleach, anti-freeze, gasoline, kerosene, car polishes, car batteries, paints, paint removers, mothballs, bug spray, road salt, and more. It's safest to keep children out of these places altogether.

# ACTION STEPS, continued

**Make sure any medicine is stored in child-safe packaging. But remember, child safe doesn't mean child-proof, so keep medicine out of reach.**

*Do you know what to do if someone in your home gets poisoned?* If you think someone has been poisoned, *call your local Poison Control Center right away at 1-800-222-1222.* Keep this number next to *all* of your telephones. Make sure you know:

- Brand-name of product
- Type of product
- Contents as listed on label
- About how much the person ate or drank
- How the person came in contact with the poison (mouth, skin, etc.)
- How long the person was in contact with the poison
- The person's age and weight
- How you tried to help the person, if you did

### **Prevent Fires and Burns**

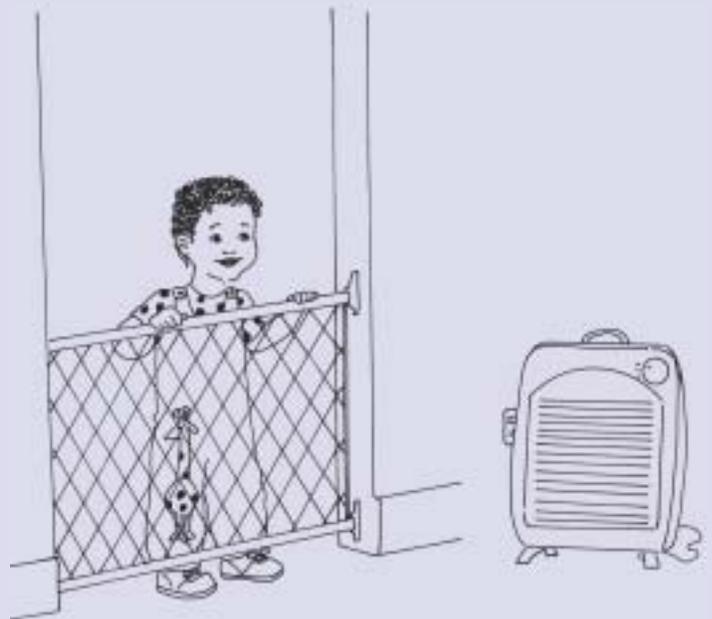
Put in a smoke alarm on every floor of your home in or near every sleeping area. This will cut in half the chances of someone dying in a fire.

Playing with fire—matches, lighters, stoves or heaters—is the leading cause of fire-related death for children five and under. Storing matches, lighters, and other heat sources in a safe place like a locked drawer will help keep your children from playing with them. Don't let children play near the stove or grill either.

Teach your children how to prevent fires, and what to do if there is a fire. It can make the difference between life and death. Talk about fire safety with your children. Your local fire department can help.

Plan and practice a fire escape route with your family. Do this at night and with the lights off so you'll be ready if there is a fire. Take special steps for getting children, the elderly, and people who may not be able to save themselves out of the building.

Space heaters such as electric or kerosene heaters cause most burns at home. Keep them out of doorways, halls, or other busy areas. Also, keep them at least three feet from curtains, bedding, or other things that could catch fire. Teach children that heaters will burn. Even better, put up a barrier to keep children and pets away.



# ACTION STEPS, continued

### **Prevent Choking and Suffocation**

Everyday foods can cause choking. Hot dogs, nuts, popcorn, and hard candy can easily get stuck in a small child's throat. Don't let your young children eat them. Even drinks, like formula, milk, or juice can make babies choke if they drink them lying down, especially from a bottle. Make sure children drink sitting up. Keep a close eye on the young children in your home.

Don't let your children play with balloons. Other household items that can cause problems are coins, marbles, and buttons, so keep your floor picked up. Finally, don't let children play near cars or old appliances. They can suffocate and die if they become trapped in a car trunk or old refrigerator.



Young children can get tangled up and suffocate in curtains, window blind cords, and extension cords. Plastic bags and covers are also dangerous. Don't tie toys or pacifiers to children's clothes. Very small children should not wear jewelry around their necks.

Toys with small parts or long cords may strangle or cause a child under the age of four to choke. Read a toy's package to make sure it's right for your child.

### **Watch Out Around Water**

*If you have or use a pool*—Watch children under the age of 12 at all times around pools. Make sure they walk on the pool deck.

All pools, hot tubs, and spas should have a fence at least five feet high, with a self-closing, self-latching gate around them. It's important that this fence be one that children cannot climb. Don't think of your home as part of the fence, because children can open doors to get to a pool.

Take all toys out of the pool area after swimming so children won't go back into the water and play by themselves.

Children should wear life jackets or vests while on docks or at beaches or rivers. Never let a child swim alone!

Never leave a young child alone in the bathtub. Children can drown in only a couple inches of water.

# ACTION STEPS, *continued*

### Other Safety Concerns

- Older children and adults should learn first aid and CPR (Cardiopulmonary Resuscitation) so they can help if someone gets hurt. Your local Red Cross offers classes.
- Never let children ride on equipment such as lawn tractors. They may get hurt if they fall off.
- Get safety gear like helmets and kneepads for children riding bicycles, in-line skates, ATVs, scooters, and skateboards. Set a good example by wearing safety gear yourself.
- Store guns safely—unloaded and locked up.
- When traveling by car, make sure that children under 12 ride in the back seat. Use car seats for infants and toddlers under 40 pounds. Use booster seats for children until they are eight years old.

## When In Doubt, Check It Out!

- Your local county Extension Office  
—look in your telephone book
- Your local or state health department  
—look in your telephone book
- For information on product recalls: The Consumer Products Safety Commission at 800/638-2772  
—www.cpsc.gov
- National SAFE KIDS Campaign, 202/662-0600  
—www.safekids.org, 1301 Pennsylvania Avenue, NW, Ste. 1000, Washington DC 20004
- The American Red Cross—www.redcross.org
- National Safety Council, 612/285-1121  
—www.nsc.org

## Notes



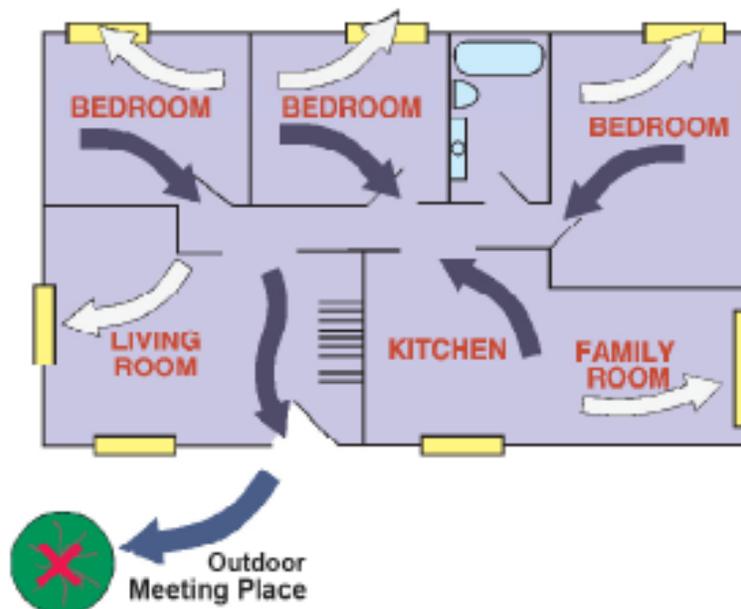


# Home Fire Escape Drills

*It starts with **Planning**, It works by **Practicing***



Plan **2** Ways Out of **EVERY** Room!



When the smoke alarm sounds...Get Out, Stay Out!

A fire can get out of control in seconds, can double in size every minute, and can overcome an entire home in just five minutes. There's no time for planning during a fire emergency. Take time today and make a plan for escaping a fire. If a fire starts in your home, your primary goal should be to get out as quickly as possible.

**① Install Smoke Alarms** - Smoke alarms are your best early warning system in the event of fire. Install smoke alarms on every level of your home, including the basement and in each sleeping area.

**② Be Prepared, Plan Your Escape**

- Draw a floor-plan of your home on the grid provided. Draw two ways out of every room. Discuss the escape routes with every member of your home.
- If there are babies, older adults, or family members with physical disabilities, make sure that someone will assist them in the fire drill and in the event of an emergency.
- Agree on a meeting place outside the home where everyone can gather after escaping a fire to wait for the fire department. This gives you a chance to count people and inform the fire department if anyone is missing or trapped inside.
- Know the emergency phone number to call after you escape. Call from a neighbor's home or a cell phone once you are safely outside.
- Check to see if all windows that are part of the escape plan open easily and have not been painted shut.
- To slow the fire's spread, make sure to close all doors behind you as you exit rooms in the home.
- If someone is missing, tell the fire department dispatcher when you call. Firefighters have the skills and equipment to perform rescues.
- Teach your children not to hide from firefighters or other emergency responders – they are there to help!
- Be sure your street number is clearly visible from the road. If not, paint it on the curb or install house numbers to make sure that emergency responders could find your home.

### **③ Practice** – Practice your plan at least once a year.

- A home fire drill can be fun! Pick a person to be in charge.
- Sound the alarm (on the smoke alarm) to be sure everyone knows what it sounds like.
- Make sure everyone living in the household participates.
- Make sure each family member can open door locks and window latches. If not, someone else in the family needs to be responsible for them during a fire.
- When you hold your fire drill, everyone in the family should practice crawling on their hands and knees low under where the smoke would be – one to two feet above the ground where the air is cooler and non-toxic during a fire.
- Remind everyone to close all doors behind them as they exit.
- Follow your escape plan and go directly to your meeting place.
- Pretend that some ways are blocked and practice using the second way out.
- Get out quickly, but carefully!
- Once you are out of the home, stay out. Going back into the home during a fire could be deadly!

#### **REMEMBER:**

##### **When the smoke alarm sounds,**

- Roll out of bed, onto the floor. Stay low beneath the smoke.
- Crawl to the door.
- Check the door for heat with the back of your hand.
- If the door is cool, open the door slowly. If the coast is clear (if you do not see fire or smoke nearby), crawl to escape.
- Signal others by calling out and banging on doors or walls
- Do not open a hot door! Place a towel or blanket under the door to keep smoke out.
- Crawl to the window and open it. If you can safely reach the ground (1<sup>st</sup> floor), exit the window. Sometimes you can safely exit a 2<sup>nd</sup> floor window by using a fire escape ladder or by hanging down from the windowsill and letting yourself drop. Otherwise, shout and signal for help. A firefighter's first priority is to rescue people.









# Smoke Alarms

## Protect Yourself and Your Family Today!

In the event of a fire, properly installed and maintained smoke alarms will give an early warning alarm to your household. This alarm could save your own life and those of your loved ones by giving you time to escape.

### Why Should My Home Have Smoke Alarms?

In the event of a fire, a smoke alarm can save your life and those of your loved ones. They are a very important way to prevent house and apartment fire deaths by giving an early warning signal -- so you and your family can escape. Smoke alarms are one of the best safety devices you can buy and install to protect yourself, your family, and your home.

### Where Do I Put Them?

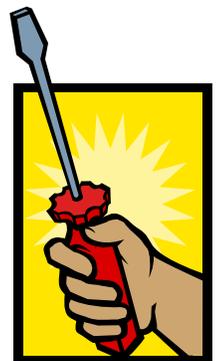
Smoke alarms should be installed on every level of your home, including the basement. Many deadly fires begin late at night or in the early morning. For extra safety, install smoke alarms both inside and outside sleeping areas. Since smoke and many deadly gases rise, installing your smoke alarms at the proper level will provide you with the earliest warning possible. Always follow the manufacturer's installation instructions.

### Where Would I Get Smoke Alarms?

Healthy Homes University provides and installs smoke alarms for your home during the baseline visit. Also, many hardware, home supply, or general merchandise stores carry smoke alarms. If you are not sure where to buy one in your community, call your local fire department (on a non-emergency telephone number) and they will give you some suggestions. Some fire departments offer smoke alarms for little or no cost.

### Are Smoke Alarms Hard to Install?

If your smoke alarms are hard wired (wired into the electrical system), you will need to have a qualified electrician do the initial installation or install replacements. **For battery powered smoke alarms, all you will need for installation is a screw driver.** Some brands are self adhesive and will easily stick to the wall or ceiling where they are placed. For all smoke alarm installations, be sure you follow the manufacturer's instructions because there are differences between the various brands. If you are uncomfortable standing on a ladder, ask a relative or friend for help. Some fire departments will install a smoke alarm in your home for you. Call your local fire department (on a non-emergency telephone number) if you have problems installing a smoke alarm.



*\*Helpful Tip: Pick a holiday or your birthday and replace the batteries each year on that day.*



## How Do I Keep My Smoke Alarm Working?

- If you have a smoke alarm with batteries:
  - Smoke Alarms powered by long-lasting batteries are designed for the entire unit to be replaced according to manufacturer's instructions.
  - **HHU families: For standard, battery-powered smoke alarms, the batteries need to be replaced at least once per year and the whole unit should be replaced every 8-10 years.**
- In hard-wired, battery back-up smoke alarms, the batteries need to be checked every month, and replaced at least once per year. The entire unit should be replaced every 8-10 years.

**IMPORTANT: If your smoke alarm starts making a "chirping" noise, replace the batteries and reset it.**



### What if the Alarm Goes Off While I'm Cooking?

Then it's doing its job. Do not disable your smoke alarm if it goes off due to cooking or other non-fire causes. You may not remember to put the batteries back in the alarm after cooking. Instead clear the air by waving a towel near the alarm, leaving the batteries in place. The alarm may need to be moved to a new location if it goes off every time you cook. Some of the newer models have a "hush" button that silences these types of false alarms for about 10 seconds while you clear the air.

### How Long will my Smoke Alarm Last?

Most alarms installed today last about 8-10 years. After this time, the entire unit should be replaced. It is a good idea to write the date of purchase with a marker on the inside of your alarm so you will know when to replace it. Some of the newer alarms already have a date written inside. In any event, always follow the manufacturer's instructions for replacement.

### The U.S. Fire Administration would like to remind you of some important fire safety and prevention information.

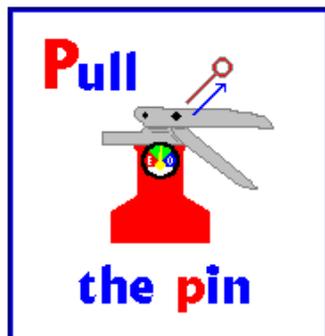
- Plan and practice fire escape plans several times a year.
- Make sure your whole family knows when and how to call emergency telephone numbers.
- Make sure you have a working fire extinguisher and learn how to use it.
- Install carbon monoxide detectors.
- Consider installing residential fire sprinklers in your home.
- Contact your local fire department on a non-emergency phone number if you need help or have questions about fire safety in your home.

Source: US Fire Administration "Smoke Alarms" factsheet located at:  
[http://www.usfa.dhs.gov/citizens/all\\_citizens/home\\_fire\\_prev/alarms/](http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/)

# Fire Extinguishers

It's easy to remember how to use a fire extinguisher if you can remember the acronym **PASS**, which stands for:

**P**ull  
**A**im  
**S**queeze  
**S**weep



Pull the pin.  
This will allow you to discharge the extinguisher.



Aim at the base of the fire.  
If you aim at the flames, the extinguishing agent will fly right through and do no good. You want to hit the fuel that the fire is burning.



Squeeze the top handle or lever.  
This pushes a button that releases the pressurized extinguishing agent in the extinguisher.



Sweep from side to side until the fire is completely out.  
Start using the extinguisher from a safe distance away, then move closer as you spray. Once the fire is out, keep an eye on the area in case it re-ignites.





# This Is Fire!

A Factsheet on the Nature of Fire

**E**very day Americans experience the horror of fire. But most people don't understand fire. Only when we know the true nature of fire can we prepare ourselves and our families. Each year more than 4,000 Americans die and 20,000 are injured in fires, many of which could be prevented.

The U. S. Fire Administration (USFA), a part of the U. S. Department of Homeland Security, believes that fire deaths can be reduced by teaching people the basic facts about fire. Below are some simple facts that explain the particular characteristics of fire.

## Fire is **FAST!**

### THERE IS LITTLE TIME!

In less than 30 seconds a small flame can get completely out of control and turn into a major fire. It only takes minutes for thick black smoke to fill a house. In minutes, a house can be engulfed in flames. Most fires occur in the home when people are asleep. If you wake up to a fire, you won't have time to grab valuables because fire spreads too quickly and the smoke is too thick. There is only time to escape.



