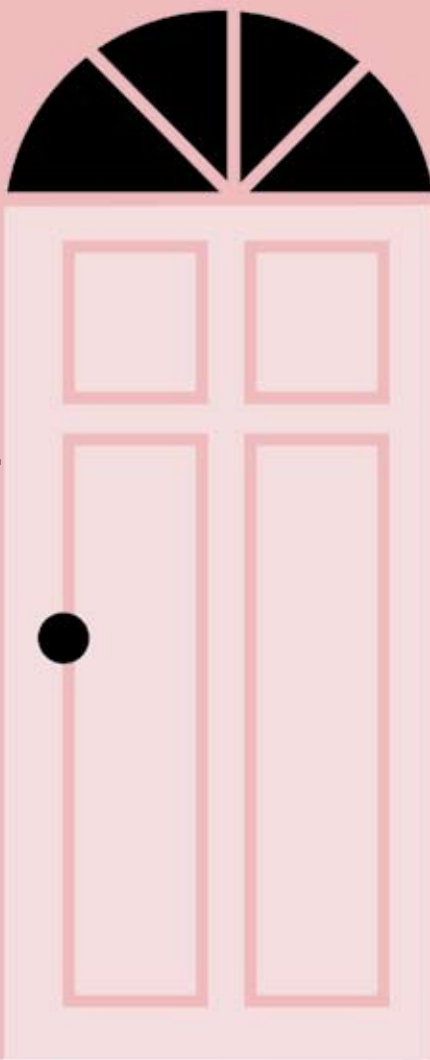


# How healthy is your house?



As the weather cools, we shut our windows and batten down the hatches. But we may be closing ourselves in with nasty chemicals that could hurt our health. The good news? Indoor pollution is surprisingly easy to clean up. Here's how. By Melinda Wenner Moyer



**M**ost of us assume that when we walk into our homes, we slam the door on exhaust, secondhand smoke, and other air-pollution ugliness. In your own house, everything is safe and clean. Right? Oh, if only. According to the U.S. Environmental Protection Agency (EPA), levels of about a dozen common chemical pollutants are two to five times higher inside homes than outside of them. Part of the problem is that houses are so much better insulated than they used to be: That's a good thing when it comes to conserving energy, but being more airtight also means that "whatever you emit indoors—whether it's your burnt microwave popcorn, cigarette smoke, or cleaning-product fumes—is going to persist in the indoor environment for longer," says Lynn Hildemann, an environmental engineer and researcher at Stanford University. In light of this, scientists are beginning to suspect that it may be these indoor nasties—not just outdoor smog—that are responsible for rising rates of asthma and other respiratory diseases. Indoor pollution can also cause headaches, flu-like symptoms, and, in serious cases, neurological problems.

We know this sounds scary, but you can minimize your family's exposure to these things with a few simple steps. None involve buying expensive products like the hulking air purifiers you see in SkyMall catalogs; some of the best fixes are the most basic.

## ***DON'T LET THE BAD STUFF IN***

Part of keeping the air in your house cleaner and safer is simply not letting some of the concerning chemicals into it in the first place, experts say. Easy ways to do just that:

>> Kick off your shoes in the front hall. The bottoms of our shoes are covered in a fine layer of chemicals, dirt, bacteria, and mold. That stuff settles onto floors and into carpeting, and regular household activity can stir it up, causing you and your family to breathe it in, Hildemann says. Try stationing a shoe basket or rack in the entryway to keep things more organized.

>> Wait a few days before picking up your dry cleaning. Freshly dry-cleaned clothes can emit chemicals that have been linked to cancer and neurological problems, according to the EPA—and it's important to make sure the solvents are completely dry before

## WHERE'S YOUR INDOOR POLLUTION COMING FROM?



bringing them home. You could also switch to a dry cleaner that uses “wet” or CO<sub>2</sub> cleaning, neither of which emit the same kind of dangerous fumes, according to the EPA.

>> Go fragrance-free. The EPA warns that some air fresheners can release compounds that cause headaches and eye, nose, and throat irritation. Lemon-lime and pine scents concern experts most, Hildemann says: The compounds used to produce those smells react with ozone in the air to form formaldehyde and ultrafine particles that can collect in the lungs. For a safer room freshener, dip cotton balls in a sweet-smelling extract like vanilla.

### VENTILATE!

Not surprisingly, indoor pollution becomes more of an issue during the winter, when we keep our windows closed for months on end, light cozy (but smoky!) fires, and braise our favorite cold-weather meals in the oven. Not only does cooking itself produce fumes, but gas stoves release trace amounts of carbon monoxide and nitrogen oxide into the air, which can build up. That doesn't mean that roasting one turkey is going to hurt you—just like other chemicals, the

exposure is cumulative. To reduce yours:

>> Turn on your stove's exhaust fan when you cook. This will ensure that any smoke and other chemicals released during cooking don't stick around, Hildemann says.

