

ALLERGY Net

ALLERGY 2011 DOI: 10.1111/j.1398-9995.2011.02561.x

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The high prevalence of peanut sensitization in childhood is due to cross-reactivity to pollen

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Keywords: food allergens; *in vitro* tests; pollens.

The large German Health Interview and Examination Survey for Children and Adolescents (KiGGS), performed by the Robert Koch Institute in Berlin, Germany between May 2003 and May 2006, enrolled

17 641 children, aged 0–17 years, from 167 communities all over Germany (1, 2).

The survey

involved a computer-assisted personal interview with the accompanying parent, asking whether a doctor had ever diagnosed asthma, atopic dermatitis or allergic rhinoconjunctivitis in the child. Specific IgE concentrations to common aeroallergens and foods (ImmunoCAP 1000; Phadia, Freiburg, Germany) were determined in 13 100 children aged 3–17 years.

The study showed that 40.8% of children were sensitized to any of the tested allergens. Especially remarkable was the prevalence of 10.9% sensitization to peanut. In view of the fact that the highest sensitization among all allergens was observed to grass pollen (22.4%), we wondered whether this high sensitization to peanut was due to cross-

reactivity to pollens or due to an increase of primary sensitization to peanut (e.g. because of changed feeding habits). We therefore compared the sensitization patterns of peanut alone with those with and without sensitization to grass and/or birch pollen (Fig. 1). Sensitization to peanut in general increased with age, while peanut sensitization without concomitant sensitization to pollen remained low and did not vary with increasing age of the children.

The hypothesis that peanut sensitization and pollen may be associated had been suspected before, but convincing evidence was lacking so far (3). In accordance with our findings, a Swedish study found similar results concerning birch, but did not investigate grass pollen (4). Furthermore, the age range was restricted to 4–8 year old children. Finally, the sensitization to peanut was lower with only 5.5% and 7.4%, respectively.

A recent population-based study revealed a prevalence of 1.0% for perceived and 0.61% for confirmed peanut allergy among 9667 Canadian individuals (5). This highlights the hypothesis

that clinically relevant allergy represents only a small proportion of the sensitized individuals in the KiGGS Study.

A possible way of differentiating between pollen cross-reactivity and primary peanut sensitization would be to measure single allergen patterns, such as for Ara h 1 and Ara h 8 (6), which was not possible in the KiGGS Study at that time.

In conclusion, our data indicate that the high sensitization of 10.9% to peanut is predominantly due to cross-reactivity to pollen – irrespective of the age of the children. The observed high peanut sensitization therefore does not indicate a high risk for the development of primary allergy to peanut.

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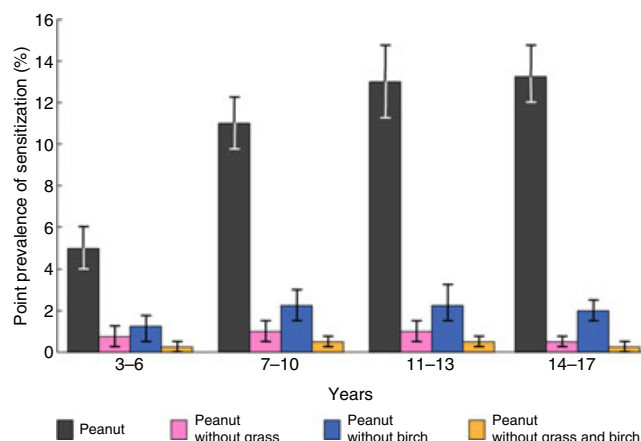


Figure 1 Point prevalence of sensitization to peanut in general and to peanut without birch and/or grass.

Accepted for publication 19 January 2011
Allergy 2011
© 2011 John Wiley & Sons A/S
DOI: 10.1111/j.1398-9995.2011.02561.x

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