## Fire is **HOT!**

### HEAT IS MORE THREATENING THAN FLAMES.

A fire's heat alone can kill. Room temperatures in a fire can be 100 degrees at floor level and rise to 600 degrees at eye level. Inhaling this super hot air will scorch your lungs. This heat can melt clothes to your skin. In

five minutes a room can get so hot that everything in it ignites at once: this is called flashover.

## Fire is **DARK!**

### FIRE ISN'T BRIGHT, IT'S PITCH BLACK.

Fire starts bright, but quickly produces black smoke and complete darkness. If you wake up to a fire you may be blinded, disoriented and unable to find your way around the home you've lived in for years.

## Fire is **DEADLY!**

### SMOKE AND TOXIC GASES KILL MORE PEOPLE THAN FLAMES DO.

Fire uses up the oxygen you need and produces smoke and poisonous gases that kill. Breathing even small amounts of smoke and toxic gases can make you drowsy, disoriented and short of breath. The odorless, colorless fumes can lull you into a deep sleep before the flames reach your door. You may not wake up in time to escape.



## Fire Safety Tips

### IN THE EVENT OF A FIRE, REMEMBER TIME IS THE BIGGEST ENEMY AND EVERY SECOND COUNTS!

Escape first, then call for help. Develop a home fire escape plan and designate a meeting place outside. Make sure everyone in the family knows two ways to escape from every room. Practice feeling your way out with your eyes closed. Never stand up in a fire, always crawl low under the smoke and try to keep your mouth covered. Never return to a burning building for any reason; it may cost you your life.

Finally, having a working smoke alarm dramatically increases your chances of surviving a fire. And remember to practice a home escape plan frequently with your family.

### For more information contact:

The U. S. Fire Administration  
16825 South Seton Avenue  
Emmitsburg, MD 21727  
or  
Visit the USFA Web site:  
[www.usfa.fema.gov](http://www.usfa.fema.gov)



Homeland  
Security



# Working Together for Home Fire Safety

A Factsheet on Home Fire Prevention

**M**ore than 4,000 Americans die each year in fires and 20,000 are injured. An overwhelming number of fires occur in the home. There are time-tested ways to prevent and survive a fire. It's not a question of luck. It's a matter of planning ahead.

## EVERY HOME SHOULD HAVE AT LEAST ONE WORKING SMOKE ALARM

Buy a smoke alarm at any hardware or discount store. It's inexpensive protection for you and your family. Install a smoke alarm on every level of your home. A working smoke alarm can double your chances of survival. Test it monthly, keep it free of dust and replace the battery at least once a year. Smoke alarms themselves should be replaced after ten years of service, or as recommended by the manufacturer.

## PREVENT ELECTRICAL FIRES

Never overload circuits or extension cords. Do not place cords and wires under rugs, over nails or in high traffic areas. Immediately shut off and unplug appliances that sputter, spark or emit an unusual smell. Have them professionally repaired or replaced.

## USE APPLIANCES WISELY

When using appliances follow the manufacturer's safety precautions. Overheating, unusual smells, shorts and sparks are all warning signs that appliances need to be shut off, then replaced or repaired. Unplug appliances when not in use. Use safety caps to cover all unused outlets, especially if there are small children in the home.



## ALTERNATE HEATERS

- Portable heaters need their space. Keep anything combustible at least three feet away.
- Keep fire in the fireplace. Use fire screens and have your chimney cleaned annually. The creosote buildup can ignite a chimney fire that could easily spread.
- Kerosene heaters should be used only where approved by authorities. Never use gasoline or camp-stove fuel. Refuel outside and only after the heater has cooled.

## AFFORDABLE HOME FIRE SAFETY SPRINKLERS

When home fire sprinklers are used with working smoke alarms, your chances of surviving a fire are greatly increased. Sprinklers are affordable--they can increase property value and lower insurance rates.

## PLAN YOUR ESCAPE

Practice an escape plan from every room in the house. Caution everyone to stay low to the floor when escaping from fire and never to open doors that are hot. Select a location where everyone can meet after escaping the house. Get out then call for help.

## CARING FOR CHILDREN

Children under five are naturally curious about fire. Many play with matches and lighters. Tragically, children set over 20,000 house fires every year. Take the mystery out of fire play by teaching your children that fire is a tool, not a toy.

## CARING FOR OLDER PEOPLE

Every year over 1,200 senior citizens die in fires. Many of these fire deaths could have been prevented. Seniors are especially vulnerable because many live alone and can't respond quickly.

### For more information contact:

The U. S. Fire Administration  
16825 South Seton Avenue  
Emmitsburg, MD 21727

or

Visit the USFA Web site:  
[www.usfa.fema.gov](http://www.usfa.fema.gov)



**Homeland Security**



# On the Safety Circuit

A Factsheet on Home Electrical Fire Prevention

**E**lectrical fires in our homes claim the lives of 485 Americans each year and injure 2,305 more. Some of these fires are caused by electrical system failures and appliance defects, but many more are caused by the misuse and poor maintenance of electrical appliances, incorrectly installed wiring, and overloaded circuits and extension cords.

The U. S. Fire Administration (USFA) would like consumers to know that there are simple steps you can take to prevent the loss of life and property resulting from electrical fires.

## THE PROBLEM

During a typical year, home electrical problems account for 67,800 fires, 485 deaths, and \$868 million in property losses. Home electrical wiring causes twice as many fires as electrical appliances.

## THE FACTS

December is the most dangerous month for electrical fires. Fire deaths are highest in winter months which call for more indoor activities and increase in lighting, heating, and appliance use. Most electrical wiring fires start in the bedroom.

## THE CAUSE

### ELECTRICAL WIRING

- Most electrical fires result from problems with “fixed wiring” such as faulty electrical outlets and old wiring. Problems with cords and plugs, such as extension and appliance cords, also cause many home electrical fires.
- In urban areas, faulty wiring accounts for 33% of residential electrical fires.
- Many avoidable electrical fires can be traced to misuse of electric cords, such as overloading circuits, poor maintenance and running the cords under rugs or in high traffic areas.

### HOME APPLIANCES

- The home appliances most often involved in electrical fires are electric stoves and ovens, dryers, central heating units, televisions, radios and record players.

### SAFETY PRECAUTIONS

- Routinely check your electrical appliances and wiring.
- Frayed wires can cause fires. Replace all worn, old or damaged appliance cords immediately.
- Use electrical extension cords wisely and don't overload them.
- Keep electrical appliances away from wet floors and counters; pay special care to electrical appliances in the bathroom and kitchen.
- When buying electrical appliances look for products that are evaluated by a nationally recognized laboratory, such as Underwriters Laboratories (UL).
- Don't allow children to play with or around electrical appliances like space heaters, irons and hair dryers.
- Keep clothes, curtains and other potentially combustible items at least three feet from all heaters.
- If an appliance has a three-prong plug, use it only in a three-slot outlet. Never force it to fit into a two-slot outlet or extension cord.
- Never overload extension cords or

wall sockets. Immediately shut off, then professionally replace, light switches that are hot to the touch and lights that flicker. Use safety closures to “child-proof” electrical outlets.

- Check your electrical tools regularly for signs of wear. If the cords are frayed or cracked, replace them. Replace any tool if it causes even small electrical shocks, overheats, shorts out or gives off smoke or sparks.

Finally, having a working smoke alarm dramatically increases your chances of surviving a fire. And remember to practice a home escape plan frequently with your family.



### For more information contact:

The U. S. Fire Administration

16825 South Seton Avenue  
Emmitsburg, MD 21727

or

Visit the USFA Web site:

[www.usfa.fema.gov](http://www.usfa.fema.gov)



Homeland  
Security



# Curious Kids Set Fires

A Factsheet for Teaching Children Fire Safety

**E**very day Americans experience the tragedy of fire. Each year more than 4,000 Americans die in fires and 20,000 are injured. Figures show that each year about 150 people are killed and \$200 million in property is destroyed in fires attributed to children playing with fire.

The U. S. Fire Administration (USFA) encourages parents to teach children at an early age about the dangers of fireplay in an effort to prevent child injuries, fire deaths and firesetting behavior in the future. Below are some facts about children and fire safety.

## CURIOUS KIDS SET FIRES

Children under five are curious about fire. Often what begins as a natural exploration of the unknown can lead to tragedy.

- Children of all ages set over 35,000 fires annually. Approximately 8,000 of those fires are set in homes.
- Children make up 15-20% of all fire deaths.
- At home, children usually play with fire in bedrooms, in closets and under beds. These are "secret" places where there are a lot of things that catch fire easily.
- Too often, child firesetters are not given proper guidance and supervision by parents and teachers. Consequently, they repeat their firesetting behavior.

## PRACTICE FIRE SAFETY IN YOUR HOME

- Supervise young children closely. Do not leave them alone even for short periods of time.
- Keep matches and lighters in a secured drawer or cabinet.
- Have your children tell you when they find matches and lighters.

- Check under beds and in closets for burned matches, evidence your child may be playing with fire.
- Develop a home fire escape plan, practice it with your children and designate a meeting place outside.
- Take the mystery out of fire play by teaching children that fire is a tool, not a toy.
- Teach children the nature of fire. It is FAST, HOT, DARK and DEADLY!
- Teach children not to hide from firefighters, but to get out quickly and call for help from another location.
- Show children how to crawl low on the floor, below the smoke, to get out of the house and stay out in the case of fire.
- Demonstrate how to stop, drop to the ground and roll if their clothes catch fire.
- Install smoke alarms on every level in your home.
- Familiarize children with the sound of your smoke alarm.
- Test the smoke alarm each month and replace the battery at least once a year.

- Replace the smoke alarm every ten years, or as recommended by the manufacturer.
- Finally, having a working smoke alarm dramatically increases your chances of surviving a fire. And remember to practice a home escape plan frequently with your family.



### For more information contact:

The U. S. Fire Administration  
16825 South Seton Avenue  
Emmitsburg, MD 21727  
or  
Visit the USFA Web site:  
[www.usfa.fema.gov](http://www.usfa.fema.gov)



Homeland  
Security



# A Season for Sharing in Fire Safety

## A Factsheet on Holiday Fire Prevention

**E**ach year fires occurring during the holiday season claim the lives of over 400 Americans, injure 1,650 more, and cause over \$990 million in damage.

According to the U. S. Fire Administration (USFA), there are simple life-saving steps you can take to ensure a safe and happy holiday. By following some of the outlined precautionary tips, individuals can greatly reduce their chances of becoming a holiday fire casualty.

### PREVENTING CHRISTMAS TREE FIRES

Special fire safety precautions need to be taken when keeping a live tree in the house. A burning tree can rapidly fill a room with fire and deadly gases.

#### SELECTING A TREE FOR THE HOLIDAY

Needles on fresh trees should be green and hard to pull back from the branches, and the needle should not break if the tree has been freshly cut. The trunk should be sticky to the touch. Old trees can be identified by bouncing the tree trunk on the ground. If many needles fall off, the tree has been cut too long, has probably dried out, and is a fire hazard.

#### CARING FOR YOUR TREE

Do not place your tree close to a heat source, including a fireplace or heat vent. The heat will dry out the tree, causing it to be more easily ignited by heat, flame or sparks. Be careful not to drop or flick cigarette ashes near a tree. Do not put your live tree up too early or leave it up for longer than two weeks. Keep the tree stand filled with water at all times.

#### DISPOSING OF YOUR TREE

Never put tree branches or needles in a fireplace or woodburning stove. When the tree becomes dry, discard it promptly. The best way to dispose of your tree is by taking it to a recycling center or having it hauled away by a community pick-up service.

### HOLIDAY LIGHTS

#### MAINTAIN YOUR HOLIDAY LIGHTS

Inspect holiday lights each year for frayed wires, bare spots, gaps in the insulation, broken or cracked sockets, and excessive kinking or wear before putting them up. Use only lighting listed by an approved testing laboratory.

#### DO NOT OVERLOAD ELECTRICAL OUTLETS

Do not link more than three light strands, unless the directions indicate it is safe. Connect strings of lights to an extension cord before plugging the cord into the outlet. Make sure to periodically check the wires - they should not be warm to the touch.

#### DO NOT LEAVE HOLIDAY LIGHTS ON UNATTENDED

### HOLIDAY DECORATIONS

#### USE ONLY NONFLAMMABLE DECORATIONS

All decorations should be nonflammable or flame-retardant and placed away from heat vents.

#### NEVER PUT WRAPPING PAPER IN A FIREPLACE

It can result in a very large fire, throwing off dangerous sparks and embers that may result in a chimney fire.

#### ARTIFICIAL CHRISTMAS TREES

If you are using a metallic or artificial tree, make sure it is flame retardant.

### CANDLE CARE

#### AVOID USING LIT CANDLES

If you do use them, make sure they are in stable holders and place them where they cannot be easily knocked down. Never leave the house with candles burning.

#### NEVER PUT LIT CANDLES ON A TREE

Do not go near a Christmas tree with an open flame - candles, lighters or matches.

Finally, as in every season, have working smoke alarms installed on every level of your home, test them monthly and keep them clean and equipped with fresh batteries at all times. Know when and how to call for help. And remember to practice your home escape plan.



#### For more information contact:

The U. S. Fire Administration  
16825 South Seton Avenue  
Emmitsburg, MD 21727  
or  
Visit the USFA Web site:  
[www.usfa.fema.gov](http://www.usfa.fema.gov)



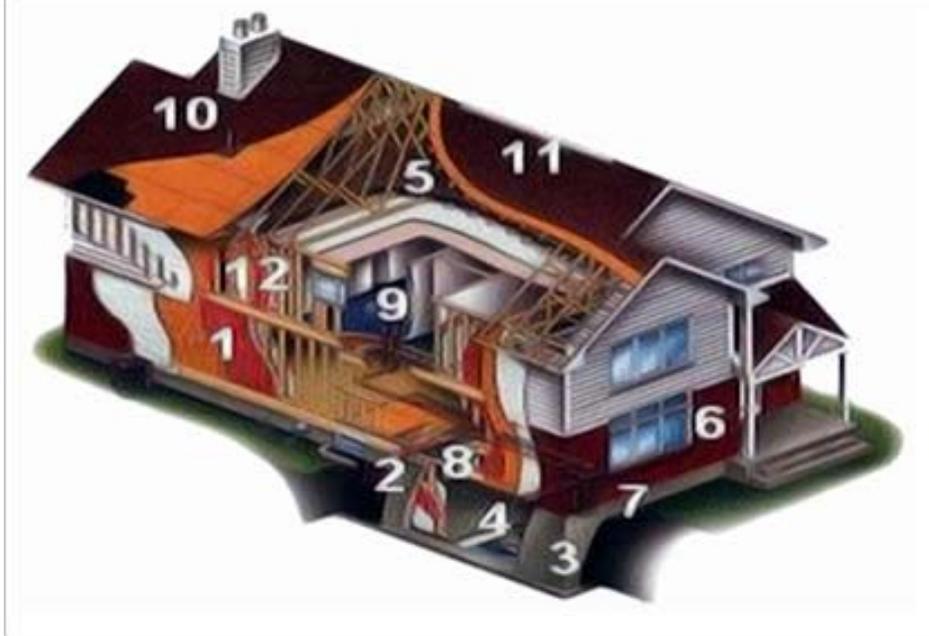
**Homeland Security**



# Asbestos Exposure & Your Health

Asbestos is the name of a group of minerals that can separate into long and thin fibers. The fibers are so small that you cannot see them.

## Where is Asbestos Found?



1. Internal walls, cement boarding, artex wall coverings
2. Ground contamination – all types of asbestos materials found in ground
3. Underground ducting – insulation on pipework or debris, packing
4. Basement – pipework, gaskets, boilers, calorifiers, cement ceiling panels
5. Roof voids – paper lining, loose fill insulation, pipework, cement water tanks
6. External walls – wall coverings, cement, soffit boards
7. Under floor – ducting pipework
8. Floor coverings – vinyl floor tiles, promenade tiles
9. Internal walls – Cement, artex wall coverings
10. Chimney stacks or risers – cement flues, cement board linings
11. Roof coverings – cement corrugated sheeting, slates, felt coverings, rainwater gutters
12. Miscellaneous products – toilet cisterns, lift shaft linings, fire blankets

## In the Homes of Workers

- Workers who are exposed to asbestos in the workplace may bring asbestos fibers home on their clothes, shoes, and bodies. So, people who live in their households could also be exposed to asbestos. Even handling and washing a worker's clothes could expose someone to asbestos.

## In Consumer Products

Asbestos can be found in consumer products, but mostly in:

- building materials
- friction products
- heat-resistant fabrics

Older homes and buildings may have asbestos-containing products such as attic insulation, fireproofing materials, gypsum wallboard, and lightweight aggregate construction materials (like concrete blocks).

