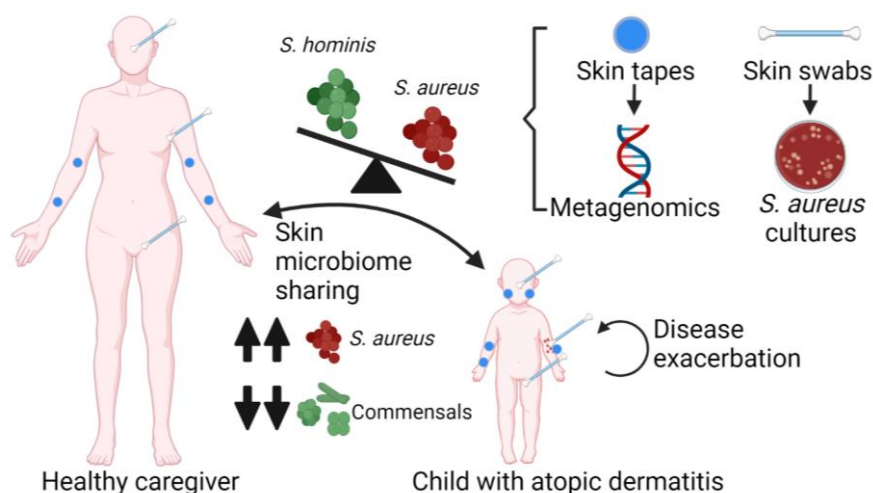


HEALTHY CAREGIVERS OF CHILDREN WITH ATOPIC DERMATITIS IDENTIFIED AS BACTERIA RESERVOIRS



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Graphical abstract showing study design and sampled skin sites

Our [paper](#), published in the *Journal of Allergy and Clinical Immunology*, revealed that close contact between children with atopic dermatitis (AD) and their clinically healthy caregivers could prolong or exacerbate AD in the caregivers' children due to the sharing of skin bacteria.

AD is a common chronic skin condition that occurs in 15-20% of children, and it can significantly impair their quality of life. Due to its relapsing nature and enrichment of the skin bacteria *Staphylococcus aureus* (*S. aureus*) during flares, clinical management can include eradicating the bacteria from the skin of children, but this does not extend to their healthy caregivers who are potential reservoirs. Hence, it is crucial to understand the skin microbiome sharing and microbial features in children with AD and their healthy adult caregivers.

To accomplish this, we sequenced the DNA of skin microbes at four body sites – forearm, elbow crease, cheeks, and AD lesions. Additionally, we isolated and sequenced *S. aureus* strains from the same study participants. We discovered that the skins of healthy caregivers are reservoirs for the sharing of microbes, especially *S. aureus*, with their children suffering from AD. Therefore, close contact between caregivers could prolong or exacerbate AD in their children.



“Our research findings showed that clinically healthy caregivers may need to be included in treatment strategies to control recurrent AD in children.”

*Dr Chia Minghao, Research Fellow,
Laboratory of Metagenomic Technologies and Microbial Systems,
GIS, and first author of the study*

“DNA sequencing is a powerful approach to study how microbes (e.g. bacteria) contribute to human health and disease. As an institute of genomic discovery, we will continue to leverage our capabilities in this field to achieve improvements to human health.”

Prof Patrick Tan, Executive Director, GIS

