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## Helping Others Breathe Easier

**G**et ready to roll up your sleeves and pinch the dust mask tight on your face because we're going in – into your home, that is – hunting for airborne invaders that can make you sneeze, wheeze, itch and drip!

That's right – AANMA's Indoor AIRepair™ guide will help you find and remove allergens and irritants that can trigger asthma, allergies and other health conditions. Every home has them, whether we live in a tent, a mansion or anything in between, but we don't always recognize them.

My family has allergies and asthma, so we're always careful to maintain clean indoor air. Were we ever surprised at what we found when we took the Indoor AIRepair tour for the first time! From a leaky pipe in the kitchen and loose grout in the shower, to a huge surprise in the attic – our AIRepair Checklist left us with a to-do list a mile long!

So we turned to the Friends and Neighbors resource list on page 12, logged onto the Internet, read every book we could find, and started our repairs. Now we've

resolved to take a room-by-room tour of our home every season to keep the air in our home beautifully breathable.



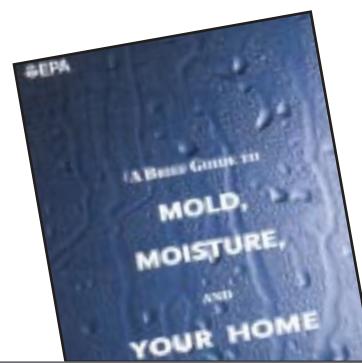
The point is, even if you think the air inside your home is clean, it may not be as healthy as you'd like. So use this Indoor AIRepair guide as a starting point. Shine your flashlight in every nook and

# Heating and Cooling Systems

Your heating, ventilation and air-conditioning (HVAC) system acts as your home's lungs: moving, filtering, warming and cooling the air you breathe each day. You can install an extra air-cleaning or filtering system to help reduce allergens and irritants in your air space, but no machine can do it alone. For best symptom relief, remove allergens and irritants at their source by following the AIRRepair tips in this publication.

Call a contractor or service company in your area to maintain your home's lungs for greatest efficiency and to explain the wide variety of ways to keep your indoor air clean and healthy.

Keep your filters clean! No matter what style HVAC system you use, be sure to change or clean the filters as recommended by the manufacturer.

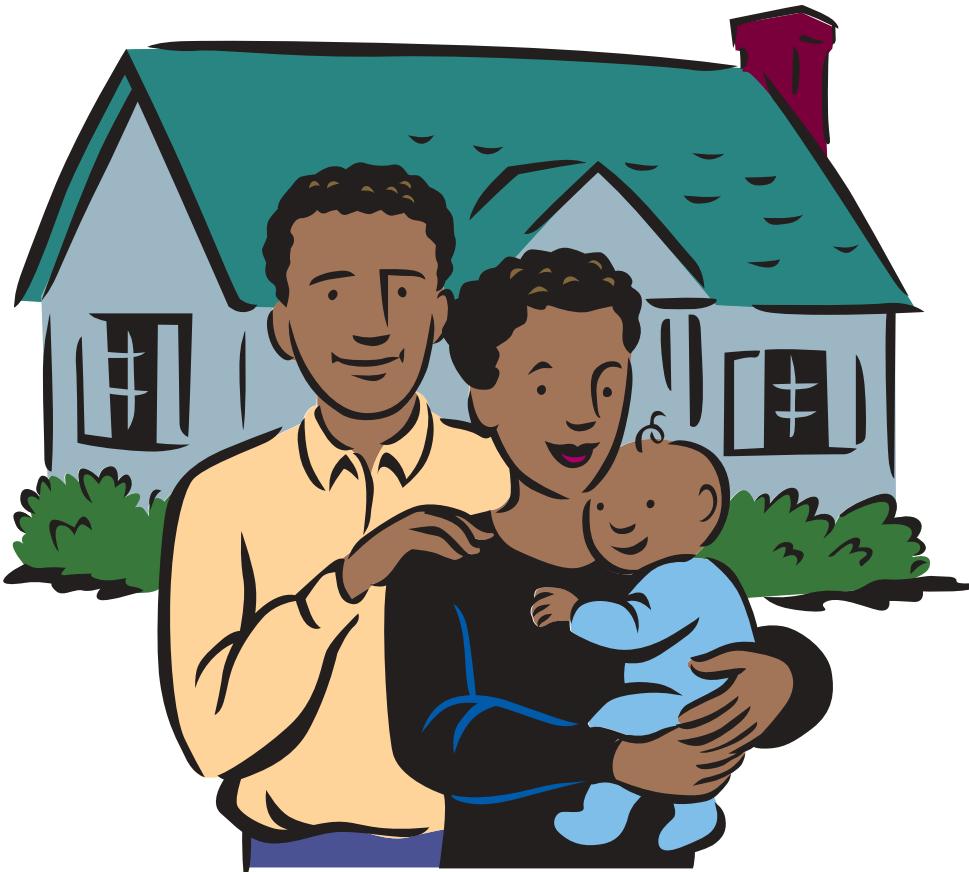


High indoor humidity allows dust mites to thrive and encourages mold and mildew growth. Eliminate water leaks and use dehumidifiers to keep humidity levels in your home below 50 percent. Consult the EPA's "A Brief Guide to Mold, Moisture, and Your Home" for more tips.

Call 800.438.4318 or visit [www.epa.gov/iaq/molds](http://www.epa.gov/iaq/molds).

## Helping Others Breathe Easier

*Continued from page 1*



cranny, searching for the clues we list room-by-room, then fill in your Checklist and use our AIRRepair tips to clean things up. Need outside help? Consult the Friends and Neighbors resource list and don't despair! As intimidating as the process can seem, there's always help.