### **In the Workplace**

Asbestos can be found in the workplace of any of the following:

- Brake repair mechanic
- Carpenter
- Demolition worker
- Dry wall finisher
- Electrician
- Roofer
- Shipyard worker
- Vermiculite processing plant
- Welder
- Insulation installer
- Miner
- Pipe or steam fitter
- Plumber

**Asbestos fibers may be released into the air when asbestos-containing material is disturbed during product use, demolition work, building or home maintenance, repair, and remodeling. In general, exposure happens only when the asbestos-containing material is disturbed in a way that releases particles and fibers into the air. Asbestos-containing material will not harm you if it is left undisturbed and the fibers are not released into the air.**

*Since asbestos fibers may cause harmful health effects in people who are exposed, all new uses of asbestos have been banned in the United States by the U.S. Environmental Protection Agency.*

### **How to Reduce the Risk for your Family**

Materials containing asbestos that are not disturbed or deteriorated do not, in general, cause a health risk and can be left alone. If you think you may be exposed to asbestos in your home, contact your state or local health department or the regional offices of the Environmental Protection Agency (EPA) to find out how to test your home for asbestos and how to locate a company that is trained to remove or contain the asbestos fibers.

## Asbestos & Your Health

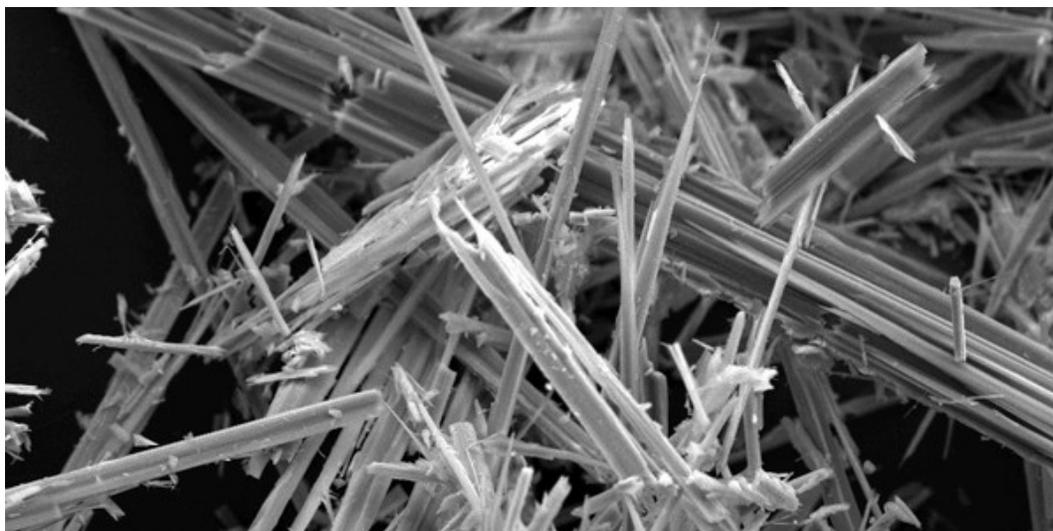
### Health Effects of Asbestos Exposure:

- Asbestos can cause health problems when it is breathed into the lungs. When you are exposed for a long time (many years), the amount of fibers in your lungs increases. Asbestos fibers in lung tissue over time may result in lung diseases such as pleural disease (affects the lining of the lungs and chest wall), asbestosis (scarring of lung tissue), lung cancer, or mesothelioma (a type of cancer). Diseases caused by asbestos do not show up immediately—they can show up many years after exposure.

### IMPORTANT:

- Being exposed to asbestos does not mean you will develop health problems! Asbestos has been used widely in the United States. 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.
- A doctor can help you find out if you have health problems from asbestos exposure.

**When Asbestos fibers (below) are breathed into the lungs over many years, they can cause health problems including cancer.**



<p><b>How to find out if you have been exposed to Asbestos</b></p>	<ul style="list-style-type: none"> <li>Asbestos-related conditions can be difficult to diagnose. Healthcare providers usually use an in-depth medical history to figure out if a person may have asbestos exposure and related health conditions. This means they look at a person’s medical, work, cultural, and environmental history.</li> <li>If a doctor suspects an asbestos-related health condition, he or she can use a number of things to help make the actual diagnosis. Some of these things are physical examinations, chest x-rays, and pulmonary function tests. Your doctor may also refer you to a specialist who treats diseases caused by asbestos.</li> </ul> <p><b>Medical Tests to Show Asbestos Exposure:</b></p> <ul style="list-style-type: none"> <li>Low levels of asbestos fibers can be measured in urine, feces, mucus, or lung washings. High levels of asbestos fibers in tissue can show that you have been exposed, but cannot show whether you will have any health problems from the exposure.</li> <li>An in-depth history, physical exam, and medical tests are needed to identify asbestos-related disease. Chest x-rays are the best way to see lung changes caused by asbestos exposure. Lung function tests and CAT scans can also help doctors diagnose asbestos-related disease.</li> </ul>
<p><b>What to do if you have been exposed to Asbestos</b></p>	<p><b>Take Action</b></p> <ul style="list-style-type: none"> <li><b>Tell Your Doctor.</b> Even if you don’t feel sick right away, tell your doctor if you think you might have been exposed to asbestos at work or in your home. Most people don’t show any signs or symptoms of asbestos-related disease for 10 to 20 years or more after exposure. Only a doctor can tell if you have any health problems due to asbestos exposure. Your doctor may refer you to a specialist who treats diseases caused by asbestos.</li> <li><b>Show this fact sheet to your doctor.</b> The information might be helpful in evaluating your health risk.</li> <li><b>Quit smoking.</b> If you are a smoker, quit smoking. Smoking combined with asbestos exposure greatly increases the risk of getting lung cancer.</li> <li><b>Get regular influenza (flu) and pneumonia shots.</b> Regular shots help reduce the chance of lung infections.</li> </ul>

## Remember:

Asbestos is well recognized as a carcinogen (cancer-causing). It can cause lung cancer, mesothelioma, and other diseases. The people at highest risk are those with very heavy exposure, usually over many years on the job. Smoking acts together with asbestos to greatly increase the risk of lung cancer. While asbestos use is much less common now than it was years ago, there is still a potential for exposure in older buildings and products. If you suspect you have asbestos in your home, contact your local health department to find out how to test your home for asbestos and how to locate a company that is trained to remove or contain the asbestos fibers.

### Contacts:

For more information on asbestos exposure and your health:

1-800-CDC-INFO (1-800-232-4676) or visit: [www.atsdr.cdc.gov/asbestos](http://www.atsdr.cdc.gov/asbestos)

Ingham County Health Department – Bureau of Environmental Health:

(517) 887-4312

#### Asbestos at Work:

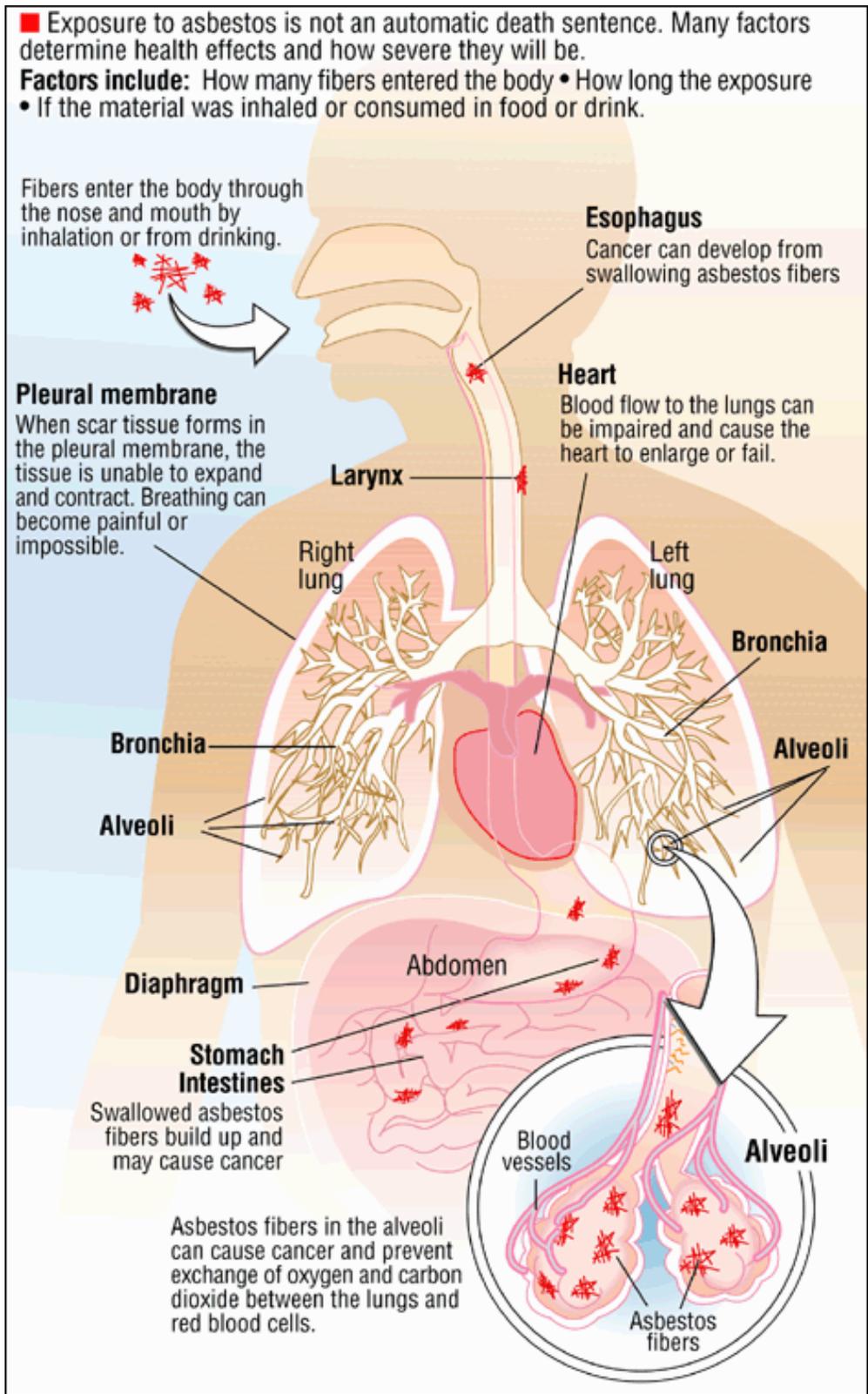
Michigan Department of Labor & Economic Growth  
Michigan Occupational Safety & Health Administration  
Construction Safety & Health Division - Asbestos Program  
7150 Harris Drive  
P. O. Box 30671  
Lansing, Michigan 48909-8171

#### Sources:

"Asbestos Exposure and Your Health", Agency for Toxic Substances and Disease Registry (ATSDR), December 2006 [http://www.atsdr.cdc.gov/asbestos/asbestos/health\\_effects/](http://www.atsdr.cdc.gov/asbestos/asbestos/health_effects/)

The American Cancer Society fact sheet on Asbestos:

[http://www.cancer.org/docroot/PED/content/PED\\_1\\_3X\\_Asbestos.asp?sitearea=PED](http://www.cancer.org/docroot/PED/content/PED_1_3X_Asbestos.asp?sitearea=PED)



Picture from Ohio Asbestos Information: <http://www.ohiotoxicmold.com/asbestos.htm>  
 Accessed July 2008.

# Protect Your Family and Yourself from Carbon Monoxide Poisoning

## Carbon Monoxide Can Be Deadly

You can't see or smell carbon monoxide, but at high levels it can kill a person in minutes. Carbon monoxide (CO) is produced whenever any fuel such as gas, oil, kerosene, wood, or charcoal is burned. If appliances that burn fuel are maintained and used properly, the amount of CO produced is usually not dangerous. However, if appliances are not working properly or are used incorrectly, you can have dangerous levels of CO in your home. Hundreds of people die accidentally every year from CO poisoning caused by malfunctioning or improperly used fuel-burning appliances. Even more people die from CO produced by idling cars. Fetuses, infants, elderly people, and people with anemia or with a history of heart or respiratory disease can be at an even higher risk. Be safe. Practice the DO's and DON'Ts of carbon monoxide.



## CO Poisoning Symptoms

Know the symptoms of CO poisoning. At moderate levels, you or your family can get severe headaches, become dizzy, mentally confused, nauseated (sick to your stomach), or faint. You can even die if CO stays at this level for a long time. Low levels can cause shortness of breath, mild nausea, and mild headaches, and may have longer-term effects on your health. Since many of these symptoms are similar to those of the flu, food poisoning, or other illnesses, you may not think that CO poisoning could be the cause.

## Play it Safe

If you have symptoms that you think could be from CO poisoning, or if your CO detector goes off:

### **DO GET FRESH AIR IMMEDIATELY**

Leave the house and call the fire department to alert them that your detector went off and you may have CO in your home.

**DO GO TO AN EMERGENCY ROOM** and *tell the physician you suspect CO poisoning.* If you have CO poisoning, it can often be diagnosed by a blood test done soon after exposure.

**DO** Be prepared to answer the following questions for the doctor:

- Do your symptoms occur only in the house? Do they disappear or decrease when you leave home and reappear when you return?
- Is anyone else in your household complaining of similar symptoms? Did everyone's symptoms appear about the same time?
- Are you using any fuel-burning appliances in the home?
- Has anyone inspected your appliances lately? Are you certain they are working properly?



## **Prevention is the Key to Avoiding Carbon Monoxide Poisoning**

✓ **DO** have your fuel-burning appliances -- including oil and gas furnaces, gas water heaters, gas ranges and ovens, gas dryers, gas or kerosene space heaters, fireplaces, and wood stoves -- inspected by a trained professional at the beginning of every heating season. Make certain that the flues and chimneys are connected, in good condition, and not blocked.

✓ **DO** choose appliances that vent their fumes to the outside whenever possible, have them properly installed, and maintain them according to manufacturers' instructions.

✓ **DO** read and follow all of the instructions that accompany any fuel-burning device. If you cannot avoid using an unvented gas or kerosene space heater, *carefully follow the cautions* that come with the device. Use the proper fuel and keep doors to the rest of the house open. Crack a window to ensure enough air for ventilation and proper fuel-burning.

✓ **DO** call EPA's IAQ INFO Clearinghouse (**1-800- 438-4318**) or the Consumer Product Safety Commission (**1-800-638-2772**) for more information on how to reduce your risks from CO and other combustion gases and particles.



✗ **DON'T** idle the car in the garage -- even if the garage door to the outside is open. Fumes can build up very quickly in the garage and living area of your home.

✗ **DON'T** use a gas oven to heat your home, even for a short time.

✗ **DON'T ever** use a charcoal grill indoors -- even in a fireplace.

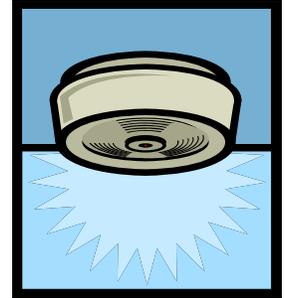
✗ **DON'T** use a gas or kerosene space heater inside a home, garage, cabin, or other enclosed space.

✗ **DON'T** sleep in a room with a gas or kerosene space heater running.

✗ **DON'T** use any gasoline-powered engines (mowers, weed trimmers, snow blowers, chain saws, small engines or generators) in enclosed spaces.

✗ **DON'T** ignore symptoms, especially if more than one person is feeling them. You could lose consciousness and die if you do nothing.

## **If the CO detector alarm goes off:**



1. Make sure it is your CO detector and not your smoke detector.
2. Check to see if any member of the household is experiencing symptoms of CO poisoning. If they are, get them out of the house immediately and seek medical attention. Tell the doctor that you suspect CO poisoning.
3. Call the Fire Department to report suspected CO in your home.
4. After inspection by the fire department, have a qualified technician inspect your fuel-burning appliances and chimneys to make sure they are operating correctly and that there is nothing blocking the fumes from being vented out of the house.



Source: US Environmental Protection Agency - "Protect Your Family and Yourself from Carbon Monoxide Poisoning" factsheet



## Questions and Answers

### What is carbon monoxide?

Carbon monoxide, or CO, is an odorless, colorless gas that can cause sudden illness and death.

