BETTER TOOLS FOR BETTER SKIN RESEARCH

Flocked Swabs Improve Skin Microbiome Sampling in Children: Study Results

Link to paper: https://www.frontiersin.org/journals/microbiomes/articles/10.3389/frmbi.2024.1446394/full

Our Study At a Glance

This study compared flocked swabs and traditional cotton swabs to find the best method for collecting skin microbiome samples in healthy children. ***Flocked swabs performed better***, capturing a higher quantity and diversity of bacteria. Common bacteria found included *Staphylococcus, Corynebacterium, and Micrococcus*—normal parts of healthy skin. These findings will improve future research by highlighting the value of using flocked swabs over scrapings to collect bacterial samples, allowing for more accurate detection and measurement of bacteria.

Why Study the Skin Microbiome, and What Did We Aim to Learn?

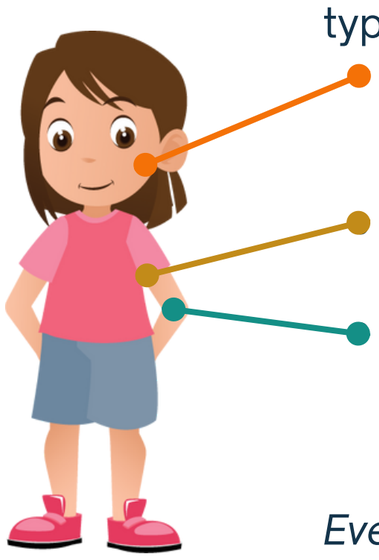
The **skin microbiome** refers to the **community of bacteria** and other microscopic organisms **that naturally live on the skin**. These tiny organisms play an important role in protecting the skin, supporting the immune system, and maintaining overall skin health.

Studying this skin microbiome in children can help us learn more about how these organisms develop and change as children grow and how they might be linked to skin conditions like eczema and infections. To study this skin microbiome, we need to collect good quality samples. This study aimed to do so by comparing two types of swabs:

- Flocked swabs (which use a soft brush-like tip to collect samples)
- Traditional cotton swabs

Key Findings

Flocked swabs **collected more skin bacteria** and **produced higher-quality samples for laboratory analysis**.



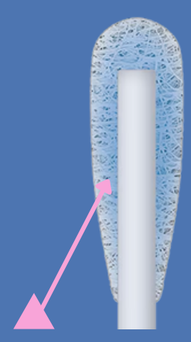
We found that different areas of the skin have different types of bacteria:

- The **cheek** had more ***Streptococcus mitis***, often found on the face and in the mouth.
- The **underarm** had higher levels of ***Staphylococcus hominis*** and ***Staphylococcus epidermidis***.
- The **inner elbow** had more ***Staphylococcus hominis*** and ***Cutibacterium modestum***—both common, helpful skin bacteria.

Everyone's skin microbiome is unique; however, we found no big differences between the left and right sides of the body.

Traditional Fiber Swab

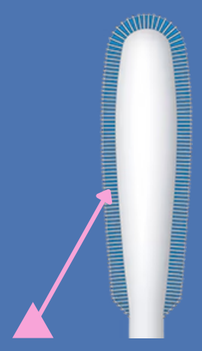
Cotton fiber wrapped around shaft



Sample is trapped in swab filters, making it harder to collect specimen and extract DNA for testing

Flocked Swab

Nylon fiber arranged like a brush around shaft



Sample stays closer to the surface and its larger surface area allows for collection and release of more material

Why Does This Matter and What's Next?

Looking towards the future, these results will be used to guide larger studies with more children. By using the best sampling methods, researchers can more accurately study how the skin microbiome develops—and how it might be used to support healthier skin in the future.

For more information, or to stay updated on future research, please visit the [Resources] section of our website or reach us at _____.
Thank you again to all our participants and their families for contributing to this valuable research.