toward Th1 cytokine responses in early infancy, leading to decreased allergic disease later in life.

STUDY POPULATION. Infants with a gestational age of <32 weeks and/or birth weight of <1500 g who were admitted to a level III NICU were randomly assigned to receive enteral glutamine or control (L-alanine) supplementation.

METHODS. Enteral glutamine supplementation (L-glutamine, 0.3 g/kg per day) was administered to the intervention group from 3 through 30 days of life. Validated questionnaires were later sent to the parents of all eligible children, when they were a corrected age of 1 year, to assess the incidence of allergic and infectious diseases during the child’s first year of life. Bronchial hyperreactivity was defined by report of at least 3 of the following physician-diagnosed symptoms: dyspnea, wheezing, humming/sawing breath sounds, or nightly dry cough without rhinitis.

RESULTS. Of 90 eligible infants, 77 participated (response rate: 86%). The risk for atopic dermatitis (AD) was lower in the glutamine-supplemented group (odds ratio: 0.13 [95% confidence interval: 0.02–0.97]). However, other outcomes did not differ between the intervention and control groups, such as incidence of bronchial hyperreactivity and infectious diseases. The sample size was relatively small and was not powered sufficiently, specifically to assess the incidence of bronchial hyperreactivity and infectious diseases during the first year of life. Therefore, it is unclear as to whether AD was prevented or simply delayed in onset among this cohort.

CONCLUSIONS. Glutamine-enriched enteral nutrition in very low birth weight infants decreased the incidence of AD during the first year of life but had no effect on the incidence of bronchial hyperreactivity and infectious diseases during the first year of life.

REVIEWER COMMENTS. The sample size was relatively small and was not powered sufficiently, specifically to assess the incidence of bronchial hyperreactivity. Moreover, the corrected age of 1 year is too early for assessing the incidence of development of atopy and infections. Therefore, it is unclear as to whether AD was prevented or simply delayed in onset among this cohort.

A Prospective Study of Allergy Development in 158 Children and 128 Adults With New Extensive Exposure to Furred Animals


PURPOSE OF THE STUDY. To explore allergy development associated with new extensive exposure to furred animals in adults and children.

STUDY POPULATION. This was a prospective study of 128 parents (age range: 22.4–49.7 years) and 158 children (age range: 1.5–17.9 years) recruited from 68 families through newspaper advertisements in Sweden. These individuals reported that either they would be buying a dog or cat or that at least 1 child in the household would be starting to ride a horse.

METHODS. Subjects were examined before the new exposure and once per year thereafter for 5 years (6 occasions). At each visit, individuals were scored on allergy symptoms. General allergic sensitization was analyzed by Phadiatop (Pharmacia, Uppsala, Sweden), a screening test for allergy to cat, horse, dog, house dust mite, and a few pollen and mold spores. Radioallergosorbent (RAST) testing with relevant allergens was performed to detect allergen-specific immunoglobulin E if screening was positive. Home environmental analyses of furred animal allergens were performed.

RESULTS. Thirty subjects from 5 families dropped out of the study. Of the remaining 256 individuals, 248 were exposed to 1 new animal, whereas 8 were exposed to 2 new animals. At the start of the study, 219 participants (86% [122 children and 97 adults]) were nonsensitized, and 37 (15% [15 children and 22 adults]) were sensitized to ≥1 allergen. Among the 219 nonsensitized subjects, only 1 adult developed sensitization to his new animal. No adults developed sensitization to other animals, and no children developed a sensitization to any animals (their own or others). Ten children and 6 adults became sensitized to other allergens. Of the 37 sensitized participants, 4 children and no adults (4 of 37 [11%]) developed sensitization to their new animals. Four children and 2 adults (6 of 37 [16%]) developed sensitization to another animal, and 1 child developed sensitization to a nonanimal allergen. The relative risk (RR) for developing a new sensitization in presensitized adults and children was 3.8, whereas the RR for developing new sensitization in presensitized children was 7.3. Because of the small sample size, a RR could not be calculated for developing new sensitization for one’s own animal. Baseline symptom scores were higher for the presensitized group compared with the nonsensitized group, but the scores did not significantly change over the 5-year period, and no individual developed asthma. The levels of animal dander in house dust were significantly higher at the end of the study for dog and horse.

