

NCC 'GET CONNECTED 2026' PAPER ABSTRACTS
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Organization Section: NCC/ BCLA

Paper Abstracts

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Assessment of impact of soft contact lens power on fit

Christina Olnier, Andrew Coates, Chithra Dhanabalan, Dan Green, Debarun Dutta

Affiliation: CooperVision

Purpose: To assess whether a power change between ± 2.00 DS impacts soft CL (SCL) fitting characteristics, to reduce chair-time required when the exact power is not immediately available for assessment.

Method: Thirty (neophyte and existing SCL wearing) participants (18–60 years) were recruited for a prospective, randomised, cross-over, open-label study. Each participant randomly wore two daily-disposable somofilcon A lenses (spherical or toric): (1) Exact-Rx (current prescription) and (2) Test-Rx (± 2.00 DS to Exact-Rx; sign randomised; no sign reversal). A series of clinical assessments including best-corrected visual acuity (BCVA, logMAR), lens-centration (x/y decentration), corneal coverage, blink-induced movement, up-gaze and horizontal-lag, push-up test, and comfort (1–10 scale and VAS) was assessed. (Toric orientation marks were observed to ensure acceptable fit.) Forced-choice lens preference was recorded. Right-eye data were analysed with paired t-tests or Wilcoxon signed-rank tests based on the variable type.

Results: SCL fit metrics were power-invariant: both Exact-Rx and Test-Rx showed 360° corneal coverage and near-zero mean decentration. Blink-induced movement showed complete agreement (0.37 ± 0.12 mm; $p=1.00$), toric Test-Rx had similar guide-mark location to Exact-Rx lenses. There was no difference in horizontal lag (mean difference $0.67 \pm 2.54\%$; $p=0.157$; mm mean difference 0.00 ± 0.32 mm; $p=0.573$), push-up scores (Exact-Rx -0.37 ± 0.49 vs Test-Rx -0.33 ± 0.48 ; $p=0.317$) and BCVA was equivalent (-0.13 ± 0.08 vs -0.14 ± 0.07 logMAR; $p=1.00$). Comfort and forced choice favoured Exact-Rx on both scales ($p \leq 0.005$).

Conclusions: In a soft contact lens design with a fixed base curve and diameter, altering the spherical power by up to ± 2.00 DS does not affect the fit of spherical or toric soft CLs. Expectedly, test lenses with ± 2.00 DS induced visual discomfort. Clinicians can use in-stock diagnostic lenses within ± 2.00 DS from the same lens material family and design to assess fit and subsequently finalise the spherical prescription without requiring a re-fit. Future work will investigate changes in cylindrical power excluding axis variation.

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