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## DO PEOPLE REALLY GET SICK FROM A LITTLE MOLD IN THEIR HOUSE?

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The debate continues to rage. The positions are as polarized as ever. Every new study is scrutinized and dissected with each side pulling tidbits, usually out of context, to support their view. It sounds like the discussion of politics in Washington, D.C. but, unfortunately, it is something that hits restoration contractors much closer to home. The debate is about mold. Specifically, health effects that can reasonably be attributed to mold. And more specifically, health effects that can be attributed to mold at exposure levels that are typically found in homes with *limited* water damage.

This debate is not purely an intellectual exercise. It has direct consequences for cleaning and restoration contractors whether they officially deal with mold or not. At a minimum, contractors need to understand the basics of the debate so that they can develop appropriate policies and procedures to address the protection of their workers and provide informative notification to their clients when mold is found as part of a “normal” project. To a greater extent, any contractor that is currently providing cleaning or restoration services should be keeping careful track of the debate as it will have a major impact on our entire industry. If significant health effects from mold exposure are proven to be *rare* those contractors who have invested heavily in developing substantial mold remediation capabilities will be forced to scramble to redirect their resources. On the other hand, if scientific studies *validate* the claims of symptoms such as memory loss, extreme fatigue, personality changes, degradation of the immune system, and significant respiratory distress, then cleaning and restoration contractors will be forced to upgrade their services to deal with this common indoor contaminant.

### Two Types of Evidence

One of the reasons that the debate about health effects related to mold continues so vigorously is that the two sides typically use different types of evidence to support their conclusions. Individuals skeptical of mold-related health effects tend to gravitate toward carefully controlled scientific studies. Although such studies produce accurate information, typically they are narrow in their application. After all, in order to control variables you often have to reduce the number of variables. This tends to produce results that are not reflective of the real world where individuals are subject to a number of environmental exposures and little is known about the synergy that may develop between unrelated exposures, magnifying the negative impacts.

Conversely, many advocates who aggressively trumpet the connection between mold in buildings and detrimental health effects often rely on case studies. To a great extent case studies involve anecdotal data—individuals report symptoms and conditions which then must be extrapolated in an attempt to determine the exposure levels and the connection between the conditions and the symptoms. It is difficult to have tight controls on case studies as exposure levels are often not measured, or measured only after symptoms have been reported. Also, it is extremely difficult to record or regulate ancillary exposures other than mold in everyday situations. Since stress, diet, chemicals, and a host of bacterial and viral organisms may produce symptoms similar to those associated with mold exposure, proving that mold is the primary culprit is extremely difficult.

### Learning from History

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This sort of debate about health consequences from exposure to a particular contaminant is not new. The ancient Romans debated whether smelting lead was truly the cause of significant illnesses. Eventually the government decided that the dangers were real enough that Roman citizens should not work such a trade, so they made lead work part of the prison punishment for foreigners. A more recent example of a suspected problem eventually being confirmed is the work related to asbestos health effects conducted by Dr. Irving Selikoff in the 1970's. He was able to make the transition from anecdotal data to scientific data by aggregating enough individual cases that the similarities in outcomes could be verified statistically. It is interesting to note that today's general acceptance of the correlation between asbestos exposure and lung cancer was as vigorously debated 35 years ago as the mold connection to health effects is today.

With this in mind we have always taken the approach in our organization that it is important to look for trends in data, even if it is *soft data*, such as reports from homeowners, rather than *hard data* like measurements or sample results.

### **Case Studies Can Serve as Examples**

Over the past ten years we have talked to hundreds of home and business owners about health symptoms and indoor mold growth. Our experience parallels that of Dr. Selikoff's with asbestos. We have been in contact with too many individuals that exhibit a cluster of similar symptoms, with the only consistent connecting factor being mold exposure to disregard this data. In that respect, one case study can serve as an example of many situations that have convinced us that there is a provable link between exposure to mold indoors and serious health symptoms. A recent project involving a family, which we will refer to as the V's, clearly illustrates our experience over the past decade.

We were called in to do an IAQ investigation of a 2,400 square foot ten-year-old two-story home in a nice neighborhood. The V's were the original purchasers of the home. The family consists of a father, a stay-at-home mother, and three children, ages eight, four, and one. They sleep upstairs. The mother reported that when the house is closed from October to May the family is sick. They didn't see or smell any mold.

