



Environmental Solutions Group

New Research Points to Common Misdiagnosis of Chronic Fatigue Syndrome

An important article recently published in the *Bulletin of the IACFS/ME* discusses the common misdiagnosis of illness from water-damaged buildings as Chronic Fatigue Syndrome (CFS). Dr. Ritchie Shoemaker examined 163 cases of patients under the age of 18 who have been diagnosed with CFS for at least 3 months. The research concluded that all 163 cases of medically-diagnosed pediatric CFS were actually water damaged building (WDB) illness. Dr. Shoemaker's findings provide an opportunity to strengthen CFS case definition by ensuring that CFS-like syndromes, especially WDB-illness, are not identified as CFS.

Dr. Shoemaker recommends that physicians treating a CFS patient collect an environmental history of the patient. Shoemaker states that the presence of visible mold, musty odors or microbial amplification as confirmed by environmental testing help negate a possible diagnosis of CFS.

A Brief History

The comprehensive review, *Damp Indoor Spaces and Health*, published by the Institute of Medicine in 2003 did not find enough documentation of fatigue as a symptom of exposure to water damaged buildings (WDB). By the fall of 2008, however, fatigue was established as part of the WDB illness syndrome.

WDB illness is defined as a chronic illness with multiple symptoms across many systems of the human body acquired following exposure lasting more than 30 days to the interior environment of a building with a history of water intrusion followed by amplification of growth of resident toxigenic microbes. These microbes include, but are not limited to fungi, bacteria, actinomycetes and mycobacteria. Also included in this group are inflammagens to include hemolysins, spiroyclic drimanones, proteinases, beta glucans, mannans and volatile organic compounds (VOCs). The illness can be acquired acutely and then persist despite removal from exposure. As a rule, however, the illness onset is gradual with duration of exposure exceeding 30 days.

Measurable symptoms of WDB illness include:

- Low level of melanocyte stimulating hormone (MSH)
- Elevated levels of transforming growth factor beta-1 (TGF beta-1), which is associated with pulmonary symptoms commonly observed in WDB patients
- Elevated levels of activation of the fourth component of complement (C4a)
- Increased incidence of antigliadin & anticardiolipin antibodies
- von Willebrand's profile, which is associated with unexplained bleeding (occurs with WDB patients but rarely seen with CFS)

WDB patients also have an increased presence of three HLA DR haplotypes: 4-3-53, 11/12-3-52B and 14-5-52B. According to Dr. Shoemaker, each patient has an illness that is best described as a chronic, systemic inflammatory response syndrome which is associated with a genetic predisposition as found in persistent illness from Lyme Disease and autoimmune hepatitis.

In light of the prevalence of WDB illness, Dr. Shoemaker recommends that physicians should revisit patients believed to have CFS, especially those who have not responded well to therapies known to benefit other CFS patients. In addition, physicians evaluating patients for CFS should rule out WDB illness in the medical diagnosis. Genomic testing for MSH, TGF beta-1 and C4a will evolve as more physicians become familiar with gene identification and the testing becomes more readily available.

Finally, Dr. Shoemaker states that "the inflammatory cascades of innate immune responses of WDB patients will not spontaneously abate, even with removal from exposure to a water damaged building."

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