Let us know how your inspection went. Tell us stories we can share in AANMA publications and our *breatherville.org* Web site. And please don't forget to return the enclosed postage-paid response card. Your opinions are important! Let's stay in touch!

A handwritten signature in black ink that reads "Nancy".

**Nancy Sander**

AANMA President and Founder  
Since 1985



# Calling All Neat Freaks and Messies

Your home is your castle, be it an apartment, mobile home, single-family dwelling or townhouse in the bustling city, suburbs or rural countryside. And whether you consider yourself a neat freak or a creatively cluttered person, if you or someone in your family has asthma or allergies, the air inside your home may be making you sick.

We Americans spend nearly 90 percent of our time inside – and often take indoor air quality for granted. But Environmental Protection Agency (EPA) studies show air pollutant levels may be two to five times higher indoors than outdoors!

If we could color the tiny air specks and chemicals we breathe each day, we'd be amazed at all the particles that constantly bombard our airways. Allergens such as animal

dander, dust mites, cockroaches and mold; irritants such as smoke, chemical odors and dust; and biological pollutants such as viruses and bacteria swirl in, often causing headaches, stuffy nose, tickly throat, nagging cough, wheezing, shortness of breath, itchy eyes and more. And while medications can sometimes relieve these symptoms,

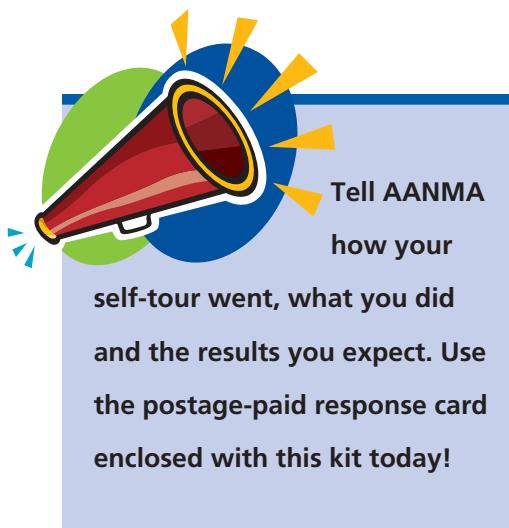
the best way to prevent them is to remove the offending elements from our home, school and play environments.

Asthma and allergies are the most common health conditions linked with indoor pollutants. Others include rhinitis, chronic sinusitis, eczema, skin rashes, fungal infections, headaches and eye irritations.

How healthy is the air inside your home? Let's find out. Grab a dust mask, a pair of gloves, a flashlight, pencil and this Indoor AIRepair at Home guide. Start at the kitchen sink (or any other convenient point in your home) and take the Room-by-Room tour to look for indoor allergens, irritants and pollutants. Record your findings on the handy Checklist on page 15.

## Find it Fix it

*How good is your home's indoor air quality? Even the cleanest homes have room for improvement. Take this quick quiz – the answers may surprise you!*



FIND IT?		FIX IT!	
Friends and/or family use lighted tobacco products in my home.	Yes <input type="checkbox"/> No <input type="checkbox"/>	My family and I have taken the EPA Smoke-Free Home Pledge.	Yes <input type="checkbox"/> No <input type="checkbox"/>
It has been more than one month since I cleaned or replaced the air filter on our heating/cooling unit.	Yes <input type="checkbox"/> No <input type="checkbox"/>	I've marked the calendar to check the filters once a month.	Yes <input type="checkbox"/> No <input type="checkbox"/>
We use bleach indoors and other scented cleaners in our home.	Yes <input type="checkbox"/> No <input type="checkbox"/>	We use only unscented or nontoxic cleaning products.	Yes <input type="checkbox"/> No <input type="checkbox"/>
My shower enclosure seems impossible to keep free from mold.	Yes <input type="checkbox"/> No <input type="checkbox"/>	I've reminded my family members to run the exhaust fan during and after their showers, and I'm now using a mildew-free shower curtain.	Yes <input type="checkbox"/> No <input type="checkbox"/>
I often wake up with an itchy nose and eyes.	Yes <input type="checkbox"/> No <input type="checkbox"/>	I've put dust-mite-proof covers on my mattress, box springs and bed.	Yes <input type="checkbox"/> No <input type="checkbox"/>

# Indoor AIRepair Room-by-Room

## Getting Started

Like a detective, you will be looking and sniffing for clues pointing to indoor allergens, irritants and pollutants. Some things to look for:

- Pets
- Tobacco smoke
- Odors
- Accumulated house dust
- Cockroaches
- Rodent droppings
- Mold
- Pollen
- Leaky pipes
- Cleaning products

Start your investigation in the room where symptoms happen most often or where you know a problem exists. For example, if your child coughs at night or you are congested every

morning when you wake up, tackle the bedrooms first. Your problem could be dust mites, feather pillows or mold.

But don't stop there – continue on through each room of the house, spreading the hunt over several days, if necessary. Tackle one project or room one day, week or month at a time. And do yourself a favor: Give up the impossible dream of a germ-free, sterile home. You'll wear yourself out and drive your family crazy if you try to create it.



