



Molds in the Environment

What are molds?

Molds are microscopic fungi that live on plant or animal matter. No one knows how many species of fungi exist, but estimates range from tens of thousands to perhaps three hundred thousand or more. Most are filamentous organisms and the production of spores is characteristic of fungi in general. These spores can be air-, water-, or insect-borne.

What are some of the common indoor molds?

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

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, or wheezing. 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. People with chronic 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 below 50% and ventilating showers and cooking areas. Mold growth can be removed with commercial products or a weak bleach solution (1 cup of bleach in 1 gallon of water). In situations where mold exposure is unavoidable, sensitive people should wear a tight-fitting face mask.

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Specific Recommendations for Decreasing Mold Exposure:

- Keep the humidity level in the house below 50%.
- 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.

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.

Some additional information on fungi and fungal diseases at the CDC Web site:

CDC/NCID Division of Bacterial and Mycotic Diseases: [Fungal Diseases](http://www.cdc.gov/ncidod/dbmd/)
[<http://www.cdc.gov/ncidod/dbmd/>]

NIOSH Publication: [HISTOPLASMOSIS: Protecting Workers at Risk](http://www.cdc.gov/spanish/niosh/docs/97-146sp.html)
[<http://www.cdc.gov/spanish/niosh/docs/97-146sp.html>]

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Emerging Infectious Diseases article: "[Emerging Disease Issues and Fungal Pathogens Associated with HIV Infection](http://www.cdc.gov/ncidod/EID/vol2no2/ampel.htm)" [<http://www.cdc.gov/ncidod/EID/vol2no2/ampel.htm>] by Neil M. Ampel, M.D. University of Arizona College of Medicine, Tucson Veterans Affairs Medical Center, Tucson, Arizona, USA

Emerging Infectious Diseases article: "[Coccidioidomycosis: A Reemerging Infectious Disease](http://www.cdc.gov/ncidod/EID/vol2no3/kirkland.htm)" [<http://www.cdc.gov/ncidod/EID/vol2no3/kirkland.htm>] by Theo N. Kirkland, M.D., and Joshua Fierer, M.D., Departments of Pathology and Medicine, University of California, San Diego School of Medicine and Department of Veterans Affairs Medical Center, San Diego, California, USA

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