Life style factors and the lower prevalence of asthma and allergy in farm children.
Anna Rask-Andersen, MD, PhD and Bjarne Lembke MD. Department of Occupational and Environmental Medicine, University hospital, Uppsala, Sweden
Factors influencing the prevalence of asthma and allergy were evaluated in farm families compared to control families. A questionnaire was sent to 2577 farms and to 1500 men randomly selected from the general population in the county of Uppsala. The questionnaire included questions on smoking, dampness in dwellings, production on the farm, number of children at home, asthma and allergy in the children etc. Originally, farm women were included in the study but less than one third of the farm women answered to the questionnaire. Therefore, the analysis was restricted to men. Sixty percent of the farm operators and 64 % of the controls answered the questionnaire. Five hundred fifty nine male farmers and 364 controls had children living at home. Farm children had a lower prevalence of asthma and allergy than the controls. Smoking habits differed significantly between the two groups with fewer smokers among the farmers. Farmers were four years older and had significantly larger families (2.1 children compared to 1.9 in the controls). The farm dwellings were significantly older than control ones and had significantly fewer signs of building dampness. The farmers had less asthma and allergy in the family. In farm families, 8.4 percent of the children with asthma had cows compared to 6.4 percent in families without cows. Rural controls resembled the farmers in some respects but not in others. This study supports earlier findings that farm children have a lower prevalence of asthma and allergy than the general population. To be a farmer is not only an occupation – it is a life style. A number of life style factors related to asthma and allergy differ between farmers and the general population. Farmers are more often non-smokers, have larger families and less exposed to pollution and building dampness. These factors decrease the prevalence of asthma and allergy. The explanation for the lower prevalence of asthma and allergy in farm children is thus multifactorial.
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EXPOSURE TO FARMING ENVIRONMENT DURING THE FIRST YEAR OF LIFE PROTECTS AGAINST THE DEVELOPMENT OF ASTHMA AND ALLERGY
Braun-Fahrländer Ch[1], Eder W, Schreuer M, Riedler J, Carr D, Maisch S, Waser M, Schierl R, Nowak D, von Mutius E[2] and the ALEX-team. (1) Institute of Social and Preventive Medicine, University of Basel, Switzerland, (2) Dr. von Hauner Children's Hospital, Munich, Germany.
There is increasing evidence to suggest that the farming environment protects against the development of childhood allergic diseases. We investigated whether early childhood exposures might be responsible for this protective effect. In a cross-sectional study performed in rural areas of Austria, Germany and Switzerland 2618 (74.7%) parents of 6-12 year old children completed a standardized questionnaire including the ISAAC core questions. 1406 (53.7%) families accepted additional investigations. Of these, all the children from farming families and a random sample of rural controls (n=901) were invited to participate. Complete data was available for 812 children. Multivariate logistic regression models were used to examine associations between asthma, wheeze, and atopic sensitization and early stay in stables or consumption of farm milk. The models adjusted for age, sex, country, family history of allergies, education and older siblings.

Exposure	Asthma ever Adj. OR (95%-CI)	Current wheeze Adj. OR (95%-CI)	Atopic sensitization Adj. OR (95%-CI)
In stable 1st year	**0.27 (0.11-0.68)**	**0.36 (0.18-0.70)**	**0.33 (0.19-0.58)**
In stable 2-5 years	0.93 (0.49-1.81)	0.73 (0.40-1.31)	0.87 (0.53-1.42)
Farm milk consumption			
1st year	**0.33 (0.17-0.64)**	**0.50 (0.30-0.85)**	**0.25 (0.15-0.39)**
2-5 years	0.88 (0.40-1.93)	0.62 (0.28-1.40)	0.57 (0.29-1.11)

Stay in stable and consumption of farm milk during the first year were independently associated with health outcome, with an indication of a multiplicative effect for asthma. These results suggest, that exposure to the farming environment early in life determines the development of asthma and allergic sensitization. The study was supported by National Research Foundations.

OCCUPATIONAL RISK FACTORS FOR INCIDENT RESPIRATORY SYMPTOMS IN A CALIFORNIA FARMER COHORT. M. Schenker, M. Stoecklin, C. Saiki, M. Orenstein. University of California, Davis, Davis, CA 95616 USA.

Respiratory disease is a common chronic illness among farmers and can interfere with many aspects of daily living. Agricultural practices and exposures vary with geographic region, and there are few data on western, dry climate farmers. These results are based on a longitudinal study of a representative cohort of California farmers that began in 1993. In 1998, 1,349 operators completed a telephone interview assessing relevant health outcomes, occupational hazards, and functional status. 90% of those interviewed were male with an average age of 54 years. There was a low prevalence of smoking in this cohort with 10.8% current, 38.2% ex- and 50.9% non-smokers. New cases of cough were recorded in 5.9% of the cohort, 7% of the cohort for bronchitis and 8.2% of the cohort for persistent wheeze. Symptoms disappeared between 1993 and 1998 for over one-third of participants (37%, 39% and 50% for cough, bronchitis and persistent wheeze, respectively). Farming tasks that bring on wheezing or make it worse reported by farmers include handling of straw/hay (23%), loading/stacking bales (20%), feeding of hay (19%), mechanical mowing of weeds (17%), and mechanical harvesting (14%). Multivariate models adjusted for age, sex and smoking status found increased odds of incident chronic bronchitis among farmers involved in residue burning (OR=1.5, 95% CI=[1.0,2.4]), feeding manufactured grains (OR=2.8, 95% CI=[1.4,5.5]), and handling hay/straw (OR=2.3, 95% CI=[1.3,4.1]). There were no associations between farm tasks and incident cases of cough or persistent wheeze. Agricultural practices and exposures in California are different from other parts of the country. Understanding specific determinants of chronic respiratory disease in California farmers is a critical component of health promotion and disease prevention recommendations in this population.

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