

7 Tips To Make Your Home Cleaner & Healthier

Do you have . . .

- Excessive dust?
- Allergy or asthma suffering?
- Concerns about the air quality in your home?

If you do, you are not alone. Over 90% of homes have hidden air control problems. The good news is there's a lot you can do to achieve a cleaner and healthier indoor living environment.

However, since every home is different, not all of the suggestions here will be applicable in your home. "A Prescription, Without An Examination and Diagnosis, Is Malpractice." At Comfort Institute, we encourage homeowners to consult with a local Comfort Institute HVAC contractor member to accurately diagnose the true causes of problems in your home. For more information on the unique *Home & Duct Performance Test* service, view the video on your member's website, or give them a call.

1. Test For Contaminated Air Infiltration From An Attached Garage, Crawlspace, Attic Or Underground: Are you breathing good air or bad air? Window and door leaks are usually less than 20% of a home's air leaks. Many others bring in contaminated air instead of fresh air.

Building scientists have recently discovered that in the typical home, up to 80% of the incoming air first passes through the attached garage, crawlspace, basement or attic. Air pollutants such as mold spores, carbon monoxide, automobile exhaust, radon gas, crawlspace moisture, insulation fibers and volatile organic chemicals can contaminate this incoming air, and negatively affect your family's health and safety. In most homes, duct leakage is the number one source of bad air infiltration.

Ask your CI Member HVAC Contractor for a Home & Duct Performance Test. The Infiltrometer test step pinpoints where the bad air leaks are, and provides guidance on how to fix them. Many can be easily repaired by homeowners as weekend projects. Others such as duct leaks are better left to professionals. Finding and fixing the leaks that let in bad air will make your home healthier, less humid in the summer, less dusty, more comfortable, and

even pay for itself through lower heating, cooling and repair bills.

2. Repair Leaky Recessed Can Lights & Attic Access Hatches: Recessed can lights are very popular, however most are very leaky. They typically allow dirt, dust, insulation fibers and very hot or cold air to be brought into the home. Luckily most of these lights can now be repaired at a reasonable cost. During the Infiltrometer test, ask your contractor to inspect your recessed can lights to see if they are a problem and if they can be repaired. Pull-down attic stairs and scuttle hatches are other common attic floor air leaks which can now be easily sealed using specialty products.

3. Identify and Reduce Pressure Imbalances In Your Home: Pressure imbalances can be caused by closing bedroom doors that have no returns in them, large exhaust fans such as attic powered ventilators, and duct leakage. All of these can cause the home to go to a negative air pressure which sucks air in through dirty and dust areas such as attics, garages, crawl spaces and unconditioned or unfinished basements. They can also back-draft gas appliances if the negative pressure is great enough, causing poisonous carbon monoxide to spill into the home.

Your HVAC member consultant can evaluate if pressure imbalances are occurring in your home and make recommendations on how to fix them. It may be possible to put your home under a slight positive air pressure, which helps keep contaminants from entering. The Infiltrometer test will give your contractor the information needed to see if this is possible in your home.

4. Have A Central High Efficiency Air Filter Installed: Typical throw away furnace filters do not even adequately protect your equipment from getting fouled up, let alone protect you from invisible respirable particles. Ask your contractor for recommendations on installing a new high efficiency filter at the equipment. The best are typically four to six inches thick and only need to be cleaned or changed once a year. Note however that even the best filter can't totally eliminate visible dust in the home, simply because visible dust is heavy and often settles before it gets to the filter.

5. Upgrade Your Home's Mechanical Ventilation:

The Infiltrometer test precisely measures how tight or leaky your home is and whether your family is getting enough fresh air. Some houses, especially newer ones, are very air tight and need improved mechanical ventilation. Older homes which have new airtight windows also often have poor indoor air. Ask your CI Member contractor for recommendations. Quiet, powerful bathroom exhaust fans are now available which do a much better job of removing moisture and odors. Another option is a Heat Recovery or Energy Recovery Ventilator, which pre-heats or pre-cools the incoming air with the stale air it exhausts. Another is a whole house ventilating dehumidifier that brings in outside air and filters it before putting in your home.

