Mold Allergies and Contamination

This season has been very wet, with heavy rains, thunderstorms and the typical Maryland humidity. For many, these conditions have meant flooding in homes and possible mold contamination, as well as in schools and workplaces. As expected, the highest spores' counts have been found in rooms with excessive moisture or water damage such as bathrooms, flooded rooms, ceilings, and unfinished basements.

There is an obvious question: Mold is an age-old problem and has always been around, so why all of the attention? Recent news reports have described extreme cases of mold growth rendering homes unlivable and unmarketable. But there are other facts: 1) According to the Environmental Protection Agency (EPA), 50% of all structures contain mold, which may be a health hazard, and real estate brochures call it the next asbestos epidemic; 2) While there is no proven relationship with the aging population of North American homes and development of molds, many older homes built with wood may have structural and maintenance issues that could contribute to the problem; 3) Moisture problems are worse in the past 30 years due to increased washing machines and dishwashers, vaporizers and humidifiers. Tighter buildings for energy conservation allow moisture to be trapped indoors. Ceiling tiles and sheetrock are especially prone to mold contamination, since many have a high cellulose content and molds naturally live on cellulose.

What is mold? Mold is a microscopic plant-like organism, whose purpose is to breakdown dead organic plant or animal matter (leaves, trees, insects and animals). There are 50,000 species of mold and mold thrives on organic or cellulose-based (plant) material, as compared to mildew, which grows on non-organic material, like ceramic bath tiles, In contrast, yeast is a microorganism, which breaks down organic materials, like sugars, and colonizes within our intestinal tracts, but like some bacteria, does not cause disease unless the immune system is deficient. Mold reproduces by releasing spores into the air surrounding it. Indoor spores generally reflect what is found outdoors, so any mold found indoors which, is not also predominant outside, suggests that there is mild contamination in the house and the air quality is degraded. Mold can absorb moisture from surfaces and the air. If it becomes too dry, it becomes inactive however, mold can reactivate with moisture as long as 15 years later.

So, the presence of mold in the home isn't the issue: The key is that contamination and growth will only occur if enough spores are present with moisture (availability of moisture most critical in determining if mold will grow), and a surface or substrate on which to grow. Bathrooms, within wall cavities under carpets and musty basements are the perfect mold environments, and the powerful digestive enzymes also decompose wood, fibers, paper and building material containing cellulose, such as carpet backing and tile grout.

How is mold detected? Detection is by visual inspection, smell, and sampling (swabs, air and carpet samples). You may need a good, professional home inspector to conduct investigations to: 1) find areas of water infiltration into your home; 2) find conditions that may facilitate water infiltration, and 3) find other conditions that may promote mold growth, such as deficient construction, improper grading, use of wet lumber during construction, excessively air-tight homes, siding or flashing failures, gutter and downspout problems or imitation stucco siding, which can cause water infiltration.

Red flags indicating need for testing include visible growth, family members with allergies to mold becoming increasingly symptomatic, musty odor anywhere, evidence of present or past water infiltration, construction defects, poorly maintained or dirty HVAC systems, plumbing defects in the kitchen, bathrooms, or laundry area, cracks in bath tile, missing caulk, failed toilet seals, leaking drains, and carpet in direct contact with concrete.

What illnesses are caused by mold contamination? One can develop a skin or sinus infection, irritation of the mucous membranes of the eyes and respiratory tract, mold allergy with associated rhinitis, sinusitis and asthma, or a more severe, but uncommon, toxic reaction. To determine a related illness, your allergist will begin with a complete history and physical examination, environmental history including home health survey, quality of life survey and identify pre-existing medical disorders masquerading as "mold toxicity". Testing will include skin testing, pulmonary function testing, and possible blood studies.

Finally how can you minimize mold contamination? Always remove any existing mold and eliminate moist conditions that allow growth. To remove minor mold problems, use a 5-10% bleach or anti-fungal solution. Remove any contaminated insulation. Seek professional advice and don't perform any clean-up if you have health problems, or if there is extreme contamination. To eliminate conditions that allow mold growth: drain and ventilate area under and around the house (crawl spaces), remove or replace wet furniture and carpets and open windows for fresh air, keep pets from soiling your home, seal leaky air conditioning ducts, install a heat recovery ventilator or air-to-air exchanger, eliminate carpeting on concrete or floors that get moist or wet, add mold inhibitors to paint before painting, repair water damaged areas, keep humidity levels under 40%, use a dehumidifier or air conditioner during humid months, and be sure to have adequate ventilation (exhaust fans in the kitchen and bathrooms). A HEPA filter in the central air system may be helpful.

For more information, check out the American Society of Home Inspectors (ASHI) and the Environmental Protection Agency (EPA) websites: www.ASHI.org and www.EPA.gov.