

# Controlling Mold Growth in the Home

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15 minutes

Any home can have a moisture problem. Flooding is the most severe problem, but fortunately it occurs infrequently, and in very few homes. When flooding does occur, the problems are difficult and may take months to resolve. However, even the more common moisture problems can be just as difficult to deal with. This would include water leaks in basements and crawl spaces, condensation in the home from high humidity level, and the lack of adequate air flow in areas of high humidity. These common problems can result in mold and mildew growth in the home.

In order to grow, mold requires moisture and organic material such as wood, natural fibers, paper or dirt and grease build up on surfaces. 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 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. We're all exposed to many kinds of molds, 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's difficult to know if it's the result of exposure to molds, or from other causes. When breathed, some mold spores are small enough to go deeply into the lungs, and cause serious illness. Because of this, it's not healthy to live in a home with high levels of mold.

Generally, mold may be found any place in the home where moisture or relative humidity levels are high. This would include the bathroom, closets, windows, and window sills, kitchen walls, the basement, in your laundry room, or in the crawl spaces themselves. As mentioned earlier, mold may be found in any of these places where moisture or relative humidity levels are high. Relative humidity is a measure of how much moisture is in the air, relative to the amount it can hold at that temperature. Wet or damp basements may have mold growing on the walls, floors, carpeting, or on materials stored in it. Moisture from the earth outside the basement can migrate through concrete walls, causing them to remain damp. Water standing in sump holes, condensate from an air conditioner or de-humidifier, leaky pipes, or water seeping into the basement are all sources of moisture that can support mold growth. Basement carpeting often has mold growing on or under it, if the carpeting is installed on a concrete floor that remains cool and damp. Materials stored in a damp basement may also have mold growing on them. As a result of the mold growth, their spores have the potential of spreading throughout the house. Crawl spaces that are built over uncovered earth can also have mold problems when the moisture in the ground causes dampness in the space itself. Crawl spaces that are sloped incorrectly can have water pooling in them are particularly likely to have problems. Mold can often be found growing in the bathroom. If an exhaust fan isn't used during bathing, then large amounts of moisture can remain in the shower or tub area. Soap scum on bath and shower walls, on ceramic tile and fiberglass, is a nutrient source for mold growth. The laundry room is another area that has a tendency to promote mold growth. Unvented clothes drying produces high levels of relative humidity that supports mold growth and development. Damp towels and clothes in laundry hampers, washers or dryers can also develop mildew growth. Spills or leaks such as a washer or toilet overflow on the carpet and other flooring materials can cause those materials to become moldy. Using a humidifier sometimes raises the relative humidity high enough that mold will grow. This is

particularly evident in the winter where high relative humidity will occur in areas where there's little air movement. This results in condensation on cold walls and windows and the resulting mold growth in those areas. Dark patches of mold can sometimes be seen inside the upper corner of a closet or an outside wall or behind doors or furniture placed against outside walls. This is the result of high humidity and too little air circulation. And finally, mold growth can be found on kitchen walls, particularly if household cooking involves large amounts of boiling water and no operating exhaust fan. The cooking spatters and grease film on the walls combined with high humidity levels are an ideal source of nutrients for mold growth and development.

There are a number of steps that can be taken to prevent mold from growing in the home. Some can be as simple as increasing room ventilation while others may require professional assistance. To prevent mold from growing, you must eliminate the sources of moisture that supports mold growth. If mold is found growing in your home, there are three basic steps for removing it. Clean it up, dry it out, and disinfect it. Because mold grows on materials contaminated with soil and grease, it's important to keep all surfaces and household textiles clean. Use a grease-cutting solution of detergent and water to wash hard surfaces like walls and floors to remove dirt and grease that supports mold growth. Precautions should be taken when using strong cleaners. You should wear rubber gloves, and avoid breathing detergent powders or getting the powder in your eyes. Next, rinse with clear water to remove any cleaner residue. Then dry the newly cleaned area quickly and thoroughly using fans and if possible a de-humidifier. When the outside air is dry, you can help prevent mold growth in the basement by opening a basement window. The dry air will facilitate drying by absorbing some of the moisture from the area. When outside humidity levels are too high to open a window, you can assist the drying process by running your home furnace or air conditioner.

In order to kill mold growth, you must use a disinfectant. In the event of flooding, disinfectants are used to kill other micro-organisms that are also present with the mold. If your home was severely contaminated following a flood, you do need to protect yourself during clean up by wearing protective clothing. One of the most effective and least expensive disinfectants is Chlorine Bleach. Check the label and use only bleach with five and a quarter percent sodium hypochlorite. Following the directions on the label, a bleach solution can be applied to hard cleaned surfaces. Dirty walls on the other hand should be thoroughly cleaned with a detergent solution before disinfecting. For many hard surfaces disinfecting with a solution of one cup of bleach to one gallon of water is effective. To kill the mold, the area must be kept wet with the bleach for 10-15 minutes. Then quickly dry the area using a fan. Again, it's important to wear rubber gloves when using bleach solutions.

