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Title: Occurrence of respiratory infections in adults with atopic disease and IgE antibodies to common aeroallergens

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Body: Background: Allergic inflammation may influence the immunity against infections, so atopic individuals could be susceptible to respiratory infections. No previous population-based study has addressed the relation between atopy and respiratory infections in adulthood. Objectives: To assess the relation between atopic disease, specific immunoglobulin E (IgE) antibodies and the occurrence of upper and lower respiratory infections in the past 12 months among working-aged adults. Methods: A population-based cross-sectional study of 1008 atopic and non-atopic adults 21-63 years old was conducted. Information on atopic diseases, allergy tests and respiratory infections was collected by a self-administered questionnaire. Spesific IgE antibodies to common aeroallergens were measured in serum. Results: Adults with atopic disease had a significantly increased risk of lower respiratory tract infections (LRTI; including acute bronchitis and pneumonia) with an adjusted risk ratio (RR) 2.24 (95% confidence interval [CI] 1.43-3.52) and upper respiratory tract infections (URTI; including common cold, sinusitis, tonsillitis, and otitis media) with an adjusted RR 1.55 (95% CI: 1.14-2.10). The risk of LRTIs increased with increasing level of specific IgE (linear trend P=0.059). Conclusions: This study provides new evidence that working-aged adults with atopic disease experience significantly more LRTIs and URTIs than non-atopics. Increased levels of specific IgE antibodies to common aeroallergens show a dose-response pattern with LRTIs. From the clinical point of view it is important to recognize that those with atopies are a risk group for respiratory infections, including more severe LRTIs.