News coverage of the dire consequences of mold infestation and multimillion legal/insurance settlements have raised concern and interest among patients about the health effects of fungi. So called “black mold” (Stachybotrys chartarum) has been described as being particularly harmful despite the fact that an initial CDC study finding an association between stachybotrys and death from pulmonary hemorrhage in infants was subsequently retracted by the CDC.\(^1\)\(^-\)\(^4\) A well balanced statement from the American College of Occupational and Environmental Medicine titled “Adverse Human Health Effects Associated with Mold in the Indoor Environment” can be found at their website: www.acoem.org/guidelines/evidence.

The summary of that statement is printed below:

“Molds are common and important allergens. About 5% of individuals are predicted to have some allergic airway symptoms from molds over their lifetime. However, it should be remembered that molds are not dominant allergens and that the outdoor molds, rather than indoor ones, are the most important. For almost all allergic individuals, the reactions will be limited to rhinitis or asthma; sinusitis may occur secondarily due to obstruction. Rarely do sensitized individuals develop uncommon conditions such as allergic bronchopulmonary aspergillosis (ABPA) or allergic fungal sinusitus (AFS). To reduce the risk of developing or exacerbating allergies, mold should not be allowed to grow unchecked indoors. When mold colonization is discovered in the home, school, or office, it should be remediated after the source of the moisture that supports its growth is identified and eliminated. Authoritative guidelines for mold remediation are available.

Fungi are rarely significant pathogens for humans. Superficial fungal infections of the skin and nails are relatively common in normal individuals, but those infections are readily treated and generally resolve without complication. Fungal infections of deeper tissues are rare and in general are limited to persons with severely impaired immune systems. The leading pathogenic fungi for persons with nonimpaired immune function, Blastomyces, Coccidioides, Cryptococcus, and Histoplasma, may find their way indoors with outdoor air, but normally do not grow or propagate indoors. Due to the ubiquity of fungi in the environment, it is not possible to prevent immune-compromised individuals from being exposed to molds and fungi outside the confines of hospital isolation units.

Some molds that propagate indoors may, under some conditions, produce mycotoxins that can adversely affect living cells and organisms by a variety of mechanisms. Adverse effects of molds and mycotoxins have been recognized for
centuries following ingestion of contaminated foods. Occupational diseases are also
recognized in association with inhalation exposure to fungi, bacteria, and other organic
matter, usually in industrial or agricultural settings. Molds growing indoors are believed by
some to cause building-related symptoms. Despite a voluminous literature on the subject,
the causal association remains weak and unproven, particularly with respect to
causation by mycotoxins. One mold in particular, Stachybotrys chartarum, is blamed
for a diverse array of maladies when it is found indoors. Despite its well-known ability to
produce mycotoxins under appropriate growth conditions, years of intensive study have failed
to establish exposure to S. chartarum in home, school, or office environments as a cause of
adverse human health effects. Levels of exposure in the indoor environment, dose-
response data in animals, and dose-rate considerations suggest that delivery by the
inhalation route of a toxic dose of mycotoxins in the indoor environment is highly unlikely at
best, even for the hypothetically most vulnerable subpopulations.

Mold spores are present in all indoor environments and cannot be eliminated from
them. Normal building materials and furnishings provide ample nutrition for many
species of molds, but they can grow and amplify indoors only when there is an adequate supply
of moisture. Where mold grows indoors there is an inappropriate source of water that must be
corrected before remediation of the mold colonization can succeed. Mold growth in the
home, school, or office environment should not be tolerated because mold physically destroys
the building materials on which it grows, mold growth is unsightly and may produce offensive
odors, and mold is likely to sensitize and
produce allergic responses in
allergic individuals. Except for
persons with severely impaired
immune systems, indoor mold is
not a source of
fungal infections.

Current scientific evidence does not support the
proposition that human health has been
adversely affected by inhaled mycotoxins in
home, school, or office environments.”

The most frequent conditions reported in
Michigan from exposure to mold are the IgE
mediated conditions; allergic rhinitis and
asthma. Less frequently the IgG mediated
condition hypersensitivity pneumonitis has
been recognized either among farmers or in
outbreaks in the early 90’s among workers
machining metals with metal working fluids
(coolants).

When evaluating a patient concerned about
mold exposure one needs to evaluate the patient
for allergic rhinitis, allergic conjunctivitis,
asthma and hypersensitivity pneumonitis.
Testing should be limited to standard diagnostic
tests such as pulmonary function and
radiographic studies. Skin testing for fungus or
measurement of IgE antibodies such as those in
the Midwest Allergy Panel and/or IgG
antibodies in the Hypersensitivity Pneumonitis
Panel are helpful in documenting exposure
when the results are positive. Results of the
blood tests are not useful when negative, given
the low sensitivity of these tests or the absence
of the responsible antigen for a particular
patient in the standard commercial lab panels.

In addition to management with the standard
battery of allergy and asthma medications,
evaluation of the building/workplace for water
damage and visible mold growth can be useful.
Sources of water leakage need to be corrected
and water damaged material such as carpeting,
 wallboard and visible mold removed. Air
Sampling for mold is rarely useful. Evaluation of the adequacy of ventilation (cubic feet/minute of supplied air and percentage of fresh air versus recirculated air) and correction of the ventilation problems that are identified is the most effective way to correct problems. Use of disinfectants to attempt to eliminate mold can increase symptoms by introducing a chemical irritant into the indoor air environment. Labor/management disagreements in the workplace can magnify the health concerns.

We remain interested in received reports of work-related health problems you suspect to be caused or aggravated by mold. See the box on the last page for ways to report a suspected patient. If you have diagnostic or management questions concerning patients potentially exposed to mold, please feel free to call Kenneth Rosenman, MD at our toll free number 1-800-446-7805.

References


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*P S E.N.S.O.R.

Address service requested.

In this issue:
“Toxic Mold”

*PS Remember to report all cases of occupational disease!

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