

Mold is found everywhere outside and inside the home or workplace, and is a common component of household dust. It reproduces by spores that can be carried by air currents. Mold is normally found indoors at levels that do not affect most healthy individuals.

HEALTH

Many molds are not generally harmful to humans, but can produce allergens, irritants, and in some cases, mycotoxins such as *Stachybotrys chartarum* that can pose potential health risks. When airborne mold spores are present in large numbers, they may cause allergic reactions, infections, skin reactions, asthma episodes, other respiratory problems, and severe illness for some people. There are some indications that long-term exposure to high spore levels may lead to the development of an allergy to the mold.



As is true for most environmental issues, while there are some clear associations between mold and health issues, there are few available standards for judging what is an acceptable quantity of mold. We do know that different individuals react differently to different levels of mold exposure. Whether or not symptoms develop in people exposed to mold depends on the type of mold, the exposure level, and the person. Personal factors include genetic predisposition, age, pre-existing medical conditions, use of immunosuppressive drugs, and concurrent exposures. These reasons make it difficult to identify dose/response relationships that are required to establish “safe” or “unsafe” levels (i.e., permissible exposure limits)

STRUCTURE

Besides potential health effects on humans, mold, mildews, and excess moisture also attack wood products and may cause structural damage to the home. When wood goes through periods of wetting and drying, it can eventually warp, cause walls to crack, or become structurally weakened by dry rot.

WHERE DO YOU FIND MOLD

Mold spores do not grow in the air. They grow on wet surfaces. Mold can be a problem if it is allowed to grow and multiply. For mold to grow, it needs:

- a food source - such as leaves, wood, paper, or dirt. Common building materials, such as plywood or particleboard, drywall, carpets, and carpet padding are food for molds.
- a place to grow (most thrive within a range of moderate temperatures);
- and most important, a source of moisture.

Molds will grow inside walls after an incident of water damage, and then become dormant until later when moisture again becomes available. After a flood or major leak, mycotoxin levels are higher in the building even after it has dried out.

ELIMINATING MOISTURE

The number one rule to controlling or eliminating mold is to control or eliminate the source of moisture. If you can see mildew or mold, or if there is an earthy or musty odor, you may have a mold problem.

Moisture can come from many sources. Look for leaks through roofs or around any flashing on or against roofs, and seepage around windows and doors. Also:

- plumbing leaks
- previous flooding
- backed-up sewers
- leaky roofs
- humidity and condensation in attics
- damp basement or crawl spaces
- seepage around base of toilets
- leaks from appliances, air conditioners, furnaces
- humidifiers
- water from house plants
- steam from cooking
- shower or bath steam
- wet clothes on indoor drying lines
- clothes dryers vented indoors
- humidifiers
- water treatment devices
- condensation on windows and glass doors

CONDENSATION AND VENTILATION

Condensation and excessive humidity is another, more subtle, but no less destructive form of moisture especially on a long-term basis. Relatively warm moist air turns to condensation against cooler surfaces, usually as a result of inadequate ventilation. Over time, this moisture provides a breeding ground for mildews and mold.

Mold is found more often in homes that have poorly ventilated attics, basements, and crawlspaces.

Proper ventilation is necessary throughout the home to control moisture.

- Be sure the home has adequate ventilation, including exhaust fans.
- Keep the humidity level in the house between 40% and 60%.
- Make sure that basements, crawlspaces, and attic have adequate ventilation.

For example, some small amount of *Stachybotrys* is commonly found in homes. Because it rapidly settles, air exposures are usually very low. One step is to install a multi-pleated filter (MPF) module in the cold air return of the house heating/cooling system and operate the fan 12-24 hours a day. This can reduce airborne mold spore levels by 50%.

TESTING FOR MOLD

Unfortunately, no reliable or affordable do-it-yourself mold testing kits are available. No federal limits have been set for mold or mold spores, therefore sampling cannot be used to check compliance with any standards. In general the EPA does not recommend sampling unless an occupant of the space is symptomatic.

When sampling is necessary, it should be performed by a trained professional who has specific experience in designing mold-sampling protocols, sampling methods, and the interpretation of findings. Information gathered from the visual inspection of the areas sampled is very significant, including sources of moisture or high humidity, areas of elevated particulate matter, and signs of visible mold growth. If you need testing, we suggest [ERA Test](#) (406-381-2237).

Health risk from mold is not about spore counts. They will consider the ratio of indoor versus outdoor fungal count, the presence or absence of certain fungi indoors versus outdoors, the genus and/or species of predominant fungi indoors versus outdoors. The working hypothesis is that if elevated spore counts found from indoor samples did not come from outdoors, then there is a source of indoor spores that needs investigating and/or cleaning.

The environment around the home is also important. For example, spore counts tend to be higher in damp and/or wooded areas, at or near greenhouses, and farms that store hay that may get wet.

DEALING WITH MOLD

First and foremost, locate and eliminate any sources of excess moisture or water damage. This often includes use of fans to dry the area. The rule of thumb is that one should remediate any visible mold growth regardless of the result of mold testing.

The next consideration is the size and severity of the mold problem. If the moldy area is less than about 10 square feet, in most cases you can handle the job yourself by following safe handling and disposal guidelines. The proper way to clean mold is to use detergent solutions that physically remove mold. Dead mold represents a potential health risk as well as living mold. Dormant molds and spores can grow once moisture is available. Mold remediation is therefore, about removing mold growth, not killing it. Many commercially available detergents marketed for mold cleanup also include an anti-fungal agent. For more information on cleanup of mold, we strongly recommend publications available at www.epa.gov/mold/. Contact us if you need more information. More extensive or severe cases of moisture damage or mold, or moisture damage in less accessible areas may require mold removal professionals.



Beyond making sure that the bathroom and kitchen fans vent out, preventing or repairing leaks, and insuring that ventilation is provided for the attic, basement or crawlspace areas, identification of many of the above issues may require advice from a professional. A home inspection will cover all major home systems, inspect for indications of leaks, moisture, or mold problems, and should report ventilation issues that could lead to mold growth.

©All Rights Reserved

NorthStar Inspections
tbeck@NorthStarInspect.net
406.544.1110