>> If you have an attached garage, open the garage door before starting your car—and keep it open for a few minutes after pulling in when you return home. Otherwise, the carbon monoxide from your exhaust pipe can get into the main house; over time, that may increase your family's risk for asthma and even neurological problems. Overexposure to carbon monoxide happens more than people might think, according to the EPA.

>> Make sure your fireplace flue is working properly, to keep lung-irritating particles in wood smoke out of your indoor air. The EPA recommends having a fireplace pro inspect and clean your furnace, fireplace, or chimney every year.

### TWEAK YOUR CLEANING ROUTINE

Remember that dust cloud that followed Pigpen around in the Charlie Brown cartoons? There's actually a scientific term

### SIMPLE, SAFE CLEANSERS YOU MAKE YOURSELF

Old-fashioned, natural disinfectants like vinegar are nontoxic—and yes, they really do work, says environmental researcher Dara O'Rourke. (If you don't believe it, just ask your Grandma!)

#### Drain unclogger:

Mix equal parts baking soda and white vinegar and pour down the drain. Wait two minutes and rinse with hot water. One or two doses of the bubbly mixture should do it, O'Rourke says.

#### Toilet cleaner:

Spritz undiluted white vinegar on the edges of the bowl, scrub with a toilet brush, and flush—the acid in vinegar cleans and removes stubborn stains.

#### Germ killer:

Add plain old liquid dish soap to a bucketful of hot water and get to scrubbin'. Antibacterial cleaners are no better at preventing infection than regular soap and water, studies have shown, and anti-germ products containing triclosan (check labels) may contribute to the formation of superbugs, according to the Centers for Disease Control and Prevention.

for it—the “personal cloud effect”—and whenever we do housework, we experience it. Dust can cause allergy flare-ups and coughing fits in adults, but what we do to keep dust and grime at bay may actually make matters even worse: According to one 2007 Spanish study, adults who used aerosolized products for glass-cleaning, air-freshening, and furniture-polishing were 50 percent more likely to develop asthma symptoms over the next several years. Anne Steinemann, Ph.D., a professor of civil and environmental engineering and public affairs at the University of Washington in Seattle, analyzed the ingredients in popular household products—including a liquid fabric softener, liquid laundry detergent, and dryer sheets—and discovered that many of them emitted chemicals the EPA has ruled as carcinogenic hazardous air pollutants known to have adverse effects on human health.

It turns out that cleaning products are some of the biggest sources of potentially harmful chemicals in our homes. At this point, you may be tempted to trash everything in your cabinets and run out to buy “all-natural” or “green” replace-

ments. But you can't always believe these buzzwords.

“Companies can say their product is natural, nontoxic, or eco-friendly, but there's no real definition for those things,” explains Dara O'Rourke, Ph.D., a professor of environmental and labor policy at the University of California, Berkeley, and the founder of [goodguide.com](http://goodguide.com), a site that rates the safety of household products. “It's kind of the Wild West right now—you can almost say anything you want on a package.” In fact, Steinemann's most recent research discovered that certain so-called “green” products contain just as many cancer-causing chemicals as regular ones do. You can't look for specific harmful ingredients to avoid, either: The government doesn't currently require most household-product makers to list ingredients on labels.

So what the heck is a health-conscious (but still cleanly) girl supposed to do? The best thing would be to use truly nontoxic cleaners like vinegar (see “Simple, Safe Cleansers You Make Yourself”), O'Rourke says—but you can also make a few changes to the way you use your current products to reduce your whole family's exposure to the chemicals inside:

- >> Don't spray cleaners directly on the surface you're scrubbing. Doing that produces a fine mist that you inhale, says O'Rourke. Instead, spray or pour the cleaner onto a rag or paper towel first, or—even better—use pre-wet wipes.
- >> Vacuum twice a week to get rid of excess dust, lead, mold, and pet dander.
- >> Don't dust or mop with dry cloths or dusters. Use a wet cloth instead, so “the particles aren't just getting swept up into the air where you'll breathe them in as you clean,” Hildemann says.
- >> Follow package directions. There's a reason why labels on most cleaning products say in big, bold letters: *Use with proper ventilation*. It's because you're not supposed to breathe the stuff!

We know that some of the fixes our experts suggest here seem very small—it doesn't get much easier than kicking off your shoes—but every little bit really does help you and your family live in a safer, healthier house. Fewer chemicals and fumes, less dust and smoke—ah, fresh(er) air! ●