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**Comparing reading performance in toric vs. spherical contact lens correction of patients with astigmatism: preliminary results**

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**Purpose**: In modern society, with the popularity of electronic mobile devices, the ability to read is a primary objective of functional vision. In this study, reading performance is compared in patients with astigmatism corrected with a spherical vs. a toric lens.

**Method**: Visual performance of fifteen volunteers (age: 33±7 yrs), with myopic astigmatism (cyl: -1.00±-0.40 D) was assessed binocularly and at two contrast levels (100%-10%) using daily disposable contact lenses, CL, (Precision1, Alcon Laboratories) with: (a) best-spherical and b) toric correction. Visual acuity (VA) at near was measured with ETDRS charts. Reading performance was evaluated, before and after completing a sustained reading task for 15-minutes on a tablet, using standard IReST paragraphs displayed on a screen (0.4 logMAR print size at 40cm distance). Eye movements were monitored with an infrared eyetracker. Data analysis included computation of reading speed, fixation duration, fixations per word and percentage of regressions.

**Results**: VA at near was found statistically significantly improved with toric vs spherical CLs in high contrast (-0.09±0.05 vs. -0.03±0.16 logMAR, p=0.048) and low contrast (0.04±0.08 vs. 0.17±0.19 logMAR, p<0.001) conditions. Average reading speed (RS) was 241±69 wpm with toric and 229±56 wpm with spherical CLs - the difference did not reach statistical significance (p=0.25). A significant overall effect of contrast on RS was found (p=0.003), without any interaction between contrast and CL type (p=0.63). Average RS following 15-minute sustained reading was found improved by 10 wpm, but this difference was not statistically significant. Eye movement parameters did not differ statistically between the conditions tested.

**Conclusions**: A non-statistically significant improvement in RS was found in patients with astigmatism when corrected with toric compared to best-spherical CLs. Since an improvement of >10 wpm is considered to be clinically relevant (Klosinski et al., 2012; Gleni et al., 2019), it is expected that results will reach statistically significant levels upon completion of the study (25 participants in total).