

Mold Informational Flyer

Mold (information gathered from the Center for Disease Control and Prevention & U.S. Environmental Protection Agency)

Contents

Mold.....	1
Dampness and Mold in Buildings.....	2
Dampness and Mold Assessment Tool for Schools and General Buildings	3
General Information	3
You Can Control Mold.....	3
If You Have Mold in Your Home.....	4
If You Use Bleach to Clean up Mold.....	4
To Prevent Mold Growth in Your Home	4
Basic Facts about Mold and Dampness	5
How common is mold in buildings?.....	5
How do molds get in the indoor environment and how do they grow?	5
How do you know if you have a mold problem?	5
How do molds affect people?	5
Who is most at risk for health problems associated with exposure to mold?	6
How do you keep mold out of buildings and homes?	6
How do you get the molds out of buildings, including homes, schools, and places of employment?.....	6
Are there any circumstances where people should vacate a home or other building because of mold? ...	7
I found mold growing in my home; how do I test the mold?	7
A qualified environmental lab took samples of the mold in my home and gave me the results. Can CDC interpret these results?	8
I heard about “toxic molds” and “black molds” that grow in homes and other buildings. Should I be concerned about a serious health risk to me and my family?	8
Mold Remediation/Cleanup and Biocides	8

Mold

Mold Informational Flyer

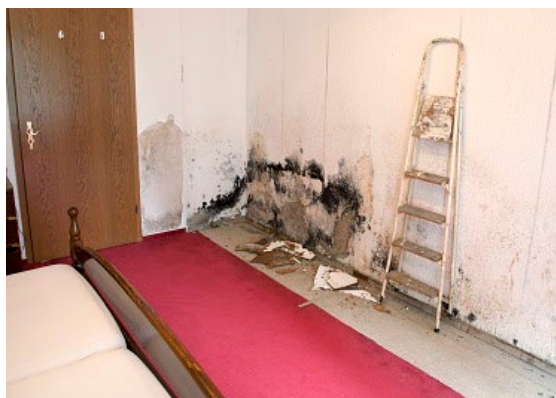
Mold can cause many health effects. For some people, mold can cause a stuffy nose, sore throat, coughing or wheezing, burning eyes, or skin rash. People with asthma or who are allergic to mold may have severe reactions. Immune-compromised people and people with chronic lung disease may get infections in their lungs from mold.

There is always some mold around. Molds have been on the Earth for millions of years. Mold can get in your home through open doors, windows, vents, and heating and air conditioning systems. Mold in the air outside can be brought indoors on clothing, shoes, bags, and even pets.

Mold will grow where there is moisture, such as around leaks in roofs, windows, or pipes, or where there has been a flood. Mold grows on paper, cardboard, ceiling tiles, and wood. Mold can also grow in dust, paints, wallpaper, insulation, drywall, carpet, fabric, and upholstery.

<https://www.cdc.gov/mold/default.htm>

Dampness and Mold in Buildings



Dampness results from water incursion from internal sources such as leaking pipes or external sources like rainwater and flooding. It becomes a problem when materials in buildings (e.g., rugs, walls, ceiling tiles) become wet for extended periods of time. Excessive moisture in the air, such as high relative humidity, can also lead to excessive dampness.

Sources of water incursion are often readily apparent (e.g., leaks in the roof or windows or a burst pipe). Dampness is less obvious when affected materials and water sources are hidden. Examples include wet insulation in a ceiling or moisture in building foundation due to sloping of surrounding land.

Indoor dampness can cause or worsen health problems with building occupants because it can:

- Cause the growth of bacteria and mold.
- Attract insects such as cockroaches, rodents, and dust mites.
- Cause release volatile organic compounds from wet building materials.

Mold Informational Flyer

Dampness and Mold Assessment Tool for Schools and General Buildings

The health of those who live, attend school, or work in damp buildings has been a growing concern for years. This is due to a broad range of reported building-related symptoms and illnesses. Research has found that people who spend time in damp buildings report health problems including the following:

- Respiratory symptoms such as in nose, throat, lungs
- Asthma developing or getting worse
- Development or worsening of asthma
- Hypersensitivity pneumonitis (a rare lung disease caused by an immune system response to breathing bacteria, fungi, organic dusts, and chemicals)
- Respiratory infections
- Allergic rhinitis (often called “hay fever”)
- Bronchitis
- Eczema

Exposures in damp buildings are complex. They vary from building to building and in different places within a building. Moisture allows indoor mold to multiply on building materials and surfaces. People inside buildings may be exposed to microbes and their structural components, such as spores and fungal fragments. Mold may produce substances that can cause or worsen health problems. These substances vary depending on the mold species and on conditions related to the indoor environment. Moisture can also attract cockroaches, rodents, and dust mites. Moisture-damaged building materials can release volatile organic compounds that can also cause health problems.

