

When Mold Attacks

Strategies to prevent, detect and control mold in your home

By Meghan Taylor

The problem of toxic mold burst on to national headlines in recent years with stories of multi-million dollar jury verdicts, insurance claims, adverse health effects, and characterizations of toxic mold as the next asbestos. In June 2002, Representative John Conyers (D-MI) and 17 members of Congress introduced the *United States Toxic Mold Safety and Protection Act*. The bill (H.R. 1268) dubbed “The Melina Bill” after a then-seven-year-old girl whose respiratory ailments were linked to mold exposure, sets up research, guidelines, inspections requirements and protection for losses. Exposure to the mold has been tied to adverse effects including congestion, runny nose, eye irritation, coughing, headaches, fatigue and flu-like symptoms. One of the toxic molds, *Stachybotrys*, has been linked in lawsuits to hemorrhagic lung disease in infants. While experts agree that mold should be controlled in the indoor environment, as with other pest problems, the use of toxic materials to manage mold can cause health problems worse than the mold itself, public health advocates warn.

The Centers for Disease Control (CDC) and other government agencies do not recognize toxic mold as distinct from common mold, citing adverse health effects as rare. According to the CDC website, “The common health concerns from molds include hay fever-like allergic symptoms...[c]ertain individuals with chronic respiratory disease (chronic obstructive pulmonary disorder, asthma) may experience difficulty breathing... [i]ndividuals with immune suppression may be at increased risk for infection from molds.” Acknowledging illness associated with mold exposure and tracing studies over the last decade, Stephen Redd, M.D., Chief, Air Pollution and Respiratory Health Branch, National Center for Environmental Health, CDC, in July 18, 2002 Congressional testimony, says there are no accepted standards for mold sampling and because of their ubiquitous nature they can be found almost anywhere samples are taken. The CDC is continuing to conduct research.

What is toxic mold

If a mold's spores produce chemicals called mycotoxins, the mold is categorized as “toxic.” However, other molds that do not release mycotoxins can still be a health threat, and are much more common in the home. Of the 100,000 types of mold that exist, only a few dozen are categorized as “toxic.” Examples include *Penicillium*, *Aspergillus*, *Stachybotrys*, *Paecilomyces* and *Fusarium*. Toxic molds are found in about two to five percent of American homes.

Molds are categorized as fungi, just like mushrooms, mildews, rusts, and smuts, because they are in a group of plants that do not contain chlorophyll and collect nutrients from organic matter. Today's wallboard in homes can contain a per-

centage of material used as nutrients for fungi, including recycled paper, starch and paraffin. A mature mold generates spores, which are light and float in the air until settling on a surface. Unlike other molds, toxic mold is not the kind found in bathroom sinks and tubs. It actually develops behind wall-paper, in ceiling tiles, carpet backing, gypsum board and wood materials that have become moist or humid (not necessarily saturated) in an environment between approximately 40 and 100 degrees Fahrenheit.

Prevention: reducing moisture

Understanding where mold likes to grow is the first step to prevention. Is the inside of your home susceptible to mold growth? Mold can materialize anywhere there is dampness or relatively high humidity. Air has less ability to hold moisture as the temperature decreases. To measure levels in your home, you can purchase an indoor humidity meter for around \$10 at most hardware stores. If you want to control mold, you *must* control the moisture in your home. Following the steps below will help reduce moisture.

- Keep the home ventilated by venting bathrooms and rooms with dryers to the outside, using exhaust fans when cooking or dishwashing, and using dehumidifiers and air conditioners.
- Run the fan in your air conditioner for 30 minutes after turning it off to dry out the inside of it.
- If you have a forced air heating and air conditioning system, clean filters regularly.
- Increase circulation in the home by keeping doors between rooms open.
- Add insulation to cold surfaces like windows, piping, exterior walls, roofs or floors in order to prevent condensation.
- Grade soil away from the house.
- Fix any leaks.
- Regularly clean and repair roof gutters.
- When building a new home, or replacing any sections, use a non-cellulose, low-nitrogen material to build it. These materials are less likely to trap water and stay damp.

When water invades your home, take steps to keep mold from following. If an area in your home has been water damaged, take immediate steps to clean and begin drying it out within 24 to 48 hours. It might be necessary to remove wallboards and flooring materials to accomplish this process.

Wash off water-damaged surfaces with detergent and water, then dry completely. Use fans, dehumidifiers, and air conditioners to dry. When using a dehumidifier, empty the water collection pan frequently. If you live in a dry climate, open the window to help dry out the material. Drying may take several weeks or months to achieve.

Replace porous materials like rugs, mattresses and draperies. However, if there is only limited and recent damage, a few hours sitting in sunlight might take care of the problem. Any wet insulation should be discarded and replaced.

Detection: how do you know if you have mold?

