ADULTS WITH ASTHMA
CONTROL OF EXPOSURE TO MITE ALLERGEN


Purpose of the Study. To determine whether decreased exposure to house dust mites improves control of asthma among adults.

Study Population. A total of 1222 adults with asthma who were being treated with inhaled corticosteroids and required short-acting β-receptor agonist treatment more than once per day were studied.

Methods. This was a double-blind, randomized, placebo-controlled study of the use of impermeable mattress covers among adults with symptomatic asthma. House dust mite antigen levels were measured in mattress dust at baseline, 6 months, and 12 months.

Results. The prevalence of sensitivity to house dust mite allergen was ~65% in both the active intervention group (allergen-impermeable bed covers) and the control group (permeable bed covers). The concentration of house dust mite antigen for the treated group was 33% of that for the control group at 6 months, but levels were not different at 12 months. The mean morning peak expiratory flow improved significantly in both groups. There was no significant difference in inhaled corticosteroid doses.

Conclusions. Use of impermeable mattress covers brought no significant change in symptom control, pulmonary function, or inhaled corticosteroid doses among adults with asthma.

Reviewer’s Comments. Another study in the same issue showed no difference in allergic rhinitis symptom control among patients randomized to receive allergen-impermeable bed covers versus sham covers. It may be postulated that there is no single intervention strategy that, by itself, significantly affects immunoglobulin E-mediated upper and lower airway involvement. This does not exclude the possibility that control of house dust mite exposure, in addition to other active treatments and more comprehensive environmental control measures, may have beneficial effects for selected patients.

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KNOWLEDGE AND PRACTICE OF DUST MITE CONTROL BY SPECIALTY CARE


Purpose of the Study. To compare the knowledge and practice of environmental control measures in families of children with asthma who were treated by either an allergist or a pediatrician.

Study Population. The subjects were 114 asthmatic children (age range: 6–17 years; mean age: 11.2 years) with positive skin test results for house dust mites. The children were recruited from 4 pediatric practices in the Baltimore metropolitan area.

Methods. A cross-sectional study using secondary analyses of data from a clinical trial of parents and their children with asthma who were performed. In the initial visit, skin testing was performed and the parent answered baseline questions related to the child’s health history. A baseline home environment evaluation consisted of 35 questions addressing the family’s cleaning habits, knowledge of environmental control measures, and self-reported changes in the home to reduce the child’s exposure to indoor allergens. A home inspection evaluated the home characteristics, as well as evidence of dust mite environmental controls (e.g., mattress encasement, pillow encasement, removal of wall-to-wall carpeting, and removal of stuffed animals). Dust samples were collected and analyzed for indoor allergens with standard methods. The children were divided into 2 groups, according to whether they had been treated by an allergist. The study then...
determined whether the 2 groups had ever been advised to make changes in their homes to reduce dust mite exposure (knowledge) and whether they had made any changes in their homes to reduce dust mite exposure (practice).

**Results.** The study families were predominately white (50%) or African American (35%). All of the children demonstrated positive skin test results for dust mite allergen, 61% (n = 69) had been examined and skin-tested by an allergist before enrolling in the study, and 4% were currently receiving immunotherapy. Fifty-six of the 69 families (81%) that had visited an allergist reported receiving advice regarding general indoor environmental control, compared with 22 families (49%) that had not visited an allergist (P < .0001). With respect to specific dust mite recommendations, families that had been evaluated by an allergist had significantly more dust mite knowledge (70% vs 18%, P < .0001). Families that had visited an allergist demonstrated a significantly greater frequency of knowledge regarding the need for mattress encasement (61% vs 13%, P < .001) and pillow encasement (51% vs 11%, P < .0001), compared with the non-allergist-treated group. Families that had visited an allergist demonstrated somewhat greater implementation of dust mite control recommendations, compared with families that had visited a pediatrician (68% vs 56%, P = .063%). The use of mattress and pillow encasements was significantly greater (38% vs 11%, P = .001, and 36% vs 16%, P = .009, respectively) in the allergist-treated group than in the pediatrician-treated group. To evaluate adherence, comparisons of each family’s knowledge of specific recommendations with the changes made in the household were made. Of the families that had visited an allergist, 70% had knowledge of dust mite control measures and 60% of those families made at least 1 of the 4 observable changes in their households to reduce dust mite allergen exposure. Of the families that had visited a pediatrician, 18% had knowledge of dust mite control recommendations and 63% of those families made changes in their households.

