



## Molds in the Environment

### What are molds?

Molds are fungi that can be found both indoors and outdoors. No one knows how many species of fungi exist but estimates range from tens of thousands to perhaps three hundred thousand or more. Molds grow best in warm, damp, and humid conditions, and spread and reproduce by making spores. Mold spores can survive harsh environmental conditions, such as dry conditions, that do not support normal mold growth.

### What are some of the common indoor molds?

- *Cladosporium*
- *Penicillium*
- *Alternaria*
- *Aspergillus*

### How do molds affect people?

Some people are sensitive to molds. For these people, exposure to molds can cause symptoms such as nasal stuffiness, eye irritation, wheezing, or skin irritation. Some people, such as those with serious allergies to molds, may have more severe 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. Some people with chronic lung illnesses, such as obstructive lung disease, may develop mold infections in their lungs.

### Where are molds found?

Molds are found in virtually every environment and can be detected, both indoors and outdoors, year round. Mold growth is encouraged by warm and humid conditions. Outdoors they can be found in shady, damp areas or places where leaves or other vegetation is decomposing. Indoors they can be found where humidity levels are high, such as basements or showers.

### How can people decrease mold exposure?

Sensitive individuals should avoid areas that are likely to have mold, such as compost piles, cut grass, and wooded areas. Inside homes, mold growth can be slowed by keeping humidity levels between 40% and 60%, and ventilating showers and cooking areas. If there is mold growth in your home, you should clean up the mold and fix the water problem. Mold growth can be removed from hard surfaces with commercial products, soap and water, or a bleach solution<sup>1</sup> of no more than 1 cup of bleach in 1 gallon of water.

Specific Recommendations:

- Keep the humidity level in the house between 40% and 60%.
- Use an air conditioner or a dehumidifier during humid months.
- Be sure the home has adequate ventilation, including exhaust fans in kitchen and bathrooms.
- Add mold inhibitors to paints before application.
- Clean bathrooms with mold killing products.
- Do not carpet bathrooms and basements.
- Remove or replace previously soaked carpets and upholstery.

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### **What areas have high mold exposures?**

- Antique shops
- Greenhouses
- Saunas
- Farms
- Mills
- Construction areas
- Flower shops
- Summer cottages

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

Generally, it is not necessary to identify the species of mold growing in a residence, and CDC does not recommend routine sampling for molds. Current evidence indicates that allergies are the type of diseases most often associated with molds. Since the susceptibility of individuals can vary greatly either because of the amount or type of mold, sampling and culturing are not reliable in determining your health risk. If you are susceptible to mold and mold is seen or smelled, there is a potential health risk; therefore, no matter what type of mold is present, you should arrange for its removal. Furthermore, reliable sampling for mold can be expensive, and standards for judging what is and what is not an acceptable or tolerable quantity of mold have not been established.

### **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. 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.

### **What type of doctor should I see concerning mold exposure?**

You should first consult a family or general health care provider who will decide whether you need referral to a specialist. Such specialists might include an allergist who treats patients with mold allergies or an infectious disease physician who treats mold infections. If an infection is in the lungs, a pulmonary physician might be recommended. Patients who have been exposed to molds in their workplace may be referred to an occupational physician. CDC is not a clinical facility. CDC does not see patients, diagnose illness, provide treatment, prescribe medication, or provide referrals to health care providers.

### **My landlord or builder will not take any responsibility for cleaning up the mold in my home. Where can I go for help?**

If you feel your property owner, landlord, or builder has not been responsive to concerns you've expressed regarding mold exposure, you can contact your local board of health or housing authority. Applicable codes, insurance, inspection, legal, and similar issues about mold generally fall under state and local (not federal) jurisdiction. You could also review your lease or building contract and contact local or state government authorities, your insurance company, or an attorney to learn more about local codes and regulations and your legal rights. CDC does not have enforcement power in such matters, nor can we provide you with advice. You can contact your county or state health department about mold issues in your area to learn about what mold assessment and remediation services they may offer. You can find information on your state's Indoor Air Quality program at [http://www.cdc.gov/nceh/airpollution/indoor\\_air.htm](http://www.cdc.gov/nceh/airpollution/indoor_air.htm).

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### **I'm sure that mold in my workplace is making me sick.**

If you believe you are ill because of exposure to mold in the building where you work, you should first consult your health care provider to determine the appropriate action to take to protect your health. Notify your employer and, if applicable, your union representative about your concern so that your employer can take action to clean up and prevent mold growth. To find out more about mold, remediation of mold, or workplace safety and health guidelines and regulations, you may also want to contact your local (city, county, or state) health department.

You should also read the U.S. Environmental Protection Agency (EPA) Guidelines, *Mold Remediation in Schools and Commercial Buildings*, at [http://www.epa.gov/iaq/molds/mold\\_remediation.html](http://www.epa.gov/iaq/molds/mold_remediation.html).

### **I am very concerned about mold in my children's school and how it affects their health.**

If you believe your children are ill because of exposure to mold in their school, first consult their health care provider to determine the appropriate medical action to take. Contact the school's administration to express your concern and to ask that they remove the mold and prevent future mold growth. If needed, you could also contact the local school board.

CDC is not a regulatory agency and does not have enforcement authority in local matters. Your local health department may also have information on mold, and you may want to get in touch with your state Indoor Air Quality office. Information on this office is available at [http://www.cdc.gov/nceh/airpollution/indoor\\_air.htm](http://www.cdc.gov/nceh/airpollution/indoor_air.htm).

You can also read the U.S. Environmental Protection Agency (EPA) guidelines, *Mold Remediation in Schools and Commercial Buildings*, at [http://www.epa.gov/iaq/molds/mold\\_remediation.html](http://www.epa.gov/iaq/molds/mold_remediation.html). Also, see these Web sites for more indoor air quality tools for schools:

- <http://www.epa.gov/iaq/schools/tfs/guidtoc.html>
- <http://www.epa.gov/iaq/schools/tfs/guideh.html>
- [http://www.healthyschools.org/guides\\_materials.html](http://www.healthyschools.org/guides_materials.html)

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<sup>1</sup> 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.
- If the area to be cleaned is more than 10 square feet, consult the U.S. Environmental Protection Agency (EPA) guide titled *Mold Remediation in Schools and Commercial Buildings*. Although focused on schools and commercial buildings, this document also applies to other building types. You can get it free by calling the EPA Indoor Air Quality Information Clearinghouse at (800) 438-4318, or by going to the EPA web site at [http://www.epa.gov/mold/mold\\_remediation.html](http://www.epa.gov/mold/mold_remediation.html).
- Always follow the manufacturer's instructions when using bleach or any other cleaning product.