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### Objectives

The BREAST-MF study was designed to characterize the breast skin and duct flora in patients undergoing aesthetic and oncologic breast surgery.<sup>1</sup>

### Methods

This was a prospective cohort study that consisted of bacterial identification and antibiotic sensitivity profiling of germs identified from the breast skin, lactiferous ducts, and parenchyma. We present the descriptive results of the study.

### Results

The study included 39 adult female patients who consented to microbial sampling during their scheduled breast surgery. Of them, 7 underwent mastectomy and 32 underwent aesthetic breast augmentation and/or mammopexy, adding up to a total number of 71 breasts.

We collected 845 swabs before and during the intervention. Preoperatively, 61.6% of the 232 swabs collected from the breast area yielded positive cultures, compared to only 4.4% positive cultures from the intraoperative steps. The frequency of the main species identified on the skin is described in the Figure, with staphylococcal species accounting for more than 90% of all identified microorganisms.

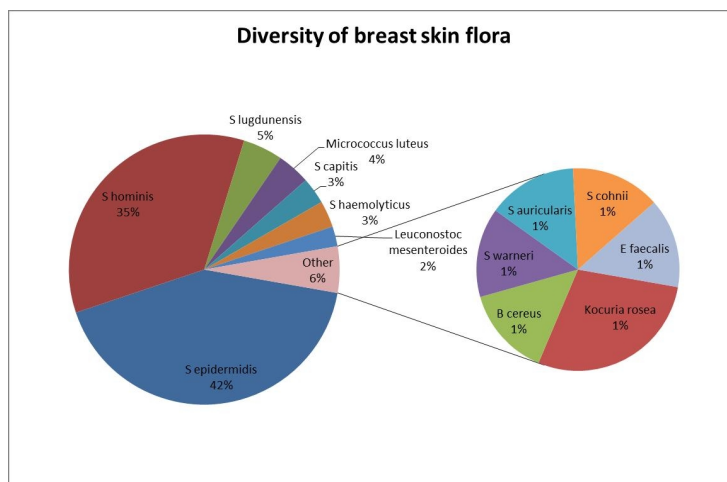


Figure. Diversity of breast skin flora

In plastic surgery, the areolar incision is traditionally considered to be a cause of contamination due to the histology of the nipple-areolar complex and the putative presence of 'endogenous breast flora' residing in the lactiferous ducts.<sup>2,3</sup> However, in our study, only 3 (4.7%) of the 64 areolar incision swabs were culture-positive and in all cases the microbial species identified appeared to be identical to those present on the skin prior to the intervention – staphylococcal species (*S. hominis*, *S. lugdunensis*). In one of these cases the patient presented periareolar folliculitis with *Staphylococcus hominis*.

### Conclusions

Based on these preliminary findings, we conclude that the nipple-areolar complex does not appear to be heavily contaminated nor does it represent a major source of intra-operative contamination; it should not be considered a bidirectional contamination route out/in and in/out. Transversal sectioning of the mammary gland was not associated with a high rate of bacterial culture positivity, implying that the lactiferous ducts and sinuses do not constitute a significant bacterial reservoir. Our findings would suggest that in the areolar region it is more likely to find isolated bacteria (if any), carried-over from the skin, rather than a well-established resident flora, as initially considered.

### References

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