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Title: Natural history of IgE sensitisation to food allergens in a cohort of adults

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Body: Background: The prevalence of sensitisation to aeroallergens is reported to be unchanged or to decrease in adults in longitudinal studies. No longitudinal studies exist on the natural history of sensitisation to food allergens. Methods: A subgroup of participants from the European Community Respiratory Health Survey (ECRHS) in Iceland and Sweden (n = 806) performed allergy tests (aeroallergens and food allergens) in ECRHS I (1990-1991), and ECRHS II (1999-2000) within the frame of EuroPrevall. IgE-sensitisation was measured against mite, cat (referred as perennial), timothy (referred as grass pollen) and egg white, milk, fish/cod, wheat, peanut, and soy (referred as food allergens). Results: Food sensitisation decreased by 56% (from 5% to 2.2%). Peanut IgE-sensitisation was the most common food allergen sensitisation and its prevalence decreased by 67% (from 2.7% to 0.9%). Perennial allergen sensitisation decreased by 9% (from 18.5% to 16.8%) and grass pollen sensitisation decreased by 15% (from 17.5% to 14.8%) (all p-values<0.001). The decreasing prevalence of allergic sensitisation for food, perennial and seasonal allergens was found both in subjects younger or older than 31 years (median age of cohort in ECRHS I). Persistence of sensitisation to food (10 of 40 subjects), perennial (114 of 149 subjects) and grass pollen sensitisation (104 of 141 subjects) was related to higher levels of total IgE at baseline (p<0.01). Conclusion Prevalence of allergic sensitisation to food decreased in adults during a 9-year-period and this is likely to be due to aging. Persistence of IgE to food allergens was related to higher baseline levels of total IgE.