the prevalence of atopy, and it is likely that other nondietary factors are also of importance.

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DOES LIVING ON A FARM DURING CHILDHOOD PROTECT AGAINST ASTHMA, ALLERGIC RHINITIS, AND ATOPY IN ADULTHOOD?


Purpose of the Study. The authors used a previously generated database from the European Community Respiratory Health Survey to search for an association between childhood residence on a farm and protection from atopic disease in adult life. This investigation was prompted by the multiple studies showing decreased allergic rhinitis and asthma among children living on farms. The persistence of this effect into adult life had not been previously studied.

Study Population. Patients were drawn from 48 centers in 5 countries (Belgium, France, the Netherlands, Sweden, and New Zealand). Unselected individuals 20 to 44 years old responded to a short postal questionnaire about asthma and allergy symptoms. A random sample of responders received a more extensive questionnaire and additional tests. Questions allowed identification of subjects who had grown up on a farm.

Methods. Data obtained on subjects entering the second phase of the study included pulmonary function testing with methacholine challenge, total immunoglobulin E (IgE), and IgE specific for dust mite, cat, Cladosporium, and Timothy grass, and 1 additional pollen common to the region of the individual center. Subjects with farm residence during childhood were compared with those without a history of farm residence by univariate and logistic regression with adjustment for potential confounders, including pet exposure in childhood, number of siblings, and parental history of allergy.

Results. Information on whether a subject had lived on a farm in childhood was available for 6251 of the 6604 subjects entering the second phase of the study. Compared with the other adults, those who had lived on a farm in childhood had a reduced risk of atopic sensitization (odds ratio = 0.76, 95% confidence interval 95% = 0.60–0.97). There was a lower risk of nasal symptoms from pollen in the farm-raised, but no difference in the prevalence of asthma compared with those not raised on a farm, or in the prevalence of nasal symptoms in the presence of animals or dust.

Conclusions. The authors conclude that environmental factors encountered in childhood may have a lifelong effect on the development of allergy. The effect has been previously noted in children, but this study indicates that a reduction of allergic sensitization persists into adulthood. However, studies of children have not consistently noted a reduction of asthma in those living on farms, as indeed was not seen in these adults. The reason for the protective effect of farm residence is not clear, but several potential alternatives are not supported by the data. The effect remains even after controlling for pet exposure in childhood, number of siblings, and presence of parental allergy. Of note, the reported rate of parental allergy was similar in the farm and nonfarm parents, an argument against the “healthy farmer” effect that supposes the allergic individuals would have elected to leave the allergen-rich farm environment.

EXPOSURE TO PETS AND ATOPY-RELATED DISEASES IN THE FIRST 4 YEARS OF LIFE


Purpose of the Study. To study the relationship between early pet exposure and the risk of developing atopic disease in the first 4 years of life.

Study Population. The study comprised a birth cohort of 3754 children born in Oslo during a 15-month period in 1992–1993. Over the 4-year period of the study, participants were excluded because of incomplete information or failure to be reached by mail during the follow-up period. The final analysis included 2531 children from the birth cohort.

Methods. The cohort was followed mainly by questionnaire to provide information about early life exposure to pets, child/family characteristics, environmental exposures, and atopy-related diseases. Questionnaires were administered at birth, 6, 12, 18, and 24 months, and a follow-up questionnaire was administered at 4 years. A subset (n = 502) of participants was studied in a matched case-control analysis of early environmental exposure and the risk of bronchial obstruction. These participants received home visits to assess environmental exposure and collection of dust samples for common aeroallergens. The information obtained from home visits was used to estimate agreement between questionnaire data on the presence of pets and allergen concentration in the dust samples. During the first 2 years of life, bronchial obstruction was defined as 2 or more episodes of obstruction or 1 episode lasting >1 month. Information on current asthma or allergic rhinitis was derived from the follow-up questionnaire and was based on a physician’s diagnosis during the previous 12 months. A history of eczema was taken from the 6-month questionnaire.

Results. This study found that there was a positive relationship between dog exposure at birth and bronchial obstruction during the first 2 years of life, although no association was noted at 4 years of age. There was a negative relationship (odds ratio = 0.6) between pet exposure and allergic rhinitis if a pet was present at birth. Additionally, the risk of having both asthma and allergic rhinitis (n = 44) was higher in unexposed children as compared with exposed children (0.023 and 0.006, respectively). Eczema was also less common during the first 6 months of life among the exposed population.

Conclusion. Although bronchial obstruction during the first 2 years of life was more common in dog owners, there was a negative relationship between pet ownership and atopy-related disease at 4 years of life.

Reviewers’ Comments. The hygiene hypothesis for atopy remains perplexing. Much data has accumulated in favor of the influence of early life “steering” away from atopy by environmental factors. An understanding of exactly what factors are critical or alterable remains elusive. Additionally, there is not even agreement that an effect exists for asthma, which for most patients is a much more significant illness than allergic rhinitis. For those interested, a pro/con editorial in the same journal (Am J Respir Crit Care Med. 2001;164:1106–1109) from von Mutius and Platts-Mills sets forth the arguments in more extensive fashion.

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Does Living on a Farm During Childhood Protect Against Asthma, Allergic Rhinitis, and Atopy in Adulthood?
Larry Williams

Pediatrics 2002;110:432

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