### Where is CO found?

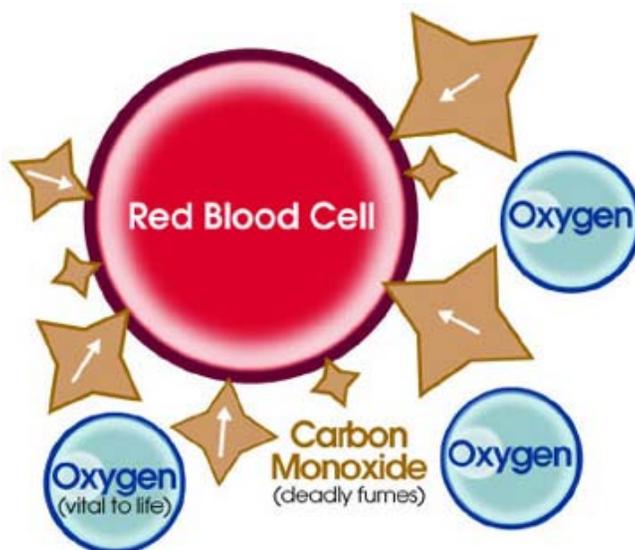
CO is found in combustion fumes, such as those produced by cars and trucks, small gasoline engines, stoves, lanterns, burning charcoal and wood, and gas ranges and heating systems. CO from these sources can build up in enclosed or semi-enclosed spaces. People and animals in these spaces can be poisoned by breathing it.

### What are the symptoms of CO poisoning?

The most common symptoms of CO poisoning are headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. High levels of CO ingestion can cause loss of consciousness and death. Unless suspected, CO poisoning can be difficult to diagnose because the symptoms mimic other illnesses. People who are sleeping or intoxicated can die from CO poisoning before ever experiencing symptoms.

### How does CO poisoning work?

Red blood cells pick up CO quicker than they pick up oxygen. If there is a lot of CO in the air, the body may replace oxygen in blood with CO. This blocks oxygen from getting into the body, which can damage tissues and result in death.



### Who is at risk from CO poisoning?

All people and animals are at risk for CO poisoning. Certain groups — unborn babies, infants, and people with chronic heart disease, anemia, or respiratory problems — are more susceptible to its effects. Each year, more than 500 Americans die from unintentional CO poisoning, and more than 2,000 commit suicides by intentionally poisoning themselves.

## Questions and Answers

(continued from previous page)

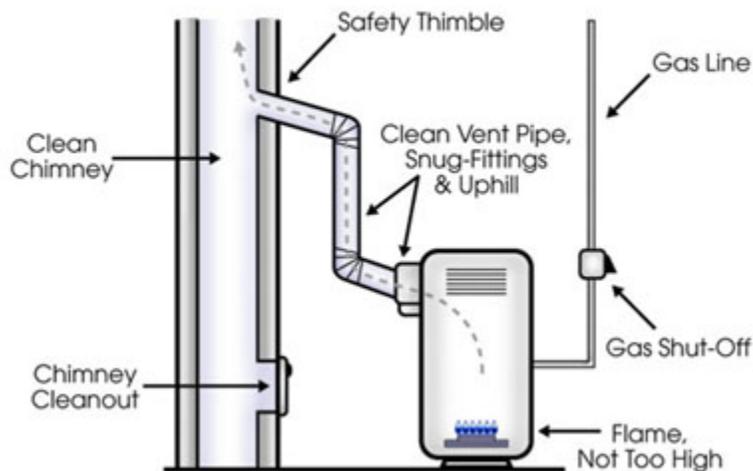
### How can I prevent CO poisoning from my home appliances?

- Have your heating system, water heater and any other gas, oil, or coal burning appliances serviced by a qualified technician every year.
- Do not use portable flameless chemical heaters (catalytic) indoors. Although these heaters don't have a flame, they burn gas and can cause CO to build up inside your home, cabin, or camper.
- If you smell an odor from your gas refrigerator's cooling unit have an expert service it. An odor from the cooling unit of your gas refrigerator can mean you have a defect in the cooling unit. It could also be giving off CO.
- When purchasing gas equipment, buy only equipment carrying the seal of a national testing agency, such as the American Gas Association or Underwriters' Laboratories.
- Install a battery-operated CO detector in your home and check or replace the battery when you change the time on your clocks each spring and fall.

### How do I vent my gas appliances properly?

- All gas appliances must be vented so that CO will not build up in your home, cabin, or camper.
- Never burn anything in a stove or fireplace that isn't vented.
- Have your chimney checked or cleaned every year. Chimneys can be blocked by debris. This can cause CO to build up inside your home or cabin.
- Never patch a vent pipe with tape, gum, or something else. This kind of patch can make CO build up in your home, cabin, or camper.
- Horizontal vent pipes to fuel appliances should not be perfectly level. Indoor vent pipes should go up slightly as they go toward outdoors. This helps prevent CO or other gases from leaking if the joints or pipes aren't fitted tightly.

#### Here's the Safe Way to Connect Heating Equipment to the Chimney



## Questions and Answers

(continued from previous page)

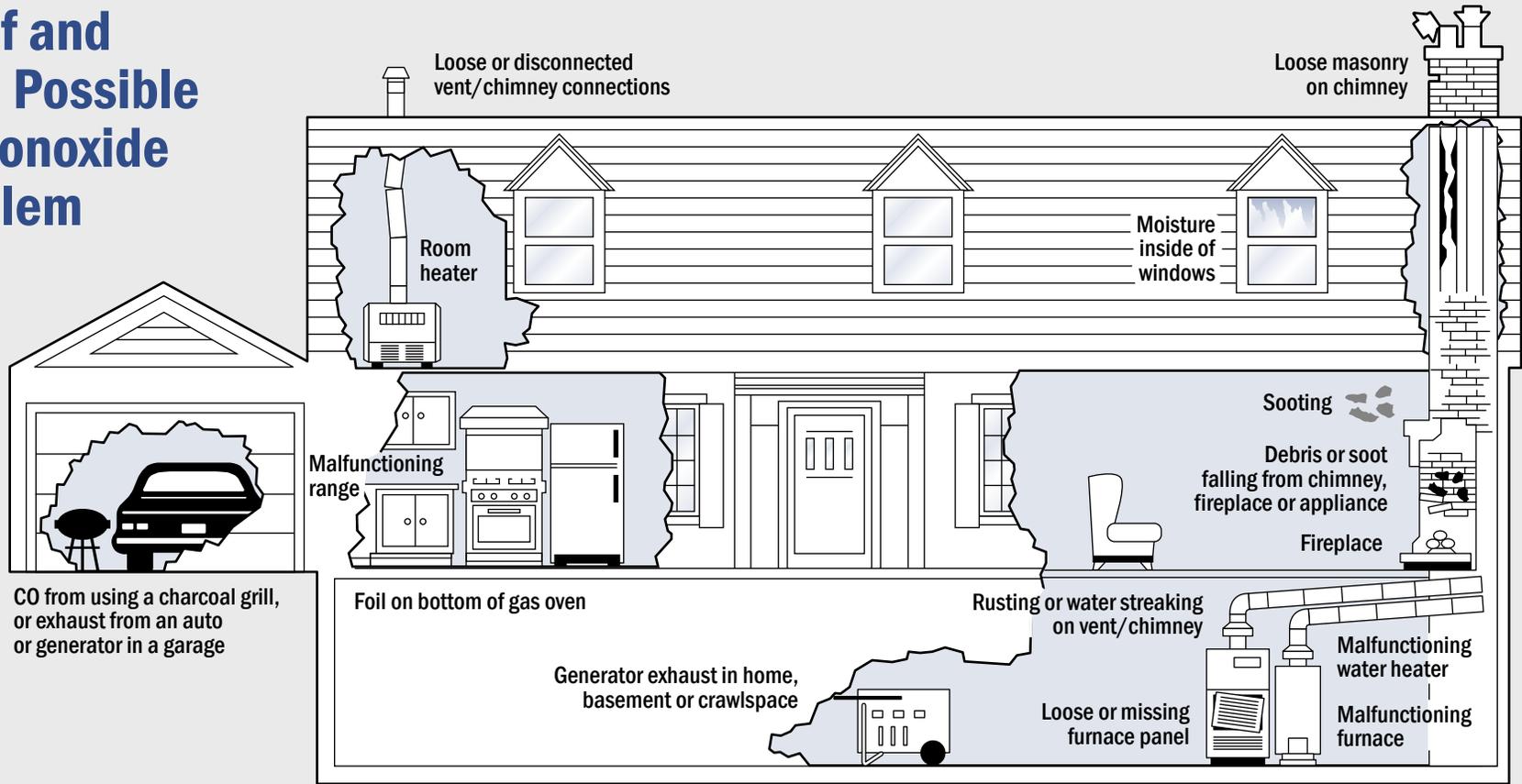
### How can I heat my house safely or cook when the power is out?

- Never use a gas range or oven for heating. Using a gas range or oven for heating can cause a build up of CO inside your home, cabin, or camper.
- Never use a charcoal grill or a barbecue grill indoors. Using a grill indoors will cause a build up of CO inside your home, cabin, or camper unless you use it inside a vented fireplace.
- Never burn charcoal indoors. Burning charcoal — red, gray, black, or white — gives off CO.
- Never use a portable gas camp stove indoors. Using a gas camp stove indoors can cause CO to build up inside your home, cabin, or camper.
- Never use a generator inside your home, basement, or garage or near a window, door, or vent.

### How can I avoid CO poisoning from my vehicle?

- Have a mechanic check the exhaust system of my car every year. A small leak in your car's exhaust system can lead to a build up of CO inside the car.
- Never run a car or truck in the garage with the garage door shut. CO can build up quickly while your car or truck is running in a closed garage. Never run your car or truck inside a garage that is attached to a house and always open the door to any garage to let in fresh air when running a car or truck inside the garage.
- If you drive a vehicle with a tailgate, when you open the tailgate, you also need to open vents or windows to make sure air is moving through your car. If only the tailgate is open CO from the exhaust will be pulled into the car.

# Sources of and Clues to a Possible Carbon Monoxide (CO) Problem



## Carbon monoxide clues you can see...

- Rusting or water streaking on vent/chimney
- Loose or missing furnace panel
- Sooting
- Debris or soot falling from chimney, fireplace, or appliances
- Loose or disconnected vent/chimney, fireplace or appliance
- Loose masonry on chimney
- Moisture inside of windows

## Carbon monoxide clues you cannot see...

- Internal appliance damage or malfunctioning components

- Improper burner adjustments
- Hidden blockage or damage in chimneys

Only a trained service technician can detect hidden problems and correct these conditions!

- CO poisoning symptoms have been experienced when you are home, but they lessen or disappear when you are away from home.

## Warnings...

- Never leave a car running in a garage even with the garage door open.
- Never run a generator in the home, garage, or crawlspace. Opening doors and windows or

- using fans will NOT prevent CO build-up in the home. When running a generator outdoors, keep it away from open windows and doors.
- Never burn charcoal in homes, tents, vehicles, or garages.
- Never install or service combustion appliances without proper knowledge, skills, and tools.
- Never use a gas range, oven, or dryer for heating.
- Never put foil on bottom of a gas oven because it interferes with combustion.
- Never operate an unvented gas-burning appliance in a closed room or in a room in which you are sleeping.



# Childhood Lead Poisoning

## What causes lead poisoning?

- Many things in our everyday lives put infants, children and adults in danger of lead poisoning. Lead-based paint was used in many homes built before 1978. The older the home, the more likely that windows, cupboards, doors, porches, and outdoor surfaces contain lead-based paint.
- Children are most often poisoned by lead dust and lead paint in older homes. Lead dust can come from repairing areas with lead paint, opening and closing windows, and through normal wear and tear of painted areas. Lead dust settles onto the floor and gets on children's hands and toys. It enters their bodies when they put their hands or toys into their mouths.
- We now realize just how dangerous lead is. There are things you can do to keep your children safe from lead poisoning.

## How can I tell if my child has been lead poisoned?

A lead-poisoned child may seem healthy and not have any signs of lead poisoning.

Or, they could have any of the following signs:

- Learning and behavior problems
- Tiredness
- Headaches
- Hearing problems
- Weight loss
- Hyperactivity
- Irritability

## When should my child be tested for lead poisoning?

Many children have blood lead tests as part of their regular care by a doctor or clinic. These tests are important for children who live or spend time in older houses which may have lead paint. Children should be tested for lead poisoning at one and two years of age or more often depending on their contact with sources of lead.

## How can I determine if my child should be tested?

- Does the child now (or in the recent past) live in or often visit a house built before 1950 with peeling or chipping paint? This could include a day care, preschool, or home of a relative.

**YES                      NO                      DON'T KNOW**

- Does the child now (or in the recent past) live in or often visit a house built before 1978 that has been remodeled within the last year?

**YES                      NO                      DON'T KNOW**

- Does the child have a brother or sister (or playmate) with lead poisoning?

**YES                      NO                      DON'T KNOW**

- Does the child live with an adult whose job or hobby involves lead?

**YES                      NO                      DON'T KNOW**

- Does the child's family use any home remedies that may contain lead?

**YES                      NO                      DON'T KNOW**

If you answered **NO** to every question, this means your child is at **LOW RISK** for lead poisoning.

If you answered **YES** or **DON'T KNOW** to any of these questions, this means your child is at **HIGH RISK** for lead poisoning. The only way to know for sure is to have your child tested. Talk to your child's doctor to schedule a blood test. Show the doctor this questionnaire so he or she knows why your child is at risk.

## **How do I get my child tested for lead poisoning?**

- Ask your family doctor or pediatrician to do a blood lead test on your child at 12 months and 24 months of age. Medicaid insurance will pay for the cost of the test if your child is enrolled. If you have private insurance, coverage may vary. The cost of a blood lead test which is sent to the Michigan Department of Community Health Lead Laboratory for analysis is \$11.
- If your child needs a blood lead test, but your insurance will not pay for it, or you cannot afford to pay for it, the fee can be waived with permission from the laboratory.
- You can also call the Ingham County Health Department Communicable Disease Department at 517-887-4308 and they can tell you where in your community you can get a free or reduced cost blood lead test.

If the first blood lead test is done with a capillary sample (finger prick), and the analysis of the sample shows an elevated blood lead level, it will be very important for you to bring your child back for a venous blood sample to confirm the results.

Call your local health department or the Childhood Lead Poisoning Prevention Program at (517) 335-8885 if you have further questions about getting your child tested for lead poisoning.

### **What is the right way to clean in a home that has lead?**

- 1. Use the Proper Cleaner**
  - Any household detergent...
  - Or cleaners made just for cleaning lead
  - You can use a spray bottle or bucket to hold the cleaning solution.
- 2. Always wear rubber gloves when cleaning. If you do not have rubber gloves, wash your hands immediately after cleaning.**
- 3. Pick up any visible paint chips before beginning to clean.**
  - Window areas usually have a lot of paint chips
  - Seal paint chips in a plastic bag and throw away
  - You can use your HEPA vacuum to clean up paint chips, but DO NOT use a non-HEPA vacuum to pick up paint chips because this can distribute lead into the air.
- 4. Use disposable paper towels to clean instead of a rag or sponge. You should put the paper towels in a sealed plastic bag and throw them away after using them in order to get rid of the lead that is on them.**
- 5. Keep your bucket of wash water clean. Use a new paper towel to clean each area. Never put dirty paper towels into the wash water.**
- 6. Pour the wash water down the toilet, not down the sink.**
- 7. Rinse the cleaned areas with clean water and fresh paper towels. Throw the paper towels away in a sealed plastic bag when you are done.**

## What do lead test results mean?

If blood lead level is...	A child needs...
0-9 mcg/dL*	No further action. Rescreen as recommended.
10-14 mcg/dL	Follow-up testing within 3 months.
15-19 mcg/dL	Follow-up testing within 2 months.
20-44 mcg/dL	Medical evaluation and care. Inspection for and removal of lead hazards in the child's environment.
45-69 mcg/dL	<b>All started within 48 hours:</b> Medical evaluation and care. Inspection for and removal of lead hazards in the child's environment.
70 mcg/dL or higher— <b>Medical Emergency</b>	<b>Immediate:</b> Hospitalization and treatment. Inspection for and removal of lead hazards in the child's environment.

- "mcg/dL" means "micrograms" of lead per "deciliter" of blood.

Source: Michigan Department of Community Health - "Questions and Answers about Childhood Lead Poisoning" factsheet located at:  
[http://www.michigan.gov/mdch/0,1607,7-132-2940\\_2955\\_2983-19536--,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_2983-19536--,00.html)

# IMPORTANT!

## Lead From Paint, Dust, and Soil Can Be Dangerous If Not Managed Properly

- FACT:** Lead exposure can harm young children and babies even before they are born.
- FACT:** Even children who seem healthy can have high levels of lead in their bodies.
- FACT:** People can get lead in their bodies by breathing or swallowing lead dust, or by eating soil or paint chips containing lead.
- FACT:** People have many options for reducing lead hazards. In most cases, lead-based paint that is in good condition is not a hazard.
- FACT:** Removing lead-based paint improperly can increase the danger to your family.

