

A close look at changes to the skin biome after ear piercing

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A team of microbiologists at McGill University's Redpath Museum, working with a colleague at Tattoo Lounge MTL, has investigated changes to the skin microbiome when a person has an ear pierced and a

metal object inserted into the puncture. In their study, [reported](#) in the journal *Proceedings of the Royal Society B*, the group collected skin swabs from volunteers before and after their piercings.

As the research team notes, human skin plays host to trillions of microorganisms—some that play a positive role in skin health and some that do the opposite. They also note that puncturing the skin and inserting a metal object leads to a dramatic shift in the local skin biome. But little research has been done to understand what sorts of changes occur.

To learn more, they enlisted the assistance of 28 adult patrons of a tattoo and piercing parlor in Montreal, Canada, all of whom had decided to have their [ears](#) pierced prior to the study. They also worked with the piercing technician, who collected ear swabs before and after piercing, which included cleaning the skin with alcohol prior to piercing. Following the piercing, the volunteers submitted skin swabs from the site after 12 hours, and then one day later, three days later, and after one and two weeks.

The research team found that the diversity of the microbiome increased significantly at the site of the piercing while it remained stable elsewhere on the body. They suggest this was likely due to an increase in skin surface area, changes in temperature and moisture in and around the wound as well as acidity levels. They suggest that exposure to the elements likely played a role as well.

The researchers also found that as time passed, two [species of bacteria](#) became dominant at the site: *Staphylococcus epidermidis* and *Cutibacterium acnes*. Both species are common in [skin](#) infections. Prior research has shown that the two species tend to keep one another in check—it is only when one or the other becomes dominant that an infection occurs.

More information: Charles C. Y. Xu et al, Community assembly of the human piercing microbiome, *Proceedings of the Royal Society B: Biological Sciences* (2023). [DOI: 10.1098/rspb.2023.1174](https://doi.org/10.1098/rspb.2023.1174)

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