### KITCHEN: SINK/CABINET

#### Common allergens and irritants: Mold, cockroaches, rodent droppings, cleaning supplies

##### Clues that there may be an indoor air problem:

- Water puddles or leaks around or near the faucet or hardware
- Loose or missing caulking where the sink meets the countertop
- Black or brown mold on the backsplash or countertop or around the drain
- Dirty dishes
- Scum or discoloration under the dish drain mat
- Odors coming from the garbage disposal
- Damp or wet plumbing pipes or flooring under sink
- Musty or damp smell inside cabinet
- Black, brown or rust-colored areas on back wall, pipes or flooring under sink
- Gaps between pipes and wallboard
- Warped or rotting wallboard or flooring
- Black or brown rodent droppings (about the size of rice)
- Dust clumps containing insect parts (cockroach nests)
- Silverfish
- Open or overflowing trash bin
- Pet food, bird seed
- Cleaning products, particularly those containing perfumes or other strong smells

##### AIRepair:

- Repair leaking faucets (a simple "o" ring or washer may do the trick) and pipes to discourage mold growth, rodents and other pests.
- Wash dishes immediately after use; dry and replace in cupboard.
- Place thin lemon slices in the garbage disposal and turn it on while running cold water into the sink to keep it smelling fresh and clean.
- Limit clutter under the sink; wipe the area clean monthly to discourage pests and mold growth.
- Never store wet sponges or dishrags under the sink.
- Stuff steel wool in gaps left around plumbing pipes to prevent rodents from entering the kitchen from behind the wall.
- Use nontoxic, childproof insect and rodent traps or baits to reduce pests.
- Use a lid on your trash bin. Empty trash daily. Clean the inside and outside of trash bin weekly.
- Store pet food and bird seed in airtight containers. Wash and put away pet food dishes each night.
- Replace odor-masking, fragranced and expensive cleaners with nontoxic, fragrance-free and inexpensive alternatives using ingredients you probably already have in your kitchen! (page 8)



## KITCHEN: REFRIGERATOR

### Common allergens and irritants: House dust, mold, cockroaches, rodent droppings

#### Clues that there may be an indoor air problem:

- Dust or slimy dark spots on top of or beneath the refrigerator
- Mold, dust and water in the drip pan (if you have one, the drip pan is usually beneath the refrigerator a few inches off the floor behind a kick plate)
- Sticky substance left from liquid spills underneath the refrigerator
- Dusty backside of the refrigerator and wall
- Black or brown rodent droppings (about the size of rice) on the floor
- Moisture on refrigerator surfaces
- Black growth on the door or door seal (the flexible rubber gasket)

#### AIRRepair:

- Keep the refrigerator top clutter-free to make dusting an easy part of your cleaning routine.
- Sprinkle salt in the drip pan to inhibit mold growth.
- Pull the refrigerator out from the wall. (You may want to wear a dust mask if it's been a while since you did this!) Vacuum dust off refrigerator coils and fan; it will help reduce energy costs, too!
- Damp mop the floor under the refrigerator each season.
- Place nontoxic, childproof rodent bait or traps behind the refrigerator. Check them often!

# Allergies at a Glance

- Allergies affect 40-50 million people in the U.S.<sup>1</sup>
- Allergic diseases affect more than 20 percent of the U.S. population.<sup>2</sup>
- Allergic diseases are the sixth leading cause of chronic disease in the U.S.<sup>1</sup>
- When an allergen is inhaled, touched or eaten, allergy antibodies trigger the release of histamine, causing symptoms such as itchy eyes, nose, throat and ears; watery eyes; runny nose and congestion; wheezing; sneezing; headache; and fatigue.
- Some allergies can trigger anaphylaxis, a life-threatening reaction that can cause swelling of the throat and/or tongue and a severe drop in blood pressure.
- Limiting exposure to allergens and irritants such as dust mites and smoke may delay or reduce the risk of developing allergy and asthma.



## KITCHEN: OVEN/STOVE

### Common allergens and irritants: Dust, mold, cockroaches, rodent droppings

#### Clues that there may be an indoor air problem:

- Dust, dust clumps containing cockroach eggs and decaying insects, decaying food and rodent droppings found on the floor or in the drawer
- Sticky, greasy filters on oven exhaust fan

#### AIRRepair:

- Periodically remove and clean the drawer at the base of the oven and vacuum or mop the floor area underneath the oven.
- Use nontoxic, childproof cockroach and/or rodent traps or bait.
- Use an exhaust fan when cooking to reduce moisture and odors.
- Clean exhaust fan filter or screen to remove cooking grease build-up.

- 1 American Academy of Allergy, Asthma & Immunology, *The Allergy Report: Science-Based Findings on the Diagnosis and Treatment of Allergic Disorders*, 1996-2001
- 2 American Academy of Allergy, Asthma & Immunology, Task Force on Allergic Disorders. *Executive Summary Report*. (1998)



## KITCHEN: WASTE CANS, COMPACTORS, RECYCLE BINS

### Common allergens and irritants: Mold, cockroaches, rodent droppings

#### Clues that there may be an indoor air problem:

- Food clinging to waste can, compactor or recycle bin surfaces
- Odors
- Black or brown rodent droppings in or near waste can, compactor or recycle bin

#### AIRRepair:

- Remove kitchen waste daily.
- Do not use odor-masking products. Odor alerts you to an allergen or irritant, rotting food and/or moisture.
- Keep waste can, compactor and recycle bin surfaces and areas clean.
- Wash or rinse out bottles and cans before placing in recycle bins.



## KITCHEN: CUPBOARDS AND COUNTERTOPS

### Common allergens and irritants: Mold, cockroaches, rodent droppings

#### Clues that there may be an indoor air problem:

- Green, gray, brown fuzzy growth on bread or yeast-containing products
- Ashtrays
- Spilled food or crumbs
- Cockroaches, silverfish
- Black or brown rodent droppings on shelving or in drawers
- Paper grocery bags

#### AIRRepair:

- Discard bread and other bakery foods when no longer fresh.
- Never allow anyone to smoke in your home. (See page 11.)
- Store all food in airtight containers or bags when not in use.
- Keep countertops clean and free of crumbs or spills.
- Place childproof, nontoxic cockroach and/or rodent baits in your kitchen. Follow package directions carefully.
- Throw away stacks of old paper bags. (They're perfect hiding places for cockroaches!)



