

REVIEW OF ARIZONA DEPARTMENT OF HEALTH SERVICES FACT SHEET ISSUED BY ADHS, AUGUST 2001

By: Mr. David K. Rueckert, Certified Industrial Hygienist
DAY BREAK ENVIRONMENTAL CORPORATION

1. General Critique:

In August 2001, the Arizona Department of Health Services published a "Fact Sheet" (the "fact sheet") which purported to entirely explain structural molds and how to deal with them. The fact sheet provides a lot of reasonable general information for a rudimentary understanding by the average homeowner. Unfortunately, it misleads them by suggesting that they have the knowledge, training and equipment to properly detect, evaluate and remediate a mold infestation and resultant damage. Molds seem generally to be explained and the threshold range of allergic responses are suggested, but the greater allergenic results of long-term exposure and the substantial threats posed by toxic and pathogenic varieties is so understated as to be illusory. The fact sheet does stress that the source(s) of water damage and intrusion which feed molds should be corrected immediately, but it fails to mention that the remaining/adjacent hidden water damage is often the greater of the damages, the more pernicious of the threats to property and health and precisely why the need for professionals arises.

2. Understatement:

The fact sheet comments that "...the basic rule is, if you can see it or smell it, take steps to eliminate the excess moisture and to clean up and remove the mold..." is vastly misleading. Many molds and bacteria, that produce strong physical reactions have no odor. The only indication of hidden damage and danger to the occupant's health may be a discolored or deformed drywall tape joint or a slightly warped baseboard. Most molds are photosensitive and thus thrive in darkened or inaccessible areas, making them "invisible" to the naked and untrained eye and making any topical remediation inadequate.

This leads to the second troubling fact sheet statement, "...should I be concerned with mold in my home? Yes, if the contamination is extensive..(?)" This is ALWAYS the concern. For example, the visible signs could be as little as a discolored carpet tack strip, but the actual contamination will be greatest at the contact of the drywall with the sill plate and studs where the water dries slowest, and the fungal growth can extend around the room and through to the next wall and other room(s)--all areas hidden internally to the untrained eye. The home owner and real estate licensee need to realize that in scenarios the actual damage usually extends back in to the wall and floor decking, ceiling and joists much farther than the outwardly visible signs. Also testing has shown that there is fungal growth at least 18 inches beyond visible water damage and visible fungal growth on surfaces. The "normal homeowner is rarely trained to recognize that, for example, the gray shadow on the back of drywall may be fungal growth or that the darkening of a stud or sill plate is actually a water run line that should be tracked and additional material removed...sometimes far removed from the patently visible site. Case after case is seen where the untrained homeowner or the unfamiliar handyman, general contractor, insurance adjuster etc., has treated only the topical issues and left the far greater internal water damage and fungal contamination behind. In many cases, the water source itself, is misunderstood and thus not terminated, virtually guaranteeing that even a successful initial mold removal will only be

replaced by new growths. The fact sheet simply misses these points, entirely and they are so endemic in the detection and remediation as to be undisputed protocol.

The New York Guidelines are specific about the proper actions for any given square footage of damage and the appropriate steps to take (which are much more detailed than the fact sheet).

The fact sheet section on "health effects," once again, is far too cursory. Although mold is found everywhere, indoors and outdoors, the types of toxic molds that grow on the back of water damaged drywall, carpet, particleboard, etc. are rare in the outside air. And although the body deals with most outside molds "without evident harm", the types of molds that grow inside on water damaged construction materials are commonly hazardous and must be removed to protect occupants (not only present ones but invitees and future owners) from nasal sores, lung lesions and the risk of serious localized or systemic infection and even physical and neurological damage.

The fact sheet statement that "...mold spores primarily cause health problems when they enter the air and are inhaled in large numbers..." is true but it only addresses the acute exposure (large dose but short period) and doesn't address the chronic exposure (small dose but for long periods). Acute, short-term exposure symptoms (bronchial spasms, severe headaches, vomiting, diarrhea, cold and flu symptoms starting two to five days following exposure) are dramatic, it is true. But the chronic issues and symptoms from long-term low-level exposures are more discrete and thus nefarious because they come on so slowly that the victim often accredits it to other, non-specific causes. Physicians treating these pernicious long-term exposures state that the patients has often accredited it (sometimes for years running) to being "just old age" or "just me", "just being tired", or being unable "to shake this cold". Often, it is downplayed as a common coping technique by the patient, such as: "I only get a few bloody noses a week, not enough to be concerned about", or "my memory is just not what it used to be" or "the whole family has been ill as long as I can remember.". Small recoveries are often made when victims leave the infected home, office, condo, trailer, apartment etc. for a day or a week, but the victim is usually not conscious of the small recovery or its connection to absenting the environment or the recurrence when the adverse environment is re-entered.

The fact sheet did not account that chronic symptoms are a result of the systemic response: The emitted chemicals are bio-accumulative, meaning they build over time and the body doesn't get rid of them easily. So small exposures add up, consequently wearing the occupant's immune system down (such as generating more and more mucus in the lungs), taxing their systems until primary defenses and secondary erode to the point where adverse secondary issues begin (lung scarring and exposure, for instance, to pneumonia). Some of these water damage mold caused, bio-accumulative, mycotoxins are well documented as being tumor and cancer generative. Worse, remediating by applying chlorine to these chemicals (bleach or ammonium chloride) as is suggested makes them more lipid soluble and so more poisonous both as a carcinogen and as a neurotoxin than the original chemical. Thus, a 10 percent Bleach solution is not a prescription for remediation but rather one for further toxification!

The fact sheet says "...people can also be exposed to mold through skin contact and eating." This is more emphatic than stated: Indeed, the Food and Drug Administration (FDA) has guidelines to

reduce the amount of these fungal mycotoxins in human food supply because the FDA is thoroughly aware how dangerous and damaging they are to human systems. The common affects: Stomach irritation, bowel irritation, liver and kidney damage. All of these are well documented. The greater issue might be that the FDA-controlled levels are not "no tolerance," they are rather "maximum tolerance," which means that the public is regularly (and "legally") exposed to affective long-term, low-levels (again, the most pernicious type of exposure) in food and water-damaged environments.

Human hands (and what they touch) are always (physically and behavioral) near human faces and what we breath upon them is therefore delivered to the stomach via the mucocilliary escalator. So food stored and prepared in a water-damaged kitchen can increase the exposure.

The fact sheet admitted that allergic and toxic effects could remain in dead spores. It should have made that more emphatic, since that is so often the case.

The fact sheet statement that “..substances that are porous and can trap molds, such as paper, rags, carpet, wallboard and rotten wood should be decontaminated and thrown out...” is correct as far as it goes. The statement should, however, have gone further respecting the discard of porous goods (such as pillows, couch cushions, flexible foam pads and heavy fabric items, which should be bagged and disposed rather than decontaminated and thrown out). The process of decontamination prior to disposal increases the individual’s contact time and increases the dosage as a result of the increased handling of the damaged item.

3. As certified industrial hygienists ("CIH"), mold detection, causal interdiction and remediation consultancy is our "way of life" in this profession. In a sense, this profession was "there" long before these kinds of water-generated contaminations were ever considered an indoor air quality ("IAQ") issue by the general public and the real estate or construction professions or even many health departments. For the most part, between the CIH and IAQ professions and related microbiological labs, we have generated through years of testing and experience the only established protocols for multidiciplined interior structural detection and remediation. We were there well before the Health Department and know from years in the field what works and what does not.