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Black Mold - Part I
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Several Beaumont families have had to move out of their homes because of the potential presence of a fungus called "black mold" and because of chronic health effects upon all family members. The matter is being treated as a severe health hazard, but science is unclear as to how dangerous the mold might be.

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. Fungi are common in nature and serve a central role as breakdown agents for organic matter. Most are filamentous organisms and the production of spores is characteristic of fungi in general. These spores can be air-borne, water-borne, or insect-borne.

Some of the common indoor molds are Cladosporium, Penicillium, Alternaria, Aspergillus and Mucor. You may remember that the first antibiotic, Penicillin, was developed from a mold listed above as Penicillium.

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.

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 40% 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.

The following steps can be taken to eliminate molds and/or decrease the presence of molds from the household and/or workplace environment.

1. Keep the humidity level in the house below 40%.
2. Use an air conditioner or a dehumidifier during humid months.
3. Be sure the home has adequate ventilation, including exhaust fans in kitchen and bathrooms.
4. Add mold inhibitors to paints before application.
5. Clean bathrooms with mold killing products.
6. Do not carpet bathrooms and basements.
7. 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

Black Mold

The health effects of "black mold" -- scientific name is Stachybotrys chartarum (SC) -- were first noted as diseases in Russian and Eastern European farm animals that ate moldy hay. The first reported human effects were seen in agricultural workers who handled the moldy straw or hay that was affecting the farm animals. After consuming contaminated cereal grains, people experienced symptoms included burning sensations in the mouth, nausea, vomiting, diarrhea and abdominal pain. SC in humans is much less common than in animals, and no lethal cases have been reported (Jarvis).

Much less is known about SC when it occurs in indoor environments, such as homes or office buildings. In general, the intensity of exposure and health effects from SC in such environments are much less severe than those in farm animals and workers handling contaminated hay or straw.

If SC spores are released into the air, there is a potential for humans to develop symptoms such as coughing, wheezing, runny nose, irritated eyes or throat, skin rash, or diarrhea. There are a few reports in the scientific literature of improvement of symptoms when people left an area where SC or other molds were found, or after moldy materials were removed from a dwelling or workplace.

It is theorized that the above symptoms may result from an allergic response to the SC, or from toxins produced by SC or from another environmental agent. However, it is difficult to show that these types of symptoms are due to SC for several reasons:

When buildings are sampled, usually several other molds are found in addition to SC, and these molds could also cause symptoms;
These symptoms are very nonspecific and can be related to other allergens (such as dust mites, animal hair, pollen, etc.), or to infectious agents such as bacteria or viruses;
Currently, research has not clarified what level of SC is necessary to produce symptoms.

Black Mold's Occurrence

SC may be found in water-damaged homes. It is a greenish-black fungus found worldwide that colonizes particularly well in high-cellulose material, such as straw, hay, wet leaves, dry wall, carpet, wall paper, fiber-board, ceiling tiles, thermal insulation, etc. The fungus (mold), before drying, is wet and slightly slimy to touch. There are about 15 species of Stachybotrys, with a world-wide distribution. The toxic mold grows in areas where the relative humidity is above 55%. This type of fungus does not grow on plastic, vinyl, concrete products, or ceramic tiles. It is not found in the green mold on bread or the black mold on the shower tiles.

SC produces a mycotoxin that causes animal and human mycotoxicosis. This type of mold is thought to be a possible cause of the “sick building syndrome”. In May 1997, the Journal of the American Medical Association carried a news article titled “Floods carry potential for toxic mold disease”. Children’s exposure to air-borne Stachybotrys spores is thought most likely to cause pulmonary hemosiderosis (bleeding in the lungs).

There is no threshold dangerous spore exposure level by the U.S. EPA or any other health administrations. There are ongoing new epidemiology studies being conducted. Many state’s department of health administrations as well as the Center for Disease Control (CDC) list the following as symptoms associated with exposure to Stachybotrys mold spores:

- Respiratory problems, such as wheezing, and difficulty in breathing
- Nasal and sinus congestion
- Eyes-burning, watery, reddened, blurry vision, light sensitivity
- Dry, hacking cough
- Sore throat
- Nose and throat irritation

- Shortness of breath
- Chronic fatigue
- Skin irritation
- Central nervous system problems (constant headaches, memory problems, and mood changes)
- Aches and pains
- Possible fever
- Diarrhea
- Possible hemosiderosis

PREVAILING CONDITIONS NECESSARY FOR THE GROWTH OF STACHYBOTRYS BLACK MOLD

1. Water soaked wood housing material.
2. Condensation inside (especially bare water pipes and clothes dryer)
3. Wet decaying leaves (outside but the dry airborne mold could re-entrain into the living volume space of the house).
4. Wet drywall, floors, and carpet from water flooding or exposure, especially in the basement areas prone to flooding. Be aware that the Stachybotrys mold can grow behind drywall or in hidden areas of the house such as air ducts with organic debris.
5. They grow in areas where the relative humidity is above 55%.
6. Stachybotrys chartarum grows and sporulates in temperature range of 35.6-104° F.

Next week, we will further discuss "black mold," answering questions and discussing what should be and what can be done about it.

As you learn about this health threat, remember, it is your life and it is your health.