## BATHROOM

### Common allergens and irritants: Mold, fragranced cleaners, personal care products

#### Clues that there may be an indoor air problem:

- Black or brown growth on grout or surfaces, particularly in corners (check around shower, tub enclosure, floor near shower, tub or sink, under sink or on backsplash, behind toilet tank or on floor at base of toilet)
- Missing grout in bath, shower or sink areas
- Musty smell
- Dust/mold clinging to the exhaust fan vent cover
- Fragranced or strong-smelling cleansers, personal hair and body care products

#### AIRRepair:

- Remove obvious signs of mold growth. (See page 8 for cleaning solution suggestions.) Mold stains may be difficult or impossible to remove from white grout or caulking. While they can be unsightly, stains do not pose a health problem.
- Replace missing grout. Repair or replace leaky faucets and pipes immediately. Your local home hardware expert can help do-it-yourselfers or this may require plumbing skills.
- Use an exhaust fan or open a window while showering to remove excess humidity. Vacuum or wash exhaust fan vent covers to remove accumulated dust which may also contain mold.
- Wipe the shower walls and tub toys dry after use.
- Use a mold-proof shower curtain. Keep enclosure doors and tracking clean and free of mold build-up.
- Dry your feet and legs before stepping onto the bathmat. Use a towel-style bathmat instead of a plush carpet. It is easier to clean and does not retain moisture as much as thicker or rubber-backed mats.

## Clues that there may be an indoor air problem:

- Humidity levels above 50 percent
- Upholstered furniture or carpet in bedroom
- Moldy smell from clothes hamper or dark spots on inside surfaces
- Moisture or dark areas on window glass and/or window frame
- White powdery coating on shoes in closet
- Empty food containers, crumbs
- Pets
- Ashtrays
- Hobby products
- Stacked books and magazines
- Deodorant sprays, room deodorizers, talc powders, perfumes, hairspray

### AIRRepair:

- Purchase an inexpensive humidity gauge to measure indoor air humidity. Keep humidity levels between 30 and 50 percent to minimize mold growth and dust mite populations.
- Limit upholstered furniture, which becomes a breeding ground for dust mites.

Many factors affect indoor air humidity. For more, visit: [www.epa.gov/iaq/homes/hip-moisture.html](http://www.epa.gov/iaq/homes/hip-moisture.html).

- Choose washable stuffed toys; wash with bedding in hot water. Dry completely. Keep stuffed toys off the bed.
- Use washable throw rugs and curtains (or use window shades or blinds instead).
- Put pillows and mattress inside specially designed dust-mite-proof covers.
- Wash bedding weekly in hot (130°F) water.

You can purchase a HEPA vacuum cleaner or use replaceable filter bags designed to trap allergens as small as .03 microns.

- Vacuum and dust the bedroom once each week. Use a HEPA (high efficiency particulate air) filtered vacuum.
- Vacuum mattress dust-mite covers when changing sheets or cleaning room.



- Avoid carpeting in bedroom if possible. Existing carpet should be in good condition with no signs of mold or dust accumulation. Padding should be in good condition – no signs of crumbling or rotting. Simply walking across a carpeted floor sends tiny allergens into the air.



## BEDROOM AND SLEEPING AREAS

### Common allergens and irritants: Dust mites, mold, cockroaches, pet dander, chemical fragrances

- Empty clothes hamper daily. Never store wet items inside.
- Do not allow clothing to pile on the floor or in corners.
- Water droplets form on windows and window frames when air temperatures inside and outside the

house vary greatly. There are numerous ways to fix the problem – some are very inexpensive. See your local home hardware experts for suggestions.

- Find and stop the source of humidity in the closet causing powdery mold to form on shoes. Leave light on in closet.

Never let anyone smoke in your home. (See page 11.)

- Keep food out of the bedroom.
- If allergic to pets, keep them out of the bedroom. (Pets usually adjust to this change faster than their owners!) For more family pet solutions visit [breatherville.org/petshop](http://breatherville.org/petshop).
- Avoid using the bedroom for hobby projects as these increase exposure to allergens, irritants and pollutants.
- Limit bedroom reading material; stacked books and magazines retain humidity and encourage mold growth.
- Whenever possible, use unscented personal hygiene and hair care products. Do not use scented candles and odor-masking room deodorizers.
- Keep potted plants (a source of mold growth) out of the bedroom.
- Use paints or wallpaper treated with mold inhibitors when redecorating.

**D**ust mites look like ferocious monsters, but thousands could sit on a pinhead. They thrive in pillows, mattresses, upholstered furniture, stuffed toys and carpets: wherever they have a steady supply of human dander (shed flakes of skin). When inhaled, tiny dust-mite droppings trigger coughing, stuffy nose, itchy eyes or wheezing. Keep dust mites at bay by reducing room humidity levels below 50 percent; washing bedding frequently; and using dust-mite-proof encasings on your mattress, box spring and pillows.

### More information:

[www.epa.gov/iaq/asthma/dustmites.html](http://www.epa.gov/iaq/asthma/dustmites.html).

