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*By Michael A. Pinto, CSP, CMP*

# Medical Evidence Connecting Mold Exposure to Illness Continues to Build

A study published in the August 2011 issue of the *Annals of Allergy, Asthma & Immunology* got quite a bit of play in both the popular press and industry publications. The study, "High environmental relative moldiness index during infancy as a predictor of asthma at 7 years of age," described a link between an infant's exposure to mold and subsequent development of asthma. Although the authors were very careful to state that they could not prove that a child's exposure to mold prior to age 1 definitively causes asthma, they explained that such exposures lead to symptoms that are caused by chronic inflammation of the respiratory system:

- wheezing
- shortness of breath
- chest tightness
- coughing

This study is of interest to cleaning and restoration professionals for a number of reasons. First, it is a continuation of a series of studies that point to mold as the primary culprit in the development of serious illnesses. Another important aspect is the fact that the dust sampling process developed by the EPA to compare mold levels in various houses is now being brought to bear in detailed scientific studies. Finally, this scholarship is important because it puts more distance between the "mold minimizers" and the mainstream practitioners of mold remediation.

## Some Fascinating Details

The latest study that draws a tighter connection between mold exposure and poor health is the culmination of a seven-year effort. Researchers at the University of Cincinnati and Cincinnati Children's Hospital Medical Center did environmental testing and medical exams on 176 children from shortly after birth until they were 7 years old. They chose age 7 for the cut-off of their study because that is the age when childhood asthma can be definitively diagnosed.

The environmental part of the research included a number of home visits. A visual inspection was conducted so the researchers could identify mold and mold odors, an indicator of the presence of hidden fungal colonies. The testing in the homes consisted primarily of settled dust samples collected from the rooms where the children being studied spent most of their time. The dust samples were analyzed and interpreted according to the process the EPA developed known as the Environmental Relative Moldiness Index (ERMI). Initially, the study was based on half of the participants living in homes with visible mold and half in homes that were mold-free.

While there was some impact if one or both of the child's parents were asthmatics, the most startling result was the clear conclusion that infants who are exposed to mold in their living environments are nearly three times as likely to develop asthma than those who did not have extensive mold exposure in their first year of life. The researchers also noted that being exposed to mold between the ages of 1 and 7 does not seem to carry nearly the same risk as being exposed in infancy.

One other interesting sidebar was that the study showed air conditioning at home slightly reduced the risk of developing childhood asthma. This is probably related to the fact that air conditioning in a house often reduces the relative humidity in the structure, and low relative humidity retards mold growth.

## Marginalization of the "Mold Minimizers"

For years, I have told cleaning and restoration contractors that it is common for professionals in an industry to accumulate anecdotal data that clearly points in a particular direction before scientific studies catch up with the wisdom of those working in the trenches. This was true of doctors seeing the debilitating effects of smoking years before the Surgeon General proclaimed tobacco use as dangerous, of workers witnessing the early death of their compatriots who were exposed to asbestos, and of restoration contractors observing the health issues suffered by occupants of buildings that sustained water damage and supported resultant mold growth.

In many respects, the restoration and indoor air quality industries raised the visibility of the mold issue. Leaders in these areas were speaking out about the health effects of mold exposure long before the Ballard case in Texas caught the public eye. Practitioners had noticed a simple pattern:

1. Individuals requested help in identifying the cause of their ill health that appeared to be related to occupancy of a residence or business.
2. Other potential sources of the health problems were ruled out or repaired without any substantial improvement in the occupants' condition.
3. Water intrusion was identified in the building, as well as, typically, colonies of mold growth.
4. Following appropriate remediation in which engineering controls minimized the potential for cross contamination, the symptoms dissipated.

From this, it was simple to conclude that exposure to fungal contamination (or, more generally, water-damaged buildings) caused the health problems and that resolving the water and mold issues improved the health of the occupants. Nevertheless, this ground-level view of the situation has been disparaged for more than a decade for lack of scientific underpinnings. According to the naysayers, restoration professionals could not prove that mold was causing the health effects without carefully controlled scientific studies.

Of course, one of the difficulties of carefully controlled scientific studies is that in an effort to limit the number of variables to control, they are typically fairly narrow in their scope. As a result, it often takes many years of specific studies that need to be merged to set the stage for a more comprehensive effort. Fortunately, we are now starting to reap the rewards of this step-by-step scientific process. One of those rewards is the validation of individuals who have been sounding the alarm regarding the health dangers of mold exposure.

## More Confirmation From Europe

For this reason, another study—one that did not get nearly the publicity of the work done by researchers at the University of Cincinnati—is very interesting. This effort is from researchers at the German Research Center for Environmental Health in Neuherberg. They, too, looked at the link between mold and asthma, and their study results were published in the respected *European Respiratory Journal* a few months before the data from their American counterparts. Not surprisingly, the German researchers found that children who live in homes with visible mold have a greater risk of developing asthma and allergies than children who do not live in moldy homes.

This effort was designed as a "meta-analysis," meaning the researchers examined the data from numerous previous studies and tried to identify broad trends. The German scientists reviewed the study design and results from 61 international research efforts published in reputable journals since the 1990s. After controlling for a large number of potential confounding factors, the results were very clear. Children living in water-damaged, moldy homes were more likely to have asthma, wheezing problems or nasal allergies than their peers from mold-free residences.

## Better Safe Than Sorry

Cleaning professionals, restoration contractors and remediation specialists now have several more good reasons not only to follow the standard of care for mold contamination, but also to develop procedures that enhance it. Proper engineering controls, personal protective equipment, specialized work practices and documentation of the effectiveness of restoration efforts is crucial to protecting workers, building occupants and cleaning and restoration businesses. It is becoming increasingly evident that mold exposure is dangerous. Industry professionals need to be part of the solution, not part of the problem. **RIA**

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