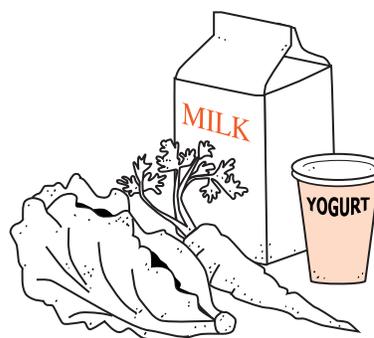
If you think your home might have lead hazards, read this pamphlet to learn some simple steps to protect your family.

## What You Can Do Now To Protect Your Family

---

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

- ◆ If you rent, notify your landlord of peeling or chipping paint.
- ◆ Clean up paint chips immediately.
- ◆ Clean floors, window frames, window sills, and other surfaces weekly. Use a mop or sponge with warm water and a general all-purpose cleaner or a cleaner made specifically for lead. REMEMBER: NEVER MIX AMMONIA AND BLEACH PRODUCTS TOGETHER SINCE THEY CAN FORM A DANGEROUS GAS.
- ◆ Thoroughly rinse sponges and mop heads after cleaning dirty or dusty areas.
- ◆ Wash children's hands often, especially before they eat and before nap time and bed time.
- ◆ Keep play areas clean. Wash bottles, pacifiers, toys, and stuffed animals regularly.
- ◆ Keep children from chewing window sills or other painted surfaces.
- ◆ Clean or remove shoes before entering your home to avoid tracking in lead from soil.
- ◆ Make sure children eat nutritious, low-fat meals high in iron and calcium, such as spinach and dairy products. Children with good diets absorb less lead.



## Are You Planning To Buy, Rent, or Renovate a Home Built Before 1978?

---

**M**any houses and apartments built before 1978 have paint that contains high levels of lead (called lead-based paint). Lead from paint, chips, and dust can pose serious health hazards if not taken care of properly.



**OWNERS, BUYERS, and RENTERS** are encouraged to check for lead (see page 6) before renting, buying or renovating pre-1978 housing.

**F**ederal law requires that individuals receive certain information before renting, buying, or renovating pre-1978 housing:



**LANDLORDS** have to disclose known information on lead-based paint and lead-based paint hazards before leases take effect. Leases must include a disclosure about lead-based paint.



**SELLERS** have to disclose known information on lead-based paint and lead-based paint hazards before selling a house. Sales contracts must include a disclosure about lead-based paint. Buyers have up to 10 days to check for lead.



**RENOVATORS** disturbing more than 2 square feet of painted surfaces have to give you this pamphlet before starting work.

## Lead Gets in the Body in Many Ways

---

**Childhood lead poisoning remains a major environmental health problem in the U.S.**

---

**Even children who appear healthy can have dangerous levels of lead in their bodies.**

---

### **People can get lead in their body if they:**

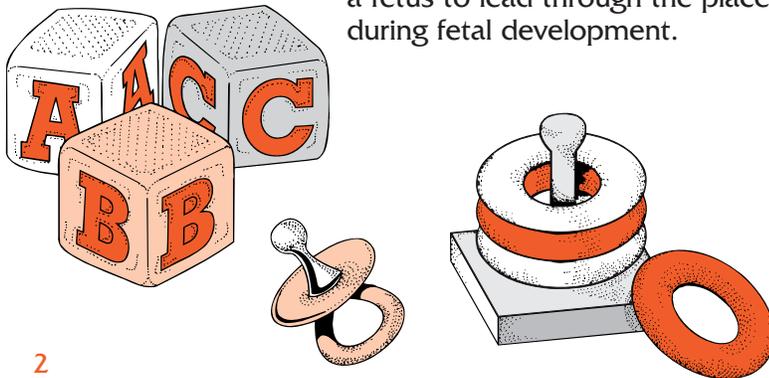
- ◆ Breathe in lead dust (especially during renovations that disturb painted surfaces).
- ◆ Put their hands or other objects covered with lead dust in their mouths.
- ◆ Eat paint chips or soil that contains lead.

### **Lead is even more dangerous to children under the age of 6:**

- ◆ At this age children's brains and nervous systems are more sensitive to the damaging effects of lead.
- ◆ Children's growing bodies absorb more lead.
- ◆ Babies and young children often put their hands and other objects in their mouths. These objects can have lead dust on them.

### **Lead is also dangerous to women of childbearing age:**

- ◆ Women with a high lead level in their system prior to pregnancy would expose a fetus to lead through the placenta during fetal development.



## Lead's Effects

It is important to know that even exposure to low levels of lead can severely harm children.

### In children, lead can cause:

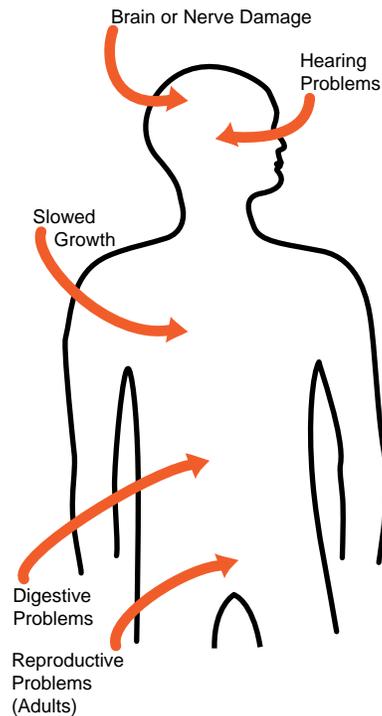
- ◆ Nervous system and kidney damage.
- ◆ Learning disabilities, attention deficit disorder, and decreased intelligence.
- ◆ Speech, language, and behavior problems.
- ◆ Poor muscle coordination.
- ◆ Decreased muscle and bone growth.
- ◆ Hearing damage.

While low-lead exposure is most common, exposure to high levels of lead can have devastating effects on children, including seizures, unconsciousness, and, in some cases, death.

Although children are especially susceptible to lead exposure, lead can be dangerous for adults too.

### In adults, lead can cause:

- ◆ Increased chance of illness during pregnancy.
- ◆ Harm to a fetus, including brain damage or death.
- ◆ Fertility problems (in men and women).
- ◆ High blood pressure.
- ◆ Digestive problems.
- ◆ Nerve disorders.
- ◆ Memory and concentration problems.
- ◆ Muscle and joint pain.



---

**Lead affects  
the body in  
many ways.**

---

## Where Lead-Based Paint Is Found

---

**In general, the older your home, the more likely it has lead-based paint.**

---

**Many homes built before 1978 have lead-based paint.** The federal government banned lead-based paint from housing in 1978. Some states stopped its use even earlier. Lead can be found:

- ◆ In homes in the city, country, or suburbs.
- ◆ In apartments, single-family homes, and both private and public housing.
- ◆ Inside and outside of the house.
- ◆ In soil around a home. (Soil can pick up lead from exterior paint or other sources such as past use of leaded gas in cars.)

## Checking Your Family for Lead

---

**Get your children and home tested if you think your home has high levels of lead.**

---

**To reduce your child's exposure to lead, get your child checked, have your home tested (especially if your home has paint in poor condition and was built before 1978), and fix any hazards you may have.**

Children's blood lead levels tend to increase rapidly from 6 to 12 months of age, and tend to peak at 18 to 24 months of age.

Consult your doctor for advice on testing your children. A simple blood test can detect high levels of lead. Blood tests are usually recommended for:

- ◆ Children at ages 1 and 2.
- ◆ Children or other family members who have been exposed to high levels of lead.
- ◆ Children who should be tested under your state or local health screening plan.

Your doctor can explain what the test results mean and if more testing will be needed.

## Identifying Lead Hazards

---

**Lead-based paint** is usually not a hazard if it is in good condition, and it is not on an impact or friction surface, like a window. It is defined by the federal government as paint with lead levels greater than or equal to 1.0 milligram per square centimeter, or more than 0.5% by weight.

**Deteriorating lead-based paint (peeling, chipping, chalking, cracking or damaged)** is a hazard and needs immediate attention. It may also be a hazard when found on surfaces that children can chew or that get a lot of wear-and-tear, such as:

- ◆ Windows and window sills.
- ◆ Doors and door frames.
- ◆ Stairs, railings, banisters, and porches.

**Lead dust** can form when lead-based paint is scraped, sanded, or heated. Dust also forms when painted surfaces bump or rub together. Lead chips and dust can get on surfaces and objects that people touch. Settled lead dust can re-enter the air when people vacuum, sweep, or walk through it. The following two federal standards have been set for lead hazards in dust:

- ◆ 40 micrograms per square foot ( $\mu\text{g}/\text{ft}^2$ ) and higher for floors, including carpeted floors.
- ◆ 250  $\mu\text{g}/\text{ft}^2$  and higher for interior window sills.

**Lead in soil** can be a hazard when children play in bare soil or when people bring soil into the house on their shoes. The following two federal standards have been set for lead hazards in residential soil:

- ◆ 400 parts per million (ppm) and higher in play areas of bare soil.
- ◆ 1,200 ppm (average) and higher in bare soil in the remainder of the yard.

The only way to find out if paint, dust and soil lead hazards exist is to test for them. The next page describes the most common methods used.

---

**Lead from paint chips, which you can see, and lead dust, which you can't always see, can both be serious hazards.**

---

## Checking Your Home for Lead

---

**Just knowing that a home has lead-based paint may not tell you if there is a hazard.**

---



You can get your home tested for lead in several different ways:

- ◆ A paint **inspection** tells you whether your home has lead-based paint and where it is located. It won't tell you whether or not your home currently has lead hazards.
- ◆ A **risk assessment** tells you if your home currently has any lead hazards from lead in paint, dust, or soil. It also tells you what actions to take to address any hazards.
- ◆ A combination risk assessment and inspection tells you if your home has any lead hazards and if your home has any lead-based paint, and where the lead-based paint is located.

Hire a trained and certified testing professional who will use a range of reliable methods when testing your home.

- ◆ Visual inspection of paint condition and location.
- ◆ A portable x-ray fluorescence (XRF) machine.
- ◆ Lab tests of paint, dust, and soil samples.

There are state and federal programs in place to ensure that testing is done safely, reliably, and effectively. Contact your state or local agency (see bottom of page 11) for more information, or call **1-800-424-LEAD (5323)** for a list of contacts in your area.

**Home test kits for lead are available, but may not always be accurate.** Consumers should not rely on these kits before doing renovations or to assure safety.

## Reducing Lead Hazards In The Home

---

**Removing lead improperly can increase the hazard to your family by spreading even more lead dust around the house.**

**Always use a professional who is trained to remove lead hazards safely.**



In addition to day-to-day cleaning and good nutrition:

- ◆ You can **temporarily** reduce lead hazards by taking actions such as repairing damaged painted surfaces and planting grass to cover soil with high lead levels. These actions (called “interim controls”) are not permanent solutions and will need ongoing attention.
- ◆ To **permanently** remove lead hazards, you should hire a certified lead “abatement” contractor. Abatement (or permanent hazard elimination) methods include removing, sealing, or enclosing lead-based paint with special materials. Just painting over the hazard with regular paint is not permanent removal.

Always hire a person with special training for correcting lead problems—someone who knows how to do this work safely and has the proper equipment to clean up thoroughly. Certified contractors will employ qualified workers and follow strict safety rules as set by their state or by the federal government.

Once the work is completed, dust cleanup activities must be repeated until testing indicates that lead dust levels are below the following:

- ◆ 40 micrograms per square foot ( $\mu\text{g}/\text{ft}^2$ ) for floors, including carpeted floors;
- ◆ 250  $\mu\text{g}/\text{ft}^2$  for interior windows sills; and
- ◆ 400  $\mu\text{g}/\text{ft}^2$  for window troughs.

Call your state or local agency (see bottom of page 11) for help in locating certified professionals in your area and to see if financial assistance is available.

## Remodeling or Renovating a Home With Lead-Based Paint

---

Take precautions before your contractor or you begin remodeling or renovating anything that disturbs painted surfaces (such as scraping off paint or tearing out walls):

- ◆ **Have the area tested for lead-based paint.**
- ◆ **Do not use a belt-sander, propane torch, high temperature heat gun, dry scraper, or dry sandpaper** to remove lead-based paint. These actions create large amounts of lead dust and fumes. Lead dust can remain in your home long after the work is done.
- ◆ **Temporarily move your family** (especially children and pregnant women) out of the apartment or house until the work is done and the area is properly cleaned. If you can't move your family, at least completely seal off the work area.
- ◆ **Follow other safety measures to reduce lead hazards.** You can find out about other safety measures by calling 1-800-424-LEAD. Ask for the brochure "Reducing Lead Hazards When Remodeling Your Home." This brochure explains what to do before, during, and after renovations.

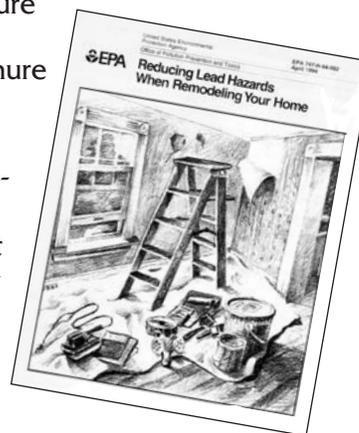
If you have already completed renovations or remodeling that could have released lead-based paint or dust, get your young children tested and follow the steps outlined on page 7 of this brochure.



---

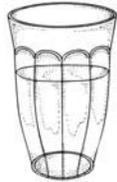
**If not conducted properly, certain types of renovations can release lead from paint and dust into the air.**

---



## Other Sources of Lead

---



---

**While paint, dust, and soil are the most common sources of lead, other lead sources also exist.**

---



- ◆ **Drinking water.** Your home might have plumbing with lead or lead solder. Call your local health department or water supplier to find out about testing your water. You cannot see, smell, or taste lead, and boiling your water will not get rid of lead. If you think your plumbing might have lead in it:
  - Use only cold water for drinking and cooking.
  - Run water for 15 to 30 seconds before drinking it, especially if you have not used your water for a few hours.
- ◆ **The job.** If you work with lead, you could bring it home on your hands or clothes. Shower and change clothes before coming home. Launder your work clothes separately from the rest of your family's clothes.
- ◆ Old painted **toys** and **furniture**.
- ◆ Food and liquids stored in **lead crystal** or **lead-glazed pottery or porcelain**.
- ◆ **Lead smelters** or other industries that release lead into the air.
- ◆ **Hobbies** that use lead, such as making pottery or stained glass, or refinishing furniture.
- ◆ **Folk remedies** that contain lead, such as "greta" and "azarcon" used to treat an upset stomach.

## For More Information

---

### The National Lead Information Center

Call **1-800-424-LEAD (424-5323)** to learn how to protect children from lead poisoning and for other information on lead hazards. To access lead information via the web, visit **[www.epa.gov/lead](http://www.epa.gov/lead)** and **[www.hud.gov/offices/lead/](http://www.hud.gov/offices/lead/)**.

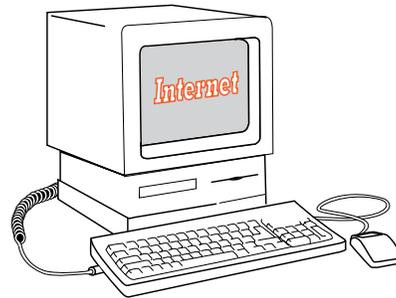


### EPA's Safe Drinking Water Hotline

Call **1-800-426-4791** for information about lead in drinking water.

### Consumer Product Safety Commission (CPSC) Hotline

To request information on lead in consumer products, or to report an unsafe consumer product or a product-related injury call **1-800-638-2772**, or visit CPSC's Web site at: **[www.cpsc.gov](http://www.cpsc.gov)**.



### Health and Environmental Agencies

Some cities, states, and tribes have their own rules for lead-based paint activities. Check with your local agency to see which laws apply to you. Most agencies can also provide information on finding a lead abatement firm in your area, and on possible sources of financial aid for reducing lead hazards. Receive up-to-date address and phone information for your local contacts on the Internet at **[www.epa.gov/lead](http://www.epa.gov/lead)** or contact the National Lead Information Center at **1-800-424-LEAD**.

For the hearing impaired, call the Federal Information Relay Service at **1-800-877-8339** to access any of the phone numbers in this brochure.

