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Heterogeneity and the origins of asthma

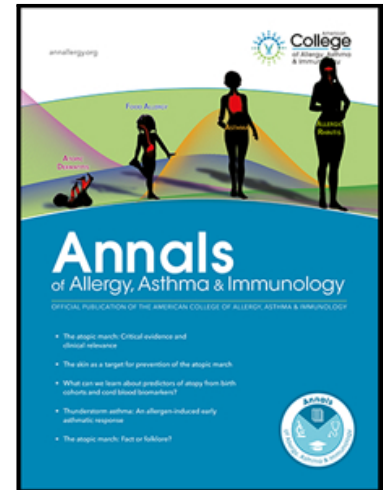
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## Heterogeneity and the origins of asthma

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### **Key Messages**

1. Asthma is a frequently diagnosed heterogeneous disease with many origins that all lead to the key finding of airway inflammation.
2. Both genetics and environment, “nature” and “nurture,” likely play a role in the pathogenesis and course of the disease.
3. Origins of asthma in childhood often have an atopic root and frequently are associated with other atopic diagnoses.
4. The microbiome in very young children likely influences susceptibility of the host to developing atopic disease.
5. In adults, asthma is often comorbid with other diseases, such as obesity or aspirin-exacerbated respiratory disease, and these co-morbidities play a significant role in both the course of the disease and response to treatment.

Word count: 3530

**Abstract: Objective:** It is a well-known fact that there is significant heterogeneity in the origins of asthma in adults and children. This article examines the roots of asthma across the ages including atopy, the role of the microbiome and viral infections, along with comorbidities/confounders such as obesity, aspirin-exacerbated respiratory disease (AERD), neutrophilic asthma, cigarette smoking and the possibility of an asthma-chronic obstructive pulmonary disease (COPD) overlap syndrome.

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