

3rd International Conference and Expo on

Optometry & Vision Science

October 08-09, 2018 | Edinburgh, Scotland

Toric orthokeratology contact lenses for patients with corneal elevation differences

Nicholas Gidosh

Lehigh Valley Eye Care Associates, USA

Orthokeratology is a well-established process by which the corneal surface is reshaped in order to correct refractive ametropia through the use of specific contact lens designs. Orthokeratology lenses are reverse geometry lenses specially designed to have very low clearance over the pupil. These designs are comprised of different zones to either provide treatment or stabilize the lens and can be organized into two broad categories: corneal refractive therapy (CRT, Paragon vision sciences, Inc.) or vision shaping treatment (VST, Bausch + Lomb). This lecture will review fundamentals in orthokeratology as well as troubleshooting common problems faced in practice. The presentation will then discuss more advanced design options available to apply ortho-k fitting to more patients by focusing on toric designs as well as describing other ways of customizing a fit. This will be done through discussion of elevation data obtained through a corneal topographer including how to measure the values and apply it when designing an orthokeratology lens. Topographical data is critical in understanding the shape of a patient's corneal surface and thereby designing an appropriately fitting contact lens. Topographical maps will be discussed and analyzed to explain how to troubleshoot different problems and guide custom lens design.

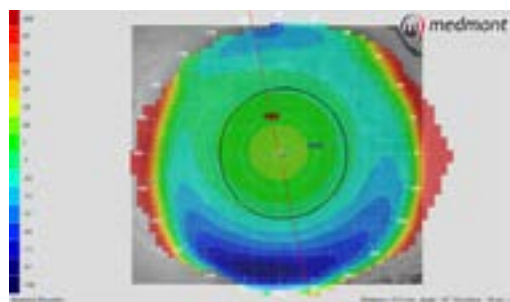


Figure 1: Shows an apparently clinically spherical cornea.

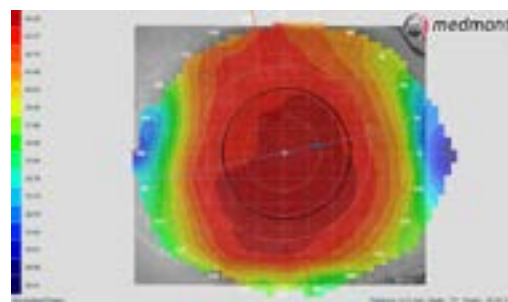


Figure 2: Shows more elevation difference, 21.5 microns, than one may expect at the 8.00 mm chord, where the alignment curve contacts the cornea.

Recent Publications:

1. CC, Cheung SW and Cho P (2012) Toric orthokeratology for highly astigmatic children. *Optometry and Vision Science*. 89 (6): 849–855.
2. J, Cardona G and Quevedo L (2012) Toric double reservoir contact lens in orthokeratology for astigmatism. *Eye Contact Lens*. 38 (4): 245-251.
3. S W, Cho P and Chan B (2009) Astigmatic changes in orthokeratology. *Optometry and Vision Science*. 86 (12): 1352-1358.
4. D, Malet J, Hoang-Xuan T and Azar DT (2011) Corneal elevation topography: best fit sphere, elevation, asphericity, toricity, and clinical implications. *Cornea*. 30 (5): 508-515.
5. Salmon T O and Horner D G (1995) Comparison of elevation, curvature, and power descriptors for corneal topographic mapping. *Optometry and Vision Science*.

Biography

Nicholas Gidosh is an Optometrist at Lehigh Valley Eye Care Associates in Allentown Pennsylvania. He has received his Doctor of Optometry Degree from the Pennsylvania College of Optometry at Salus University, where he is currently doing his part time as a Clinical Instructor. He has also completed a Cornea/Contact Lens Residency at the Michigan College of Optometry at Ferris State, and is a Fellow of the American Academy of Optometry. He has served as a Clinical Investigator for studies involving hybrid, scleral, multifocal, and orthokeratology lenses. He has also presented lectures and posters at several conferences.