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### Inside...

[Investigating Mold](#)

[Mold and Health](#)

[Mold FAQs](#)

[Food of the Gods](#)

[GML Case File...](#)

***THE TRUTH ABOUT  
“TOXIC BLACK MOLD”***

## INVESTIGATING MOLD

Following a request from a homeowner, real estate broker or other concerned party, GML will schedule an on-site visit to investigate the presence of mold in a building.

The investigative process is simple: locate the mold growth and discover the cause, then determine the type of mold and severity of the problem. Finally, we provide detailed remediation recommendations.

Mold needs water in order to grow, so careful on-site observation includes finding sources of water that don't belong. This may include roof, window or foundation leaks, as well as leaky pipes, faucets or toilets. Severity of mold odors provides clues to location as well as the extent of the problem. Sometimes there may have been a specific leak or flooding event that resulted in the mold problem. Other times, the cause may be less obvious.

As the investigation process progresses, samples are collected in order to gain further information such as verifying the presence of mold and identifying the type. These samples may be collected from surfaces, room air and air inside wall or ceiling cavities.

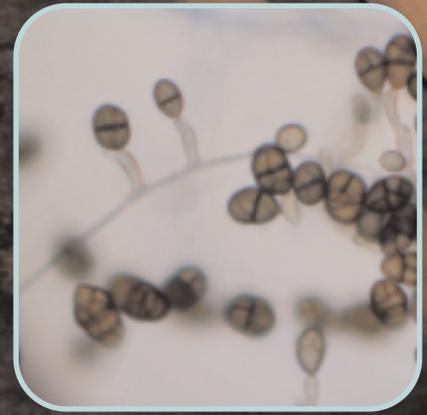
Surfaces that are water damaged may not have obvious mold growth on them; samples collected from surfaces will determine the presence of mold growth. Air samples will describe how many and what type of mold spores are becoming airborne in a given location. This is important because of the potential effect of airborne mold spores on the human respiratory system.

Drilling a hole in a wall or ceiling and sucking out cavity air helps to discover hidden mold growth. Occasionally, a roof leak, defective window frame or leaky pipe can create a mold problem that remains hidden from the eye, but quite available to the nose. Hidden mold also has the potential to gradually destroy the structural integrity of building materials before it becomes known. Of course, once found, the mold problem can be remediated.

Next, the gathered samples are brought back to the lab, cultured, and examined under a microscope. Generally, it takes about seven days for the full development of characteristics required for identification. We will specifically identify the types of molds present, the level of mold spores in the air, what items molds are growing on and the sources of hidden molds in the areas of concern.

A written report with information about the mold types, levels, and sources found is sent to our client. It also suggests the steps necessary to remove the mold problem and prevent a recurrence. Although GML is not a remediation company (that would be a conflict of interest), we do have the experience and expertise to inform our clients of the remediation procedures necessary.

If serious remediation is needed, we generally recommend re-testing when the job is complete, to make sure that the remediation was successful and all damaged materials removed.



### Attic Consultations

Real estate brokers, buyers, sellers, and investors need a quick evaluation of an attic to judge whether mold contamination is present and if so, how serious it is. Can it be cleaned, a few pieces of wood replaced, or is a new roof needed due to extensive mold damage (big bucks). GML can provide a discerning visual inspection, collect a surface sample, get lab results, and offer remediation suggestions all in 24 hours. This evaluation can save time, money, and ultimately, the sale.

## MOLD & HEALTH

In 1995, Katrine Stevens, 57, moved into a condo in Gloucester. Six weeks later, with itch, rash, difficulty breathing, coughing up blood and a trip to the emergency room, she moved out. In her new place, her son's asthma has subsided, but her husband still has neurological problems and she wears a gas mask when she goes into the laundry room. She blames "toxic mold." Last fall the case was settled by jury for over half a million dollars, the first such lawsuit victory in

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Massachusetts. The jury held the condominium trustees negligent in not correcting a chronic wetness problem.

The scientific evidence for mold causing illness is a controversial issue with vigorous advocates on

both sides. As reported in our Winter 2003 issue (The Legal Corner), the Government stepped in with an effort to settle the issue and establish guidelines for mold exposure; the CDC directed the Institute of Medicine to convene a panel to review all published studies. Its 300 page report came out this past Spring. They remained non-committal save for saying that there is "sufficient evidence for an association" between mold (probably) and upper respiratory tract symptoms (sneezing, coughing, runny nose, wheezing), asthma attacks in asthmatics, and hypersensitivity pneumonitis (inflammation of the lung) in rare cases. They also considered the possibility of an

*Continued on page 4*

## MOLD FAQs

### **If my house has mold, does it need to be burned to the ground?**

Probably not. It is extremely rare that a house is so infiltrated with mold that it's easier and more economical to tear it down and start anew. Naturally though, these cases make the front page. Oftentimes, in cases of extensive mold contamination, some structural material must be removed, but this is much less drastic than having to "burn it down" or demolish it.

