



ATI

**DISASTER
RECOVERY
SERVICES**

**BLACK MOLD
STACHYBOTRYS CHARTARUM**

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Introduction

MOLD AND GROWTH

There are over 2,000 different species of mold. The most common indoor molds are *Cladosporium*, *Penicillium*, and *Aspergillus*. However, the most dangerous of all is called *Stachybotrys Chartarum*, also known as black mold or the “invisible killer.”

Mold spores are microscopic, and found virtually everywhere, including naturally in the air we breathe, both indoors and outdoors. Spores are tiny and lightweight, and can easily become airborne. Every time we vacuum, walk on carpet, or sit on a couch, mold spores can be projected into the air. Floating mold spores can enter a space through doorways, windows, or HVAC systems, then attach to skin, clothes, drapes, furniture, carpet, and even pets. If these spores are exposed to moist surfaces, they quickly multiply and spread, manifesting into the recognizable black micro-fungus.

High-moisture areas experience the most mold infestations (leaks in roofs, windows, pipes, etc.). Some building materials are prone to moisture, like wood, drywall, wallpaper, insulation materials, carpet, paints, and ceiling tiles. Mold can also grow on everyday household products, such as paper, cardboard, and upholstery. Any cellulose, fibrous, or porous material, if wet, can provide the catalyst for expansive growth.

Moisture and material aren't the only factors behind growth. Mold grows faster in the summer months, thriving in warm, humid conditions. Temperatures around 70 degrees Fahrenheit (20 degrees Celsius) are ideal for growth and multiplication. However, winter doesn't necessarily mean that we're in the clear. Although it can't reproduce at temperatures below freezing, it can survive in dormancy and begin growing in the spring.



There are over 2,000 different species of mold. The most dangerous of all, pictured here, is called *Stachybotrys Chartarum*, also known as black mold or the “invisible killer.”



A Negative Air Machine equipped with HEPA (High Efficiency Particulate Air) filtration is commonly used to create a negative pressure environment in the workspace as well as filter harmful particles such as mold spores.

What is Black Mold?

STACHYBOTRYS CHARTARUM

Stachybotrys chartarum is a dark greenish-black mold, slimy when wet and thriving, and is usually accompanied by a distinctive odor. If its water source runs out and the moisture is dried, black mold can also appear dry and powdery. Black mold is one of the most toxic molds found in homes and buildings. It produces mycotoxins, capable of creating a range of health problems and causing death in both humans and other animals.

As with all molds, the primary factor in black mold growth is moisture. Once it begins to grow, it can spread across a structure within 24 to 48 hours. **It colonizes in one to twelve days and grows at one square inch per day.** In less than a week, it can cover surface areas of several thousand square feet.

Mycotoxins can be carcinogenic (cause cancer), mutagenic (change genetic material), teratogenic (cause abnormal fetal development), hepatotoxic (damage or destroy liver cells), nephrotoxic (damage or destroy kidney cells), immunosuppressive, and embryotoxic (cause abnormal embryonic development).

Unfortunately, black mold is usually already widespread before the problem is suspected by the building- or homeowners. Yet another reason why black mold is considered so dangerous is due to difficulty distinguishing it from other, similar looking molds.



Health Risks

MYCOTOXINS IN MOLD SPORES

Exposure to damp and moldy environments may cause a variety of health issues or none at all. Sensitivity to mold varies from person to person. General exposure to mold can lead to symptoms such as stuffy nose, wheezing, and red or itchy eyes or skin. People with mold allergies or asthma are more susceptible and may experience severe reactions such as fever and shortness of breath.

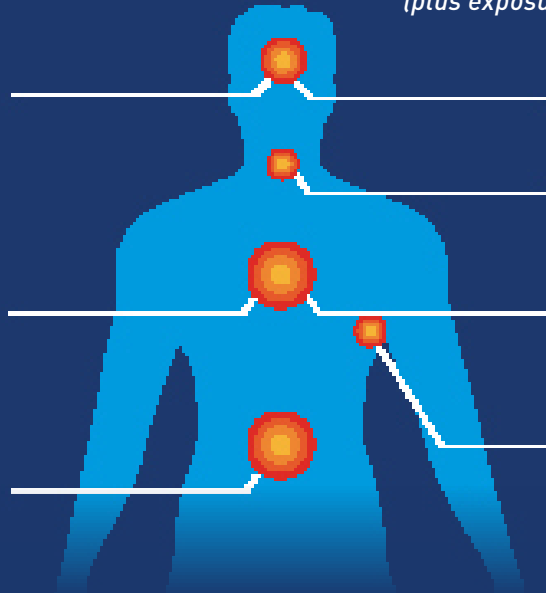
A 2004 study by the Institute of Medicine (IOM) found sufficient evidence linking indoor exposure to mold with upper respiratory tract symptoms in otherwise healthy people. Asthma symptoms are heightened in asthmatics and hypersensitivity pneumonitis is exacerbated in individuals susceptible to that immune-mediated condition.

