

What is Mold?



Mold is technically a type of multicellular fungus. There are over 100,000 different species of fungus. This includes mildews, smuts, truffles, slime molds, yeast, molds, rusts, mushrooms and puffballs. Mold is found almost everywhere, in the air and on many surfaces. They come in a variety of colors and thrive off of moisture. In nature, they help break down dead plants and animals and are an important part of the ecosystem (Mazur et al. 2006).

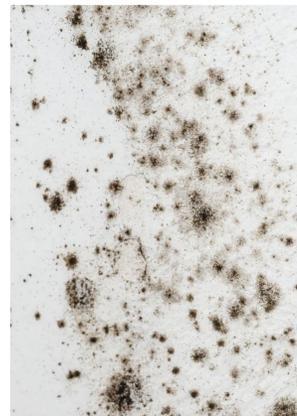
https://en.wikipedia.org/wiki/Fungus#/media/File:Fungi_collage.jpg

When is Mold a Problem?

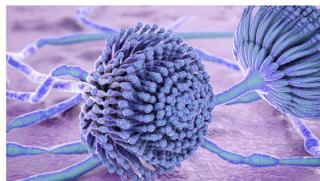
In small amounts mold spores typically carry no threat. However, when given the damp environment they thrive in, mold can grow excessively. This creates a larger quantity of spores that can be inhaled or ingested and lead to the experience of certain health problems. Dampness and mold in buildings was associated with a 30-50% increase in adverse respiratory health outcomes (Fisk, Lei-Gomez & Mendell, 2007).

What is Toxicogenic Mold?

Toxicogenic (producing a toxin or toxic effect) mold is commonly known as toxic mold or black mold. The most common strain of toxicogenic mold is *Stachybotrys chartarum* (CDC - Mold - General Information: Facts about *Stachybotrys chartarum* and Other Molds, 2017). Typically dark green or black, this kind of mold releases mycotoxins, which can create more severe negative health effects in humans than nontoxicogenic mold spores.



<https://www.apartmenttherapy.com/black-mold-symptoms-cleaning-removal-health-effects-254381>



<http://www.dutchanatomy.com/chronic-fungal-infection-as-a-cause-of-disease-the-toxicity-of-mycotoxins/>

How Do I Know if I Have a Mold Problem in My Home?

Larger mold infestations are usually seen or they can be smelled. Sometimes though, mold can grow in attics, behind walls, or in hard-to-see-places, making them harder to find. Houses damaged by floods or located in humid environments are more at risk for infestations (A Brief Guide to Mold, Moisture, and Your Home, 2012).

Known Health Effects

Exposure to mold has been shown to lead to many different adverse symptoms in humans including:

- ❖ Stuffy nose
- ❖ Wheezing
- ❖ Red or itchy eyes
- ❖ Asthma
- ❖ Fever

(Mold 101: Effects on Human Health, n.d.)

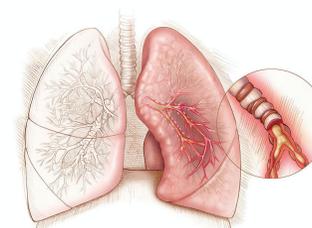
People with mold allergies may have more severe symptoms and exacerbated illnesses such as:

- ❖ Severe asthma
- ❖ Hypersensitivity pneumonitis
- ❖ Allergic rhinitis
- ❖ Bronchopulmonary aspergillosis
- ❖ Sinusitis

(Spectrum of noninfectious health effects from molds, 2006)



<https://www.bustmold.com/resources/about-mold/health-effects-of-mold/>



<https://www.everydayhealth.com/hs/managing-severe-asthma/what-is-severe-asthma/>

Hypothesized Health Effects

The negative effects of mycotoxins and molds on the human body cannot be tested directly on individuals for obvious ethical reasons. Historically, there is a claim that is not possible to prove association between indoor mold exposure and health problems (especially non-respiratory diseases) Recently, more and more conclusive evidence has been found through animal trials and other studies that shows that mycotoxins in mold could catalyze multiple unknown health problems for people (Rosen, 2015).

For example, studies have found that mold mycotoxins can be ingested and exposed to the digestive tract. In animal studies, it is well documented that exposure to mycotoxins can cause things ranging from growth impairment, hepato- and nephrotoxicity, decreased resistance to pathogens, and death (Grenier & Applegate, 2013).

We are starting to realize how important gut flora and good bacteria is to our intestines. When they become out of balance (dysbiosis), many adverse health effects are hypothesized to occur (Rosen, 2015).

Although very uncommon, molds and mycotoxins have been found growing in the brains, lungs, and liver of deceased patients (Rosen, 2015).



<https://www.houselogic.com/by-room/bathroom-laundry/bathroom-mold/>



<https://www.medicalnewstoday.com/articles/288651.php>

Prevention and Remediation

- ❖ The most effective way to manage mold growth is to inhibit conditions that foster their establishment (damp environments)
- ❖ Fix leaky pipes (or if renting, request landlord/management do so)
- ❖ Ensure indoor environments have proper ventilation
- ❖ Clean up wet spots and condensation quickly
- ❖ Bleach and dish detergent are helpful household items that will help when cleaning mold (or if renting, request landlord/management do so)
- ❖ In extreme cases, services specializing in remediation should be called

(A Brief Guide to Mold, Moisture, and Your Home, 2012)

Montana State University Student Survey

A group of five students conducted a survey to find out basic housing formation and different renting issues students face on the MSU campus. This questionnaire was sent out to 1,000 undergraduate and graduate students of MSU. A total of 155 students responded.

One of the questions asked was if how familiar they were with mold issues.

- ❖ 20.66% responded that they were unfamiliar with black mold
- ❖ 31.40% responded that they were slightly familiar
- ❖ 33.08% responded they were moderately familiar
- ❖ 14.88% responded that they were extremely familiar with black mold

We also asked if black mold was a health risk in their current living situation.

- ❖ 9.09% responded yes
- ❖ 24.79% responded unsure
- ❖ 66.12% responded no

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