

Houston Association of Realtors

Questions and Answers on Mold

This article was printed in the July, 2001 edition of the *Texas REALTOR® Magazine*. It is a compilation of information from several sources considered to be experts in mold and other environmental issues. The responses to the questions were taken from information published by the noted authorities. The authorities are identified as follows.

KSU - Kansas State University ["Controlling Mold Growth in the Home" 9/95]

EPA - Environmental Protection Agency ["Mold Resources" 4/4/01]

CADH - California Dept. of Health ["Mold in My Home: What Do I Do?" 3/98]

NYCDH - New York City Dept. of Health ["Facts about Mold" 2//01]

GCRC - General Clinical Research Ctr. ["Pulmonary Hemorrhage and Hemosiderosis in Infants" 3/00]

ALA & USPSC - American Lung Association & U.S. Product Safety Commission ["Biological Pollutants in Your Home" 1//90]

FmHnd - The Family Handyman ["Combating Mold and Mildew" 3//00]

What are molds?

KSU: Molds are fungi, usually microscopic in size, that occur in nature in large quantities. They reproduce by releasing spores into the air that settle on surfaces and, under the right conditions, grow. Growths of mold can often be seen in the form of a discoloration, ranging from white to orange and green to brown and black. Mold can sometimes be detected by its musty odor. Mildew is a common mold.

EPA: Molds produce tiny spores to reproduce. Mold spores waft continually through the indoors and outdoors. When mold spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. There are molds that can grow on wood, paper, carpet, and foods. When excessive moisture or water accumulates indoors, mold growth will often occur, particularly if the moisture problem remains undiscovered or is not addressed.

CADH: Molds are simple, microscopic organisms, found virtually everywhere, indoors and outdoors. Molds can be found on plants, foods, dry leaves, and other organic material. Molds are needed for breaking down dead material. Mold spores are very tiny and lightweight, and this allows them to travel through the air. When molds are present in large quantities, they can cause allergic symptoms similar to those caused by plant pollen.

NYCDH: There are more than 100,000 species of mold. At least 1,000 species of mold are common in the U.S. Some of the most commonly found are species of *cladosporium*, *penicillium*, and *aspergillus*.

What is *Stachybotrys*?

NYCDH: *Stachybotrys chartarum* (also known as *Stachybotrys atra*) is a type of mold that has been associated with health effects in people. It is a greenish-black mold that can grow on materials with a high cellulose content—such as drywall sheetrock, dropped ceiling tiles, and wood—that become chronically moist or water-damaged, due to excessive humidity, water leaks, condensation, or flooding.

GCRC: While *Stachybotrys chartarum* occurs widely in North America, it is probably rather uncommon to find it in homes. It requires water-soaked cellulose (wood, paper, and cotton products) to grow. While wet it looks black and slimy perhaps with the edges white, and when dry it looks less shiny. It is not the only or the most common black mold to be found in these conditions.

NYCDH: Many molds are black in appearance but are not *Stachybotrys*. For example, the black mold commonly found between bathroom tiles is not *Stachybotrys*. *Stachybotrys* can be positively identified only by specially trained professionals (e.g., mycologists) through a microscopic exam.

Do molds affect one's health?

NYCDH: Most types of mold that are routinely encountered are not hazardous to healthy individuals. However, too much exposure to mold may cause or worsen conditions such as asthma, hay fever, or other allergies. The most common symptoms of overexposure are cough, congestion, runny nose, eye irritation, and aggravation of asthma. Depending on the amount of exposure and a person's individual vulnerability, more serious health effects, such as fevers and breathing problems, can occur but are unusual.

ALA & USPSC: One third to one half of all structures have damp conditions that may encourage development of pollutants such as molds and bacteria, which can cause allergic reactions, including asthma, and spread infectious diseases.