CONCLUSIONS. For patients over 1 year of age, exposure to a new furred animal did not seem to increase the rate of new allergic symptoms or sensitization over the next 5 years. This result was not affected by the baseline sensitization status of the subjects. On the basis of this study, there is no strong evidence to recommend avoidance of new animals to prevent new allergy development.
Decreased Markers of Atopy in Children With Presumed Early Exposure to Allergens, Unhygienic Conditions, and Infections

PURPOSE OF THE STUDY. To compare 2 populations of children with different risk and protective factors for the development of atopy.

STUDY POPULATION. The study group consisted of 415 children living in community foster homes in Lodz, a large industrial city in Poland. The reference group consisted of 500 children who were living with their parents at home and recruited from primary care centers.

METHODS. Questionnaires were completed by parents or guardians. The primary outcome measures were skin-prick test results to 14 environmental and 4 food allergens and specific immunoglobulin E (IgE) in serum. Secondary outcomes included symptoms of asthma and allergic diseases, lung function, parental allergy, and family history, including life conditions in early childhood, and markers of allergy, such as total IgE serum concentration and eosinophil blood cell count. Stool samples were analyzed for parasites.

RESULTS. The analysis included 408 study children and 402 reference children. Atopy was significantly more prevalent in the reference group (25.9%) than in the foster home children (11.3%). More positive skin-prick test results were observed in children from the reference group than in study children. Specific IgE was significantly higher to dust mites, timothy, and mugworth, as well as asthma, rhinitis, and atopic dermatitis, in the reference group. To explain this phenomenon, the investigators selected 16 variables that differed in both groups in the first year of life and related them to atopy. They found that the more cumulative features characteristic of the foster home population (poor living conditions), the lower the risk of atopy.

CONCLUSIONS. Extremely unfavorable environmental circumstances, which are characteristic of the foster home population during early childhood, might prevent atopy.

Infections in Child Day Care Centers and Later Development of Asthma, Allergic Rhinitis, and Atopic Dermatitis Infections in Child Day Care Centers: Prospective Follow-up Survey 12 Years After Controlled Randomized Hygiene Intervention
Dunder T, Tapiainen T, Pokka T, Uhari M. Arch Pediatr Adolesc Med. 2007;161(10):972–977

PURPOSE OF THE STUDY. To evaluate the effect of prevention of common infections in child day care centers (CDCCs) on the later development of allergic disease.

STUDY POPULATION. Children ≤2 years of age were recruited from 20 CDCCs in Finland for a 15-month randomized, controlled hygiene intervention trial conducted in 1991–1992. Among the children in the intervention CDCCs, there were 27% fewer episodes of acute otitis media and 24% fewer days of antimicrobial agents.

METHODS. Questionnaires were sent in 2003 (12 years later) to 1376 participants of the previous intervention trial; 928 participated (response rate: 68%). The main outcome measures were the number of respondents with a physician diagnosis of asthma, allergic rhinitis, and/or atopic dermatitis (AD) and those who reported symptoms of atopic disease.

RESULTS. No differences were found between the intervention and control groups with regard to rates of asthma, allergic rhinitis, or AD or with frequency of atopic symptoms.
A Prospective Study of Allergy Development in 158 Children and 128 Adults
With New Extensive Exposure to Furred Animals
Anu Kewalramani

Pediatrics 2008;122;S178
DOI: 10.1542/peds.2008-2139K

Updated Information & Services
including high resolution figures, can be found at:
/content/122/Supplement_4/S178

Subspecialty Collections
This article, along with others on similar topics, appears in the following collection(s):
Allergy/Immunology
/cgi/collection/allergy:immunology_sub

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
/site/misc/Permissions.xhtml

Reprints
Information about ordering reprints can be found online:
/site/misc/reprints.xhtml
A Prospective Study of Allergy Development in 158 Children and 128 Adults With New Extensive Exposure to Furred Animals
Anu Kewalramani
*Pediatrics* 2008;122;S178
DOI: 10.1542/peds.2008-2139K

The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/122/Supplement_4/S178