ERMI: Pathophysiology of Illness Caused by Exposure to Water-Damaged Buildings

Read this article by two pioneers in mold research that summarizes the latest information known about how disease is caused by damp (water-damaged) buildings - aka WDB - and an exciting, surprisingly new test developed by the EPA, called ERMI, that can be used to screen rooms and buildings for the overgrowth of fungi. Learn about the latest on dose-response theory (why amount of exposure doesn't apply), scientific breakthroughs, the "sicker, quicker" phenomenon, and much more!

Full ERMI test kits may be obtained by visiting www.mycometrics.com

The Ever-Expanding Data Base on Pathophysiology of Illness Caused by Exposure to Water-Damaged Buildings, by Ritchie Shoemaker, MD and King-Teh Lin, PhD, Mycometrics LLC

Indoor Environment Connections, Jan. 8, 2008

Click here to read this article, archived on SMH site

Click here to read article on www.ieconnections.com archive

Several key quotes:

On the dose-response theory:

"... dose-response relationships seen in illness caused by exposure of genetically susceptible patients to interior environments of water-damaged buildings are not linear "unit in equals unit out." There are so many observed variables of exposure and response that the idea of a 1:1 relationship of total mass or number of spores required for a threshold exposure is nonsensical."(p.2)

On recent scientific breakthroughs:

"Perhaps the most important scientific breakthrough in the WDB field was the confirmation that mold exposure in WDB was just one part of the inflammatory gauntlet some people faced when they walked into WDB. Toxigenic actinomycetes, endotoxin-forming bacteria and unusual mycobacteria all have been identified as contributing to human illness associated with WDB.

Added to these insights was the numbing realization that counting spores was essentially a worthless endeavor when over 99 percent of the toxin-carrying elements capable of hurting people in WDB were fragments of fungal organisms. Moreover, the emerging literature confirms that additional sources of adverse inflammatory effects found in patients with illness from WDB are products of secondary fungal metabolism, especially beta glucans."(p.2)

"Two additional recent advances came from the Environmental Protection Agency in April, 2006 and the Indoor Air Quality Association’s annual meeting in Las Vegas, October, 2007. Dr. Steve Vesper’s EPA Microbial Exposure Group brought us the Environmental Relative Mold Index, a diagnostic method that analyzes settled house dust for fungal DNA,

categorizing a home as being in a certain percentile for moldiness based on the DNA present in vacuum dust samples (IE Connections, June, 2007).

ERMI is a mold index. At the IAQA meetings, Ritchie C. Shoemaker, MD, a treating physician and biotoxin researcher from Pocomoke, Md., presented data on sequential activation of innate immune elements (SAIIE) that, taken in cases and controls, identified that buildings with a high ERMI were associated with patients having a high SAIIE index. Buildings that didn't have a high ERMI didn't have patients with a high SAIIE." (p.3)

On why people get "sicker, quicker" with each subsequent exposure:

"... the participation of multiple amplifying biological cascades of the innate immune response system provides for an exponential response that becomes steeper with subsequent re-exposures.

This phenomenon [is] called "sicker, quicker"...(p.3)

On why some people get sick, others don't, and why some become very sick, in WDB:

"In total, having reviewed HLA DR haplotypes in over 5,000 patients, we know the risk of illness acquisition caused by exposure to WDB is largely confined to patients with six separate HLA DR haplotypes, comprising 24 percent of the population. In that group, there are two separate haplotypes (4-3-53 and 11-3-52B) that have a 22-fold enrichment in those patients who develop a much more disabling syndrome seen following acquisition of illness. These two haplotypes fortunately are relatively rare, comprising only 4 percent of the population."(p.4)

Summary:

"We now have reliable, inexpensive tools to show the potential for human illness, the presence of human illness and the potential for increased risk for illness reacquired following re-exposure. When we have the genomics of this illness worked out, we should be able to screen multiple individuals inexpensively with a high degree of accuracy for untoward effects of WDB on health."(p.6)

If you are interested in the ERMI test, it is available through Mycometrics. Have your Mold Inspector or physician familiar with mold obtain this test, to facilitate interpretation, from www.Mycometrics.com. Mycometrics does not directly work with the public as it is a laboratory and does not have the personnel to take calls from throughout the USA and beyond. Dr. Shoemaker now uses this test with his mold-ill patients to prescreen and check the environments they occupy. Read more on Dr. Shoemaker's research and treatment protocols on his new website, at www.biotoxin.info.

Ritchie Shoemaker, MD is a family practice physician who has treated over 4,500 patients with illnesses acquired following exposure to water-damaged buildings. He has written six books, including "Mold Warriors." He has published multiple academic papers and has lectured widely to lay and academic audiences alike. [He may be reached at www.chronicneurotoxins.com or www.biotoxin.info]

King-Teh Lin, PhD is laboratory director for Mycometrics LLC. He earned a doctorate degree from Robert Wood Johnson Medical School and, soon after his postdoctoral fellowship, continued as a faculty member until being recruited by P&K Microbiology Services as a director of research and development. There, he pioneered commercialization of MSQPCR and invented the new DNA testing for wood-decaying fungi. In 2005, he established Mycometrics to provide microbiology testing services. Lin can be reached by e-mail at kingteh@mycometrics.com.{/njaccess}