KSU: We are all exposed to many kinds of mold both inside and outside the house. However, some people seem to be more sensitive to mold and have allergies to some

types of mold. These people may suffer from cold-like symptoms. When people are experiencing these symptoms, it is difficult to know if they are the result of exposure to molds or have other causes. When breathed, some mold spores are small enough to go deeply into the lungs and cause serious illness. It is not healthy to live in a home with high levels of mold.

CADH: Allergic reactions may be the most common health problem resulting from mold exposure. Typical symptoms reported (alone or in combination) include: respiratory problems; nasal and sinus congestion; burning eyes; blurry vision; light sensitivity; dry, hacking cough; sore throat; nose and throat irritation; shortness of breath; skin irritation; central nervous system problems; aches and pains; and possible fever.

Should I be concerned about mold in my home?

CADH: Yes, if the contamination is extensive. When airborne mold spores are present in large numbers, they can cause allergic reactions, asthma episodes, infections, and other respiratory problems for people. Exposure to high spore levels can cause the development of an allergy to the mold. Mold can also cause structural damage to your home. Similarly, when wood goes through a period of wetting, then drying, it can eventually warp and cause walls to crack or become structurally weak.

How much mold can make me sick?

CADH: It depends. For some people, a relatively small number of mold spores can cause health problems. For other people, it may take many more.

NYCDH: Also, mold can sometimes produce chemicals called mycotoxins. Mycotoxins may cause illness in people who are sensitive to them or if they are exposed to large amounts in the air. Large exposures are typically associated with certain occupations (e.g., agricultural work).

Who is at greater risk when exposed to mold?

CADH: The following individuals appear to be at higher risk for adverse health effects of molds: infants and children; elderly; immune-compromised patients (people with HIV infection, cancer chemotherapy, liver disease, etc.); pregnant women; and individuals with existing respiratory conditions, such as allergies, multiple chemical sensitivity, and asthma.

FmHnd: With even slight exposure to molds and spores, sensitive people may experience headaches, runny noses, skin rashes, nausea, sinus problems, memory loss, and coughs. They may feel listless for long periods of time. In short, they feel as though they have a perpetual case of the flu. Newborns, the elderly, the sick, and those with compromised immune systems can be affected severely, even fatally. In truth, most of us fall somewhere between the two extremes of invincibility and supersensitivity. But even "normal" folks will react to unusually high concentrations of mold and spores. And the time you're most likely to stir up spores and inhale and ingest them is the very time you're trying to get rid of the stuff. That's when you need to be the most careful.

Are some molds more hazardous than others?

CADH: Allergic persons vary in their sensitivities to mold, both as to amount and type needed to cause reactions. In addition, certain types of molds can produce toxins, called mycotoxins, that the mold uses to inhibit or prevent the growth of other organisms. Mycotoxins are found in both living and dead mold spores.

NYCDH: Typically, indoor air levels of *Stachybotrys* are low; however, as with other types of mold, at higher levels health effects can occur. These include allergic rhinitis (cold-like symptoms), dermatitis (rashes), sinusitis, conjunctivitis, and aggravation of asthma. Some related symptoms, such as fatigue and the inability to concentrate, are more general. Usually, symptoms disappear after the contamination is removed. There has been evidence linking *Stachybotrys* with pulmonary hemosiderosis in infants who are generally less than six months old. Pulmonary hemosiderosis is an uncommon condition that results from bleeding in the lungs. In studied cases of pulmonary hemosiderosis, the exposure to *Stachybotrys* came from highly contaminated dwellings, where the infants were continually exposed over a long period of time.

GCRC: Over the past several years, there have been a number of infants (most under 6 months old), in the eastern neighborhoods of Cleveland, who have been coughing up blood due to bleeding in their lungs. Some infants have died and more infants continue to get ill. This bleeding, a disorder called pulmonary hemorrhage, appears to be caused by something in their home environments, most likely toxins produced by an unusual fungus called *Stachybotrys chartarum* or similar fungi.

What are some of the most common sources of mold?

