

MOLD INFORMATION SHEET

THE FACTS ABOUT MOLDS IN INDOOR ENVIRONMENTS

What are molds?

Molds are simple, microscopic organisms, present virtually everywhere, indoors and outdoors. Molds, along with mushrooms and yeast, are fungi and are needed to break down dead material and recycle nutrients in the environment. For molds to grow and reproduce, they need only a food source – any organic material, such as leaves, wood, paper or dirt – and moisture. Because molds grow by digesting the organic material, they gradually destroy whatever they grow on. Mold growth on surfaces can often be seen in the form of discoloration, frequently green, gray, brown or black but also white and other colors. Some of the most common indoor molds are *Cladosporium*, *Penicillium*, *Aspergillus*, and *Alternaria*.

How am I exposed to indoor molds?

Molds release countless tiny, lightweight spores, which travel through the air. Everyone inhales some mold every day without apparent harm. It is common to find mold spores in the air inside homes. In fact, most of the airborne spores found indoors come from outdoor sources. Mold spores primarily cause health problems when they are present in large numbers and exposures are high. This may occur when there is active mold growth within a home, office, school or other building in which people live or work for long periods. People can also be exposed to mold by touching contaminated materials or eating contaminated foods.

Can mold become a problem in my home?

Yes. Molds will grow and multiply anywhere, when sufficient moisture is available and organic material is present. Be on the lookout for the following common sources of moisture inside and outside your home that may lead to mold problems:

- Flooding
- Leaky roof; improper flashings
- Sprinkler spray hitting the house
- Plumbing leaks and overflow from sinks and sewers
- Damp basement or crawl space
- Improper grading and lack of downspout extensions
- Steam from showers, cooking or humidifiers
- Wet clothes hung to dry indoors or a clothes dryer that exhausts indoors
- Condensation from air conditioners
- Refrigerator ice maker water supply lines
- Consult a company trained or certified in the inspection for and remediation of mold for additional information

Other signs of moisture problems include warping floors and discoloration of walls and ceilings. Condensation on windows and walls is also an important indicator; however, it can also be caused by an indoor combustion problem. Fuel-burning appliances such as water heaters should be routinely inspected by your local utility or a professional technician.

Should I be concerned about mold in my home?

Yes. If indoor mold contamination is extensive, it can cause very high and persistent airborne spore exposures. Persons exposed to high spore levels can become sensitized and develop allergies to the



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mold or other health problems. Mold growth can damage your furnishings, such as carpets, upholstery, cabinets and drapes. Mold can be found growing on clothes and shoes stored in damp closets. Over time, unchecked mold growth can cause serious damage to the structural elements in your home.

HEALTH EFFECTS

What symptoms can molds cause?

Molds produce health effects through inflammation, allergy or infection. Allergic reactions are the most common occurrences following exposures to high concentrations of molds. Typical symptoms that people exposed to molds report (alone or in combination) include:

- Respiratory problems, such as wheezing, difficulty breathing and shortness of breath
- Nasal and sinus congestion
- Eye irritation (burning, watery or reddened eyes)
- Dry, hacking cough
- Nose or throat irritation
- Skin rashes or irritation

How much mold can make me sick?

It depends. Most otherwise healthy people have no responses to molds unless the spore levels are excessively high. For others, a relatively small number of mold spores can trigger an asthma attack or lead to other health problems. However, mold should not be growing inside a building and its sustained growth can be unhealthy. Basically, if you can see or smell mold inside your home, school or office building, you should take steps to identify and eliminate the excess moisture and clean up or remove the mold.

Are some molds more hazardous than others?

Perhaps. Allergic persons vary in their sensitivities to mold both as to the amount and the types to which they react. In addition to their allergic properties, some indoor molds, such as *Fusarium*, *Trichoderma* and *Stachybotrys*, may produce compounds that have toxic properties, which are called mycotoxins. Mycotoxins are not always produced, and whether a mold will produce mycotoxins while growing in a building depends on what the mold is growing on, conditions such as temperature, humidity, pH or other unknown factors. When mycotoxins are present, they occur in both living and dead mold spores and may be present in materials that have become contaminated with molds. The term "toxic mold" is not accurate. While certain molds do produce mycotoxins, the molds themselves are not toxic or poisonous. The Centers for Disease Control and prevention (CDC) recommends that hazards presented by molds that may produce mycotoxins should be considered the same as other common molds that can grow in your building. All molds should be treated the same with respect to potential health risks and removal.

Who is at greater risk when exposed to mold?