6. Control Indoor Humidity Year Round:

Insufficient or excessive indoor humidity can contribute to health and comfort problems. In most homes, the humidity levels vary substantially from week to week, depending largely on outdoor weather conditions. Excessively dry air (usually a wintertime problem in Northern regions) causes sore throats, dry sinuses, increased risk of infections, static electric shocks, and cracks in wood trim and furniture. To decrease winter dryness, seal air leaks and use a central humidifier.

On the other hand, some houses are actually **too humid**, causing excessive moisture to drip off the windows in the winter, or to be damp and clammy in the summer.

Controlling excessive indoor moisture and humidity is the key to controlling allergy causing mold and dust mites. The American Lung Association, the American Medical Association, the Environmental Protection Agency, the Centers For Disease Control and many other authorities recommend keeping the relative humidity level in your home between 30% and 50% year round. Higher levels encourage allergy causing dust mites, mold growth and musty odors. Indoor mold can cause serious health problems, including allergic reactions, toxic reactions, asthma episodes, infections and respiratory damage. High indoor humidity levels in the summer cause discomfort.

There are many steps you can take to better control high humidity.

6A. Reduce Moisture Sources If You Have Excessive Humidity: Excessive indoor humidity is a complex subject, depending on whether it is a winter or summertime problem. After completing your Performance Tests, your contractor will be in a better position to make recommendations. Possible solutions include: added wintertime ventilation, better exhaust fans in bathrooms, covering dirt floors in crawlspaces, capping open sump pits & basement wall air leaks, and improved foundation drainage. Don't store firewood indoors. Cover pots when cooking.

6B. Tighten Up Your Home And Ducts: In much of the country, for most of the spring, summer and fall, the primary source of moisture is the outdoor air leaking into

the house. It contains very high levels of humidity in the form of invisible water vapor. Too much outside air raises summertime indoor humidity to unhealthy levels, and can overcome the dehumidification capacity of the air conditioner. Tightening up duct and house leaks will help bring humidity down to a healthy level.

6C. Consider A New Air Conditioner With Enhanced Dehumidification Features: Air conditioners reduce summer humidity as a byproduct of cooling the home. If you are planning to buy a new AC unit, some units have advanced humidity sensing controls, variable speed fans or two speed compressors that help wring out more moisture.

6D. Ensure Your AC System Is The Right Size: When it comes to air conditioning, **bigger is not better, because you'll end up wetter.** An oversized unit quickly cools the house and then shuts off before it does the longer job of removing humidity. Have your contractor perform a computerized equipment sizing calculation conforming to the industry standard "Manual J". Refer to the CI video called "Bigger Is Not Better".

6E. Consider Investing In A High Capacity Ducted Dehumidifier: Even the best air conditioner can't keep the house dry and comfortable during cloudy or rainy weather. There are now high efficiency, high capacity dehumidifiers available which supplement the air conditioning system, delivering the ultimate in indoor comfort and indoor air quality. They can be installed out of sight using ductwork, and connected to a condensate drain so that you never have to empty the reservoir. This equipment dehumidifies the whole house and also cleans the air 24 hours a day, 365 days a year. Some models even provide filtered fresh outdoor ventilation air. Ask your CI Member contractor for recommendations. The Infiltrometer test will help your contractor determine the right size of dehumidifier for your home.

7. Install A Low Level Carbon Monoxide Monitor and Alarm: Carbon Monoxide (CO) is a very real health hazard. Unfortunately, many homeowners who have a CO alarm are not actually protected. The typical CO alarm's sensor only lasts 2 to 4 years, and the test button only checks the battery and the horn, not the CO sensor. Ask your HVAC contractor to test your alarm with actual CO test gas to ensure it is still working. Another problem is that standard CO alarms do not warn you of chronic low levels in your home that can cause permanent neurological damage. Low levels of CO are especially hazardous for infants, unborn babies, the elderly and those with chronic illnesses. Ask your CI Member contractor for information on a new Low Level Health Monitor device which will give you early warning.

For more information on any of the issues mentioned, just call your local CI Member contractor.

© Comfort Institute Inc. 2002-2008 All Rights Reserved, For distribution only by Comfort Institute Members in good standing. Reproduction and distribution by non members strictly forbidden