

Scientific Studies: *Non-Immune Contact Reactions*

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One of the frequent misunderstandings about multiple chemical sensitivity (MCS) is confusing it with an allergic response due to IgE (immunoglobulin E). MCS is not an allergic reaction. Rather, it appears to be a reaction to the toxic properties of the incitants due to a damaged detoxification system. Thus far, science is still searching for the existence of biomarkers to diagnose the condition.

Researchers conducted a study involving non-immune immediate contact reactions (NIICR), which are defined as “non-immunoglobulin E (IgE)-mediated skin responses that occur without previous sensitization” (Harth et al, 2007). NIICR has been observed from contact with benzoic acid, trans-cinnamic acid and methyl nicotinate as well as cinnamic aldehyde of fragrance mix. Antihistamine treatment in these cases has been ineffective because the reaction is non-immune or NIICR.

The researchers examined a case report of a subject with workplace related reactions to perfumes. The subject presented delayed reactions to a mixture of odorous substances in patch testing. A bronchial challenge with perfume was performed and yielded an immediate asthmatic reaction with a diagnosis of occupational allergy to perfumes.

The researches tested a 47 year old female gardener who complained of shortness of

breath and headaches when exposed to any and all odors since 2000. The patient experienced the symptoms at home and work, though they were more pronounced at work. The diagnosis of idiopathic environmental intolerance (IEI) was the most likely diagnosis, though the researchers decided to perform further tests.

For the first time, the researchers applied an NIICR inducing component of fragrance mix in a bronchial challenge test which showed an asthmatic reaction. The symptoms were determined to not be due to hyperosmia (oversensitivity to smell). It was determined that the negative results for asthma favored the diagnoses of the accidental coincidence of IEI and NIICR. Though the researchers did not find a cause for IEI, they did determine that cinnamic aldehyde has effects of the lower airways of the patient and that bronchial effects and clinical relevance of NIICR need to be further examined.

This study reinforces the fact that environmental illness is not allergy mediated or asthma related, yet there may be co-occurring allergy or asthma in some patients.

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Reference:

Harth V, Merget R, Altmann L, & Bruning T. Bronchial challenge testing to fragrance component as further diagnostic approach to non-immune immediate contact reactions. Contact Dermatitis. 2007 Mar;56(3):175-7.