### **My attic roof sheathing is black with mold. Do I need a new roof?**

It depends on how extensive the mold is, and sometimes on what you are willing to pay for. If the mold is just in a few areas, it may be cleanable or require only limited replacement of materials. Larger mold problems in attics may require significant replacement or removal of roof materials. Obviously, any roof leaks – shingles, flashing, ice damming, etc. – must be fixed to prevent future mold growth and insure the integrity of the roof.

### **After my basement flooded, the carpet was removed, but I still smell a musty odor. Why?**

If moisture remains in porous materials in the basement – wall cavities, wood framing,

and personal contents – molds will continue to grow and produce the volatile organic compounds (VOCs), also known as the "mold odor". If moisture is entering slowly through the foundation walls or floor, the condition can be chronic unless you stop it, say, by sealing the foundation or putting in a drainage system. Dehumidifiers are always going help.

### **Is the mold growing on my bathroom ceiling toxic?**

Mold will grow on damp surfaces within a couple of days at normal temperatures. Bathrooms, being a source of frequent moisture laden activities (showers and baths), often have visible mold growth. The fact remains that most molds are toxic to some extent and to varying degrees in different people. In addition, many molds are black because of spore production. The media reports on "toxic mold" and "toxic black mold" and almost use scare tactics that cause people to panic. Consider any mold, whether it is black, toxic, neither, or both, to be a problem when growing indoors. So the answer to the question is 'yes', but do not panic. The solution most likely is an easy and inexpensive one and the risk isn't great as long as the mold is removed soon.

All indoor mold should be removed, however, there are a few types that deserve special attention, among them *Stachybotrys chartarum* and a few species/strains of *Aspergillus*. These molds can produce strong toxins and a lot of them. It's a matter of amount, though: generally, you can't breathe in enough toxin except under most unusual circumstances. However, some people have experienced negative reactions to breathing in low levels of mold spores and for these sensitized people, it is not a good idea to spend time in a moldy environment. If you have young children, crawling and putting everything in their mouths, you should be concerned about any surface mold growth, and particularly if it's *Stachybotrys*.

### **Remember:**

Cleaning, disinfecting and drying surfaces prevents mold growth.

Reduce moisture levels in bathrooms by running exhaust fans during and after showers.

Fix plumbing leaks and seepage to prevent the buildup of moisture and prevent mold growth.

## FOOD OF THE GODS

Last time we talked about Quorn, a fungal food more popular overseas, and you already know about beer, bread, and the several cheeses dependent on fermentation by molds, but do the chocoholics among you appreciate the role of fungi in your favorite delectable? The raw material for chocolate is cacao, derived from the tree *Theobroma cacao*, meaning "food of the gods," which we all know that it is.

Cacao is native to the American tropics, but production is mainly in the Eastern hemisphere. Why? It is due to disease and fungi common in the trees' native habitat. Essentially all plants harbor fungi within their leaves and the cacao has hundreds of different types, more or less specific to it. These fungi arrive as windblown spores and often function as protectors. In Central America, the wind also carries another microorganism from the fungal family, a relative of the Irish potato blight. If this fungus settles on a cacao leaf that hasn't been infected previously with some of these other "protective" fungi, the leaf dies or is seriously damaged. A leaf previously infected with the helpful fungus does not. Similar stories apply to other crops and ornamental plants, a fact that organic farmers are keenly aware of.

One final note: if you see mold growing on your chocolate bar, it's not the protective kind, it's one of those undesirable environmental molds that is bad to ingest, so throw it out!



