

## SYNOPSIS

- A population-based incident case-control study recruiting all cases of adult (21 to 63 years of age) asthma diagnosed in a defined area (population = 440,913) in Finland.
- Asthma was defined as at least one asthma-like symptom and demonstration of reversible airways obstruction in lung function investigation.
- All participants answered a self-administered questionnaire modified from the Helsinki Office Environment Study.
- Total IgE and Phadiatop® (mixture of common inhalant allergens) were analyzed by ImmunoCAP™ (Phadia AB, Uppsala, Sweden).
- Phadiatop was expressed as a score from 0-6 as graded by the ImmunoCAP System. Score 0 = 0-0.34 kU/L, score 1 = 0.35-0.69 kU/L, score 2 = 0.70-3.49 kU/L, score 3 = 3.50-17.4 kU/L, score 4 = 17.5-49.9 kU/L, score 5 = 50-100 kU/L, score 6 = >100 kU/L.
- A logistic regression model was used adjusting for core covariates (age, sex, education and smoking status).
- The adjusted OR increased from 1.33 (95% CI, 0.92-1.93) at Phadiatop score 1-2 to 7.83 (95% CI, 2.75-22.3) at Phadiatop score >4.

Citation: Jaakkola MS et al. Are atopy and specific IgE to mites and molds important for adult asthma? *J Allergy Clin Immunol* 2006; 117:642-8.

## SYNOPSIS

- Consecutive otolaryngology patients (n=242), mean age of 4.7 years (range 5 months to 15 years), from an outpatient surgery center were studied.
- The children were treated with bilateral myringotomy tubes (BMT) and/or adenoidectomy alone, or BMT together with adenoidectomy and tonsillectomy.
- Sera were analyzed for IgE antibodies to food allergens (milk, egg, beef, wheat, soy) by ImmunoCAP™.
- Sensitization to food allergen was 14.5% in patients compared to 7% in the general population.
- Sensitization to milk was 10.7% compared to 1% in the general population.
- Sensitization to egg was 5% compared to 2.1% in the general population.
- Sensitization to food allergens were higher in children above 2 years of age (17.7%) compared to below 2 years of age (12.9%).

Citation: Bhombal S et al. Prevalence of elevated total IgE and food allergies in a consecutive series of ENT pediatric patients. *Otolaryngol Head Neck Surg* 2006; 134:578-80.

## SYNOPSIS

- Children (n=74) with low egg-specific IgE ( $\leq 2.5$  kIU/L), oral egg challenge outcomes and SPT results were selected from a database.
- Egg-specific serum IgE concentrations were measured by ImmunoCAP™.
- SPT were performed using commercial egg white extract (Greer Laboratories).
- Thirty nine percent passed the oral food challenge test.
- There were no differences in mean age (5.7 years vs. 5.1 years) and clinical characteristics, except for allergic rhinitis ( $p=0.02$ ), between responders and non-responders.
- The median SPT wheal response was significantly ( $p = 0.003$ ) larger in responders (5 mm vs. 3 mm).
- Logistic regression analysis showed an increasing probability from 50% to pass the oral egg challenge if the IgE antibody level was  $\leq 2.5$  kIU/L and an SPT wheal equal or smaller than 3 mm.

Citation: Knight AK et al. Skin prick test to egg white provides additional diagnostic utility to serum egg white-specific IgE antibody concentration in children. *J Allergy Clin Immunol* 2006; 117:842-7.

## The Phadiatop® level is highly related to the risk to develop asthma in adults

According to the authors this is the first publication that studies the importance of atopy in new-onset asthma in adults. They have performed a large population-based incident case-control study to assess the role of Phadiatop and total IgE as quantitative indicators for the development of asthma in adults. Asthma was defined as patients with at least one asthma-like symptom and demonstration of reversible airway obstruction. A Phadiatop score and total serum IgE were used as quantitative indicators of atopy.

The prevalence of asthma in the adult population was 7.5%. The incidence of asthma in adults during the study period was 0.9 per 1000 person and year. The risk to develop asthma increased in a dose-dependent pattern with increasing Phadiatop score and total serum IgE. In a logistic regression model adjusted for core covariates the adjusted OR for positive Phadiatop increased from 1.33 at the lowest score to 7.83 at the highest score. A more moderate dose-dependence increase was shown for total IgE (from 1.00 to 3.33).

These findings suggest that atopy is a major determinant in the development of asthma in adulthood as well as in childhood. The authors conclude that this might have great importance for prevention to reduce asthma incidence in adults.

## High prevalence of food allergen sensitization in children needing ENT surgery procedures indicates that these patients may benefit from allergy testing

The association between otitis media and food allergy has been shown in several studies but the causality is controversial. The aim of this study was to determine the prevalence of food IgE sensitization in a consecutive series of pediatric otolaryngology patients at an outpatient surgery center. The children were treated with bilateral myringotomy tubes (BMT) and/or adenoidectomy alone, or BMT together with adenoidectomy and tonsillectomy. A positive family history of allergy was found in 77.3% of the children. Family perception of allergy in their children was 70.7%. Sera were analyzed for allergen-specific IgE antibodies to food allergens (milk, egg, beef, wheat, soy). The children in the study population had a food allergen sensitization of 14.5% compared to 7% in the general population. When looking at individual allergens the sensitization to milk was 10.7% compared to 1% in the general population. Sensitization to egg was 5% compared to 2.1%. Furthermore, a higher food allergen sensitization (17.7%) was shown in children above 2 years compared to children below 2 years (12.9%).

The authors conclude that the high prevalence of food sensitization shown in this study indicate that children needing ENT procedures may benefit from allergy testing.

## Children with low ( $\leq 2.5$ kIU/L) egg white-specific IgE antibody levels and an SPT wheal of 3 mm predict a 50% rate of passing an oral food challenge

It has recently been shown that the level of food-specific IgE can be used to determine the likelihood to give a positive food challenge reaction. Patients with levels of food-specific IgE above defined decision points were shown to have 95% likelihood to respond in food challenge tests. The decision points are used to exclude patients for challenge testing. There is a clinical need to further define the likelihood of food challenge response in children, but now with lower egg-specific IgE, since periodic testing of sensitization is performed to find out if a tolerance has been developed or not. The aim of this study was to evaluate if skin prick testing could be used together with low levels ( $\leq 2.5$  kIU/L) of egg-specific IgE to identify responder and non-responders in food challenge.

Children with low egg-specific IgE, oral egg challenge and SPT were selected from a database. A statistically significant difference could be shown between responders and non-responders to food challenge with respect to SPT wheal-and-flare responses and egg/histamine SPT indices. Logistic regression analysis showed a decreasing probability below 50% to be a responder if the wheal was equal or smaller than 3 mm in this population.

The authors suggest that children with a low egg-specific IgE level and a small SPT response to egg white might undergo egg challenges whereas children with larger SPT might benefit from deferring a challenge for another half a year.