

NCC 'FUTURE GENERATION 2024' POSTER Abstracts
SCIENTIFIC SESSION IN COOPERATION WITH THE BCLA

NCC 'Future generation 2024'

Organization Section: NCC/ BCLA

POSTER Abstracts

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Characterization of tear film and wettability dynamics over two daily disposable soft contact lenses

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Purpose: To study (i) the surface wettability in vitro and (ii) the PLTF dynamics in vivo over two daily disposable soft contact lenses (DDCLs), both from CooperVisionMyDay® (MD) and clariti® 1 day (CLR) utilizing distinct silicone hydrogel (SiHy) technologies, Aquaform® (MD) and WetLoc® (CLR), and (iii) to probe for correlations between them.

Method: Fourteen healthy participants, 4 males (24.75±0.25 (SD) years old) and 10 females (25.2±4.49 years old), were recruited in a contralateral study. (PL)TF stability was assessed via first (NIKf-BUT) and average (NIKav-BUT) non-invasive break-up time (Oculus Keratograph 4) before, 30 minutes and 8 hours after DDCL insertion (following one day and one-week wear), and 30 minutes after DDCL removal. DDCL water contact angle was probed (CA) (i) instantaneously after removal from blister and (ii) immediately after removal from the eye.

Results: PLTF stability decreased significantly 30 min after SiHy insertion for both DDCL. At further wear MD outperformed CLR and the effect was significant on the first day after 8 hours wear: 8.33 s (±4.5 s) vs 5.8782 (±2.14 s) NIKf-BUT (p=0.029) and 11.576 s (±4.5 s) vs 11.205 (±2.14 s) NIKav-BUT (p=0.003) for MD and CLR respectively. These trends correlated with the better ex vivo wettability of MD vs CLR after 8 h wear on 1 day (34.902°±5.15° CA vs

44.775°±4.36°CA, p=0.042) and one week (34.557°±4.97° CA vs 44.775°± 4.89°CA, p=0.039) of DDCL wear. Post DDCL removal after one week wear, PLTF stability was higher (p<0.01) in eyes where MD was worn (15.30 (±5.92) s NIKf-BUT and 17.97 (±5.59) s NIKav-BUT) compared to eyes where CLR was worn (9.89 (±3.65) s NIKf-BUT and 14.434 (±4.01) s NIKav-BUT).

Conclusions: Correlations appear to exist between SiHy wettability and PLTF stability at and after DDCL wear. These are now explored further with larger sample sizes.

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