Photograph courtesy of Precision Fabrics Group, Inc. maker of Pristine®



# Recipes for Success



## Clean mold and mildew with:

- 1 tablespoon baking soda  
+ 2 tablespoons white vinegar  
+ 1 quart water

## Disinfect with:

- 1/2 cup borax + 1 gallon hot water  
or...
- 1/4 cup baking soda + 1/2 cup  
white vinegar + 1 gallon warm  
water (for toilet bowls)

## Remove rust from countertops with:

- A paste of cream of tartar and  
lemon juice (allow paste to sit on  
rust spot for 15-30 minutes, scrub  
with sponge, rinse)

## Clean shower soap scum with:

- Undiluted, heated white vinegar  
(put in spray bottle, spray on, let  
soak for 15 minutes, apply dry  
borax, scrub)

## Clean dirty shower grout with:

- 2 cups baking soda + 1 cup borax  
+ 1 cup hot water

## Clean glass and mirrors with:

- 3 tablespoons white vinegar  
+ 3/4 cup water

## Deodorize and freshen musty areas with:

- Baking soda in an open container
- White vinegar in an open container

## Clean drains monthly with:

- Baking soda and vinegar (pour 1/2  
cup baking soda into drain followed  
by 1/2 cup white vinegar; let sit 30  
minutes, then flush with cool water)

Cleaning recipes from 101 Ways to Reduce Allergens in Your Home by Jayne Ruppenkamp and [www.queenofclean.com](http://www.queenofclean.com).



## FAMILY ROOM

### Common allergens and irritants: Dust mites, pet allergens, mold, secondhand smoke, firewood, coal dust, kerosene

#### Clues that there may be an indoor air problem:

- Ashtrays
- Fabric upholstered furniture
- Pets
- Carpeting and padding
- Food crumbs on carpet and underneath couch cushions
- Stacked firewood or kindling, ashes or burned wood smell in the fireplace
- Kerosene heaters, wood stoves, coal stoves

#### AIRepair:

- Never permit any person to smoke inside your home. (See page 11.)
- Secondhand, upholstered furniture or antiques may contain mold, dust, dust mites and pet allergens. Replacement alternatives to consider include vinyl, leather or other washable-surface furniture.
- Keep pets off the furniture and out of the family room.
- If family members are diagnosed with pet allergies, consider finding a new home for your pet or create safe and weather-protected living space outside the home for your animal.
- Vacuum underneath and behind furniture and underneath couch and chair cushions at least once a month.
- Vinyl beanbag chairs provide kid-friendly seating for watching television and playing games.
- Replace moldy carpet and padding (check in front of doors leading to the outside of your home, in corners, etc.), preferably with hardwood or other hard-surface flooring. Avoid products requiring toxic glues or fumes when possible.
- If the floor beneath the carpet is concrete, make certain the concrete was sealed or a moisture barrier or wood planking was placed between the padding and floor before the carpet was installed. If the basement has ever flooded, don't install carpet or wood flooring.
- Use paints or wallpaper treated with mold inhibitors when redecorating.
- Eat meals in the kitchen/dining area. Enjoy snacking while watching television, but remember to clean under couch and chair cushions and underneath furniture after eating.
- Use water-filled radiant electric heaters as a supplemental heat source in place of wood or coal stoves, fireplaces and kerosene space heaters.

#### Keep Indoor Humidity Low

If possible, keep indoor humidity below 60 percent (ideally between 30 and 50 percent) relative humidity. Relative humidity can be measured with a moisture or humidity meter, a small, inexpensive (\$10-\$50) instrument available at many hardware stores.

## Clues that there may be an indoor air problem:

- Dampness
- Temperature and humidity differences from the rest of the house
- Musty smell; rodent or pet urine smell
- Silverfish, crickets, spiders or other insects
- Black or brown rodent droppings, particularly in corners or along the perimeter
- Mold spots or dust on coils of dehumidifier

### AIRepair:

- Look for the cause of dampness. Use a flashlight to look for cracks in the foundation or warped wallboard or paneling. Lift carpeting along the edges to check for mold growth. If interior walls are exposed, look for cracks in the foundation. If found, you may need to contact your landlord or
- 

## BASEMENT FINISHED AND UNFINISHED

### Common allergens and irritants: Mold, cockroaches, pet dander, rodent droppings

an expert to repair the foundation of your home.

- If you plan to remodel an unfinished basement, contact your heating and air-conditioning contractor to ensure your existing system can handle the increased demand of heating and cooling finished spaces.
- Do not block air vents or restrict air flow around air handling equipment (furnace, swamp cooler, air conditioner, etc.). Keep area clean and dry.
- Use a dehumidifier when humidity climbs over 50 percent.

- Clean dehumidifier drip pan according to manufacturer's instructions.
- Leave the lights on (mold prefers dark spaces) in basements with limited windows.
- Avoid using carpet on concrete basement floors.
- Ideally, apply a water sealant to outside walls before finishing basement interior.
- Replace cardboard storage boxes with plastic containers with lids.
- Wash mold off hard surfaces and dry completely. Moldy ceiling tiles, carpets, wood, furniture, etc., should be removed (wear a dust mask and goggles) and replaced.
- Be certain to fix the cause of the mold!
- Use childproof, nontoxic cockroach, insect or rodent bait or traps.
- Do not use the basement for sleeping purposes. Family members with asthma or allergies should minimize time spent in the basement.



