



Scleral Lenses for Healthy Eyes – A Collection of Case Reports by AccuLens



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Scleral lenses have a wide range of applications, and represent some of the most cutting-edge technology in contact lenses. With careful accuracy and discrimination, any practitioner can fit them successfully. One item that I have learned in my practice is that they are not limited to diseased eyes. They have also benefitted many of my patients with healthy eyes. With this series, leading contact lens practitioners will present cases that illustrate how the EasyFit and Comfort SL miniscleral lenses by AccuLens have made a profound difference in their patients’ lives as well.

Fit the Healthy Eye!



Case 1 - AMBLYOPIA / ANISOMETROPIA - Introduction:

History: LC, a 34 year-old female management analyst, had been referred to one of our practice’s ophthalmologists for refractive surgery OS. However, due to amblyopia and 8 diopters of refractive astigmatism in this eye, my colleague referred her to me for a gas permeable (GP) contact lens fitting.

The patient had a history of refractive amblyopia OS, and had never worn contact lenses. However, a bitoric corneal GP lens with 7 diopters of astigmatism on its back surface represents an optical compromise. Because of this, I selected the EasyFit, a miniscleral design by AccuLens. The patient decided that since she would be wearing a contact lens on the left eye, that she wanted one for the healthy right eye, too. Although the right eye could have successfully worn any material or modality, I initially tried a corneal GP lens. This was to maintain the same care system for both lenses while keeping patient costs down.

Objective:

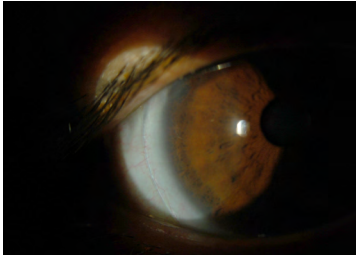
Entering Spectacle VA:

OD: 20/20
OS: 20/400

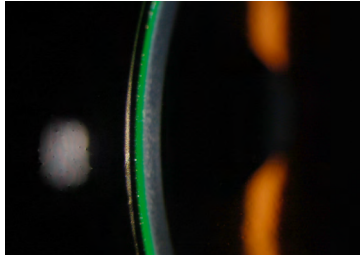
MR: OD: -1.25 - .50 X 025 20/20
OS: +2.00 - 8.00 X 010 20/50-1

Ks: OD: 42.96@102/ 42.19
OS: 46.23@091/ 38.19

Slit lamp examination: all structures healthy except
TBUT 8 seconds OD and 6 seconds OS



EasyFit lens OD, demonstrating an optimal lens edge to conjunctiva fitting relationship



EasyFit lens OD, showing 200 microns of central clearance

Contact Lenses Dispensed:

OD: Optimum Extra BC 8.0/ -1.75/ Diam. 9.2 20/20

OS: EasyFit (Optimum Extra) BC 8.23/ sag 4.42/ +.25/ Diam. 15.8/ toric PCs (steeper in vertical meridian) 20/40

The right lens showed an interpalpebral fit, well-centered with minimum clearance underneath the lens and good edge left. The left lens showed good centration, 250 u of central clearance, good limbal clearance, and no impingement of the blood vessels adjacent to the lens’ edge. The patient was asked to return in 1 week for a follow-up visit.

First Follow-up Visit:

LC had been wearing her lenses for 6-7 hours per day. She was happy with her vision, particularly OS. However, she noted that the right lens, “moved more than the left one,” and this affected consistent vision. She was also frustrated that the lens occasionally moved to the nasal or temporal canthus, particularly when she was trying to remove it. She also stated that the scleral lens was “much more comfortable” than the corneal GP lens. She asked if she could wear a scleral lens on the right eye, too. I reminded her the difference in lens cost, but after trying both lens designs, price was no object. She wanted a scleral lens for the right eye.

She also stated that the scleral lens was “much more comfortable” than the corneal GP lens. She asked if she could wear a scleral lens on the right eye, too.

Final Lens Dispensed OD:

EasyFit (Optimum Extra) BC 7.85/ sag 4.12/ -3.00/ Diam. 15.0 20/20

The lens showed good centration, 200 u of central clearance, good limbal clearance, and no impingement of the blood vessels adjacent to the lens’ edge. After two months of wear, the patient was successfully wearing her lenses 8 hours per day.

Discussion:

Given the patient’s anisometropia and high astigmatism OS, spectacles would not have been a viable option due to potentially induced aniseikonia—not to mention the asymmetric weight of the spectacles. In addition, our refractive surgeon did not favor LASIK for this amblyopic patient with 8 diopters of cylinder. A soft toric lens represented a compromise. Any slight rotation would have diminished vision, while her dry eye condition would have caused end-of-day dryness, reducing both vision and comfort. A scleral lens vaults the cornea, bathing it in tears all day long. The EasyFit miniscleral lens was an obvious treatment of choice for her left eye.

Conclusions:

Although not by design, this case provided a direct comparison of on-eye performance of a miniscleral lens versus a corneal GP lens—and the EasyFit won. A scleral lens’ diameter allows its edges to tuck underneath the lids, so there is no discomfort upon blinking. In addition, the lens lands on the conjunctiva, providing good centration. This helps ensure that the patient is always viewing through the optical center of the lens. Also because of this, there is increased lens stability and retention. Lastly, its optic zone is approximately the same size as the entire diameter of a corneal lens, resulting in better vision in dim illumination, such as night driving. In summary, LC’s experience taught me to recommend scleral GP lenses for healthy eyes—not just after failure with other modalities, but from the start.