# Radon Test Kits

**The Ingham County Health Department provides short and long term radon test kits to Ingham County residents at a minimal cost.**

Testing for radon in your home is quick and easy. You should test your home in the winter. The test kit should be placed in the lowest level of the home (basement or first floor) about 20 inches above the floor, and you should keep the test kit away from drafts, high heat, high humidity, and exterior walls. Short term tests only take 2 or 3 days to complete. The instructions will tell you where to mail the sample.

**Contact the Ingham County Health Department Bureau of Environmental Health to purchase a radon test kit for your home.** They usually cost around \$10. Follow all instructions included in the kit. After you mail in your sample, you will receive your home's test results by mail. If the level is higher than 4, call the Ingham County Health Department or Healthy Homes University for help with reducing the radon level in your home.

**Ingham County Health Department  
Bureau of Environmental Health  
5303 S. Cedar St.  
Lansing, MI 48911**

**(517) 887-4312**

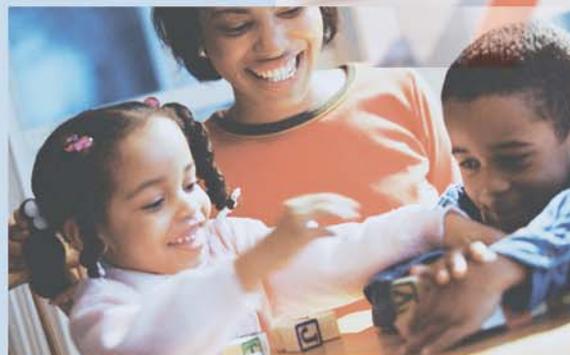




# A Citizen's Guide To Radon



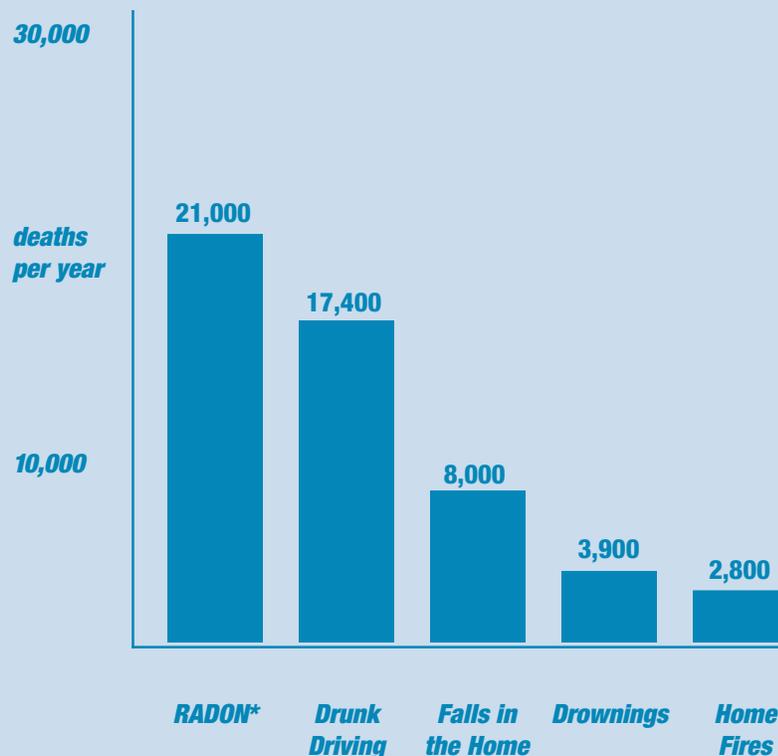
## The Guide To Protecting Yourself And Your Family From Radon



## EPA Recommends:

- ▼ **Test your home for radon—it's easy and inexpensive.**
- ▼ **Fix your home if your radon level is 4 picocuries per liter (pCi/L) or higher.**
- ▼ **Radon levels less than 4 pCi/L still pose a risk, and in many cases may be reduced.**

**Radon is estimated to cause thousands of lung cancer deaths in the U.S. each year.**



\*Radon is estimated to cause about 21,000 lung cancer deaths per year, according to EPA's 2003 Assessment of Risks from Radon in Homes (EPA 402-R-03-003). The numbers of deaths from other causes are taken from the Centers for Disease Control and Prevention's 1999-2001 National Center for Injury Prevention and Control Report and 2002 National Safety Council Reports.

### ***Radon is a cancer-causing, radioactive gas.***

You can't see radon. And you can't smell it or taste it. But it may be a problem in your home.

Radon is estimated to cause many thousands of deaths each year. That's because when you breathe air containing radon, you can get lung cancer. In fact, the Surgeon General has warned that radon is the second leading cause of lung cancer in the United States today. Only smoking causes more lung cancer deaths. **If you smoke and your home has high radon levels, your risk of lung cancer is especially high.**

### ***Radon can be found all over the U.S.***

Radon comes from the natural (radioactive) breakdown of uranium in soil, rock and water and gets into the air you breathe. Radon can be found all over the U.S. It can get into any type of building—homes, offices, and schools—and result in a high indoor radon level. But you and your family are most likely to get your greatest exposure at home, where you spend most of your time.

### ***You should test for radon.***

Testing is the only way to know if you and your family are at risk from radon. EPA and the Surgeon General recommend testing all homes below the third floor for radon. EPA also recommends testing in schools.

Testing is inexpensive and easy—it should only take a few minutes of your time. Millions of Americans have already tested their homes for radon (see page 5).

### ***You can fix a radon problem.***

Radon reduction systems work and they are not too costly. Some radon reduction systems can reduce radon levels in your home by up to 99%. Even very high levels can be reduced to acceptable levels.

### ***New homes can be built with radon-resistant features.***

Radon-resistant construction techniques can be effective in preventing radon entry. When installed properly and completely, these simple and inexpensive techniques can help reduce indoor radon levels in homes. In addition, installing them at the time of construction makes it easier and less expensive to reduce radon levels further if these passive techniques don't reduce radon levels to below 4 pCi/L. **Every new home should be tested after occupancy, even if it was built radon-resistant.** If radon levels are still in excess of 4 pCi/L, the passive system should be activated by having a qualified mitigator install a vent fan. For more explanation of radon resistant construction techniques, refer to EPA publication, *Building Radon Out: A Step-by-Step Guide on How to Build Radon-Resistant Homes* (see page 15).

OVERVIEW

# HOW DOES RADON GET INTO YOUR HOME?

**Any home may have a radon problem.**

Radon is a radioactive gas. It comes from the natural decay of uranium that is found in nearly all soils. It typically moves up through the ground to the air above and into your home through cracks and other holes in the foundation. Your home traps radon inside, where it can build up. Any home may have a radon problem. This means new and old homes, well-sealed and drafty homes, and homes with or without basements.

Radon from soil gas is the main cause of radon problems. Sometimes radon enters the home through well water (see page 8). In a small number of homes, the building materials can give off radon, too. However, building materials rarely cause radon problems by themselves.

### **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.**



Nearly 1 out of every 15 homes in the U.S. is estimated to have elevated radon levels. Elevated levels of radon gas have been found in homes in your state. Contact your state radon office (see back cover) for general information about radon in your area. While radon problems may be more common in some areas, any home may have a problem. The only way to know about your home is to test.

Radon can also be a problem in schools and workplaces. Ask your state radon office (see back cover) about radon problems in schools, daycare and childcare facilities, and workplaces in your area (also visit [www.epa.gov/radon](http://www.epa.gov/radon)).

# HOW TO TEST YOUR HOME

You can't see radon, but it's not hard to find out if you have a radon problem in your home. All you need to do is test for radon. Testing is easy and should only take a few minutes of your time.

The amount of radon in the air is measured in "picocuries per liter of air," or "pCi/L." Sometimes test results are expressed in Working Levels (WL) rather than picocuries per liter (pCi/L) (4 pCi/L equals 0.016 WL). There are many kinds of low-cost "do it yourself" radon test kits you can get through the mail and in some hardware stores and other retail outlets. If you prefer, or if you are buying or selling a home, you can hire a qualified tester to do the testing for you. You should first contact your state radon office about obtaining a list of qualified testers. You can also contact a private radon proficiency program for lists of privately certified radon professionals serving your area. For links and more information, visit [www.epa.gov/radon/proficiency.html](http://www.epa.gov/radon/proficiency.html).

## There are Two General Ways to Test for Radon:

### SHORT-TERM TESTING:

*The quickest way to test is with short-term tests. Short-term tests remain in your home for two days to 90 days, depending on the device. "Charcoal canisters," "alpha track," "electret ion chamber," "continuous monitors," and "charcoal liquid scintillation" detectors are most commonly used for short-term testing. Because radon levels tend to vary from day to day and season to season, a short-term test is less likely than a long-term test to tell you your year-round average radon level. If you need results quickly, however, a short-term test followed by a second short-term test may be used to decide whether to fix your home (see also page 7 under Home Sales).*

### LONG-TERM TESTING:

*Long-term tests remain in your home for more than 90 days. "Alpha track" and "electret" detectors are commonly used for this type of testing. A long-term test will give you a reading that is more likely to tell you your home's year-round average radon level than a short-term test.*

## How To Use a Test Kit:

Follow the instructions that come with your test kit. If you are doing a short-term test, close your windows and outside doors and keep them closed as much as possible during the test. Heating and air conditioning system fans that re-circulate air may be operated. Do not operate fans or other machines which bring in air from outside. Fans that are part of a radon-reduction system or small exhaust fans operating only for short periods of time may run during the test. If you are doing a short-term test lasting just 2 or 3 days, be sure to close your windows and outside doors at least 12 hours **before** beginning the test, too. You should not conduct

**Testing is easy  
and should only  
take a few  
minutes of  
your time.**

---

short-term tests lasting just 2 or 3 days during unusually severe storms or periods of unusually high winds. The test kit should be placed in the lowest lived-in level of the home (for example, the basement if it is frequently used, otherwise the first floor). It should be put in a room that is used regularly (like a living room, playroom, den, or bedroom) but **not** your kitchen or bathroom. Place the kit at least 20 inches above the floor in a location where it won't be disturbed—away from drafts, high heat, high humidity, and exterior walls. Leave the kit in place for as long as the package says. Once you've finished the test, reseal the package and send it to the lab specified on the package right away for analysis. You should receive your test results within a few weeks.

### **EPA Recommends the Following Testing Steps:**

**Step 1. Take a short-term test. If your result is 4 pCi/L or higher, take a follow-up test (Step 2) to be sure.**

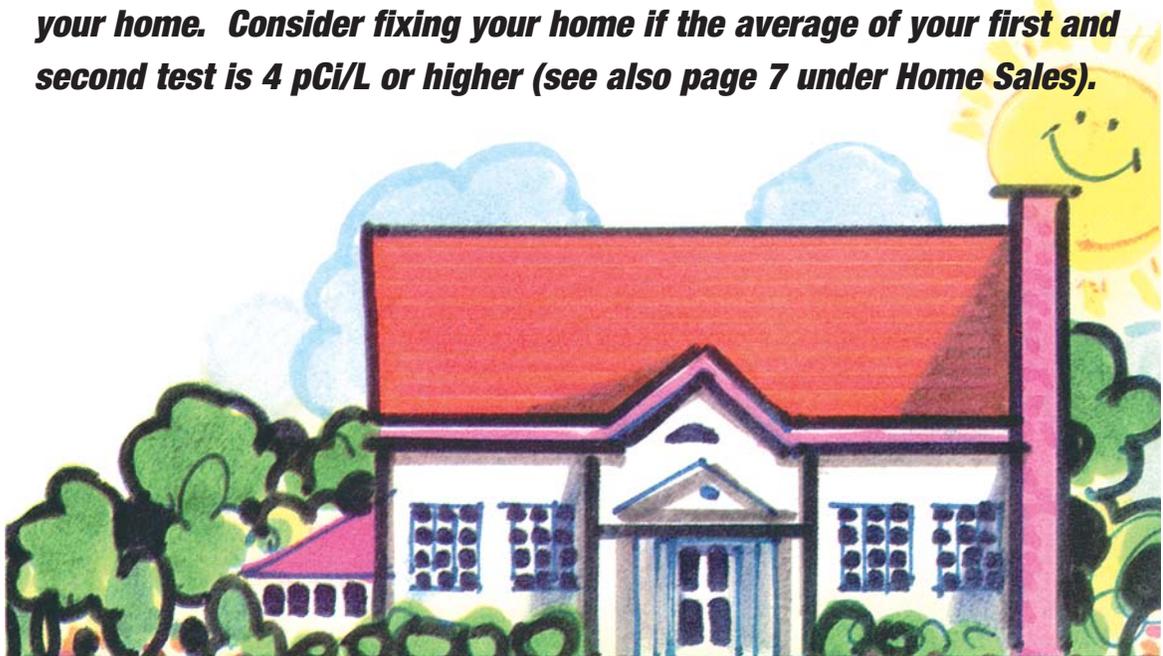
**Step 2. Follow up with either a long-term test or a second short-term test:**

- **For a better understanding of your year-round average radon level, take a long-term test.**
- **If you need results quickly, take a second short-term test.**

*The higher your initial short-term test result, the more certain you can be that you should take a short-term rather than a long-term follow up test. If your first short-term test result is more than twice EPA's 4 pCi/L action level, you should take a second short-term test immediately.*

**Step 3.**

- **If you followed up with a long-term test: Fix your home if your long-term test result is 4 pCi/L or more.**
- **If you followed up with a second short-term test: The higher your short-term results, the more certain you can be that you should fix your home. Consider fixing your home if the average of your first and second test is 4 pCi/L or higher (see also page 7 under Home Sales).**



# WHAT YOUR TEST RESULTS MEAN

The average indoor radon level is estimated to be about 1.3 pCi/L, and about 0.4 pCi/L of radon is normally found in the outside air. The U.S. Congress has set a long-term goal that indoor radon levels be no more than outdoor levels. While this goal is not yet technologically achievable in all cases, most homes today *can* be reduced to 2 pCi/L or below.

Sometimes short-term tests are less definitive about whether or not your home is above 4 pCi/L. This can happen when your results are close to 4 pCi/L. For example, if the average of your two short-term test results is 4.1 pCi/L, there is about a 50% chance that your year-round average is somewhat below 4 pCi/L. However, EPA believes that any radon exposure carries some risk—no level of radon is safe. Even radon levels below 4 pCi/L pose some risk, and you can reduce your risk of lung cancer by lowering your radon level.

If your living patterns change and you begin occupying a lower level of your home (such as a basement) you should retest your home on that level.

Even if your test result is below 4 pCi/L, you may want to test again sometime in the future.

**Test your home now and save your results. If you find high radon levels, fix your home before you decide to sell it.**

### **RADON AND HOME SALES**

*More and more, home buyers and renters are asking about radon levels before they buy or rent a home. Because real estate sales happen quickly, there is often little time to deal with radon and other issues. The best thing to do is to test for radon NOW and save the results in case the buyer is interested in them. Fix a problem if it exists so it won't complicate your home sale. If you are planning to move, call your state radon office (see back page) for EPA's pamphlet "Home Buyer's and Seller's Guide to Radon," which addresses some common questions ([www.epa.gov/radon/pubs/realstate.html](http://www.epa.gov/radon/pubs/realstate.html)). You can also use the results of two short-term tests done side-by-side (four inches apart) to decide whether to fix your home.*

*During home sales:*

- *Buyers often ask if a home has been tested, and if elevated levels were reduced.*
- *Buyers frequently want tests made by someone who is not involved in the home sale. Your state radon office (see back cover) can assist you in identifying a qualified tester.*
- *Buyers might want to know the radon levels in areas of the home (like a basement they plan to finish) that the seller might not otherwise test.*

*Today many homes are built to help prevent radon from coming in. Building codes in your state or local area may require these radon-resistant construction features. If you are buying or renting a new home, ask the owner or builder if it has radon-resistant features. The EPA recommends building new homes with radon-resistant features in high radon potential (Zone 1) areas. Even if built radon-resistant, every new home should be tested for radon after occupancy. If you have a test result of 4 pCi/L or more, you can have a qualified mitigator easily add a vent fan to an existing passive system for about \$300 and further reduce the radon level in your home. For more information, refer to the EPA's Map of Radon Zones and other useful EPA documents on radon-resistant new construction (see publications on page 15), or visit [www.epa.gov/radon](http://www.epa.gov/radon).*

### RADON IN WATER

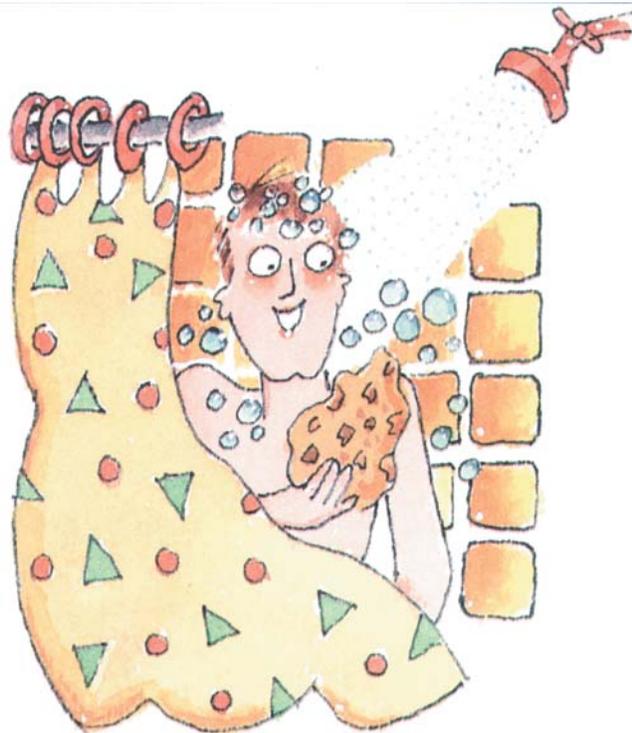
There are two main sources for the radon in your home's indoor air, the soil and the water supply. Compared to radon entering the home through water, radon entering your home through the soil is usually a much larger risk.

