

The complex link of the environment on allergic rhinitis and atopic dermatitis

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Prevalences of both allergic rhinitis and atopic dermatitis have increased in the Asia-Pacific region and worldwide.¹⁻³ Patients suffering from these allergic diseases are likely to miss school or work which can result in an increased health care cost and a poorer quality of life. Identification of major controllable risk factors therefore may help to improve the epidemiology and the impact of allergy.

A correlations study by Chen J, et al., from China, reported childhood allergic rhinitis (AR) was biomodally shaped by the meteorological (daily average temperatures of 11°C and 21°C), and environmental factors (levels of air pollutants) which were significantly associated with higher outpatient visits for children with AR.⁴

Likewise, a study conducted by Park YM, et al., in Korean schoolchildren found that not only was atopic dermatitis associated with risk factors such as the history of atopy and parental atopy, but also moving into a newly built house during infancy and visibility of mold.⁵ This finding confirms the data from a poster abstract, presented by Tsakok T, et al., that damp housing conditions were associated with childhood eczema.⁶

However, it should be noted that the limitations of the methodology, population and confounding factors of these studies should to be taken into consideration when interpreting such results. When exploring environmental factor, it is actually much more complex than one may appreciate. Indoor and outdoor environments as well as its allergens and irritants may contribute either directly or interactively on allergy risk.⁷⁻⁸ The complexity becomes greater when microbial flora or microbiome, genetics, and epigenetics also play significant roles on the immune system and allergic pathogenesis.⁹⁻¹¹ Besides such complexities of the environmental-host interactions' influence on the risk of developing allergic diseases, they may play

important roles on the different natural course of the diseases.¹²⁻¹³ Ideally, data from well-designed, large-scale birth cohorts on immunological, microbiome and genetic analyses are highly desirable in providing a better understanding of the complex interaction between the sensitization of the environmental-host interaction and its clinical allergic outcomes.

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