What is the connection between cockroach allergy and wheezing or asthma in children? ---- MD

A number of studies have demonstrated that cockroach allergy is a major cause of asthma in older, inner-city children. One study found that in 476 inner-city children with asthma, 37% were allergic to cockroaches, and high allergen levels were found in half of their bedrooms.1 Those children with the highest levels of exposure had the most severe asthma and were 3 times more likely to require hospitalization. Call and associates2 found (using radioallergosorbent testing) that a significant proportion of African American inner-city children with asthma were sensitive to cockroach allergen; they had been exposed to high levels of the allergen in their homes. Garcia and coworkers3 compared cockroach sensitization rates from urban, suburban, and rural areas of Kentucky. They found that 43% of the adults and children from rural areas had positive skin test results for cockroach sensitivity, compared with 41% of inner-city patients, indicating that rural exposure is similar to inner-city exposure. In addition, several studies have suggested that cockroach-related wheezing may depend on factors other than socioeconomic status.4,5 Recently, Matsui and colleagues6 found that cockroach allergen levels are associated with cockroach sensitization in suburban homes, in African American as well as other children. Repeated episodes of wheezing in infants and children younger than 3 years is a common, widespread problem. Infants and young children are more likely to be hospitalized with asthma than are older children or adults. Viral upper respiratory tract infections and secondhand smoke exposure are considered the primary causes of asthma in infants. IgE-mediated allergy is a much less common cause of wheezing in this age group; thus, skin tests are not routinely performed. However, studies have shown that the incidence of asthma or wheezing attributable to cockroach exposure is increasing in infants and young children. Gold and coworkers4 found that the presence of cockroach allergen in the family room may increase the risk of repeated wheezing during the first year of life, but they were unable to determine whether the risk of wheezing was mediated through allergic or nonallergic mechanisms. My colleagues and I5 found that 45% of asthmatic infants and children younger than 3 years had at least 1 positive reaction on skin tests for common indoor allergens. One fourth had positive results on skin tests for cockroach extract, and 17% had positive results on tests for house dust mite extract. Even in the 49 infants who were younger than 1 year, 28.5% had positive results on skin tests for cockroach and 10% had positive reactions on tests for house dust mite and cat. Delacourt and associates7 found that 25% of infants with recurrent wheezing had positive results on skin tests for either Dermatophagoides pteronyssinus or cat allergen. The larger number of infants and young children sensitized to indoor inhalant allergens, such as cockroach and dust mite, suggests that the prevalence of allergy may be increasing in this age group.5,7 Thus, consider skin tests in all asthmatic children--regardless of age--who have persistent wheezing. Appropriate environmental control measures can then be instituted for those patients with sensitivity to the indoor allergens. ---- Mary Beth Hogan, MD

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