Soft textiles need to be treated in a similar manner - cleaned and thoroughly dried and disinfected if possible. Some products will disinfect hard surfaces but are ineffective for disinfecting textiles. To be sure that textiles that can be laundered are disinfected, use products with the EPA (Environmental Protection Agency) registration number and with specific directions for disinfecting laundry. Two types of disinfectants that are effective on fabrics, are chlorine bleaches, five and a quarter percent sodium hypochlorite and quaternary compounds. It's a good idea to check that care label on the fabric to determine if chlorine bleach can be safely used on it. Test for color change in an inconspicuous area of the fabric. Launder washable items with soap or detergent and chlorine bleach if the label indicates that you can use chlorine bleach on that fabric. On washable textiles that cannot be bleached with chlorine, limited success on removing stains can be obtained by using sodium borate or potassium monopersulfate. You should apply these chemicals at the hottest temperature that is safe for the fabric or what the care label allows. Then leave it in place for up to 12 hours. Again, it is important that you apply all

detergents and bleaches according to product instructions. On non-washable items, you should send them to the dry cleaner and inform them of the mildew stain. When you've discovered the mildew, you need to work quickly. You should take the mildew textiles out of doors and then brush, shake, sun, and air them.

Carpeting presents some additional challenges in dealing with mold because when it becomes wet, it's very difficult to dry quickly enough to prevent mold growth. When possible, carpeting should be lifted so that it and the floor underneath can dry thoroughly. To accelerate drying, you should use fans and de-humidifiers. When mold growth has started on the carpeting, both the carpet and the pad must be removed for cleaning and drying. Pads that contain mildew should be discarded because it's nearly impossible to clean and destroy all the mildew in a pad. Compared to carpeting, padding is a relatively low cost item. Most wall-to-wall carpeting is best cleaned by a professional rug cleaner or restorer. But if you decide to clean it yourself, the best results will occur with a carpet that can be removed from the floor. Apply rug shampoos with a carpet shampooer. Follow the manufacturer's directions. Be sure to remove all detergent used in cleaning because any that's left behind will accelerate future soiling. As was stated earlier, cleaning moldy carpets and pads is a difficult process, and in many cases, you'll find it's impossible to save the pad and carpeting and both end up being discarded.

When flooding has occurred, the likelihood of mold growth on contaminated materials is very great. Carpeting that has been soaked with flood waters must be discarded as well as other textile products such as contaminated mattresses, and upholstered furniture. Upholstered furniture and mattresses that contain mold, but not flood contaminated, may be cleaned. The first thing is to take upholstered pieces and mattresses outdoors and brush the surface mold away with a broom. Then vacuum clean, using an upholstery attachment on the surface to draw out the mold. Discard the disposable vacuum cleaner bag immediately or empty non-disposable bags out of doors to prevent the spread of mold spores. Place the mildewed item in the sun for a few hours and air thoroughly to stop further mold growth. If mildew remains, then you should use the services of a professional upholstery cleaner. In doing the cleaning yourself, sponge the items with thick dry soap or detergent suds, and wipe with a clean damp cloth. While doing this, you should avoid getting wet. Wipe the furniture with a cloth moistened with a solution of 1 cup denatured or rubbing alcohol to one cup water. Then dry thoroughly. If you discover that the mold is growing deep in the padding of an upholstered piece or mattress, then the only way to eliminate it is by renovation by a trained upholsterer or replacement of the item.

When flood waters soak paneling, dry wall, ceiling tile, and plaster, these materials are not salvageable and must be removed and discarded. In most cases, the flood waters have also entered the wall cavity, contaminating the structural components of the house. It's necessary to remove the wall board, ceiling tiles, and floor materials so that the structure of the house can dry out. On outside walls, it's also necessary to remove wet insulation. Because moisture can be wicked by these materials to a wider area that was originally flooded, be prepared to remove a large amount of material. When large areas need to be cleaned and disinfected, wall cavities and floors can be sprayed with a bleach solution and brushed with a broom. Do not replace wall board or flooring materials until these areas have thoroughly dried and this may take several weeks. Use fans, a de-humidifier, or air conditioning to help dry the area. It may be necessary to disinfect again as the walls dry out to prevent mold growth.

Mold in a home can be eliminated. The key is to control the excess humidity and to take action if mold is discovered.