Researchers have not found exactly how much exposure to dampness-related substances it takes to cause health problems. Studies report that finding and correcting sources of dampness is more effective at preventing health problems than counting indoor microbes. NIOSH has developed a tool to help assess areas of dampness and prioritize remediation of problems areas in buildings.

<https://www.cdc.gov/niosh/topics/indoorenv/mold.html>

General Information

You Can Control Mold

Mold can cause many health effects. For some people, mold can cause a stuffy nose, sore throat, coughing or wheezing, burning eyes, or skin rash. People with asthma or who are allergic to mold may have severe reactions. Immune-compromised people and people with chronic lung disease may get infections in their lungs from mold.

There is always some mold around. Molds have been on the Earth for millions of years. Mold can get in your home through open doors, windows, vents, and heating and air conditioning systems. Mold in the air outside can be brought indoors on clothing, shoes, bags, and even pets.

Mold Informational Flyer

Mold will grow where there is moisture, such as around leaks in roofs, windows, or pipes, or where there has been a flood. Mold grows on paper, cardboard, ceiling tiles, and wood. Mold can also grow in dust, paints, wallpaper, insulation, drywall, carpet, fabric, and upholstery.

If You Have Mold in Your Home

Mold can look like spots. It can be many different colors, and it can smell musty. If you see or smell mold, you should remove it. You do not need to know the type of mold.

If mold is growing in your home, you need to clean up the mold and fix the moisture problem. Mold can be removed from hard surfaces with household products, soap and water, or a bleach solution of no more than 1 cup of household laundry bleach in 1 gallon of water.

If You Use Bleach to Clean up Mold

- Never mix bleach with ammonia or other household cleaners. Mixing bleach with ammonia or other cleaning products will produce a poisonous gas.
- Always follow the manufacturer's instructions when you use bleach or any other cleaning product.
- Open windows and doors to provide fresh air.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected areas.
- If you need to clean more than 10 square feet, check the U.S. Environmental Protection Agency (EPA) guide titled *Mold Remediation in Schools and Commercial Buildings*, which gives advice on all building types. You can get it by going to the EPA web site at <https://www.epa.gov/mold/mold-remediation-schools-and-commercial-buildings-guideexternal icon>.

To Prevent Mold Growth in Your Home

- Keep humidity levels in your home as low as you can—no higher than 50%—all day long. An air conditioner or dehumidifier will help you keep the level low. You can buy a meter to check your home's humidity at a home improvement store. Humidity levels change over the course of a day so you will need to check the humidity levels more than once a day.
- Be sure the air in your home flows freely. Use exhaust fans that vent outside your home in the kitchen and bathroom. Make sure your clothes dryer vents outside your home.
- Fix any leaks in your home's roof, walls, or plumbing so mold does not have moisture to grow.
- Clean up and dry out your home fully and quickly (within 24–48 hours) after a flood.
- Add mold inhibitors to paints before painting. You can buy mold inhibitors at paint and home improvement stores.
- Clean bathrooms with mold-killing products.
- Remove or replace carpets and upholstery that have been soaked and cannot be dried right away. Think about not using carpet in places like bathrooms or basements that may have a lot of moisture.
- To learn more about preventing mold in your home, see the Environmental Protection Agency's book *A Brief Guide to Mold, Moisture, and Your Home* at <https://www.epa.gov/sites/production/files/2016-10/documents/moldguide12.pdf>

https://www.cdc.gov/mold/control_mold.htm

Mold Informational Flyer

Basic Facts about Mold and Dampness

How common is mold in buildings?

Molds are very common in buildings and homes. Mold will grow in places with a lot of moisture, such as around leaks in roofs, windows, or pipes, or where there has been flooding. Mold grows well on paper products, cardboard, ceiling tiles, and wood products. Mold can also grow in dust, paints, wallpaper, insulation, drywall, carpet, fabric, and upholstery.

The most common indoor molds are *Cladosporium*, *Penicillium*, and *Aspergillus*. We do not have precise information about how often different molds are found in buildings and homes.

How do molds get in the indoor environment and how do they grow?

Mold is found both indoors and outdoors. Mold can enter your home through open doorways, windows, vents, and heating and air conditioning systems. Mold in the air outside can also attach itself to clothing, shoes, and pets and be carried indoors. When mold spores drop on places where there is excessive moisture, such as where leakage may have occurred in roofs, pipes, walls, plant pots, or where there has been flooding, they will grow. Many building materials provide suitable nutrients that encourage mold to grow. Wet cellulose materials, including paper and paper products, cardboard, ceiling tiles, wood, and wood products, are particularly conducive for the growth of some molds. Other materials such as dust, paints, wallpaper, insulation materials, drywall, carpet, fabric, and upholstery, commonly support mold growth.