The radon in your water supply poses an inhalation risk and an ingestion risk. Research has shown that your risk of lung cancer from breathing radon in air is much larger than your risk of stomach cancer from swallowing water with radon in it. Most of your risk from radon in water comes from radon released into the air when water is used for showering and other household purposes.

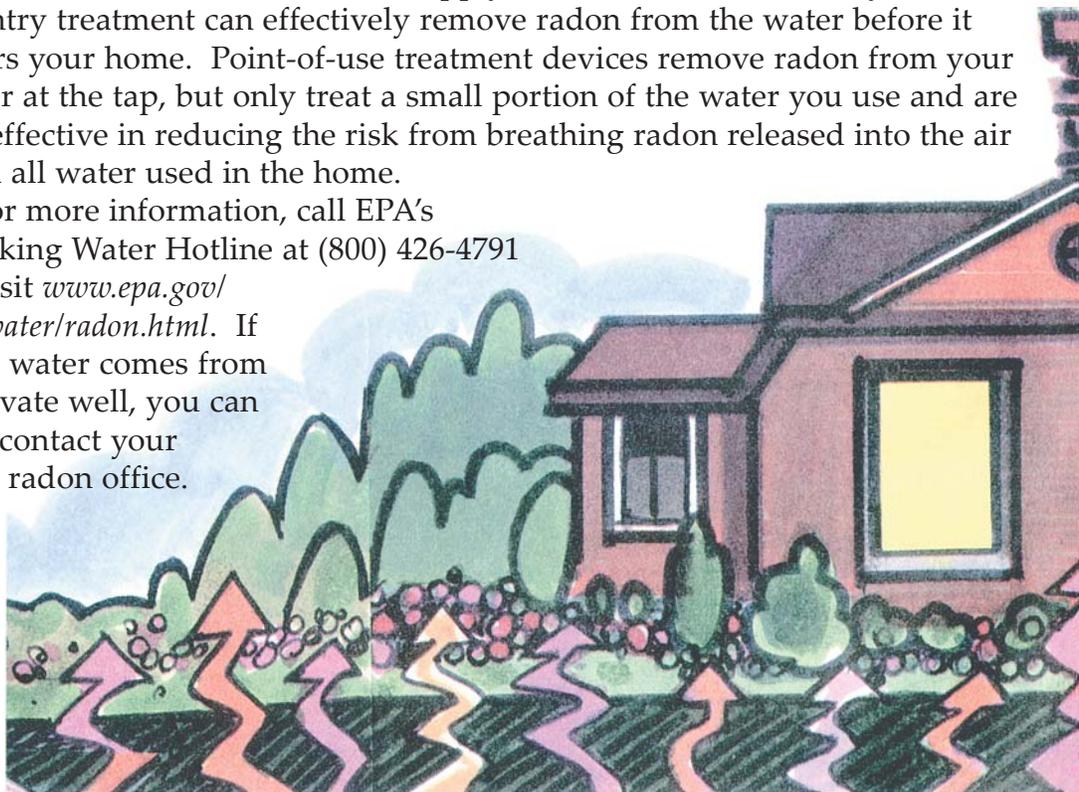
Radon in your home's water is not usually a problem when its source is surface water. A radon in water problem is more likely when its source is ground water, e.g., a private well or a public water supply system that uses ground water. If you are concerned that radon may be entering your home through the water and your water comes from a public water supply, contact your water supplier.

If you've tested your private well and have a radon in water problem, it can be fixed. Your home's water supply can be treated in two ways. Point-of-entry treatment can effectively remove radon from the water before it enters your home. Point-of-use treatment devices remove radon from your water at the tap, but only treat a small portion of the water you use and are not effective in reducing the risk from breathing radon released into the air from all water used in the home.

For more information, call EPA's Drinking Water Hotline at (800) 426-4791 or visit [www.epa.gov/safewater/radon.html](http://www.epa.gov/safewater/radon.html). If your water comes from a private well, you can also contact your state radon office.



***If you've tested the air in your home and found a radon problem, and your water comes from a well, have your water tested.***



# HOW TO LOWER THE RADON LEVEL IN YOUR HOME

Since there is no known safe level of radon, there can always be some risk. But the risk can be reduced by lowering the radon level in your home.

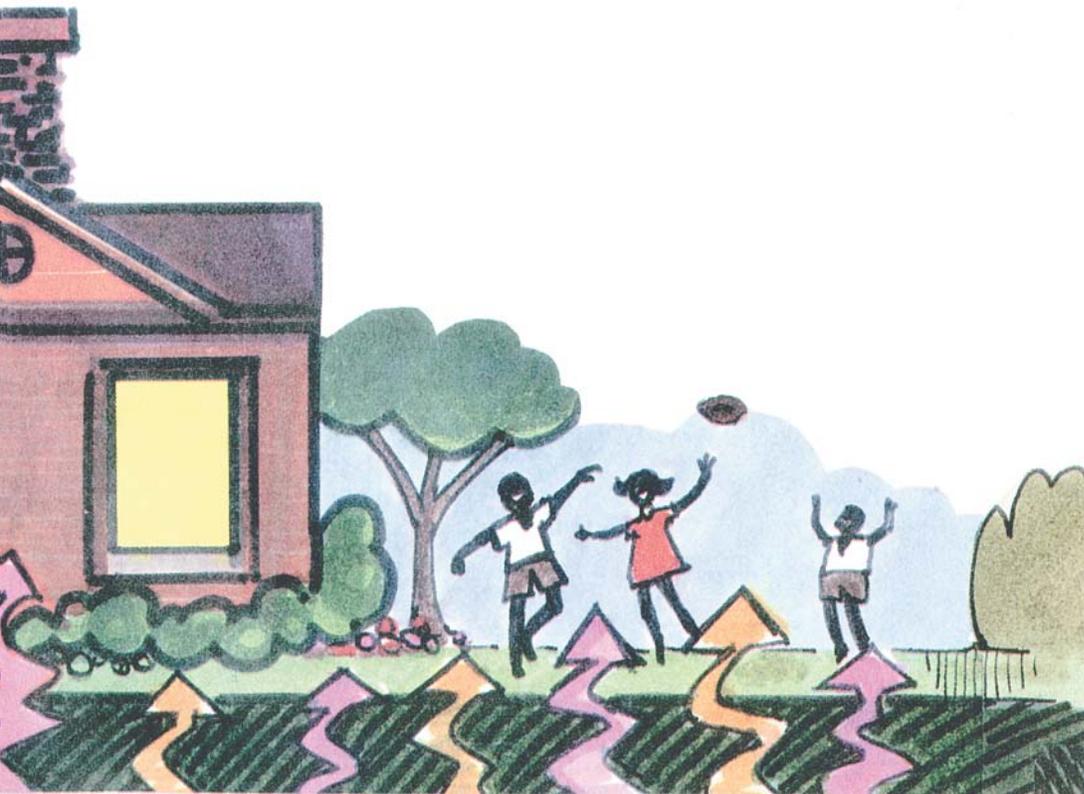
There are several proven methods to reduce radon in your home, but the one primarily used is a vent pipe system and fan, which pulls radon from beneath the house and vents it to the outside. This system, known as a soil suction radon reduction system, does not require major changes to your home. Sealing foundation cracks and other openings makes this kind of system more effective and cost-efficient. Similar systems can also be installed in houses with crawl spaces. Radon contractors can use other methods that may also work in your home. The right system depends on the design of your home and other factors.

Ways to reduce radon in your home are discussed in EPA's *Consumer's Guide to Radon Reduction*. You can get a copy from your state radon office, or view it online at [www.epa.gov/radon/pubs](http://www.epa.gov/radon/pubs).

The cost of reducing radon in your home depends on how your home was built and the extent of the radon problem. Most homes can be fixed for about the same cost as other common home repairs. The average house costs about \$1,200 for a contractor to fix, although this can range from about \$800 to about \$2,500. The cost is much less if a passive system was installed during construction.

### **RADON AND HOME RENOVATIONS**

*If you are planning any major structural renovation, such as converting an unfinished basement area into living space, it is especially important to test the area for radon before you begin the renovation. If your test results indicate a radon problem, radon-resistant techniques can be inexpensively included as part of the renovation. Because major renovations can change the level of radon in any home, always test again after work is completed.*



**Most homes can be fixed for about the same cost as other common home repairs.**

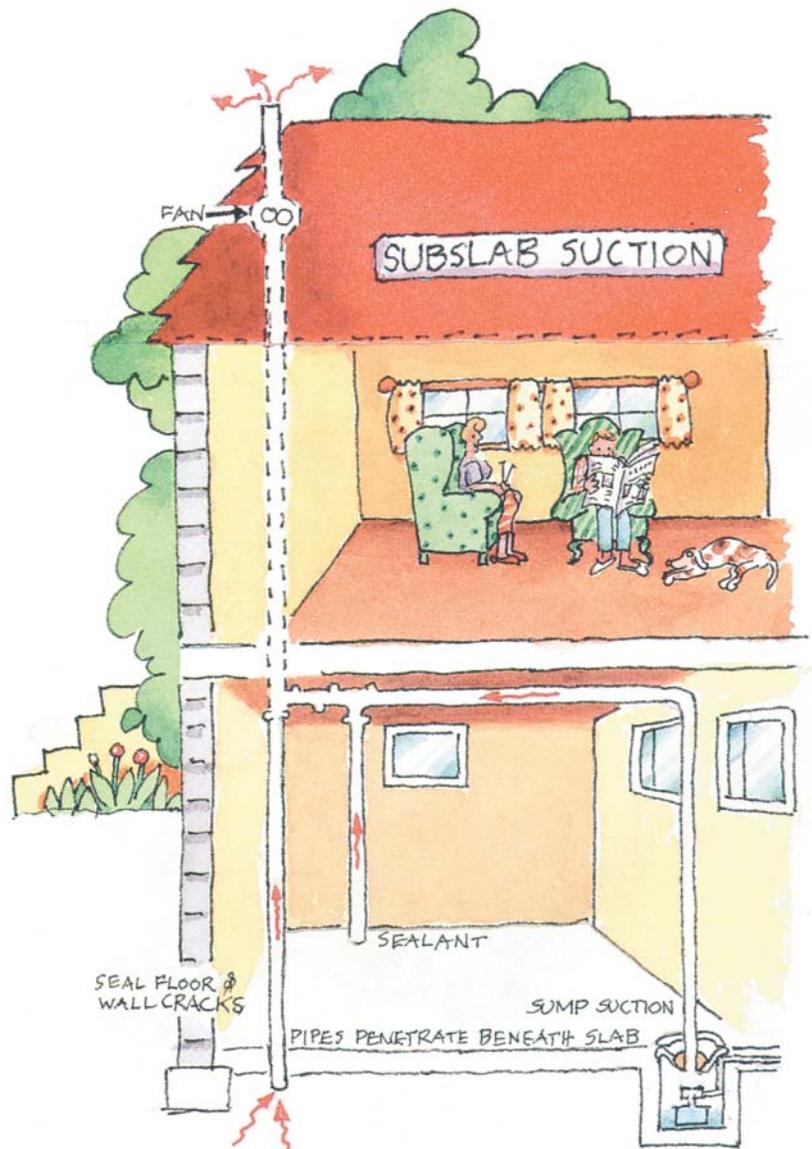
Lowering high radon levels requires technical knowledge and special skills. You should use a contractor who is trained to fix radon problems. A qualified contractor can study the radon problem in your home and help you pick the right treatment method.

Check with your state radon office for names of qualified or state certified radon contractors in your area. You can also contact private radon proficiency programs for lists of privately certified radon professionals in your area. For more information on private radon proficiency programs, visit [www.epa.gov/radon/proficiency.html](http://www.epa.gov/radon/proficiency.html). Picking someone to fix your radon problem is much like choosing a contractor for other home repairs—you may want to get references and more than one estimate.

*If you are considering fixing your home's radon problem yourself, you should first contact your state radon office for guidance and assistance.*

You should also test your home again after it is fixed to be sure that radon levels have been reduced. Most soil suction radon reduction systems include a

monitor that will indicate whether the system is operating properly. In addition, it's a good idea to retest your home every two years to be sure radon levels remain low.



*Note: This diagram is a composite view of several mitigation options. The typical mitigation system usually has only one pipe penetration through the basement floor; the pipe may also be installed on the outside of the house.*

## **THE RISK OF LIVING WITH RADON**

Radon gas decays into radioactive particles that can get trapped in your lungs when you breathe. As they break down further, these particles release small bursts of energy. This can damage lung tissue and lead to lung cancer over the course of your lifetime. Not everyone exposed to elevated levels of radon will develop lung cancer. And the amount of time between exposure and the onset of the disease may be many years.

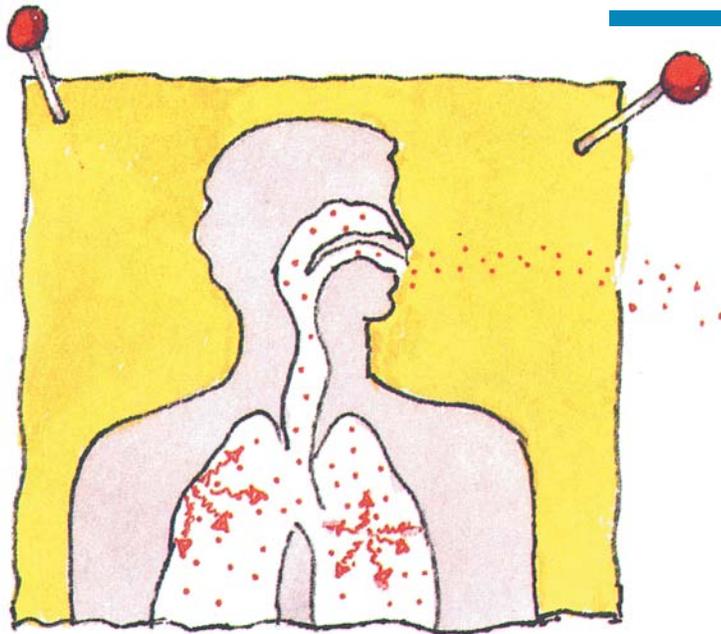
Like other environmental pollutants, there is some uncertainty about the magnitude of radon health risks. However, we know more about radon risks than risks from most other cancer-causing substances. This is because estimates of radon risks are based on studies of cancer in humans (underground miners).

Smoking combined with radon is an especially serious health risk. Stop smoking and lower your radon level to reduce your lung cancer risk.

Children have been reported to have greater risk than adults of certain types of cancer from radiation, but there are currently no conclusive data on whether children are at greater risk than adults from radon.

***Your chances of getting lung cancer from radon depend mostly on:***

- ***How much radon is in your home***
- ***The amount of time you spend in your home***
- ***Whether you are a smoker or have ever smoked***



***Scientists are more certain about radon risks than risks from most other cancer-causing substances.***

## RADON RISK IF YOU SMOKE

Radon Level	If 1,000 people who smoked were exposed to this level over a lifetime* . . .	The risk of cancer from radon exposure compares to** . . .	WHAT TO DO: Stop Smoking and . . .
20 pCi/L	About 260 people could get lung cancer	◀ 250 times the risk of drowning	Fix your home
10 pCi/L	About 150 people could get lung cancer	◀ 200 times the risk of dying in a home fire	Fix your home
8 pCi/L	About 120 people could get lung cancer	◀ 30 times the risk of dying in a fall	Fix your home
4 pCi/L	About 62 people could get lung cancer	◀ 5 times the risk of dying in a car crash	Fix your home
2 pCi/L	About 32 people could get lung cancer	◀ 6 times the risk of dying from poison	Consider fixing between 2 and 4 pCi/L
1.3 pCi/L	About 20 people could get lung cancer	(Average indoor radon level)	(Reducing radon levels below 2 pCi/L is difficult)
0.4 pCi/L		(Average outdoor radon level)	

Note: If you are a former smoker, your risk may be lower.

