



Skin hydration: CCI brings light into the darkness

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Introduction

Healthy skin is fundamental to hand hygiene, the most effective infection control measure in healthcare facilities¹. Therefore, skin-friendly hand disinfectants are essential for skin health, especially for professional users. An intuitive, illustrative and more compelling way of assessing and presenting positive product attributes could encourage compliance with hand hygiene.

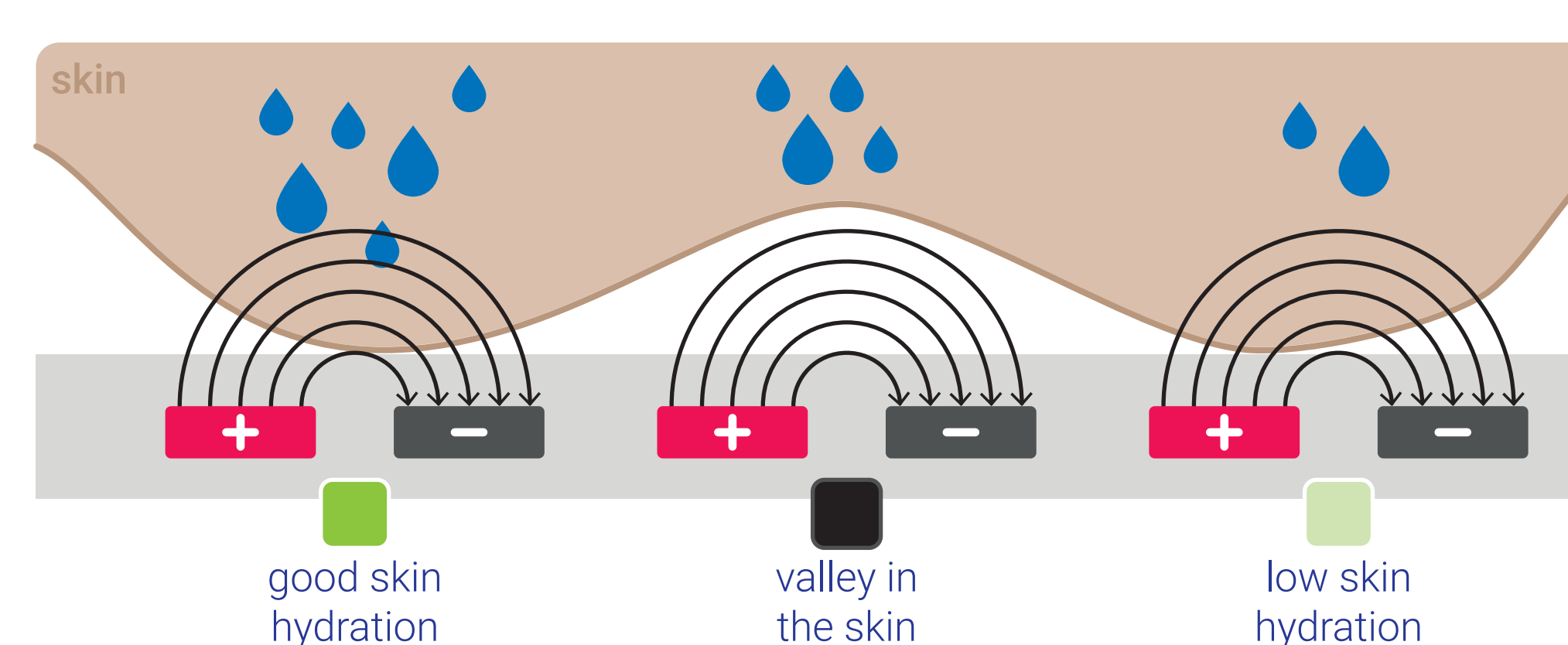
The aim of this study was to establish a new method to assess and illustrate skin hydration in comparison to conventional corneometry: Capacitive Contact Imaging (CCI)²

