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What You Should Know About Mold

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There are many myths and false beliefs regarding molds. This article discusses some issues such as the composition of mold, what health problems it may cause, some key ingredients that allow for its growth, the proper way to clean it up, and how to prevent future mold growth within a home.

Let's first start with some important key terms. Mold can be defined as fungi that grows on the surfaces of objects, within its pores, and in deteriorated materials (EPA, Appendix C: Moisture, Mold and Mildew). They can also be considered microscopic spores and can be transmitted through the air, water or through insects. They can be found in almost every environment and can occur indoors and outdoors all year long.

Some people can be sensitive to molds. Molds produce substances that can cause allergic reactions, called allergens. Other products produced include irritants and in some cases mycotoxins, or potentially toxic substances. Allergic responses to these irritants and allergens include symptoms that resemble that of hay-fever like red eyes, runny nose and itchy skin. Allergic reactions to mold are common and are quite often attributed to something else. These allergic responses can be immediate or can be delayed. Molds may also trigger asthma attacks in people that are asthmatic. Mold exposure can irritate skin, eyes, throat, nose and lungs, whether the person is allergic or not. People with chronic diseases, such as obstructive lung disease, could potentially develop mold infections within their lungs. Severe reactions could include shortness of breath and fever. Molds can be found in damp, shady areas such as where leaves or vegetation are decomposing or places that have a high humidity level such as showers or basements. The most

Penicillium, Cladosporium and Aspergillus are the most common forms of indoor molds.

Fusarium and Stachybotrys are two of the most toxic indoor molds and can cause extreme respiratory and breathing difficulties.

Conditions necessary for mold growth include:

-Temperatures that range from 40 to 100 degrees

-Moisture

-Mold Spores

-Nutrient Base

Soap and water and scrubbing can remove mold from surfaces.

common molds found indoors are Penicillium, Cladosporium and Aspergillus. These molds are the first to occur on water-damaged materials such as caulk, lumber and carpet. Two dangerous species are Fusarium and Stachybotrys, which can cause extreme breathing and respiratory difficulties. These particular species prefer extremely wet carpet and building materials. If you can visibly see mold, or if there is a musty or earthy odor, it is safe to assume that you have a mold problem. There are no established amounts of “safe” or “unsafe” exposure levels. Some people may easily be effected by a small number of mold spores and other people may need a higher level of exposure. A basic rule to follow is, if you can see or smell it, take the necessary steps to eliminate the excess moisture, and then cleanup and remove the mold.

Molds require nutrients to grow such as oxygen, water and favorable temperatures. The following conditions are necessary for the growth of mold: mold spores, moisture, a nutrient base and temperatures that range from 40 to 100 degrees Fahrenheit. Many molds thrive at normal indoor temperatures. Standing water does not have to be present for mold to grow; it can occur when the relative humidity is high or if a building has hygroscopic properties, which is the tendency to absorb and retain moisture. Water enters buildings as a liquid and as a gas. In its liquid form, water is intentionally introduced in kitchens, bathrooms, laundry rooms and accidentally by spills and leaks. Water vapor moves in and out of buildings as part of the air and may enter or exit through openings in a building’s frame.

The cleanup of mold depends largely in part on where it is located. If the mold is located on boxes or home furnishings you can simply discard the material. Moldy materials are not considered hazardous waste and can be picked up with other trash and taken to a landfill. It is a good idea to seal the moldy items in a heavy plastic bag so the people who handle it in transit are protected. If the mold takes up less than 10 square feet, wash the dirty area with soapy water (scrubbing may be necessary), rinse and allow the area to dry completely before repainting. If you have severe allergies, asthma or a weakened immune system, get someone else to perform the clean up. Larger areas should be cleaned by someone with experience. Although bleach will kill and deodorize mold, it does not remove mold. Dead mold still has the ability to cause allergic reactions. Killing mold is not necessary to remove it. Scrubbing with soap and water can remove mold from hard surfaces. If a few mold spores are left behind after clean up it is not a problem if the

*Wear proper equipment
when cleaning up mold.*

- Goggles*
- Respirator Mask*
- Gloves*

*Keep relative humidity
between 50 and 60
percent.*

*Keep condensation to a
minimum .*

underlying moisture problem has been fully corrected. When cleaning moldy areas, you may want to wear an N-95 respirator mask, available at many hardware stores. Gloves that come to the middle of the forearm are recommended. Goggles that do not have ventilation holes in them are recommended to keep mold spores from getting in your eyes. Materials that trap mold such as rags, paper, rotten wood and wallboard should be decontaminated and then discarded. Materials that are harder such as plastic, glass or metal can be kept after they have been cleaned and disinfected.

When water spills or leaks indoors, it is important to act quickly. If damp or wet materials are dried within 24-48 hours, most of the time, mold will not grow. Roof gutters should be repaired and cleaned on a regular basis. Air conditioning drip pans should be kept clean and drain lines should remain unobstructed and flow properly. Indoor humidity should be kept low. Relative humidity, if possible, should be kept below 60 percent, and 50 percent is ideal. A moisture meter normally ranges from \$10-\$15 and is available at many hardware stores. If condensation accumulates on windows, walls or pipes, act quickly to clean the wet surface and reduce the source of the moisture/water. Condensation could be considered a sign of humidity. Appliances that produce moisture such as clothes dryers, stoves and heaters should be vented to the outside, if possible. Air conditioners and dehumidifiers can be used to reduce humidity during humid months. Running the bathroom fan or opening a window when showering also helps. Exhaust fans and open windows should be utilized whenever cooking or running the dishwasher. Cold surfaces, such as cold water pipes, should be covered with insulation. Increasing air temperature also helps keep the humidity level low. Other suggestions include adding mold inhibitors to paints before applying them, using mold killing products to clean bathrooms, leaving basements and bathrooms free from carpeting and removing or replacing carpets and upholstery that have been previously soaked.

This article was designed to help homeowners and builders reduce and prevent mold growth within homes and businesses. To recap, the most effective way to reduce the occurrence of mold within a home or business is moisture control. Filtering the air can contribute to lowering mold spores within the air but is secondary to controlling moisture. Identifying the species of mold is not necessary and the CDC does not recommend routine mold sampling. Current evidence indicates that the most

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For more information on mold and mildew visit <http://www.epa.org>, and <http://www.cdc.gov>

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common disease associated with molds are allergies. Standards that determine a tolerable, an acceptable or normal quantity of mold has yet to be established. The most important things to remember when cleaning up mold is to wear the proper equipment (gloves, a mask and goggles) and use cleaning agents that have mold killing capabilities. Here is a simple approach to remember: if you can see or smell mold, there is a problem. If you are interested in getting more information about qualified inspection agencies that are licensed to do the testing, please give our office a call and we will give be happy to give you some referrals.

The information analyzed within this article was obtained from research conducted by the author. Information was also obtained from web sties such as <http://www.cdc.gov>, <http://www.realtor.org>, <http://www.rcpureair.com>, <http://www.environmentaldiseases.com>, <http://www.sciencesofsafety.net> and <http://www.epa.gov>. Opinions expressed are based on observations and analyses conducted by the author.