

Molds in Indoor Workplaces

Molds are forms of fungi that are found indoors and outdoors.

You are exposed to them daily in the air you breathe. Sometimes molds grow excessively inside your workplace and can cause different types of illnesses. Most workers will not be affected by molds. Some workers have symptoms like those of hay fever and the common cold, but they can last for longer periods. Molds can also aggravate asthma. In addition, some people in wet or moldy buildings may have flu-like symptoms. Most health problems are temporary and can be controlled by limiting exposure to molds.

How do I know I am being exposed to molds at work?

Molds need moisture and a food source (organic material). Molds can be any color, including white, orange, green, brown, or black. Even if you cannot see any molds, you may notice a mildew or earthy smell. They may be found indoors on wet/damp walls, carpets, ceilings, or behind wallpaper, as well as in heating, ventilation, and air conditioning (HVAC) systems. Indoor moisture leading to the growth of molds and other micro-organisms may come from flooding, leaks, high humidity, and steam.

Symptoms also can indicate that you are exposed to molds at work. See “Health Effects of Mold Exposure” on page 3. If you have symptoms, observe when they occur. They may be work-related if they worsen when you are at work, and disappear or lessen at home or on weekends, or during vacations. The onset of symptoms depends on your individual reaction to molds.

How do I get exposed to molds?

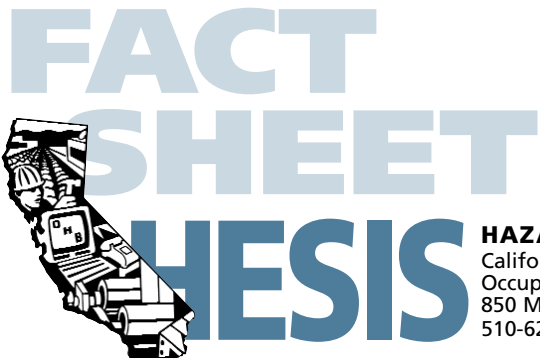
Molds produce seed-like spores that are small enough to travel through the air. You can breathe in spores or come into contact with them. Sometimes molds also produce chemicals called mycotoxins, which are attached to the spores and other parts of the mold. You may be exposed to mycotoxins at the same time you are exposed to molds. Mycotoxins are produced only under certain environmental conditions.

How can molds affect my health?

Molds can cause allergic reactions, fungal infections, and other health effects. Most workers, however, will have no reaction at all when exposed to molds (see page 3). Some workers have underlying health conditions that make them more sensitive to effects of mold exposure.

Allergic reactions, similar to common pollen or animal allergies, are the most common health effects of molds. Allergic and toxic illnesses can be treated by getting rid of the mold exposure. Your doctor may also prescribe medication to control symptoms.

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In almost all cases of allergic or other illnesses, the symptoms are temporary. However, a small percentage of people may experience longer recovery times.

Fungal infections of internal organs are rare. They require immediate medical attention and treatment.

The symptoms described on page 3 for mold exposure can also be due to other causes such as bacterial or viral infections, or other allergies. Therefore, it is important to tell your doctor if you are concerned about exposure to molds. If possible, have your doctor refer you to, or consult with, an occupational medicine physician to help determine if the illness is work-related. An occupational medicine physician can also help identify other workplace conditions that could be related to your symptoms.

What do I do about molds in the workplace?

There are no standards to say how much mold is hazardous to your health. There should not be visible mold growth or strong moldy odors in the workplace.

Report mold problems. If you see or smell mold, or if you or others are experiencing mold-related symptoms, report it so the problem can be investigated. You may need to tell your employer, supervisor, health and safety officer, union representative, or school board. Find out whether co-workers are experiencing any of the listed symptoms. See if a particular office, floor, or area is affected. Your workplace Injury and Illness Prevention Plan (Title 8, California Code of Regulations, Section 3203) must describe a procedure for employees to report hazards to the employer. Your employer must correct uncontrolled indoor accumulation of water that may cause mold. (Title 8, California Code of Regulations, Section 3362). Cal/OSHA enforces these regulations (see page 4).

**What about Stachybotrys?
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If you have symptoms see a doctor. If possible, go to an occupational health clinic. Take this factsheet in to show your doctor, and refer to HESIS if there are further questions (see 'Resources'). If your illness is work-related, your doctor may recommend your removal from the workplace and you may be eligible for workers' compensation benefits. Make sure your doctor fills out a Doctor's First Report of Occupational Injury or Illness (DFR), a form necessary for a successful claim.

Clean up mold contamination. Mold should be removed right away. No one with symptoms, or with a higher likelihood of mold-related illness (see box, page 3), should participate in mold removal.

- Focus on fixing the problem, not testing for mold. A thorough investigation should reveal all sources of mold and moisture. Environmental sampling is usually unnecessary, since all types of molds should be eliminated.
- Scrub hard surfaces (tile, concrete, vinyl, undamaged wood) with ordinary household cleaning products. Bleach is not necessary. Use waterproof gloves.
- Moldy porous materials (carpet, ceiling tile, wallboard, softened wood) usually require removal and replacement. For extensive removal jobs (greater than 30 square feet), HESIS recommends using a contractor specializing in this kind of work. There is no state license specifically for mold removal or cleanup.
- Ensure that workers who remove moldy materials use gloves, eye protection, coveralls, head and shoe covers, and properly fitted respirators. See the recommended respiratory protection program (Title 8, California Code of Regulations, Section 5144). Choose N-95 respirators (not dust masks) in most situations. Make sure mold removal workers are trained about dust control methods, use of personal protective equipment, and health risks.
- Avoid using toxic chemicals. Fungicides and disinfectants are rarely appropriate, and may endanger building occupants. Don't use ozone generators; ozone can harm your lungs. Mold-resistant paints may contain toxic additives. No chemical can substitute for regular cleaning.

