

Increasing aeroallergen sensitisation: evidence from three decades of population based studies

Introduction: Changes in awareness of allergic disease might affect self-reported symptoms of allergic rhinitis. Thus, inclusion of objective measures such as skin-prick-test (SPT) and serum specific IgE (sIgE) when assessing time trends are valuable. However, only a limited number of studies have included measures of allergic sensitisation when studying time trends in allergic disease in adults.

Methods: Five health examination studies of random samples of individuals aged 18–72 years resident in the Western part of the Copenhagen region were conducted in 1990–1991 (n=567), 2006–2008 (n=3,443), 2010–2011 (n=1,522), 2013–2015 (n=7,408), and 2016–2017 (n=1,251). Aeroallergen sensitisation was defined by serum specific IgE or skin prick test (SPT) to at least one of the allergens; birch, grass, house dust mite, or cat. We calculated sex- and age-standardised prevalences using the 1990–1991 study as reference. Logistic regression was used to analyse changes in aeroallergen sensitisation between the studies, adjusted for age, sex, and season of examination.

Results: The age- and sex-standardised prevalence of IgE-defined aeroallergen sensitisation was 16 % in 1990–1991, 26 % in 2006–2008 and 29 % in 2013–2015. The prevalence of SPT-defined sensitisation was 27 % in 2006–2008, 28 % in 2010–2011, and 32 % in 2016–2017. We found an increase in the odds of being sensitised (IgE-defined) in 2013–2015 compared to 2006–2008 (odds ratio 1.26; 95 % CI 1.14–1.38; p <0.001) and a lower odds of being sensitised in 1990–1991 compared to 2006–2008 (odds ratio 0.53; 95 % CI 0.41–0.67; p <0.001). Changes in SPT-defined sensitisation were similar.

Key conclusions: The prevalence of aeroallergen sensitisation increased in an adult Danish general population over three decades.

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