Secondhand tobacco smoke exposure in infancy and the development of food hypersensitivity from childhood to adolescence

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BACKGROUND
Previous studies have demonstrated a link between early-life exposure to secondhand tobacco smoke (SHS) and allergen-specific immunoglobulin E (IgE) mediated sensitization to food allergens. However, it is unclear whether this association extends to clinical symptoms following food consumption [1]. We aimed to determine if SHS exposure during infancy is associated with food hypersensitivity from childhood to adolescence.

METHODS
Data were obtained from the BAMSE birth cohort of 4,089 Swedish children born in 1994–96 and followed to adolescence [2]. SHS exposure in infancy was assessed through parental report when the children were 2 months old. Food hypersensitivity was defined as the presence of parent-reported symptoms to specific food items at 1, 2, 4, 8, 12 and 16 years. Food sensitization was defined as an IgE ≥0.35 kU/l to fx5® – a mix of milk, egg, peanut, wheat and codfish allergens – at 4, 8 and 16 years.

Odds ratios (OR) and 95% confidence intervals (95%CI) from generalized estimating equations were used to calculate the overall association between SHS exposure in infancy and food hypersensitivity and/or food sensitization. Estimates were initially adjusted for young maternal age (≤25 years) at birth, exclusive breast feeding (≥4 months), parental allergy and socioeconomic status; they were subsequently adjusted for concomitant asthma.

RESULTS
SHS exposure in infancy was associated with 1.12 times greater odds of reporting food hypersensitivity (OR 1.12; 95%CI 0.96–1.30) and 1.29 times greater odds of food sensitization (OR 1.29; 95%CI 1.06–1.57). With respect to concurrent outcomes, SHS exposure in infancy was associated with 1.43 times greater odds of having both food hypersensitivity and sensitization (OR 1.43; 95%CI 1.06–1.87); this estimate did not change substantially upon adjustment for concomitant asthma (OR 1.39; 95%CI 1.03–1.88).

CONCLUSIONS
SHS exposure in infancy is associated with food sensitization from childhood to adolescence, particularly with concurrent food hypersensitivity.

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REFERENCES