Methods

Study design

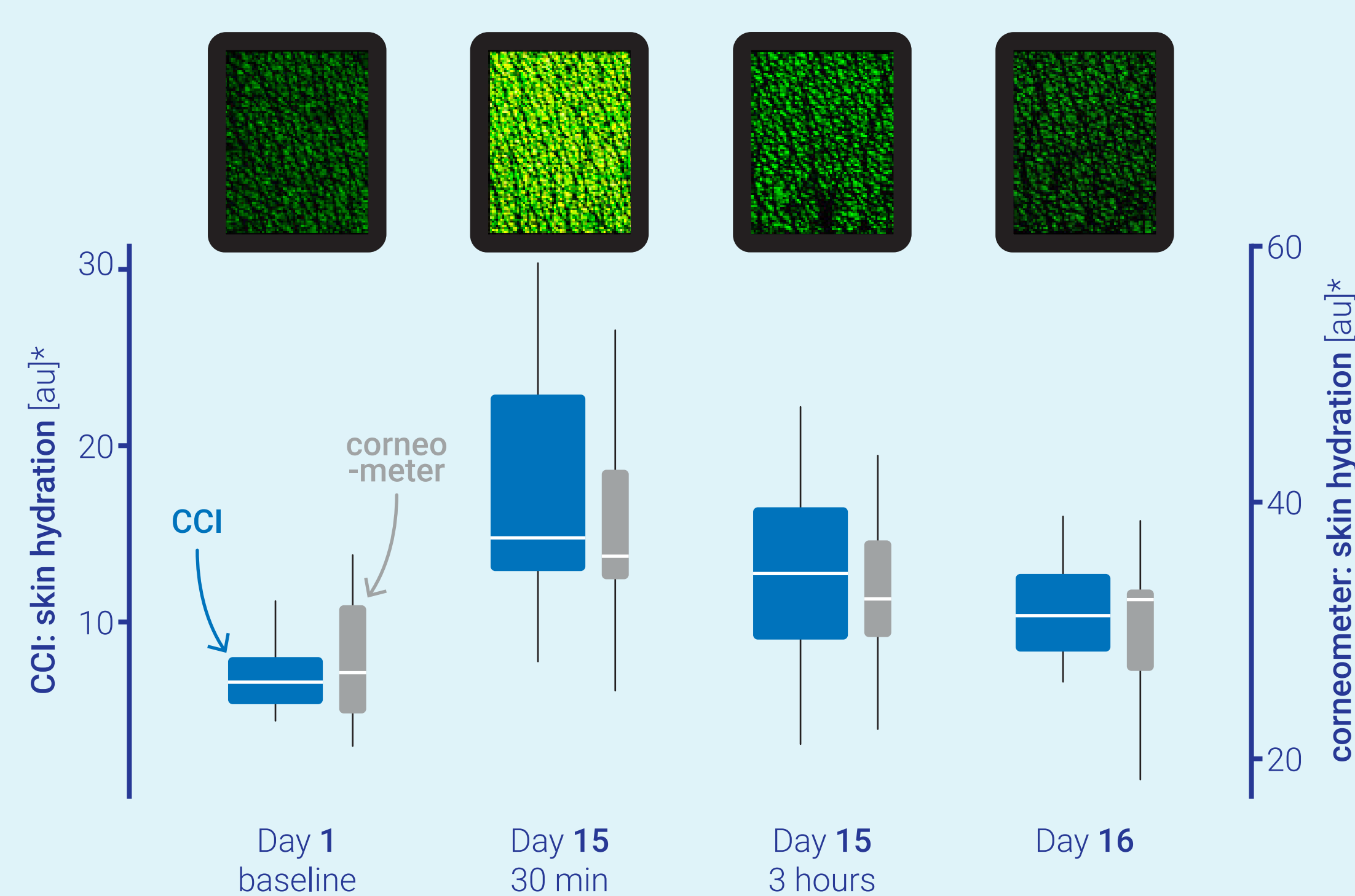
- two week exploratory open-label, randomised study
- 24 test persons (60% females, 40% males) with healthy or unhealthy skin
- 20 product applications per day (Sterillium® foam extra care)
- assessment of following parameters on Day 1, 15, and 16:
 - skin hydration (corneometer)
 - skin permittivity and hydration (CCI)
 - tolerability assessment by dermatologist and test persons (day 1 and day 15)

Capacitive Contact Imaging



Capacitive Contact Imaging (CCI) is based on fingerprint sensor technology. 256x300 individual measurements (pixels) of the skin permittivity are recorded by generating electric fields, which are influenced by the water content of the top layer of the skin. The electric field values are then converted to skin hydration values and illustrative visualisations.