Exposure to mold is not healthy for anyone inside buildings. Therefore, it is always best to identify and correct high moisture conditions quickly before mold grows and health problems develop. Some people may have more severe symptoms or become ill more rapidly than others:

- Individuals with existing respiratory conditions, such as allergies, chemical sensitivities, or asthma.
- Persons with weakened immune systems, such as people with HIV infection, cancer chemotherapy patients, and others with chronic diseases.
- Infants and young children.
- The elderly.

If you believe that you or your children have symptoms that you suspect are caused by exposure to mold, you should see a physician. Keep in mind that many symptoms associated with mold exposure may also be caused by many other illnesses.

MOLD DETECTION

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

You may suspect that you have mold if you see discolored patches or cottony or speckled growth on walls, ceilings or furniture or if you smell an earthy or musty odor. You may also suspect mold contamination if mold-allergic individuals experience some of the symptoms listed above when in the house. Evidence of past or ongoing water damage also should trigger a more thorough inspection for damp conditions. You may find mold growth underneath water-damaged surfaces or behind walls, floors or ceilings.

Should I test my home for mold?

The Arkansas Department of Health and the CDC do not recommend testing as a first step to determine if you have a mold problem. Reliable air sampling for mold can be expensive and requires expertise and equipment that is not available to the general public. Owners of individual private homes and apartments usually will need to pay a contractor to perform such sampling, because insurance companies and public health agencies seldom provide this service. Some mold inspection contractors also provide remediation (clean up) services, which can be expensive. Some contractors may have a financial interest in detecting mold for the purpose of acquiring clean up business. Mold inspection and cleanup is usually considered a housekeeping task that is the responsibility of the homeowner or landlord, as are roofing and plumbing repairs, house cleaning and yard maintenance.

Another reason that testing is not recommended for mold contamination is that there are few available standards for what is an acceptable quantity of mold. In all locations, there is some level of mold outdoors. If sampling is carried out in a home, an outdoor sample also must be collected at the same time as the indoor sample, to provide a baseline measurement. Because individual susceptibility varies so greatly, sampling is at best a general guide.

The simplest way to deal with a suspicion of mold contamination is: If you can see or smell mold, you likely have a problem and should take the steps outlined below. Mold growth is likely to recur unless the source of moisture that is allowing the mold to grow is removed and the contaminated area is cleaned.

GENERAL CLEANUP PROCEDURES

Currently there are no State of Arkansas or Federal laws or regulations requiring property owners to remediate (clean up) the presence of mold in buildings. If mold is present inside a building prompt remediation is recommended but ultimately is the option of the building owner and/or occupant of the building. The following is intended as an overview for homeowners and apartment dwellers. For additional information, consult the more detailed documents list in the **USEFUL PUBLICATIONS** section.

Judging how large a problem you have

Small mold problems – total area less than 10 square feet can be handled by the homeowner or apartment maintenance personnel using appropriate personal protective equipment (see below). Large contamination problems – areas greater than 100 square feet, may require an experience professional contractor. For in-between situations, the type of containment and personal protection will be a matter of judgment.

Can mold cleanup activities be hazardous to my health?

Yes. During the cleanup process, you may be exposed to mold, strong detergents, and disinfectants. Spore counts may be 10 to 1000 times higher than background levels when mold-contaminated materials are disturbed. Take steps to protect you and your family's health during cleanup:

- When handling or cleaning moldy materials, it is important to use a respirator to protect yourself from inhaling airborne spores. Respirators can be purchased from hardware stores; select one that is effective for particle removal (sometimes referred to as an N-95 particulate respirator). However, respirators that remove particles will not protect you from fumes (from cleaning materials). Minimize exposure when using bleach or other disinfectants by ensuring good ventilation of the area.
- Wear protective clothing that is easily cleaned or discarded.
- Use rubber gloves.
- Try cleaning a test area first. If you feel that this activity adversely affected your health, you should consider paying a contractor or other experienced professional to carry out the work.
- Ask family members or bystanders to leave the areas that are being cleaned.
- Work for short time periods and rest in a location with fresh air.
- Air out your house well during and after the work.

What can I save? What should I toss?

Discard items from which it will be difficult to remove mold completely. Solid materials generally can be kept after they are cleaned thoroughly.

