

**The Microbiome and the Human Immune Response in Atopic Dermatitis**  
***Exploring Microbial Targets for Personalized Treatment***

Joan E.E. Totté

1. The composition of both the nasal and skin microbiome are associated with the severity of atopic dermatitis (AD) in children. *(This thesis)*
2. Patients with AD more often have *S. aureus* on the lesional and non-lesional skin and in the nose than healthy controls. *(This thesis)*
3. Patients with AD more often have IgE against staphylococcal enterotoxin (SE)A and SEB in the serum than healthy controls. *(This thesis)*
4. Children with AD develop an IgG dependent immune response against *S. aureus* and the bacterium might use immunomodulatory antigens to persist on the skin in AD. *(This thesis)*
5. Next to *S. aureus*, other microbes on the skin and in the nose might be involved in AD inflammation. *(This thesis)*
6. The microbiome forms an ecosystem with the skin barrier and the immune system and plays an important role in the pathogenesis of AD.
7. Studying the elimination of *S. aureus* through (long-term) targeted therapies will increase our understanding of AD disease heterogeneity.
8. After a correct diagnosis, a crucial step is to unravel which pathophysiologic mechanisms are driving the disease, thereby determining the endotype of the patient. *(based on Muraro et al. JACI 2016)*
9. Future studies should incorporate an endotyping approach in their design, including the assessment of epidermal, immunological and microbial biomarkers, and translate these data into clinical tools for personalized treatment approaches.
10. A standardized format for reporting (microbial) sample handling and processing with a common scientific language is important to promote reproducibility and advance science. *(based on Kong et al. JID 2017)*
11. The simple things are also the most extraordinary things, and only the wise can see them. *(Paulo Coelho)*