

Healthy Homes Grantees in Region II, New York/New Jersey

Name of Grantee: Columbia University, School of Public Health

Name of Project: The Trustees of Columbia University in the City of New York
The Joseph L. Mailman School of Public Health, Novel Markers of
Fungal Exposure in Homes and Their Relationship to Respiratory
Symptoms in Children From New York City

Amount Awarded: \$ 505,365

Year of Grant: 2001

Contact Info:

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Project Partners: Columbia University's Mailman School of Public Health

Summary of Project Activities:

Mold exposure in homes has been associated with respiratory morbidity in children and adults, but the exact nature of the exposure is unclear. In addition, it is unclear how interview surveys and reports of damp and mold spots correlate with exposure to relevant mold components. Because the more objective measures of fungal exposure utilizing microscopy can be rather time consuming and expensive, recent advances in immunoassays for fungal components such as extra cellular polysaccharides (EPS) have enabled quantization of mold in house dust in a timely and cost-effective manner. These methods are anticipated to provide a better measure of fungal exposure (Chew et al. In Press; Douwes et al. 1996; Douwes et al. 1999). For example, Douwes et al. (1999) found that EPS-*Asp/Pen* in house dust was positively associated with total culturable mold counts and with respiratory symptoms. Likewise, the use of other types of EPS may further enhance our ability to assess mold exposure.

An ongoing prospective birth cohort study at Columbia University's Mailman School of Public Health provides a unique opportunity to investigate the utility of measuring fungal EPS in house dust and fungal EPS specific IgG in serum of 400 mothers and 100 children in order to identify relationships between mold exposure and respiratory symptoms. The study has already received funding (NIEHS- P50 ES09600 & 5 ROI ES08977-02 and EPA- R 827027-02), to evaluate levels of airborne particulate matter (PM_{2.5}), polycyclic aromatic hydrocarbons (PAH), indoor allergens, environmental tobacco smoke (ETS), and pesticides in the home. In addition, the study has been funded to collect nutrition information and measure several biomarkers including cotinine, PAH-DNA adducts, lead, antioxidants, total IgE, specific IgE, lymphocyte proliferation, and T cell cytokines. This study is straight-forward in design and one of the most comprehensive in exposure assessment and clinical evaluation of children.

Product Outcomes/Outputs:

The addition of a novel mold exposure assessment will benefit not only this study, but also future residential and occupational studies where mold exposure is conceivably related to adverse health outcomes.

