

Vision and Comfort over 16 hours of wear of a Water Surface Treated Soft Contact Lens for Astigmatism

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PURPOSE

This study enrolled current wearers of soft toric contact lenses to assess their wear experience when wearing a daily disposable contact lens with a water surface treatment over 16 hours of wear time.

METHODS

35 participants with astigmatism in at least one eye were consented and completed the study. The initial visit evaluated ocular health and visual acuity to ensure inclusion/exclusion criteria were met. Those eligible were refit into the study lenses (PRECISION1® for Astigmatism, Alcon, Fort Worth TX).

After 1 week of lens wear, participants returned for a follow-up visit. After a successful follow-up visit, participants were scheduled to complete surveys throughout the evening of 5 weekdays.

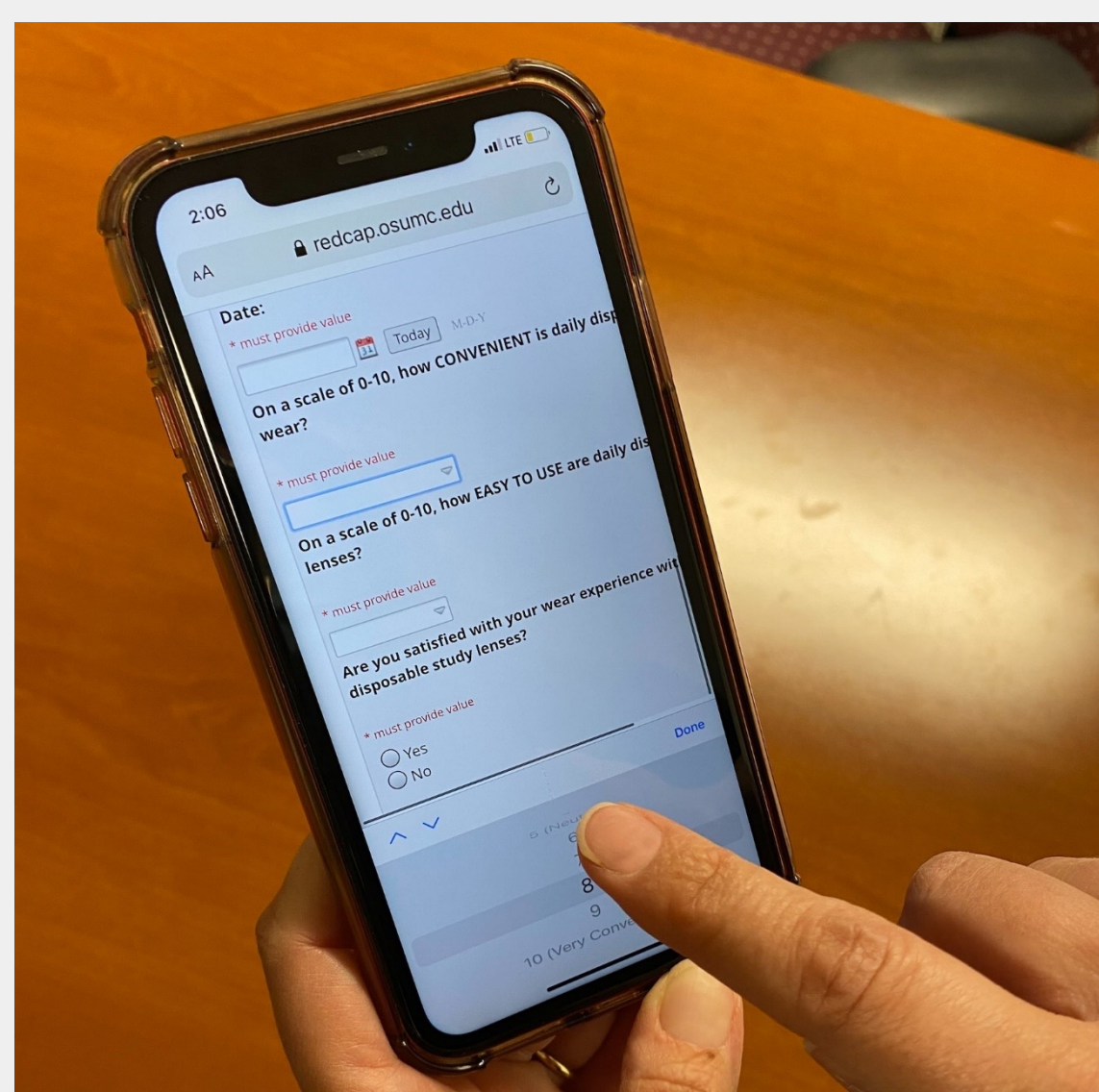


Figure 1. Surveys in this study were completed on the participant's smart phone.

Participants used personal smart devices to enter the time of insertion of their lenses each morning and then responded to surveys of their comfort and vision while wearing the study lenses at 10, 12, 14 and 16 hours of lens wear.

Evening surveys included 1-10 forced choice grading of comfort and quality of vision, with 1 labeled as “poor” and 10 labeled as “excellent.” Evening scores for each time point on the five days of surveys were averaged for each participant and overall median and interquartile range was calculated for each study time point.

RESULTS

Thirty participants were fit with the study lenses for astigmatism in both eyes.

Mean (standard deviation) LogMAR acuity OU with the study lenses was -0.19, which equates to 20/12.5⁻¹ Snellen acuity.

Visual Acuity with study lenses			
n=30	OD	OS	OU
Mean LogMAR acuity	-0.12	-0.14	-0.19
Standard deviation	0.08	0.08	0.06
Mean Snellen equivalent	20/16 ⁺¹	20/16 ⁺²	20/12.5 ⁻¹

Rotation of lenses was less than 10 degrees in 56/61 eyes (91.8%) of assessed.

For the evening survey (n=34), the median score (interquartile range) for comfort was 9.5 (1.6) 10 hours; 9.2 (1.8) at 12 hours; 8.9 (1.7) at 14 hours; and 8.3 (2.6) at 16 hours of wear. Median quality of vision scores were 9.9 (1.2) at 10 hours; 9.6 (1.6) at 12 hours; 9.3 (1.6) at 14 hours; and 8.9 (2.6) at 16 hours of wear.

Evening Surveys

	10 hour Comfort Score	10 hour Vision score	12 hour Comfort Score	12 hour Vision score	14 hour Comfort Score	14 hour Vision score	16 hour Comfort Score	16 hour Vision score
Median score	9.5	9.9	9.2	9.6	8.9	9.3	8.3	8.9
Interquartile range	1.6	1.2	1.8	1.6	1.7	1.6	2.6	2.6

CONCLUSIONS

In this study, all participants with astigmatism had visual acuity of 20/20 or better when wearing the daily disposable study lenses with water surface treatment.

Participants had median subjective comfort scores greater than 8 and quality of vision scores greater than 9 on a scale of 1-10 at 16 hours of lens wear.

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