Stachybotrys chartarum and other molds may cause health symptoms that are nonspecific. It is unnecessary to determine what type of mold you may have growing in your home or other building. All molds should be treated the same when considering potential health risks and removal.

Common Symptoms

EXPOSURE & INHALATION

- EYE IRRITATION
 - FEVER
 - CHRONIC HEADACHES
 - CHRONIC FATIGUE
-
- RESPIRATORY ISSUES
 - ASTHMA
-
- VOMITING
 - NAUSEA



STACHYBOTRYOTOXICOSIS

(plus exposure & inhalation symptoms)

- CONJUNCTIVITIS
 - BLOODY RHINITIS
 - BURNING SINUSES
-
- PAIN & INFLAMMATION IN THROAT AND MOUTH
-
- TIGHTNESS OF CHEST
 - COUGH
-
- SKIN RASHES
 - DERMATITIS

EXPOSURE AND INHALATION

For black mold, the mycotoxins in airborne spores can attack your respiratory health. The potency of these particular toxic spores has proved to be the most detrimental to human health over other common molds, and symptoms can develop within two to three days of exposure.

People with allergies are likely to be more sensitive to molds. Those with immune suppression or underlying lung disease are more susceptible to fungal infections. Individuals with chronic respiratory disease (chronic obstructive pulmonary disorder, asthma, etc.) may experience difficulty breathing. Individuals with immune suppression are also at increased risk for mold infection.

STACHYBOTRYOTOXICOSIS

Exposure to black mold can lead to black mold poisoning, or “stachybotryotoxicosis,” a hazardous condition for young children and the elderly. As mold builds up in the body, it can develop into more “mysterious” chronic health conditions, including a decrease in white blood cell production; chronic fatigue syndrome; chronic coughing; depression and anxiety; memory loss; autoimmune disease; nerve issues (like numbness in the hands and feet).

Other symptoms of hair loss, muscle cramps, digestive complaints (like diarrhea), abdominal pain, joint pain, nervous system disorders, night sweats, excessive thirst, metallic taste, vertigo and increased urination could also be longer-term symptoms of black mold poisoning.


Removal and Abatement

If there is a mold problem, act quickly. Mold damages the materials on which they grow. So, the longer it grows, the more damage it can cause. Much of the procedures below are obtained from the EPA guidelines.

SMALLER INFESTATIONS

Black mold clean up depends on a number of factors. One consideration is the size of the mold infestation. If the moldy area is **less than about 10 square feet (less than roughly a 3 ft. by 3 ft. patch)**, the job can likely be handled without hiring a professional cleaning or remediation service.

- Wear gloves and facial protection, including safety glasses/goggles and a face mask or respirator (N-95 recommended).
- Fix plumbing leaks and other water problems as soon as possible. Dry all items completely.
- Scrub mold off hard surfaces with detergent and water, and dry completely.
- Absorbent or porous materials, such as ceiling tiles and carpet, may have to be thrown away if they become moldy. Mold can grow on or fill in the empty spaces and crevices of porous materials, so the mold may be difficult or impossible to remove altogether.
- Do not paint or caulk moldy surfaces. Clean up the mold and dry the surfaces before painting. Paint applied over moldy surfaces is likely to peel.



Moldy areas smaller than a 3 x 3 foot patch can be handled without hiring a professional service if done safely and correctly.



Infestations larger than 10 sq. ft. should be handled by a professional service.

LARGER INFESTATIONS

A professional cleaning or mold remediation service will need to be hired if there has been a lot of water damage and/or mold growth **covers more than 10 square feet**. Furthermore, if the building or materials used in that space are **more than 30 years old**, it is recommended that a professional be hired due to the possibility of asbestos exposure.

- If a contractor (or other professional service provider) is hired to do the cleanup, make sure the contractor has experience cleaning mold.
- If you suspect that the heating/ventilation/air conditioning (HVAC) system may be contaminated with mold (it is part of an identified moisture problem, for instance, or there is mold near the intake to the system), consult EPA guide “Should You Have the Air Ducts in Your Home Cleaned?” or hire an inspector before taking further action. Do not run the HVAC system if you know or suspect that it is contaminated with mold, as it could spread mold throughout the building.
- If the water and/or mold damage was caused by sewage or other contaminated water, call in a professional who has experience cleaning and fixing buildings damaged by contaminated water.
- If you have health concerns, consult a health professional before starting cleanup.



Amended water sprayed to keep dust particles down during the demolition process. Water is seldom used during mold remediation, unless you have a large scale demolition activity such as this.

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