Over the course of numerous conversations with the V's we were able to compile a list of symptoms (see sidebar). When we got a sense of the magnitude of the health problems they had experienced, we asked Mrs. V to compile a list of doctor visits during the past year. We were stunned when the listing yielded 51 visits—nearly one a week! No wonder some of the doctors had accused Mrs. V of suffering from Munchausen syndrome, a psychological disorder where a mother calls attention to herself by magnifying, or in more severe cases causing, illnesses in her children.

This information led us to question Mr. and Mrs. V carefully regarding past incidents of water intrusion. They indicated that they had numerous leaks over the years in the northeast corner of the kitchen, and just a few weeks prior to our inquiry had identified a gap in the siding that was the probable cause. The builder had agreed to fix the siding and reported that a whole sheet of orient strand board under the siding above the kitchen had to be replaced because it was "...black and so soft that you could put your finger through it".

Following replacement of the board the four-year-old was sick; but the blood test was inconclusive for mononucleosis. Previously, Mr. V had exhibited the fewest symptoms, but after investigating the attic area where the siding was replaced, he was stricken with disabling headaches and upper respiratory distress. Mrs. V contracted pneumonia following the removal of the orient strand board.

This new information was cause for some real concern as we understand that one of the key truisms of mold situations is that "bad mold remediation is worse than no remediation at all". The homeowner allowed us to conduct a mold investigation. We found substantial residue in the attic that was confirmed as *Stachybotrys*. We also recovered elevated levels of *Aspergillus/Penicillium* throughout the house and *Stachybotrys*

contamination in the HVAC system, with the worst levels in the eight-year-old's bedroom. This correlation between the highest mold counts and most significant symptoms of the occupants is an association that we frequently observe.

Based on the results of our investigation we recommended that a local restoration firm (ASCR member and certified mold specialist) conduct the remediation. The family moved out of their home while the remediation was conducted. Within a week of moving out they noticed that they were not having upper respiratory problems. Within a month all the symptoms had subsided.

The remediation effort involved the removal of the siding for a second time where the leak occurred. This aggressive approach uncovered additional material with visible fungal contamination. After all the source material was removed, cleaning and air scrubbing were conducted in a small, isolated area of the attic. This was followed with a complete HEPA sandwich cleaning (HEPA vacuuming, damp wiping with an anti-microbial, and HEPA vacuuming a second time) of all exposed surfaces in the living area of the house. After cleaning the interior of the house, the entire HVAC system was cleaned following NADCA guidelines. Post-remediation air samples confirmed that the remediation process had eliminated all of the residual *Stachybotrys* and other mold types.

The true testament to successful remediation is that since the family has returned to their home they have not had any doctor visits. Although this is only one case, it is not uncommon in our experience, and it serves to bolster our belief that many people really do get sick from a little mold in their home.

A Partial List of Symptoms Reported	
8-year-old	4-year-old
▶ Chronically sick since infancy	▶ Flu
▶ Shingles at 9 months	▶ Hives—treated with steroids causing dehydration
▶ Mononucleosis at 5 years and 8 years	▶ Viral infection
▶ Chronic sinusitis	▶ Fluid in ear
▶ Bronchitis	▶ Blood test inconclusive for mono
▶ Tonsils and adenoids removed; little improvement noted	▶ Blood test positive for mold
▶ Impetigo every spring and summer	▶ Low white blood cell count
▶ Many warts	▶ Eczema
▶ Lethargic	
▶ Dark circles under the eyes	
▶ Many ear infections	

## About the Author

*Michael A. Pinto currently serves as Chief Executive Officer of Wonder Makers Environmental, Inc. He is a nationally recognized expert in the areas of indoor air quality and biological contamination. His educational background includes a Bachelor of Science degree in philosophy and a Masters Degree in public administration. Michael holds numerous other certifications including Certified Safety Professional (CSP) and Certified Mold Professional (CMP). His expertise in the IAQ area has been recognized by the legal system through his appearance in a variety of cases as an expert witness. He has made presentations regarding the intricacies of indoor investigations at numerous seminars and conferences around the country, and he is an instructor of three levels of RIA-certified mold remediation training that is conducted around the country and in Canada. Michael is the author of three books, including Fungal Contamination: A Comprehensive Guide for Remediation, over 114 technical articles, and 18 commercial training programs. He can be reached at 269-382-4154 or map@wondermakers.com.*