Avoid exposure during mold cleanup.

The highest exposure to mold often occurs during cleanup. You may need to temporarily leave work

Health Effects of Mold Exposure

ALLERGIC REACTIONS

➔ **Dermatitis** – Red itchy skin and/or rash.

➔ **Asthma** – May be aggravated or caused by exposure to mold, resulting in acute attacks of coughing, wheezing, and shortness of breath. Reactions usually occur within minutes after exposure, and may repeat 6-10 hours later.

➔ **Allergic rhinitis or sinusitis** – Similar to hay fever or the common cold, but over an extended period of time. Symptoms include a runny nose, nasal or sinus congestion, irritated or red eyes, irritated or scratchy throat, and cough. Reactions occur quickly after exposure to molds.

➔ **Hypersensitivity pneumonitis (extrinsic allergic alveolitis)** – Involves the lungs and body. Symptoms include tightness in the chest, difficulty breathing, cough, fever, and muscle aches. Reactions occur 6-8 hours after exposure. **RARE**

FUNGAL INFECTIONS

➔ **Invasive pulmonary aspergillosis** – Only occurs in the severely immunocompromised. Symptoms include pneumonia plus fever, bone pain, chills, headache, and weight loss. **RARE**

➔ **Aspergilloma (formed in a pre-existing healed lung abscess)** – Symptoms include cough, coughing up blood, and weight loss. **RARE**

OTHER EFFECTS

➔ Reported symptoms in damp buildings include fatigue, headache, fever, muscle ache, difficulty concentrating and mood changes. The cause of these symptoms is not completely understood.

Most people will have no reaction at all when exposed to molds.

Workers with a higher likelihood of mold-related illness include those who:

- Have other allergies
- Have existing respiratory conditions including asthma or other lung diseases
- Are moderately immunocompromised (such as diabetic) or severely immunocompromised (have AIDS or leukemia, receiving chemotherapy, or are organ transplant recipients)
- Are elderly

areas where cleanup is occurring, especially if you have symptoms or underlying medical conditions that increase your risk of mold-related illnesses.

Eliminate and control the source of moisture. As long as moisture is present the mold will return, so the source of the moisture must be eliminated and the building properly maintained.

Monitor symptoms after cleanup. If the symptoms persist after cleanup, they may not be related to molds, or the cleanup effort was

unsuccessful. You and your doctor should explore other possible causes of illness. If there are other indoor air quality problems or the cleanup was not adequate, your employer may need professional assistance. ■

RESOURCES

ORGANIZATIONS

- **HESIS** can answer questions about the health effects of molds and other workplace hazards for California workers, employers, and health care professionals, call toll-free (866) 282-5516.
- **Occupational health clinics** can be found at the University of California:
 - UC San Francisco/SFGH Occupational and Environmental Medicine Clinic: (415) 885-7580.
 - UC Davis Occupational and Environmental Health Clinic: (530) 754-7635.
 - UC Irvine Occupational and Environmental Clinic: (949) 824-8641.
 - UC San Diego Occupational and Environmental Clinic: (619) 471-9210.
- **California Division of Occupational Safety and Health (Cal/OSHA)** can cite an employer for unsanitary conditions, including uncontrolled water accumulation, that may promote mold growth; see <http://www.dir.ca.gov/title8/3362.html>. Employees who need information on workplace health and safety regulations, or who want to file a complaint, should call the nearest district office of Cal/OSHA. Call (510) 286-7000 or see www.dir.ca.gov/DOSH/districtoffices.htm to find out which District Office covers your workplace. Your identity will be kept confidential.
- **Employers** who want free, non-enforcement help to evaluate the workplace and to improve health and safety conditions can call the Cal/OSHA Consultation Service at (800) 963-9424.

PUBLICATIONS

- **Workers' Compensation in California: A Guidebook for Injured Workers** from California Department of Industrial Relations. **English:** <http://www.dir.ca.gov/InjuredWorkerGuidebook/InjuredWorkerGuidebook.html>. **Spanish:** <http://www.dir.ca.gov/InjuredWorkerGuidebook/Spanish/InjuredWorkerGuidebook.htm>
- **EPA guide *Mold Remediation in Schools and Commercial Buildings***, <https://www.epa.gov/mold/mold-remediation-schools-and-commercial-buildings-guide>
- **"Indoor Air Quality Tools for Schools"** is a kit developed by the EPA to help with investigation of indoor air issues at schools. See <https://www.epa.gov/iaq-schools/take-action-improve-indoor-air-quality-schools> or call 1-800-438-4318.
- **Listings of indoor air quality consultants** can be obtained from the California Department of Health Services' Indoor Air Quality Program; see www.cal-iaq.org then link to "Guidance on Finding an IAQ Consultant" and "Guidance on Hiring IAQ Consultants." The American Industrial Hygiene Association also has consultant listings; see www.aiha.org.

What about *Stachybotrys*?

Stachybotrys chartarum (also known as *Stachybotrys atra*) is a greenish-black mold that grows on materials with high cellulose content (drywall, wood and paper, and dropped ceiling tiles). This mold, like some other molds, produces chemicals called mycotoxins under certain environmental conditions. Health effects of breathing mycotoxins are not well understood.

Here are the most important things to know:

- Not all black molds are *Stachybotrys*, and not all *Stachybotrys* produces mycotoxins.
- While still alive, *Stachybotrys* is slimy and does not release many spores or mycotoxins. Exposure is low unless it dries up, when spores and mycotoxins (if present) are released into the air.
- There is no diagnostic test to determine if you are currently exposed to *Stachybotrys*.
- All indoor molds are potential health hazards and need to be cleaned up.

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