## MOLD SCENE INVESTIGATION, from the GML Case Files

Gill and I arrived at the Funwall townhouse complex on Lost Causeway at 9:37 AM. It was mid-summer, and the sticky, humid air was slowly turning into thunderstorms. The first thing we noticed were brown leaves drooped on several branches of the rhododendron near the entrance to Unit M. The dead leaves were close to the ground on a few rooted branches. "So what caused this?" he asked. "Well, I can't be sure, but see that old stump hidden under the far side of the bush? Unless I'm mistaken, that used to be a *Quercus albus*." "You mean a White Oak, similar to the one known as The Charter Oak, state tree for Connecticut," interjected Gill with a grin. "Yes, and an interesting story for another day. But this tree was taken down shortly after the unit was built, which was about 16 years ago, judging by the weathering of the siding. Cheap construction, by the way. The tree was dying of eastern oak root fungus, *Armillaria suspectans*, I suspect. The rhododendron was planted later, but the fungus was still in the old roots and infected the new plant. Notice the soil," I continued, "heavy and wet – poor drainage. With this hot weather, perfect root rot conditions."

Continued on page 4

We went inside. Ms. Rainin escorted us to the washing machine on the second floor that had flooded a month ago; her daughter's bedroom was on the other side of the wall. "A moderate odor from mVOC's," Gill observed pulling out his notebook, "indicating continued mold growth under or in back of the washing machine." I pointed out a cat box beside the appliance. "Somewhat different bouquet, Gill." But inside the bedroom there was no question – the mold odor was strong. "It goes away on sunny days," Ms. Rainin offered. Water damage was evident on the flooring now that the carpet had been removed, but nothing significant on wall materials just above the floor. "So moisture penetrated into the wall behind the washing machine and we'll find a heavy growth of mold there." Gill was confident, but as he drilled a hole in the wall by the washing machine, I had the uneasy feeling of being led down a mushroom path. I looked around at the other walls. All dry, with no visible water damage. Hmm... I went downstairs and examined the ceiling under the water-damaged area: nothing. No water had come through, couldn't have been a bad flood. Back in the bedroom I ran my fingers over the window frames on the two outside walls. Paint was flaking in a few spots. "Cheap construction," I muttered as I remembered the siding and Ms. Rainin's comment. I picked up a sock lying on the floor against the wall; a silverfish ran out. I snagged it with my tweezers. "Where have you been living, little guy?" I asked as it struggled and twisted into a weird shape in the dry bedroom air. "Take samples of the other three walls, too, under the windows there and there," I told Gill as he finished sucking cavity air into the Andersen sampler. "Control samples?" he asked. "Just being thorough," I quipped nonchalantly, as I spackled the first hole. But my thoughts were still on the window frames.

Back at the lab, the molds grew slowly in their agar cages. After three days I took a first look. By the sixth day, there was no question about it: The outside walls with the windows had far more mold spores than the wall by the washing machine. We reported to Ms. Rainin, recommending that both walls be opened up, and that a contractor find the source of the moisture under the windows. I'm just a mold investigator, so I play dumb, but I know what they'll find.

... stay tuned for the next installment of  
**MOLD SCENE INVESTIGATION**

association with lower respiratory illness in children. Dampness was associated with abnormal or uncomfortable breathing and the development of asthma. There is agreement about "flu-like" effects with the exposure to high levels of mold spores.

One difficulty is that the definition of asthma is vague; an IOM report in 2000 used "a chronic disease of the airways characterized by inflammatory response involving many cell types." The defining symptom is "reversible airflow obstruction." While genetics seems to play a part, the environment is important in the development and triggering of asthma in two broad categories: allergic and non-allergic.

There is fair evidence for allergic immune responses to mold. About 6-10% of the US population seems sensitive to fungal allergens. Many people have occasional "hay fever" symptoms. Surveys regarding asthma generally find an association with damp conditions in the home, but not always identifying the presence of mold, presumably due to lack of mold testing.

A study published after the IOM review found that most classes of antibodies increased significantly after exposure to mold in water-damaged buildings. Other beasts (bacteria, yeasts, dust mites, etc.) and certain chemicals have been implicated, although most studies agree that, in some people, asthma attacks are triggered by mold spores and/or other mold products. Evidence exists that there is something in damp indoor environments strongly contributing to increased cases of asthma.

The confident connection between upper respiratory distress and mold exposure is one reason to eliminate indoor mold growth. More severe symptoms will occur in sensitized individuals; people with compromised immune systems are at risk for mold infections and future studies may reveal that serious disease can be caused by mold in otherwise healthy persons. Additional reasons for finding and eliminating molds: flagging the presence of moisture, say, in an unsuspected wall cavity, thus stopping structural damage, ending offensive mold odor and of course, avoiding lawsuits.

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For the latest information or news please contact us at:

[www.moldtestingma.com](http://www.moldtestingma.com)

The GML web-site features Technical Information,  
Frequently Asked Questions,  
What's New, and direct e-mail access