NYCDH: Mold is most likely to grow where there is water or dampness, such as in bathrooms and basements.

FmHnd: Mold and mildew need only a damp, moist environment and organic material to establish themselves and thrive. Roof and foundation leaks, high interior humidity, overflowing washing machines, and more severe forms of flooding are common sources of moisture. Drywall backing, wallpaper, carpet backing, household dust, and many wood products are commonly attacked organic materials.

KSU: When mold spores settle on organic or contaminated surfaces and when other conditions of temperature, humidity, shade or darkness, and oxygen supply are conducive, they germinate and develop new colonies of mold. Even surfaces from which mold has previously been removed can have mold growing again if the conditions are right.

CADH: The following are sources of indoor moisture that may cause problems: flooding; backed-up sewers; leaky roofs; humidifiers; mud or ice dams; damp basement or crawl spaces; constant plumbing leaks; house plants (watering can generate large amounts of moisture); steam from cooking; shower or bath steam and leaks; wet clothes on indoor drying lines; clothes dryers vented indoors; and combustion appliances (e.g., stoves) not exhausted to the outdoors.

GCRC: Common areas for this mold (*Stachybotrys*) growth are: water-soaked wood, ceiling tiles, wall paneling, unpainted plaster-board surfaces, cotton items, cardboard boxes, and stacks of newspapers. If these areas have been very wet, usually for longer than one week, check for mold. After the area dries, the fungus will not continue to grow, but the black dust caused by the fungus can be sucked up by the furnace blower and spread throughout the house.

What does it take to remove mold?

EPA: There is no practical way to eliminate mold and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture.

ALA & USPSC: If your cleanup is not simple (i.e., your water damage and mold growth is extensive and/or involves structural materials), contact your city or county health department for assistance in assessing the problem. They can put you in contact with environmental laboratories capable of identifying *Stachybotrys* and with abatement contractors familiar with the precautions and other specifics important for extensive clean-up. If you have a large area of mold growth (greater than two square feet), seek professional assistance in the cleanup. You can get quite ill if you inhale a large quantity of the fungal dust or get it on your skin.

NYCDH: Although any visible mold can be sampled by an environmental consultant and/or analyzed by a

laboratory specializing in microbiology, these tests can be very expensive, from hundreds to thousands of dollars. There is no simple and cheap way to sample the air in your home to find out what types of mold are present and whether they are airborne. Even if you have your home tested, it is difficult to say at what levels health effects would occur. Therefore, it is more important get rid of the mold rather than find out more about it. The most effective way to treat mold is to correct underlying water damage and clean the affected area.

Where can I get more information?

Environmental Protection Agency

(www.epa.gov/iaq/pubs/moldresources.html)

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

(www.oznet.ksu.edu/library/hous2)

California Department of Health Services

(www.cal-iaq.org/mold9803.htm or

www.cal-iaq.org/LAYMEM97.html)

New York City Department of Health

(<http://nycdoitt.ci.nyc.ny.us/html/doh/html/epi/epimold.html>)

The Family Handyman

(www.familyhandyman.com/200003/how_a_house_works/main.html)

General Clinical Research Center

(<http://gcr.cwru.edu/stachy/default.htm>)

Health House

(www.healthhouse.org)

Kansas Department of Health and Environment

(www.kdhe.state.ks.us)

Texas Department of Health

(www.tdh.state.tx.us)

Centers for Disease Control and Prevention National Center

(www.cdc.gov/nceh/asthma/factsheets/molds/default.htm)

University of Montana Healthy Indoor Air for America's Homes

(www.montana.edu/wwwcxair/facts_mold.html)

American Lung Association Health House Project

(www.healthhouse.org/tipsheets/mold.htm)

American Academy of Pediatrics Committee on Environmental Health

(www.aehf.com/articles/Apmold.htm)

University of Minnesota Environmental Health and Safety

(www.hehs.umn.edu/iaq/fungus/stachybotrys)