How do you know if you have a mold problem?

Large mold infestations can usually be seen or smelled.

How do molds affect people?

Exposure to damp and moldy environments may cause a variety of health effects, or none at all. Some people are sensitive to molds. For these people, exposure to molds can lead to symptoms such as stuffy nose, wheezing, and red or itchy eyes, or skin. Some people, such as those with allergies to molds or with [asthma](#), may have more intense reactions. Severe reactions may occur among workers exposed to large amounts of molds in occupational settings, such as farmers working around moldy hay. Severe reactions may include fever and shortness of breath.

In 2004 the Institute of Medicine (IOM) found there was sufficient evidence to link indoor exposure to mold with upper respiratory tract symptoms, cough, and wheeze in otherwise healthy people; with asthma symptoms in people with asthma; and with hypersensitivity pneumonitis in individuals susceptible to that immune-mediated condition.

In 2009, the World Health Organization issued additional guidance, the [WHO Guidelines for Indoor Air Quality: Dampness and Mould pdf icon\[PDF – 2.65 MB\]external icon {Summary} pdf icon\[PDF – 167 KB\]](#). Other recent studies have suggested a potential link of early mold exposure to development of asthma in some children, particularly among children who may be genetically susceptible to asthma

Mold Informational Flyer

development, and that selected interventions that improve housing conditions can reduce morbidity from asthma and respiratory allergies.

A link between other adverse health effects, such as [acute idiopathic pulmonary hemorrhage among infants](#), memory loss, or lethargy, and molds, including the mold [Stachybotrys chartarum](#) has not been proven. Further studies are needed to find out what causes acute idiopathic hemorrhage and other adverse health effects.

There is no blood test for mold. Some physicians can do allergy testing for possible allergies to mold, but no clinically proven tests can pinpoint when or where a particular mold exposure took place.

Who is most at risk for health problems associated with exposure to mold?

People with allergies may be more sensitive to molds. People with immune suppression or underlying lung disease are more susceptible to fungal infections. Individuals with chronic respiratory disease (e.g., chronic obstructive pulmonary disorder, asthma) may experience difficulty breathing. Individuals with immune suppression are at increased risk for infection from molds. If you or your family members have these conditions, a qualified medical clinician should be consulted for diagnosis and treatment.

How do you keep mold out of buildings and homes?

Inspect buildings for evidence of water damage and visible mold as part of routine building maintenance. Correct conditions causing mold growth (e.g., water leaks, condensation, infiltration, or flooding) to prevent mold growth.

Inside your home you can control mold growth by:

- Controlling humidity levels;
- Promptly fixing leaky roofs, windows, and pipes;
- Thoroughly cleaning and drying after flooding;
- Ventilating shower, laundry, and cooking areas.

Specific Recommendations:

- Keep humidity levels as low as you can—between 30% and 50%—all day long. An air conditioner or dehumidifier will help you keep the level low. Bear in mind that humidity levels change over the course of a day with changes in the moisture in the air and the air temperature, so you will need to check the humidity levels more than once a day.
- Use an air conditioner or a dehumidifier during humid months.
- Be sure your home has enough ventilation. Use exhaust fans which vent outside your home in the kitchen and bathroom. Make sure your clothes dryer vents outside your home.
- Fix any leaks in your home's roof, walls, or plumbing so mold does not have moisture to grow.
- Consider not using carpet in rooms or areas like bathrooms or basements that may have a lot of moisture.

How do you get the molds out of buildings, including homes, schools, and places of employment?

Mold growing in homes and buildings indicates that there is a problem with water or moisture. This is the first problem to address.

Mold Informational Flyer

Remove moldy items from living areas. Once mold starts to grow in carpet, insulation, ceiling tiles, drywall, or wallboard, the only way to deal with the problem is by removal and replacement.

It is important to properly clean and dry the area as you can still have an allergic reaction to parts of the dead mold and mold contamination may recur if there is still a source of moisture.

Remove or replace carpets and upholstery that have been soaked and cannot be dried promptly.

Clean up and dry out your home thoroughly and quickly (within 24-48 hours) after any flooding. Dig out mud and dirt. Use a wet vacuum to remove remaining dirt. Scrub cleanable surfaces (such as wood, tile, stone) with soapy water and a bristle brush. Thoroughly clean all hard surfaces (such as flooring, molding, wood and metal furniture, countertops, and sinks) with water and dish detergent. Dry surfaces quickly and thoroughly after cleaning. If you have a fan, air conditioner or dehumidifier that wasn't affected by flooding use it to help the surfaces dry after you finish cleaning.

