Exposure to Pets, and the Association With Hay Fever, Asthma, and Atopic Sensitization in Rural Children

PURPOSE OF THE STUDY. To evaluate the effect of exposure to animals on the development of hay fever, asthma, and atopy.

STUDY POPULATION. Cross-sectional study of 2618 families of Swiss, German, and Austrian decent, living in a rural location. Families were assigned to 1 of 2 categories: farming and nonfarming.

METHODS. Information was collected by standardized questionnaire and interview. Mattress dust was collected and measured for content of endotoxin and cat allergen. Specific immunoglobulin E levels to multiple common allergens and immunoglobulin G4 to cat were measured.

RESULTS. Complete data were available for 812 children. Among them, 319 were farmers’ children and 493 were nonfarmers’ children. In the entire group, early (<1-year-old) and current exposure to cats was associated with a reduced risk of wheezing and grass pollen sensitization. Current contact with dogs was inversely associated with hay fever, asthma, and sensitization to cat allergen and grass pollen. Early exposure to dog did not have any significant effects. When farm-animal contact was controlled for, most of these associations were weakened but were strongest in farmers’ children.

CONCLUSIONS. There was an inverse relationship between dog exposure and asthma, hay fever, and allergy. However, much of this protective effect was explained by exposure to farm animals.

REVIEWER COMMENTS. There are several studies that report pet exposure to be associated with a reduced risk for atopic disease. In this study, the primary outcome of decreased clinical manifestations of atopy was confounded by exposure to farm animals. Although the exposure to pets did not show an overall statistically significant association, the results approached significance, and a larger study population may have revealed significant differences. Also, the study ultimately found that animal exposure is most likely to provide a protective effect when the total level of exposure is highest (ie, those children exposed to pets and farm animals).
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