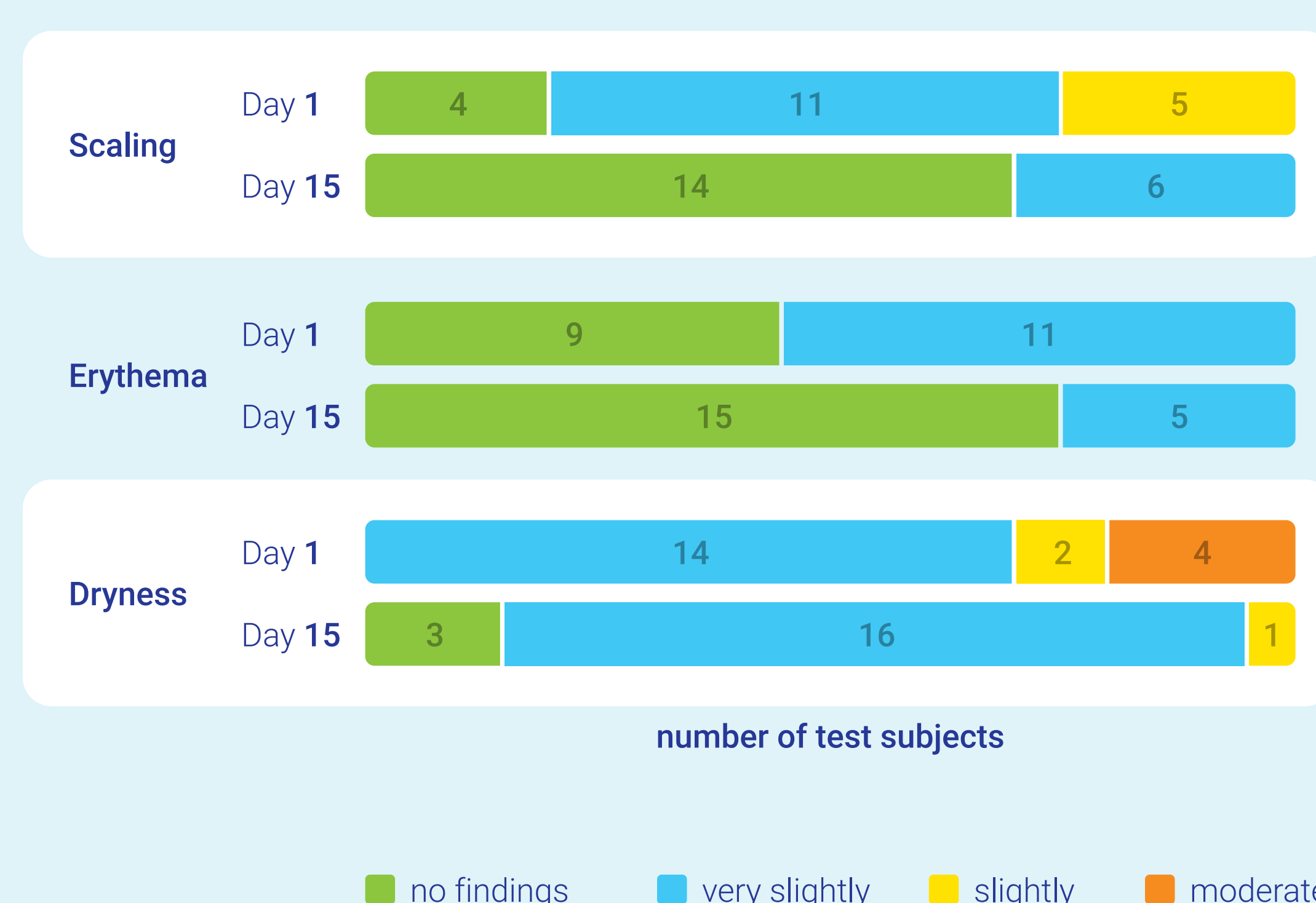
Results



The skin hydration of the test subjects was measured at the beginning of the study before use of the product (day 1), and 30 min after the last use as well as 3 h later (day 15). To investigate the long-term effect, the measurements were repeated the next day (day 16). CCI uses fingerprint sensor technology to measure and visualise skin hydration. Better skin hydration leads to brighter images. The image above shows the CCI images of one subject over the course of the study. Corneometry - the current gold standard method - was used to confirm the CCI results.

*arbitrary units

A dermatologist assessed the skin of 20 subjects before (day 1) and after 2 weeks of product application (day 15). The subjects' skin improved in terms of parameters such as erythema, dryness, and scaling. Other parameters such as fissures, papules, pustules, edema, vesicles, and weeping were not observed at beginning and end of the study.



Conclusion

- Skin hydration assessment by CCI yielded equivalent results to conventional gold standard corneometry.
- CCI has the added benefit of visualising skin hydration. The product tested showed a consistent skin hydrating effect and very good tolerability with repeated use.
- The good tolerability was also confirmed by the dermatologist and by the subjects' self-assessment.

Acknowledgement

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References

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