Telltale signs of mold presence include a musty or earthy smell, or stains on drywall, trim and foundation walls. Also keep an eye out for rust on plumbing underneath sinks, and behind washing machines and refrigerators with icemakers. Mold can be visible on walls, in tubs and other damp areas. It can also occur where you cannot see it, such as behind wallpaper, and inside wall cavities and heating ducts, in ceiling tiles, carpet backing, gypsum board and wood materials that have become moist. If you suspect that mold is hidden, do not investigate yourself! Hiring a professional will avoid an unintended release of a mass amount of mold spores. Some companies use specially trained dogs to pinpoint the source of mold growth that cannot be readily seen.

The story with air samples. If mold is visible, you know you have to address the problem; sampling is not needed. Factors such as heating or air conditioning systems, use of vacuum cleaners, and opening and closing doors and even switching on a light can change mold levels dramatically in one specific area, and can throw off an air sample. Since these tests are often unreliable, do not depend on one or only several tests. Hire a professional industrial hygienist or home inspector experienced in microbial testing. The National Allergy Bureau considers mold counts in air of 0-900 mold spores per cubic meter as low, to 2500 as moderate, to 25,000 as high, and above 25,000 as very high. However, opinions on this vary widely, as do individual sensitivities.

Control: a two step process

Controlling mold involves first cleaning it up, and then preventing it from coming back. Only attempt clean up if you can handle it!

Step One: Cleaning Up Existing Mold

According to the Environmental Protection Agency (EPA), chemical use to kill molds is generally not recommended. Chemicals aside, inhaling mold spores can pose a serious health threat. If you have allergies or experience any reaction when dealing with mold, contact a professional to take care of the problem.

The prep work: Separate your cleanup area from other areas of the house by hanging plastic sheeting to prevent mold

spores from spreading. Gear yourself up with goggles without ventilation holes, gloves that reach mid-arm, long sleeves and pants. A respirator designed for particle removal for protection against inhaling mold spores is also necessary. You can find these respirators at most hardware stores.

The clean up: Scrub mold off surfaces with detergent and water, then dry completely. If the contaminated area is metal, glass or any other non-porous material, these can usually be restored. If you are cleaning a semi-porous item like wood or concrete, use cleaning pads or stiff brushes for the cleaning process. Porous objects like carpets and insulation will most likely have to be discarded. If an object you hold near and dear to you is contaminated, try contacting a professional skilled in restoration work. Keep in mind that an area of mold should be removed even if it is dead. It can still release spores that may cause allergic reactions in some people.

The aftermath: Remove and wash your clothes immediately after you finish cleaning. Rags, brushes and anything else that came in contact with mold should be placed in airtight plastic bags and discarded.

Step Two: Prevent Mold from Returning

With an effective cleanup, you can greatly reduce mold presence. To keep the mold from striking again, it is critical to address the moisture source. When appropriate, replace damaged materials with non-cellulose, low-nitrogen content materials.

Resources

- Bode, Marilyn and Deanna Munson. September 1995. "Controlling Mold Growth in the Home." *Kansas State University's The Near Environment*.
 Cleveland Live. July 20, 2002. "About Mold." http://www.mold-help.org/submenus/mold_and_the_environment/about_mold.htm.
 CNN. November 5, 1997. "Beware the Mold Stachybotrys." *Health Story Page*. www.cnn.com/HEALTH/9711/05/deadly.mold/.
 Environmental Protection Agency. March 2001. "A Brief Guide to Mold, Moisture, and Your Home." *EPA 402-K-02-003*.
 Friedman, Daniel. January 1997. "Mold Levels: Allergenic or Toxic Mold: How much means a problem?" <http://www.inspect-ny.com/sickhouse/moldlevels.htm>.
 Friedman, Daniel. January 1997. "What You Need to Know About Testing for Mold." <http://www.inspect-ny.com/sickhouse/moldlevels.htm>.
 Healthy Schools Network, Inc. 2002. "Guide to Molds at School." <http://www.healthyschools.org/downloads/molds.pdf>.
 Household Mold Resource Center. 2002. "Mold Tips: Cleanup." <http://www.moldtips.com/cleanup.htm>.
 Jaakkola, Maritta et al. May 2002. "Indoor Dampness and Molds and Development of Adult-Onset Asthma: A Population-Based Incident Case-Control Study." *Environmental Health Perspectives*. 110 (5).
 Redd, M.D., Stephen, Chief, Air Pollution and Respiratory Health Branch, National Center for Environmental Health, Centers for Disease Control, State of the Science on Molds and Human Health, Statement before the Subcommittee on Oversight and Investigations and Housing and Community Opportunity, Committee on Financial Services, U.S. House of Representatives, July 18, 2002.
 Sichelman, Lew. "Toxic Mold Seen As Growing Household Hazard," *Medscape, WebMD*. http://www.imakenews.com/pureaircontrols/e_article00011418.cfm.
 Toxic Mold & Tort News Online. "Toxic Mold Information." http://www.toxic-mold-news.com/toxic_mold/info.html.
 Toxic Mold & Tort News Online. "Prevention." http://www.toxic-mold-news.com/toxic_mold/prevent.html.
 Pinto & Associates. November 10, 2002. "What's All the Talk About Toxic Mold? And Does it Affect You?" *Techletter*, 18 (3): 1.
www.mold-help.org, Mold Overview.