

Summary of the Literature supporting the linkage between exposure to mold and the development of multiple health issues aka mold illness or Chronic Inflammatory Response Syndrome (CIRS).

By Proactive Wellness Centers, PLC, Lynese L. Lawson DO, Medical Director

1. The World Health Organization has recognized the connection between exposure to water damaged buildings and the resulting mold-related illnesses in their 2009 report.
<http://www.who.int/indoorair/publications/7989289041683/en/>

Here is an excerpt from that report:

*4.1.5 Conclusions Our review of the epidemiological evidence presented in this report, the previous review by the Institute of Medicine and the quantitative meta-analysis of Fisk, Lei-Gomez and Mendell (2007) **leads us to conclude that there is sufficient evidence of an association between indoor dampness-related factors and a wide range of respiratory health effects (Table 8), including asthma development, asthma exacerbation, current asthma, respiratory infections, upper respiratory tract symptoms, cough, wheeze and dyspnoea.***

2. A report published in the highly respected Scientific World Journal in 2013 by Janette Hope provides a comprehensive review of the mechanism of injury with respect to exposure to a water damaged building and the related health impacts. **Report: Review of the Mechanism of Injury and Treatment Approaches for Illness Resulting from Exposure to Water-Damaged Buildings, Mold, and Mycotoxins. An excerpt is provided below and the full article is here:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3654247/>

*Symptoms and illness due to exposure result from varying mechanisms including infection, toxicity, allergy, irritant effects, and systemic inflammation. Additionally, individual responses to exposure vary based on genetic makeup, duration and severity of exposure, and underlying health and nutritional status. **While it is often difficult to determine the contribution of the many components of water-damaged buildings, studies on illness from exposure to damp/water-damaged environments have been consistent in identifying the overall exposure itself as being the main factor associated with adverse health effects [4, 5].** Individual components of exposure that have been identified include: mold and mold spores, mycotoxins, bacteria, bacterial endotoxins and other cell wall components, protozoa (amoeba), increased presence of rodents, insects and dust mites, and increased deterioration of building materials with consequent off gassing of toxic fumes such as formaldehyde*

3. Shoemaker et al, presents a published Consensus report representing the evidence with respect to CIRS-Water Damaged Buildings. Following is an excerpt from that report which is available at:

https://www.survivingmold.com/docs/MEDICAL_CONSENSUS_1_19_2016_INDOOR_AIR_KB_FINAL.pdf

Evidence supports a cause-effect relationship between exposure to the air and dust in water-damaged buildings (WDBs) and chronic inflammatory response syndrome (CIRS). This

syndrome has an increased relative risk associated with specific HLA genotypes. CIRS-WDB is mediated by a persistent innate immune inflammatory response to toxins, antigens, and inflammagens present in the interior environment of WDBs.

- The 2008 GAO Report while a bit dated (2008) recognized the association between water damaged buildings, mold and human health impacts. This report provides a broad review of the evidence prior to 2008.

The 2004 Institute of Medicine report, *Damp Indoor Spaces and Health*, found sufficient evidence of an association between exposure to indoor mold and certain adverse health effects—that is, an association between the agent and the outcome has been observed in studies in which chance, bias, and confounding factors can be ruled out with reasonable confidence. These health effects include upper respiratory tract symptoms, including nasal congestion, sneezing, runny or itchy nose, and throat irritation; • exacerbation of pre-existing asthma; • wheeze; • cough; • hypersensitivity pneumonitis in susceptible persons; and • fungal colonization or opportunistic infections in immune-compromised persons.

Further, the report shows that 5 different government agencies have published 169 different reports on the health effects of exposure to toxic mold. The table is provided below:

Table 1: Potential Adverse Health Effects of Exposure to Indoor Mold Cited in Six or More Guidance Documents, by Federal Agency

Potential adverse health effects of exposure to indoor mold	Number of documents reviewed, by agency					Total number of documents citing the health effects
	CPSC ^a (2)	EPA (12)	FEMA (8)	HHS (6)	HUD (6)	
	Number of documents citing the health effects					
Asthma, asthma triggers, or asthma symptoms (such as episodes or attacks)	2	11	6	4	6	27 ^b
Upper respiratory tract symptoms ^c	2	4	6	6	5	21 ^b
Eye symptoms ^d	2	3	6	6	5	20 ^b
Skin symptoms ^e	1	2	5	5	4	16 ^b
Allergies or allergic reactions (symptoms not otherwise specified)	0	7	4	3	1	15
Wheeze	1	1	5	5	2	13 ^c
Cough	2	2	4	2	2	10 ^b
Difficulty breathing or trouble breathing	1	1	3	2	4	10 ^b
Infections (including those affecting people who have chronic lung disease)	0	1	3	6	0	10
Adverse effects to the nervous system ^f	1	1	3	0	4	8 ^b
Shortness of breath	1	1	3	3	0	7 ^c
Fungal colonization or opportunistic infections in immune-compromised individuals	0	1	0	5	1	6 ^b
Hypersensitivity pneumonitis	1	4	0	2	1	6 ^b

Source: GAO analysis of selected federal guidance.