## ATTIC UNFINISHED

### Common allergens and irritants: Mold, insulation fibers, dust, bird and/or rodent droppings



### Clues that there may be an indoor air problem:

- Sounds of birds or animals in the eaves
- Birds flying into eaves
- Bird or other animal droppings, carcasses
- Wet or warped interior walls, studs, flooring
- Daylight visible in areas that should not be exposed
- Moldy, damp or rotten smell
- Matted or moldy-looking insulation

### AIRepair:

- Bird and animal proof your attic.
- Seal any gaps leading to living spaces, such as around light fixtures or heating and air-conditioning vents. You may want to contact a heating and air-conditioning contractor to do this for you.
- Determine cause of wet or warped walls, studs or flooring.
- Repair cause (construction faults or storm damage) of problem and replace damaged insulation and structures. Check your homeowner's insurance policy. Damages may be covered. If you do not own your home, notify the landlord as soon as you discover the problem.



## LAUNDRY AREA

Your laundry area may be down the hall of your apartment building, in your kitchen, outside your bedroom door, in the basement or in the garage. However, always keep your laundry area clean and dry to eliminate mold, a sign of high air moisture content and possible hidden water damage.

### Common allergens and irritants: Mold, dust

#### Clues that there may be an indoor air problem:

- High humidity or moisture levels
- Wet clothes left in the washing machine
- Wet clothing piles
- Clothing lint and dust on floor and walls near washer and dryer
- Cleaning agents such as bleach or heavily scented fabric cleaners and softeners

#### AIRRepair:

- Pull the washing machine away from the wall. Use the flashlight to look for plumbing leaks. Tighten pipes and hoses if needed. Clean the floor before replacing the washing machine.
- Pull the dryer away from the wall. Use the flashlight to check the exhaust hose. It should be vented to the outside of the house. Turn the dryer on while the exhaust hose is still attached to the wall. Then go outside your home and find the exterior vent. Do you feel warm air coming out? If so, that's good news. If it is weak or you don't feel any air at all, you have a problem that needs to be fixed. Either your exhaust hose is clogged with lint or it is not properly vented to the outside of your home. Clean the floor and walls before replacing the dryer.
- Ask your landlord to keep your laundry facility neat and dry with plenty of fresh air ventilated into the area.
- Bleach is an airway irritant known to produce symptoms in some adults and children with asthma. Avoid using bleach.
- Use unscented laundry products.

## Know Your Allergens

A board-certified allergist can provide allergy testing and consultation to help you find out which things in your home may be causing your symptoms or making them worse.

Focus your indoor air repair actions and budget on those areas most likely to cause symptoms. For example, if your biggest problem is dust mites, concentrate on reducing humidity and allergy proofing the bedroom first.



## ATTACHED GARAGE

Home builders increasingly attach the car garage directly to the home – sometimes off the kitchen, underneath a bedroom or next to the family room.

When used to store old paint cans, gasoline, lawn mowers, pesticides, wood stains, woodworking projects and/or household cleaners, the garage becomes the most toxic room in the house. Chemicals seep into your breathing space through tiny cracks and gaps between the home's foundation and walls.

Families also often put recycling bins and trash cans inside the garage; however, failure to keep this area clean will attract rodents, cockroaches and other unwelcome allergens and irritants.

### Common allergens and irritants: Chemicals, cockroaches, rodent droppings

#### Clues that there may be an indoor air problem:

- Attached garage
- Car(s) inside garage
- Gasoline-powered tools and equipment
- Cleaners, pesticides and other strong-smelling chemicals
- Trash cans, recycle bins

#### AIRRepair:

- Switch to electric or human-powered lawn mowers and hedge cutters. Use a rake or broom instead of a gas-powered leaf or grass blower.
- Paint should never be stored in the garage; temperature extremes will cause the paint to go bad rapidly. When finished painting a room, pour a small amount of the paint into a clean glass jar with a tight-fitting lid. Label the jar with the date, color, manufacturer and room it was used in before storing on a shelf in a part of your home where it will not be exposed to temperature changes.
- Dispose of unused lawn and garden powders, sprays and pellets. If using the garage as a hobby room, ventilate and clean the air inside your garage before it reaches the breathing space inside your home. You may need assistance from your local heating, ventilation and air-conditioning expert.

extremes will cause the paint to go bad rapidly. When finished painting a room, pour a small amount of the paint into a clean glass jar with a tight-fitting lid. Label the jar with the date, color, manufacturer and room it was used in before storing on a shelf in a part of your home where it will not be exposed to temperature changes.

● Dispose of unused lawn and garden powders, sprays and pellets. If using the garage as a hobby room, ventilate and clean the air inside your garage before it reaches the breathing space inside your home. You may need assistance from your local heating, ventilation and air-conditioning expert.

# Why is it so important to have a Smoke-free home?

Every day, 12 million children are exposed to secondhand smoke in their homes. And more than 40 percent of children ages two months to 11 years live with at least one smoker [source: [www.mayoclinic.com](http://www.mayoclinic.com)].

Although breathing secondhand smoke is unhealthy for everyone, children are especially vulnerable. Their lungs are still developing, they have higher breathing rates than adults, and they have little control over their indoor environments.

If you smoke at home, consider how it affects your child's health:

## More frequent and severe asthma attacks

Secondhand smoke irritates the airways and triggers asthma symptoms. According to the Centers for Disease Control and Prevention, children with asthma who breathe secondhand smoke have more severe asthma episodes and lower lung function than children with asthma who are not exposed to smoke. Inhaling secondhand smoke may actually cause asthma in some children. A recent study in the *American Journal of Respiratory and Critical*



Care Medicine found that the number of children diagnosed with asthma at age 6 or younger was twice as high in families who smoked as in nonsmoking families.

## Greater risk of lower respiratory tract infections (bronchitis and pneumonia)

According to the Environmental Protection Agency, secondhand smoke exposure causes an average of 225,000 lower respiratory tract infections every year in children

18 months or younger, resulting in as many as 15,000 hospitalizations per year. Secondhand smoke can also aggravate sinusitis, rhinitis, cystic fibrosis and chronic respiratory problems like cough and postnasal drip in children.

