# Warp! There It Is: Scleral Lenses Improve Corneal Warpage Secondary to Tight Lids

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## INTRODUCTION

Scleral lenses can improve quality of vision in patients with high astigmatism. In addition, they may have a therapeutic benefit by improving corneal regularity. This case study demonstrates a case where a patient with asymmetric astigmatism secondary to tight superior lids is fit in scleral lenses. The fit resulted in improved vision and improved corneal regularity on topography.

## HISTORY

A 23 year old white female referred by her primary eye care provider complained of blur in her current monthly replacement, soft toric contact lenses. Medical history was unremarkable. Ocular history was remarkable for mixed astigmatism OU and soft contact lens use.

## EXAMINATION

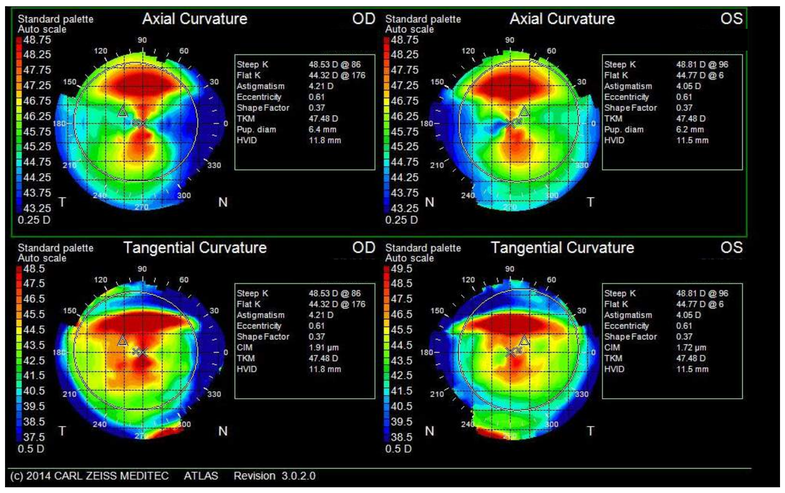


Figure 1: Topography revealed with the rule astigmatism with a much larger area of superior steepening than inferior steepening, demonstrating an overall asymmetric dumbbell pattern.

| Findings | OD | OS |
|---|---|---|
| Entering VA in SoftToric Lenses | 20/20- | 20/20- |
| Spectacle Rx | +1.75 -4.00 x 175 | +1.00 -3.00 x 013 |
| External Evaluation | Normal | Normal |
| SLE | Tight superior lids<br>Cornea clear | Tight superior lids<br>Cornea clear |

## RESULTS

After patient education and discussion, the patient was willing to consider scleral contact lenses for improved quality of vision. The patient was successfully fit in Blanchard Onefit 2.0 scleral lenses. After multiple follow up visits, the final lenses demonstrated adequate apical and limbal clearance and excellent comfort. BCVA was 20/20+ OD, 20/20+ OS with improved quality of vision.

| | Lens | Base Curve | Peripheral Curve | Power | Diameter | Material |
|---|---|---|---|---|---|---|
| **OD** | Blanchard Onefit 2.0 | 7.80 | Grade 1 Steep | +2.00 D | 14.9 mm | Optimum Extra |
| **OS** | Blanchard Onefit 2.0 | 7.70 | Grade 1 Steep | +1.00 D | 14.9 mm | Optimum Extra |

The patient returned to clinic 1 year later for a contact lens check. She reported wearing her scleral lenses daily with excellent comfort and vision. She also reported improved vision in her spectacles. An updated topography was performed that revealed with the rule astigmatism with a regular, symmetric dumbbell pattern.

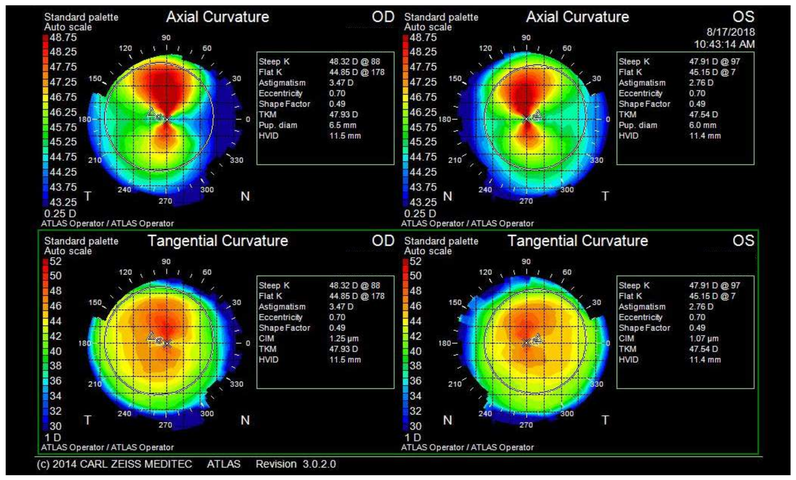


Figure 3: Updated topography after 1 year of scleral lens wear, demonstrating with the rule astigmatism with an improved, symmetric dumbbell pattern.

## DISCUSSION AND CONCLUSION

Scleral lenses are an excellent option for many patients to improve quality of vision. This is especially true for patient with high astigmatism. In addition, scleral lenses can improve corneal regularity by vaulting the entire cornea, protecting it from mechanical forces such as tight lids, like in this case. The use of scleral lenses not only improved vision while wearing the lenses, but also they improved vision in spectacles by making the cornea more regular.

Scleral lenses may be a great option in restoring the cornea to its natural shape. This concept has other potential implications such as improving corneal warpage from GP wear, tight lenses, or lid lesions. More studies are needed in order to fully analyze the therapeutic benefit of scleral lenses in improving corneal regularity.

## REFERENCES

*Available upon request*