The molecular features of normal and atopic dermatitis skin in infants, children, adolescents and adults
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Abstract
Atopic dermatitis (AD) is an inflammatory skin disease that starts in infancy and is associated with other chronic conditions such as asthma, allergies, and sleep problems. While there is no cure for AD, current treatments aim to relieve symptoms, prevent flares, and improve quality of life. In this study, we characterized the molecular features of normal and atopic dermatitis skin in infants, children, adolescents, and adults to better understand the disease and identify potential therapeutic targets.

Methods
Skin biopsies were obtained from 10 healthy infants and 10 children with AD at different ages. RNA was extracted, and gene expression was analyzed using RNA-seq. The data were analyzed using bioinformatic tools to identify differentially expressed genes and pathways.

Results
We found that atopic dermatitis skin had significant upregulation of Th2-related genes, as well as other immune- and barrier-related genes. The gene expression profiles were distinct at different ages, with more pronounced differences observed in older children and adults. The Th2/Th22-related genes were more prominent in infants and younger children, while Th1 and Th17-related genes became more significant in older children and adults.

Conclusion
Our findings suggest that atopic dermatitis skin has a dynamic gene expression profile that evolves over time. Understanding these molecular changes could help in the development of more targeted therapies for AD. Further studies are needed to validate these findings and explore the therapeutic potential of these targets.