- First, fix the moisture problem and remove excess water.
- A wet/dry vacuum cleaner may help remove water and clean the area.
- Discard porous materials such as ceiling tiles, sheetrock, carpeting and wood products.
- Contain the area in which you work to reduce the spread of dust to other areas; for example, close the door or use plastic sheets to separate the room and run a suction fan that exhausts the air outdoors.
- Because spores are more easily released when moldy materials dry out, it is advisable to remove moldy items as soon as possible. If there was flooding, sheetrock should be removed to a level above the high-water mark. Visually inspect the wall interior and remove any mold-contaminated materials such as insulation.
- Carpet is often difficult to clean thoroughly, especially when the backing or padding is moldy, in which case, it should be discarded.
- Bag and discard moldy items. Items can be disposed of as household trash.
- Clean nonporous materials such as glass, plastic, metal and ceramic tiles.
- Wear gloves, an N-95 respirator, and eye protection.
- Use a non-ammonia soap or detergent, or a commercial cleaner, in hot water, and scrub the entire mold-affected area.
- Use a stiff brush or cleaning pad on cement-block walls and other uneven surfaces.
- Rinse cleaned items with water and dry thoroughly.

Disinfection of contaminated materials

Disinfecting agents can be toxic for humans as well as molds, therefore, they should be used only when necessary and should be handled with caution. Disinfectants should be applied only to thoroughly cleaned materials to ensure that the mold has been killed.

- Wear gloves and eye protection when using disinfectants and ventilate the area well.
- A 10% solution of household bleach can be used as a disinfectant. Use 1½ cups of household bleach per gallon of water.

- When disinfecting a large structure, make sure that the entire surface is wetted, for example, the floors, joists and posts.
- Keep the disinfectant on the treated material for a prescribed time before rinsing or drying. Ten minutes is typically recommended for a bleach solution.
- Properly collect and dispose of extra disinfectant and runoff.
- Using bleach straight from the bottle is actually LESS effective than diluted bleach.
- Bleach fumes can irritate the eyes, nose and throat. Make sure that working areas are well ventilated.
- Never mix bleach with ammonia; toxic fumes may be produced.

Can air ducts become contaminated with mold?

Yes. Air duct systems can become contaminated with mold. Duct systems may be constructed of bare sheet metal, sheet metal with fibrous glass insulation on the exterior or sheet metal with internal fibrous glass liner, or they may be made entirely of fibrous glass. Bare sheet metal systems and sheet metal with exterior fibrous glass insulation can be cleaned and disinfected. If water damaged, ductwork made of sheet metal with an internal fibrous glass liner or made entirely of fibrous glass will often need to be removed and discarded. Ductwork in difficult-to-reach locations may have to be abandoned. If you have any other questions, contact an air duct cleaning professional or licensed contractor.

Can ozone air cleaners help remove mold or reduce odors?

The ADH and CDC strongly recommend that you NOT use an ozone air cleaner in any occupied space. Ozone is a strong oxidizing agent that is used to eliminate odors. However, ozone is a known lung irritant. Ozone generators have been shown to sometimes produce indoor level above the safe limit. It has been shown that ozone is not effective in controlling mold and other microbial contamination, even at concentrations far above safe health levels. Also, ozone may damage materials in the home, for example, cause rubber items to become brittle.

How can I prevent indoor mold problems in my home?

Inspect your home regularly for the indications and sources of indoor moisture and mold listed on page 1. Take steps to eliminate sources of water as quickly as possible. If a leak or flooding occurs, it is essential to act quickly.

- Stop the source of leak or flooding.
- Remove excess water with mops or wet vacuum.
- Whenever possible, move wet items to a dry and well ventilated area or outside to expedite drying. Move rugs and pull up areas of wet carpet as soon as possible.
- Open closet and cabinet doors and move furniture away from walls to increase circulation.
- Run portable fans to increase air circulation. Do not use the home's central blower if flooding has occurred in it or any of the ducts. Do not use fans if mold may have already started to grow – more than 48 hours since flooding.
- Run dehumidifiers and window air conditioners to lower humidity.
- Do not turn up the heat or use heaters in confined areas, as higher temperatures increase the rate of mold growth.
- If water has soaked inside the walls, it may be necessary to open wall cavities, remove the baseboards, and/or pry open wall paneling.

Useful Publications

US EPA. A Brief Guide to Mold, Moisture, and Your Home. www.epa.gov/mold/moldresources.html

US CDC. Mold homepage. www.cdc.gov/mold/default.htm

Facts about Mold and Dampness. www.cdc.gov/mold/dampness_facts.htm

US CDC. Facts about *Stachybotrys chartarum* and other Molds. www.cdc.gov/mold/stachy.htm
Mold Cleanup Fact Sheet. www.bt.cdc.gov/disasters/pdf/flyer-get-rid-of-mold.pdf

Local Assistance

This Fact Sheet has been prepared by the Arkansas Mold Investigation Advisory Board. The Board has also prepared a guidance document that will provide information on subjects such as mold and health, advice on assessment of mold in indoor environments, cleanup efforts and prevention of mold growth and additional links to other resources.

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