Fact Sheet Mold Exposure

What is a mold?

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. Mold growths can often be seen in the form of discoloration, ranging from white to orange and from green to brown and black. When molds are present in large quantities, they can cause allergic symptoms similar to those caused by plant pollen.

How is the mold contracted?

The mold is contracted by inhalation and skin contact when the fungus is found on walls or in carpets. When airborne mold spores are present in large numbers, they can cause allergic reactions, asthma episodes, infections, and other problems for people. Exposure to high spore levels can cause the development of an allergy to the mold. Mold contamination occurs when there is moisture available to allow mold to thrive and multiply. 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/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.

What are the symptoms of mold exposure?

Allergic reactions may be the most common health problem of mold exposure. Typical symptoms reported (alone or in combination) include: respiratory problems, such as wheezing, and difficulty breathing; nasal and sinus congestion; eyes-burning; watery, reddened, blurry vision; light sensitivity; dry, hacking cough; sore throat; nose and throat irritation; shortness of breath; and skin irritation. In very rare cases severe symptoms may present, such as: central nervous system problems, (constant headaches, memory problems, and mood changes); aches and pains; and/or possible fever.

Are some molds more hazardous than others?

Allergic persons vary to 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. Materials permeated with mold need to be removed, even after they are disinfected with cleaning solutions. Allergic and toxic effects can remain in dead spores. Exposure to mycotoxins may present a greater hazard than that of allergenic or irritative molds. Mycotoxins have been found in homes, agricultural settings, food, and office buildings.

How can I tell if I have mold in my house?

If you can see mold, or if there is an earthy, musty odor, you can assume you have a mold problem. Allergic individuals may experience the symptoms listed above. Look for previous water damage. Visible mold growth is found underneath materials where water has damaged surfaces, or behind walls. Look for discoloration and leaching from plaster.

Should I test my home for mold?

The Iowa Department of Public Health does not recommend testing as the first step to determine if you have a mold problem. Reliable sampling for mold can be expensive, and requires equipment not available to the general public. Residents of individual private homes must pay a contractor to carry out such sampling, as it is not usually done by public health agencies. Mold clean up is usually considered one of the housekeeping tasks of a private citizen, along with roof and plumbing repairs, sweeping and house cleaning.

Another problem is that there are few available standards for judging what is an acceptable quantity of mold. In all locations, there is some outdoor levels of mold. If sampling is carries out, an outdoor air sample needs to be taken at the same time as the sample indoors, to provide a baseline measurement. Since the susceptibility of individuals varies so greatly, sampling is at best a general guide. The simplest approach is: if you can see or smell mold, you have a problem. Once you know the problem exists, follow the procedure given next. Unless the source of moisture is removed and the contaminated area is cleaned and disinfected, mold growth is likely to reoccur.

General Clean-up Procedures

1. Identify and correct the moisture source. 2. Clean, disinfect, and dry the moldy area. 3. Bag and dispose any material that has moldy residues, such as rags, paper, leaves or debris.

What can I save? What should I toss?

Substances that are porous and can trap molds, such as paper, rags, wallboard, and rotten wood should be decontaminated and thrown out. Harder materials such as glass, plastic, or metal can be kept after they are cleaned and disinfected.

Ultimately, it is critical to remove the source of moisture first, before beginning remedial action, since mold growth will return shortly if an effected area becomes re-wetted.

Removal of Moldy Materials

After fixing the moisture source and removing excess moisture, the cleanup can begin:

1. Wear gloves
2. Remove porous materials (examples: ceiling tiles, sheetrock, carpeting, wood products)
3. Carpeting can be difficult problem -- drying does not remove dead spores. If there is heavy mold, disposal of the carpet should be considered.
4. Bag and discard the moldy substances .
5. Allow the area to dry 2 to 3 days.
6. If flooded, remove all sheetrock to at least 12 inches above the high water mark. Visually inspect the wall interior and remove any other intrusive molds. (This step may have to be carried out by a licensed contractor.)

Caution: Spores are easily released when moldy material is dried out.

Soap Cleanup

1. Before disinfecting contaminated areas, clean the areas to remove as much of the mold (and food it is growing on) as possible.
2. Wear gloves when doing this cleanup.
3. Use a non-ammonia soap or detergent, or a commercial cleaner, in hot water, and scrub the entire area affected by the mold.
4. Use a stiff brush or cleaning pad on block walls or uneven surfaces.
5. Rinse clean with water. A wet/dry vacuum is handy for this.