## More frequent ear infections

Inhaled secondhand smoke irritates the Eustachian tube (the tube connecting the back of the nose with the middle ear) and causes a build-up of fluid in the middle ear.

## Greater risk of Sudden Infant Death Syndrome (SIDS)

Infants whose mothers smoke during and after pregnancy are three times more likely to die of SIDS than infants of nonsmoking mothers. The Environmental Protection Agency estimates that secondhand smoke exposure causes an average of 2,300 SIDS deaths each year.

*For a copy of this secondhand smoke material in Spanish, please call 800.878.4403.*



What do most children with asthma who are treated in hospital emergency departments have in common?

They live with family members who smoke at home.

What is the best way to eliminate tobacco smoke from the home?

Do not allow any person to smoke in your home or near windows and doors leading to your home.

# AIRepair Friends and Neighbors

**M**ost of AANMA's AIRepair tips are easy to make part of your cleaning routine. Some suggestions take more time than others. You may discover serious problems that require expert help. Then again, you may have friends who will swap their plumbing or carpentry skills for your babysitting and cooking talents.

Once you've completed your inspection, create a plan for tackling the to-do list using AANMA's AIRepair Checklist. Don't try to accomplish everything in one day. For those items that cost more money than you've currently budgeted, look for creative ways to save money to make the repairs as soon as you are able.

You are not alone! One-third to one-half of all buildings have damp conditions that may encourage mold and bacteria. Every home has dust mites. And no area of the U.S. is immune to rodent or cockroach infestations.

There is a wealth of fascinating and helpful information, photographs, links and services that can be found FREE on the Internet. If you don't have Internet access at home, visit your local library and ask someone to teach you how to go online.

## Helpful Resources

**Allergy & Asthma Network  
Mothers of Asthmatics**

800.878.4403

[breatherville.org/homesweet](http://breatherville.org/homesweet)

[breatherville.org/schoolhouse](http://breatherville.org/schoolhouse)

[breatherville.org/playtime](http://breatherville.org/playtime)

Spanish resources available

**U.S. Environmental Protection Agency**

Indoor Air Quality Information

Clearinghouse

800.438.4318

[www.epa.gov/iaq/asthma](http://www.epa.gov/iaq/asthma)

Spanish resources available

**Centers for Disease Control  
and Prevention**

[www.cdc.gov/nceh/airpollution/  
mold/stachy.htm](http://www.cdc.gov/nceh/airpollution/mold/stachy.htm)

Spanish resources available

**American Industrial Hygiene  
Association**  
703.849.8888 [www.aiha.org](http://www.aiha.org)

**American Society of Home Inspectors**  
800.743.2744 [www.ashi.org](http://www.ashi.org)

**American Lung Association® Health  
House® Program**  
877.521.1491 [www.healthhouse.org](http://www.healthhouse.org)  
[info@healthhouse.org](mailto:info@healthhouse.org)

**[www.restcon.com](http://www.restcon.com)** – Restoration Consultants provides information on mold remediation, including a comprehensive list of commercial and nonprofit Web sites

**[www.nari.org](http://www.nari.org)** - National Association of the Remodeling Industry provides consumer information on remodeling, including help finding a professional remodeling contractor  
800.611.6274

**[www.ascr.org](http://www.ascr.org)** - Association of Specialists in Cleaning and Restoration  
800.272.7012

**[www.sc.edu/sustainableu/GreenBuildingWebsites.pdf](http://www.sc.edu/sustainableu/GreenBuildingWebsites.pdf)** – a list of Web sites for environmentally friendly building techniques and products

**[www.HomeMoisture.org](http://www.HomeMoisture.org)** – North Dakota State University Extension Service

**[www.healthyindoorair.org](http://www.healthyindoorair.org)** – Montana State University Extension Service

**[www.nadca.com](http://www.nadca.com)** – National Air Duct Cleaners Association

**[www.nclr.org](http://www.nclr.org)** – National Council of La Raza (Spanish resources)  
202.785.1670

**[www.accesohispano.org](http://www.accesohispano.org)** – Self Reliance Foundation (Spanish resources); operates the Hispanic Community Resource Hotline  
800.473.3003

## Other useful Web sites:

**[www.afhh.org](http://www.afhh.org)** – Alliance for Healthy Homes  
202.543.1147

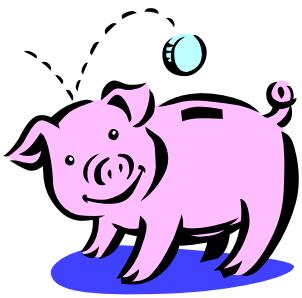
**[www.buildingforhealth.com](http://www.buildingforhealth.com)** – Building for Health Materials Center  
800.292.4838

**[www.ecomall.com](http://www.ecomall.com)** – search engine/directory for environmentally friendly products

## Room Air Filters

**R**oom air filters are found in department, variety and hardware store shelves throughout the country. Do they really reduce symptoms? If you buy one, will it clean your indoor air well enough that can you sleep with your cat and dog and smoke in your home?

Air filters do not replace the need to eliminate or reduce indoor air allergens and irritants known to produce symptoms. Be wary of any manufacturer making health claims. Ion generators and electronic air cleaners may produce ozone, a lung irritant. For more information on room air filters, visit [www.epa.gov/iaq/pubs/airclean.html](http://www.epa.gov/iaq/pubs/airclean.html).