**It's never too late to reduce your risk of lung cancer. Don't wait to test and fix a radon problem. If you are a smoker, stop smoking.**

## RADON RISK IF YOU'VE NEVER SMOKED

Radon Level	If 1,000 people who never smoked were exposed to this level over a lifetime* . . .	The risk of cancer from radon exposure compares to** . . .	WHAT TO DO:
20 pCi/L	About 36 people could get lung cancer	◀ 35 times the risk of drowning	Fix your home
10 pCi/L	About 18 people could get lung cancer	◀ 20 times the risk of dying in a home fire	Fix your home
8 pCi/L	About 15 people could get lung cancer	◀ 4 times the risk of dying in a fall	Fix your home
4 pCi/L	About 7 people could get lung cancer	◀ The risk of dying in a car crash	Fix your home
2 pCi/L	About 4 people could get lung cancer	◀ The risk of dying from poison	Consider fixing between 2 and 4 pCi/L
1.3 pCi/L	About 2 people could get lung cancer	(Average indoor radon level)	(Reducing radon levels below 2 pCi/L is difficult)
0.4 pCi/L		(Average outdoor radon level)	

Note: If you are a former smoker, your risk may be higher.

\*Lifetime risk of lung cancer deaths from EPA Assessment of Risks from Radon in Homes (EPA 402-R-03-003).

\*\*Comparison data calculated using the Centers for Disease Control and Prevention's 1999-2001 National Center for Injury Prevention and Control Reports.

## RADON MYTHS

**MYTH:** Scientists aren't sure radon really is a problem.

**FACT:** Although some scientists dispute the precise number of deaths due to radon, all major health organizations (like the Centers for Disease Control, the American Lung Association and the American Medical Association) agree with estimates that radon causes thousands of preventable lung cancer deaths every year. This is especially true among smokers, since the risk to smokers is much greater than to non-smokers.

**MYTH:** Radon testing is difficult, time consuming and expensive.

**FACT:** Radon testing is easy. You can test your home yourself or hire a qualified radon test company. Either approach takes only a small amount of time and effort.

**MYTH:** Radon test kits are not reliable and are difficult to find.

**FACT:** Reliable test kits are available from qualified radon testers and companies. Reliable testing devices are also available by phone or mail-order, and can be purchased in hardware stores and other retail outlets. Call your state radon office (see back cover or visit [www.epa.gov/radon](http://www.epa.gov/radon)) for help in identifying radon testing companies.

**MYTH:** Homes with radon problems can't be fixed.

**FACT:** There are simple solutions to radon problems in homes. Hundreds of thousands of homeowners have already fixed radon problems in their homes. Radon levels can be readily lowered for about \$800 to \$2,500 (with an average cost of \$1,200). Call your state radon office (see back cover) for help in identifying qualified mitigation contractors.

**MYTH:** Radon only affects certain kinds of homes.

**FACT:** House construction can affect radon levels. However, radon can be a problem in homes of all types: old homes, new homes, drafty homes, insulated homes, homes with basements, homes without basements. Local geology, construction materials, and how the home was built are among the factors that can affect radon levels in homes.

## A Citizen's Guide to Radon

**MYTH:** Radon is only a problem in certain parts of the country.

**FACT:** High radon levels have been found in every state. Radon problems do vary from area to area, but the only way to know your radon level is to test.

**MYTH:** A neighbor's test result is a good indication of whether your home has a problem.

**FACT:** It's not. Radon levels can vary greatly from home to home. The only way to know if your home has a radon problem is to test it.

**MYTH:** Everyone should test their water for radon.

**FACT:** Although radon gets into some homes through water, it is important to first test the air in the home for radon. If your water comes from a public water system that uses ground water, call your water supplier. If high radon levels are found and the home has a private well, call the Safe Drinking Water Hotline at (800) 426-4791 for information on testing your water.

**MYTH:** It's difficult to sell homes where radon problems have been discovered.

**FACT:** Where radon problems have been fixed, home sales have not been blocked or frustrated. The added protection is sometimes a good selling point.

**MYTH:** I've lived in my home for so long, it doesn't make sense to take action now.

**FACT:** You will reduce your risk of lung cancer when you reduce radon levels, even if you've lived with a radon problem for a long time.

**MYTH:** Short-term tests can't be used for making a decision about whether to fix your home.

**FACT:** A short-term test followed by a second short-term test\* can be used to decide whether to fix your home. However, the closer the average of your two short-term tests is to 4 pCi/L, the less certain you can be about whether your year-round average is above or below that level. Keep in mind that radon levels below 4 pCi/L still pose some risk. Radon levels can be reduced in most homes to 2 pCi/L or below.

*\*If the radon test is part of a real estate transaction, the result of two short-term tests can be used in deciding whether to mitigate. For more information, see EPA's "Home Buyer's and Seller's Guide to Radon."*

# FOR FURTHER INFORMATION

## **EPA Radon Web Site**

[www.epa.gov/radon](http://www.epa.gov/radon)

*EPA radon page includes links to publications, hotlines, private proficiency programs and more.*

## **Hotlines**

### **1-800-808-RADON (767-7236)**

*Operated by the National Safety Council in partnership with EPA to order radon test kits.*

### **1-800-55RADON (557-2366)**

*Operated by the National Safety Council in partnership with EPA, for live help with radon questions.*

### **1-800-644-6999**

*Radon Fix-It Hotline, operated by the National Safety Council in partnership with EPA for information on how to mitigate your home.*

### **1-866-528-3187**

*Radon Hotline in Spanish, operators can be reached 9:00 a.m. to 5:00 p.m. to assist with information about radon, or ordering a radon test kit.*

### **1-800-426-4791**

*Safe Drinking Water Hotline, operated under contract to EPA. For information on testing, treatment, radon in water, and drinking water standards.*

## **EPA Regional Offices**

[www.epa.gov/iaq/whereyoulive.html](http://www.epa.gov/iaq/whereyoulive.html)

*Check the above Web site for a listing of your EPA regional office.*

## **EPA Publications**

*Radon publications in print can be downloaded via the EPA radon website at [www.epa.gov/radon/pubs](http://www.epa.gov/radon/pubs)*

*Radon publications may be ordered through the National Service Center for Environmental Publications (NSCEP) by calling 1-800-490-9198, by visiting the NSCEP website at [www.epa.gov/ncepihom](http://www.epa.gov/ncepihom), or by e-mail at [nscep@bps-lmit.com](mailto:nscep@bps-lmit.com)*



## U.S. EPA Assessment of Risks from Radon in Homes

In June 2003, the EPA revised its risk estimates for radon exposure in homes. EPA estimates that about 21,000 annual lung cancer deaths are radon related. EPA also concluded that the effects of radon and cigarette smoking are synergistic, so that smokers are at higher risk from radon. EPA's revised estimates are based on the National Academy of Sciences 1998 BEIR VI (Biological Effects of Ionizing Radiation) Report which concluded that radon is the second leading cause of lung cancer after smoking.

## Surgeon General Health Advisory

*"Indoor radon is the second-leading cause of lung cancer in the United States and breathing it over prolonged periods can present a significant health risk to families all over the country. It's important to know that this threat is completely preventable. Radon can be detected with a simple test and fixed through well-established venting techniques."*

January 2005

## State Radon Offices ([www.epa.gov/iaq/wherelive.html](http://www.epa.gov/iaq/wherelive.html))

Call your state radon office for additional help with any of your radon questions. Up-to-date information on how to contact your state radon office is also available on EPA's Web site at [www.epa.gov/iaq/wherelive.html](http://www.epa.gov/iaq/wherelive.html), or call EPA's toll free Indoor Air Quality Information Clearinghouse (IAQ INFO) at (800) 438-4318 to obtain the current listing.

	Local-Toll	Toll-Free		Local-Toll	Toll-Free
Alabama	334-206-5391	800-582-1866	Montana	406-841-5280	800-546-0483
Alaska	907-474-7201	800-478-8324	Nebraska	402-471-0594	800-334-9491
Arizona	602-255-4845		Nevada	775-687-5394 x275	
Arkansas	501-661-2301	800-482-5400	New Hampshire	603-271-4674	800-852-3345 x4674
California	916-449-5674	800-745-7326	New Jersey	609-984-5425	800-648-0394
Colorado	303-692-3420	800-846-3986	New Mexico	505-827-1093	
Connecticut	860-509-7367		New York	518-402-7556	800-458-1158 x27556
Delaware	302-739-4731	800-464-4357	North Carolina	919-571-4141	
District of Columbia	202-535-2999		North Dakota	701-328-5188	800-252-6325
Florida	850-245-4288	800-543-8279	Ohio	614-644-2727	800-523-4439
Georgia	404-651-5120	800-745-0037	Oklahoma	405-702-5165	
Hawaii	808-586-4700		Oregon	503-731-4014 x664	
Idaho	208-332-7319	800-445-8647	Pennsylvania	717-783-3594	800-23RADON
Illinois	217-782-1325	800-325-1245	Puerto Rico	787-274-7815	
Indiana	317-233-7147	800-272-9723	Rhode Island	401-222-2438	
Iowa	515-281-4928	800-383-5992	South Carolina	803-898-3893	800-768-0362
Kansas	785-296-1560	800-693-5343	South Dakota	605-773-3151	800-438-3367
Kentucky	502-564-4856		Tennessee	615-687-7000	800-232-1139
Louisiana	225-925-7042	800-256-2494	Texas	512-834-6688	800-572-5548
Maine	207-287-5676	800-232-0842	Utah	801-536-4250	800-458-0145
Maryland (EPA Region 3)	215-814-2086		Vermont	802-865-7730	800-439-8550
Massachusetts	413-586-7525	800-RADON95	Virginia	804-786-5932	800-468-0138
Michigan	517-335-8037	800-723-6642	Washington	360-236-3253	
Minnesota	651-215-0909	800-798-9050	West Virginia	304-558-6772	800-922-1255
Mississippi	601-987-6893	800-626-7739	Wisconsin	608-267-4795	888-569-7236
Missouri	573-751-6160	800-628-9891	Wyoming	307-777-6015	800-458-5847

## Tribal Radon Program Offices

Hopi Tribe (Arizona)	928-734-3100
Inter-Tribal Council of America	602-307-1509
Navajo Nation	928-871-7672

# Bats & Rabies

If you find a bat in your home and think someone may have come in contact with it, call the Ingham County Health Department (517-887-4308) as soon as possible for instructions on what to do.

## What is Rabies?

Rabies is an infectious viral disease that affects the nervous system (brain, spinal cord, and nerves) of humans and other animals. It usually results in death for people who are not treated after being exposed. However, if it is treated, people usually make a full recovery. Tens of thousands of people are successfully treated each year after being bitten by an animal that may have rabies. A few people die of rabies each year in the United States, usually because they do not understand that they can get rabies from the bite of a wild animal and they do not seek medical care.

People get rabies from the bite of an animal with rabies (a rabid animal). Any wild animal, like a bat, raccoon, skunk, fox, or coyote can have rabies and give the disease to people. It is also possible, but not as common, that people may get rabies if infectious material from a rabid animal, such as saliva from their mouth, gets directly into the person's eyes, nose, mouth, or a wound.

## HOW do People Get Rabies?

If a person has been bitten or scratched by an animal that is thought to have rabies, they should first clean the area immediately with soap and water if possible to reduce the chance of infection.

## HOW is Rabies Treated in a Person?

Then, they should go to their health care provider or emergency room as soon as possible. If they are thought to be at risk of rabies, they will receive an injection (shot) at the site of the bite or scratch, as well as one in their arm. They will receive four more shots over the next four weeks. The idea of getting shots is uncomfortable for some people, but going through this treatment is much better than the risk of developing rabies!

If you are bitten by a bat — or if infectious material (such as saliva) from a bat gets into your eyes, nose, mouth, or a wound — wash the affected area with soap and water if possible and get medical care immediately. Whenever possible, the bat should be captured and sent to a laboratory for rabies testing. Contact the Ingham County Health Department for information in this situation.

People usually know when they have been bitten by a bat. However, because bats have small teeth which may leave marks that are not easily seen, there are situations in which you should seek medical advice even without seeing an obvious bite wound. For example, if you wake up and find a bat in your room, see a bat in the room of an unattended child, or see a bat near a mentally impaired or intoxicated (drunk) person, seek medical advice and have the bat tested.

## What Should I Do if I Come in Contact with a Bat?



## When can I Be Sure that I Have NOT Been Exposed to Rabies?

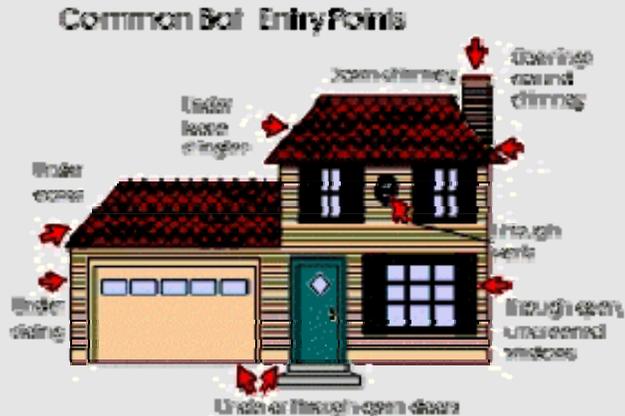
- If you simply see a bat (or other wild animal) nearby
- If you come into contact with bat (or other wild animal) feces, urine, or blood
- If you see a bat in a place in your home that where it would have no chance of contact with a human (such as the attic or crawlspace)
- Touching a stick or other material that a bat (or other wild animal) has touched
- Touching a bat (or other wild animal) on its fur

In all of these examples, you are not likely to have been exposed to rabies.

If you think your pet or domestic animal has been bitten by a bat, contact a veterinarian or your local health department for assistance immediately and have the bat tested for rabies if possible. Remember to keep vaccinations current for cats, dogs, and other animals.

## What Should I Do if my Pet is Exposed to a Bat?

## How can I Keep Bats out of my House?



Bats should always be prevented from entering rooms of your home. For help with "bat-proofing" your home, contact an animal-control or wildlife conservation agency. If you choose to do the "bat-proofing" yourself, here are some suggestions. Carefully examine your home for holes that might allow bats to enter. Any openings larger than  $\frac{1}{4}$  inch by  $\frac{1}{2}$  inch should be caulked or plugged. Use window screens, chimney caps, and draft-guards beneath doors to attics; fill electrical and plumbing holes with stainless steel wool or caulking; and ensure that all doors to the outside close tightly.

You can prevent bats from roosting in attics or buildings by covering outside entry points. Observe where the bats exit at dusk and keep them from getting back in ("exclude" them) by loosely hanging clear plastic sheeting or bird netting over these areas. Bats can crawl out and leave, but cannot get back in. After the bats have left (allow a few days), the openings can be permanently sealed.

During summer, many young bats are unable to fly. If you exclude adult bats during this time, the young may be trapped inside and die or make their way into living quarters. Thus, if possible, avoid exclusion from May through August. Most bats leave in the fall or winter to hibernate, so these are the best times to "bat-proof" your home.

# How Can I Safely Capture a Bat in my Home?

## If Someone is Exposed:

**If a bat is present in your home and there is a chance you or someone else has been exposed**, leave the bat alone and contact your local health department or an animal-control for help. If professional help is unavailable, use precautions to capture the bat safely, as described below.

What you will need:

- Leather work gloves (put them on)
- Small box, coffee can, or other container
- Piece of cardboard with small holes punched in it
- Tape

When the bat lands, approach it slowly, while wearing the gloves, and place the box or coffee can over it. Slide the cardboard under the container to trap the bat inside. Tape the cardboard to the container securely, and punch small holes in the cardboard, allowing the bat to breathe. Contact your local health department or animal control authority to make arrangements for rabies testing.

## If No One is Exposed:

**If you see a bat in your home and you are sure no human or pet exposure has occurred**, confine the bat to a room by closing all doors and windows leading out of the room. Keep windows and doors to the outside open. The bat will probably leave soon on its own. If not, it can be caught, as described above, and released outdoors away from people and pets.