Disinfect Surfaces

1. Wear gloves when using disinfectants.
2. After thorough cleaning and rinsing, disinfect the area with a solution of 10% household bleach (e.g., 11/2 cup bleach per gallon water). Using bleach straight from the bottle will not be more effective.
3. Never mix bleach with Ammonia- the fumes are toxic.
4. For spraying exterior large area, a garden hose and nozzle can be used.
5. When disinfecting a large structure, make sure the entire surface is wetted (floors, joists, and posts)
6. Avoid excessive amounts of runoff or standing bleach.
7. Let disinfecting areas dry naturally overnight -- this extended time is important to kill all the mold.

Caution: Bleach fumes can irritate the eyes, nose, and throat, and damage clothing and shoes. Make sure the working area is ventilated well.

Can cleaning up mold be hazardous to my health?

Yes. Exposure to mold can occur during the cleaning stage. Mold counts are typically 10 to 100 times higher than background levels during the cleaning of mold damaged materials. Take steps to protect your health during cleanup:

1. When handling or cleaning moldy materials, consider using a mask or respirator to protect you from breathing airborne spores. Respirators can be purchased from hardware stores; select one for particle removal (sometimes referred to as a N95 or T21C particulate respirator). Respirators are not as effective at removing bleach fumes, so minimize your exposure when using bleach or other disinfectants.
2. Wear protective clothing that is easily cleaned or discarded.
3. Use rubber gloves.
4. Try cleaning a small test patch of mold first. If you feel that this adversely affected you health, you should consider paying a licensed contractor or professional to carry out the work.
5. Ask family members or bystanders to leave areas when being cleaned.
6. Work over short time spans and rest in a fresh air location.
7. Air you house out well during and after the work.

Caution: When using a gasoline engine indoors (e.g. pressure washer, generator) make sure to open as many windows as possible and use a fan to circulate fresh air, otherwise you could expose yourself and your family to carbon monoxide poisoning.

Can air duct systems become contaminated with mold?

Yes. Air duct systems can become contaminated with mold. Duct systems can be constructed of bare sheet metal, sheet metal with an exterior fibrous glass insulation, sheet metal with an internal fibrous glass liner, or made entirely of fibrous glass. If you home's air duct system has had water damage, first identify the type of air duct construction that you have. Bare sheet metal systems, or sheet metal with exterior fibrous glass insulation, can be cleaned and disinfected.

If your system has sheet metal with an internal fibrous glass liner, or are made entirely of fibrous glass, the ductwork normally will need to be removed and discarded. Ductwork in difficult locations may have to be abandoned. If you have other questions, contact an air duct cleaning professional, or licensed contractor.

After I've cleaned everything as thoroughly as possible, can I still have mold odors?

Yes. It is possible that odors may persist. Continue to dry out the area and search for any hidden areas of mold. If the area continues to smell musty, you may have to re-clean the area again (follow the cleaning steps given in this sheet). Continue to dry and

ventilate the area. Don't replace flooring or begin rebuilding until the area has dried completely.

How can further damage to my home be prevented?

Check regularly for the following:

1. Moisture condensation on windows.
2. Cracking of plasterboard.
3. Drywall tape loosening.
4. Wood warping
5. Musty odor.

If you see any of the above, seek out and take steps to eliminate the source of water penetration, as quickly as possible.

Can ozone air cleaners help remove indoor mold, or reduce odor or pollution levels?

Some air cleaners are designed to produce ozone. Ozone is a strong oxidizing agent used as a disinfectant in water and sometimes to eliminate odors. However, ozone is a known lung irritant. Symptoms associated with exposure include cough, chest pain, and eye, nose, and throat irritation. Ozone generators have been shown to generate indoor levels above the safe limit. Furthermore, it has been demonstrated that ozone is not effective in controlling molds and fungi, even at high concentrations far above safe health levels. Also, ozone may damage materials in the home. For these reasons, the Iowa Department of Public Health strongly recommends that you do not use an ozone air cleaner in any occupied residential space.

For more information visit the following websites:

http://www.epa.gov/iaq/

http://www.cdc.gov/nceh/asthma/factsheets/molds/molds.htm

This information presented by the Grundy County Sanitarian Office 319-824-1212.