## Financial aid

**Medical insurance company** – call your benefits office; ask if your insurance covers physician-recommended devices like air cleaners or dust-mite-proof mattress covers to improve your health.

**Local utility company** – ask if they offer financial help for renovations to improve air quality.

**State, county or city health departments** – call your Public Health Department; ask what division can help you with indoor air quality renovations. Look in the government pages of your local telephone book for offices that deal with family health; environmental health; preventive health; community and family health services; primary care and family health.

For a state-by-state list of public health officials and telephone numbers, visit [www.statepublichealth.org/index.php](http://www.statepublichealth.org/index.php), or call the Association of State & Territorial Health Officials (ASTHO), 202.371.9090.

**Places of worship** – local churches, synagogues, mosques and other religious groups often have compassionate aid for people in need; you do not always need to be a member of the congregation.

National service organizations offer personal and financial help to people in need. Look in your telephone book for local chapters of the American Red Cross, Kiwanis International, the Lions Club, Rotary International, or the Salvation Army.



## Home improvement assistance

**To locate contractors:** check your telephone book for organizations that can provide professional services or recommendations:

- Local Home Builders Association
- Local Board of Realtors
- Local remodelers' or contractors' organizations
- Local Better Business Bureau

**Construction or drainage matters:** Contact your city or county planning office, building inspector's office, or library for information on applicable building codes and inspection/permit requirements; local stormwater ordinances; local subdivision and zoning ordinances; and local flood damage protection ordinances and maps required by the National Flood Insurance Administration (NFIA). Other sources:

- Local/county Soil Conservation Service Agency
- City/county hydrologist or engineer
- Agricultural Extension Service
- Professional engineer or hydrologist
- University Civil Engineering or Agricultural Engineering departments; ask about experts in drainage, foundation and structures
- Professional/commercial house inspectors



## Help dealing with insurance companies, builders or landlords

Look in the telephone book for Consumer Affairs organizations; try your local government, newspapers or television stations.

The nonprofit Patient Advocate Foundation can provide help with insurance claims and other financial problems: 800.532.5274; [www.patientadvocate.org](http://www.patientadvocate.org). Spanish resources available.

For information on federal government regulations, contact U.S. Department of Housing and Urban Development (HUD), 800.685.8470; [www.hud.gov/renting/index.cfm](http://www.hud.gov/renting/index.cfm).

States and counties have their own tenant laws. Contact your local government Housing department to find out about your laws; ask about Housing Rights Committees.

Check these Web sites for information on renters' rights:

- [www.tenant.net](http://www.tenant.net) – The Tenant Network
- [www.tenantsunion.org](http://www.tenantsunion.org) – The Tenants Union – ask for the Resource Directory; 206.723.0500

# Asthma at a Glance

- Exposure to triggers such as allergens, irritants, respiratory infections, dry or cold weather or exercise can cause asthma symptoms to become more noticeable.
- When asthma happens, swollen airways fill with fluid and mucus, restricting breathing space. The muscles surrounding the airways tighten (bronchospasm).
- Asthma medications treat and prevent inflammation, swelling and bronchospasm, but the first step to controlling asthma is avoiding exposure to triggers in your environment.
- Children exposed to second-hand smoke have more severe asthma episodes and lower lung function than those not exposed to smoke.<sup>1</sup>

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1. "Involuntary Smoking and Asthma Severity in Children," *Chest*, 2002, 122(2):409-415

# U.S. Asthma Statistics

- 20.7 million adults (9.7%) in the U.S. have been diagnosed with asthma.<sup>1</sup>
- 9.1 million children under 18 (12%) have been diagnosed with asthma.<sup>2</sup>
- More than 70 percent of people with asthma also have allergies.<sup>3</sup>
- 10 million Americans suffer specifically from allergic asthma.<sup>4</sup>
- There were 1.9 million asthma-related visits to hospital emergency departments in 2002, including 727,000 for children under 18.<sup>5</sup>
- There were 4,261 deaths from asthma in 2002.<sup>5</sup>
- Asthma-related healthcare costs are estimated at \$14 billion annually.<sup>6</sup>



- Asthma accounts for 14.7 million missed school days and 11.8 million missed work days annually.<sup>5</sup>

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1. "Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2003," National Center for Health Statistics, Series 10, No. 225, Centers for Disease Control and Prevention
  2. "Summary Health Statistics for U.S. Children: National Health Interview Survey, 2003," National Center for Health Statistics, Series 10, No. 223, Centers for Disease Control and Prevention
  3. "Understanding Allergy and Asthma," National Library of Medicine, National Institutes of Health
  4. "Asthma and its Environmental Triggers," National Institute of Allergy and Infectious Disease, July 1997
  5. "Asthma Prevalence: Health Care Use and Mortality, 2002," National Center for Health Statistics, Centers for Disease Control and Prevention
  6. "Morbidity & Mortality: 2002 Chart Book on Cardiovascular, Lung, and Blood Diseases," National Health, Lung, and Blood Institute, National Institutes of Health, May 2002

# Indoor AIR Repair Checklist

Use this chart to note allergens and irritants found in your home and create a to-do list of clean-up actions.

Date	Room	Clue/Source	Action	Date Fixed
5/23/04	Joey's Room	Moisture and mold on window frame	Removed mold, caulked windows, cleaned rain gutter outside window	6/14/04

# Welcome to Breatherville, USA!

Where learning about allergies  
and asthma is a positive experience!



Copies of the **Indoor AIRRepair™ at Home** newsletter  
can be downloaded at [breatherville.org/homesweet](http://breatherville.org/homesweet).



Visit [breatherville.org](http://breatherville.org) or call us at 800.878.4403