Mold growth can be removed from hard surfaces with commercial products, soap and water, or a [bleach solution](#) of *no more than* 1 cup (8 ounces) of bleach in 1 gallon of water to kill mold on surfaces. Never mix bleach with ammonia or other household cleaners.

If you choose to use bleach to clean up mold:

- Never mix bleach with ammonia or other household cleaners. Mixing bleach with ammonia or other cleaning products will produce dangerous, toxic fumes.
- Open windows and doors to provide fresh air.
- Wear non-porous gloves and protective eye wear.
- Small areas (such as a shower, or an area the size of a door) can often be cleaned by residents, but larger areas might need more professional help. Always follow the manufacturer's instructions when using bleach or any other cleaning product.

If you have an extensive amount of mold and you do not think you can manage the cleanup on your own, you may want to contact a professional who has experience in cleaning mold in buildings and homes.

Are there any circumstances where people should vacate a home or other building because of mold?

These decisions have to be made individually. If you believe you are ill because of exposure to mold in a building, you should consult your physician to determine the appropriate action to take.

I found mold growing in my home; how do I test the mold?

If you can see or smell mold, a health risk may be present. You do not need to know the type of mold growing in your home, and CDC does not recommend or perform routine sampling for molds. No matter what type of mold is present, you should remove it. Since the effect of mold on people can vary greatly, either because of the amount or type of mold, you cannot rely on sampling and culturing to know your health risk.

Mold Informational Flyer

A qualified environmental lab took samples of the mold in my home and gave me the results. Can CDC interpret these results?

Standards for judging what is an acceptable, tolerable or normal quantity of mold have not been established. Sampling for mold can be expensive, and standards for judging what is and what is not an acceptable quantity of mold have not been set. The best practice is to remove the mold and work to prevent future growth. If you do decide to pay for environmental sampling for molds, before the work starts, you should ask the consultants who will do the work to establish criteria for interpreting the test results. They should tell you in advance what they will do or what recommendations they will make based on the sampling results. The results of samples taken in your unique situation cannot be interpreted without physical inspection of the contaminated area or without considering the building's characteristics and the factors that led to the present condition.

I heard about “toxic molds” and “black molds” that grow in homes and other buildings. Should I be concerned about a serious health risk to me and my family?

There is always a little mold everywhere – in the air and on many surfaces.

Certain molds are toxigenic, meaning they can produce toxins (specifically “mycotoxins”). Hazards presented by molds that may produce mycotoxins should be considered the same as other common molds which can grow in your house. Not all fungi produce mycotoxins and even those that do will not do so under all surface or environmental conditions.

Mold growth, which often looks like spots, can be many different colors, and can smell musty. Color is not an indication of how dangerous a mold may be. Any mold should be removed and the moisture source that helped it grow should be removed.

There are very few reports that toxigenic molds found inside homes can cause unique or rare health conditions such as pulmonary hemorrhage or memory loss. These case reports are rare, and a causal link between the presence of the toxigenic mold and these conditions has not been proven.

<https://www.cdc.gov/mold/faqs.htm>

Mold Remediation/Cleanup and Biocides

The purpose of mold remediation is to remove the mold to prevent human exposure and damage to building materials and furnishings. It is necessary to clean up mold contamination, not just to kill the mold. Dead mold is still allergenic, and some dead molds are potentially toxic. **The use of a biocide, such as chlorine bleach, is not recommended as a routine practice during mold remediation, although there may be instances where professional judgment may indicate its use** (for example, when immune-compromised individuals are present). In most cases, it is not possible or desirable to sterilize an area; a background level of mold spores will remain in the air (roughly equivalent to or lower than the level in outside air). These spores will not grow if the moisture problem in the building has been resolved.

If you choose to use disinfectants or biocides, always ventilate the area. Outdoor air may need to be brought in with fans. When using fans, take care not to distribute mold spores throughout an unaffected area. Biocides are toxic to humans, as well as to mold. You should also use appropriate PPE and read and

Mold Informational Flyer

follow label precautions. **Never mix chlorine bleach solution with cleaning solutions or detergents that contain ammonia; toxic fumes could be produced.**

Some biocides are considered pesticides, and some States require that only registered pesticide applicators apply these products in schools. Make sure anyone applying a biocide is properly licensed, if necessary. Fungicides are commonly applied to outdoor plants, soil and grains as a dust or spray — examples include:

- Hexachlorobenzene
- Organomercurials
- Pentachlorophenol
- Phthalimides
- Dithiocarbamates

Do not use fungicides developed for use outdoors for mold remediation or for any other indoor situation.



https://www.epa.gov/mold/mold-remediation-schools-and-commercial-buildings-guide-chapter-3#Table_2