**Conclusions.** Parents of dust mite-sensitive, asthmatic children who visited an allergist were more aware of dust mite control recommendations and made more indoor environmental changes. Allergists are able to perform specific tests to determine allergies and can offer directed education regarding environmental control measures.

**Reviewer’s Comments.** This study emphasizes the importance of identifying allergy triggers. Without knowledge of specific allergy triggers, guidelines for environmental controls can only be vague. When given specific advice, patients appeared to be equally motivated, regardless of which physician provided the environmental control advice. However, a limitation of the study, as the authors noted, was that the subjects in the study were predominantly middle-class children; patients in lower socioeconomic groups might have different outcomes. In addition, depending on the type of insurance (if any), patients might not have easy accessibility to an allergist.

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**Fungal Levels in the Home and Lower Respiratory Tract Illnesses in the First Year of Life**


**Purpose of the Study.** Previous studies found a relationship between home dampness and lower respiratory tract symptoms among children. Is this relationship attributable to exposure to fungi, which thrive in damp conditions?

**Study Population.** A birth cohort of 499 children with a history of asthma or allergy for at least 1 parent was studied.

**Methods.** During a home visit, when the child was 2 or 3 months of age, a technician determined household and socioeconomic characteristics and obtained air and dust samples. Every 2 months thereafter, a follow-up telephone questionnaire, regarding respiratory symptoms and illnesses experienced by the child, was administered to the child’s primary caregiver. In-home fungal concentrations were evaluated as predictors of lower respiratory tract illnesses (LRI) (croup, pneumonia, bronchitis, and bronchiolitis) in the first 1 year of life.

**Results.** In multivariate analyses, after controlling for gender, the presence of water damage or visible mold/mildew, being born in winter, breastfeeding, and being exposed to other children through siblings, the authors found a significantly increased relative risk (RR) of LRI with high levels (>90th percentile) of airborne Penicillium (RR: 1.73; 95% confidence interval [CI]: 1.23–2.43), dust-borne Cladosporium (RR: 1.52; 95% CI: 1.02–2.25), Zygoomyces (RR: 1.96; 95% CI: 1.35–2.83), or Alternaria (RR: 1.51; 95% CI: 1.00–2.28), or any fungus (RR: 1.86; 95% CI: 1.21–2.88).

**Conclusions.** Exposure to high fungal levels increased the risk of LRI in infancy. The actual mechanisms remain unknown. Sensitivity to inhaled allergens, including mold, as measured with skin testing or radioallergosorbent testing, is uncommon in infancy, and this association in infancy is likely to be nonallergic.

**Reviewer’s Comments.** These are interesting and potentially useful findings, but more study is required. It should be noted that no increase in LRI was associated with high levels of exposure to a large number of other individual fungi evaluated. As the authors pointed out, “People are routinely exposed to >200 different species of fungi. Exposure occurs universally and is impossible to avoid completely. Often there are no adverse effects from these exposures.” It is hoped that solid scientific work such as this will not be misconstrued to bolster the mold hysteria prevalent in many parts of the country, resulting in expensive and unnecessary mold removal projects.

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**β-Adrenergic Agonist Therapy**

**ComparISON OF Racemic Albuterol AND Levalbuterol FOR Treatment of Acute Asthma**


**Purpose of the Study.** Inhaled β-receptor agonists are widely used to treat bronchospasm and acute asthma exacerbations. Recently, a new β agonist, levalbuterol, which is the R-isomer of albuterol, was introduced. This study was conducted in an acute setting, to compare albuterol and levalbuterol.

**Methods.** This was a randomized, double-blind, controlled trial conducted in the emergency department and inpatient asthma care unit of a children’s hospital. Children were 1 to 18 years of age; the study group included 482 patients, with a total of 547 enrollments. Patients received a nebulized solution of either 2.5 mg of racemic albuterol or 1.25 mg of levalbuterol every 20 minutes, for a maximum of 6 doses. Children subsequently admitted to...
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