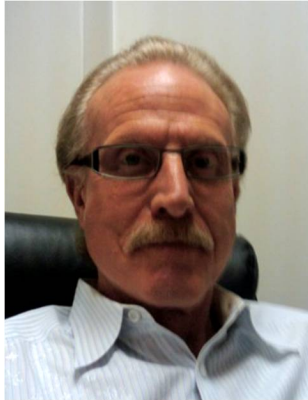


# I-site Newsletter



## I(n)-site-the-practice

### Hopes for High Myopes?



Orthokeratology in the USA is approved for up to 6D of myopia, otherwise it would be an off-label procedure. Many of us in clinical practice preach that with up to 4D of myopia the results are usually good; beyond that the outcome may get less predictable. This way, thousands of patients have been fitted around the world, and the magic of orthokeratology continues. Higher myopes are often left out though, which can be very frustrating sometimes for friends or family of successful patients using orthokeratology. But incidental cases sometimes show surprising results. Please see link for the full case report by Bruce Williams of Seattle Vision in Seattle (USA). Furthermore: see this link for information on the upcoming [Orthokeratology Academy of America meeting](#) in October in Chicago (USA), of which Bruce Williams is a board member, with much more on corneal reshaping.

### Hopes for High Myopes

#### Is 8D of myopia too much for orthokeratology treatment?

#### ***Case Report***

Our patient is a 29-year-old white female project manager with a 20 year history of (R)GP lens wear. She would like to reduce her dependency on daily wear contact lenses because of sports and environmentally induced comfort issues, but she is not interested in eye surgery. She heard about orthokeratology from her co-workers.

Her prescription is:

OD -8.25D, 20/20 distance and near

OS -8.00D, 20/20 distance and near

After repeated attempts to dissuade the patient, we agreed to try reducing the amount of myopia sufficiently to allow for part-time soft lens wear.

#### ***Lens Fit***

Her keratometry values are:

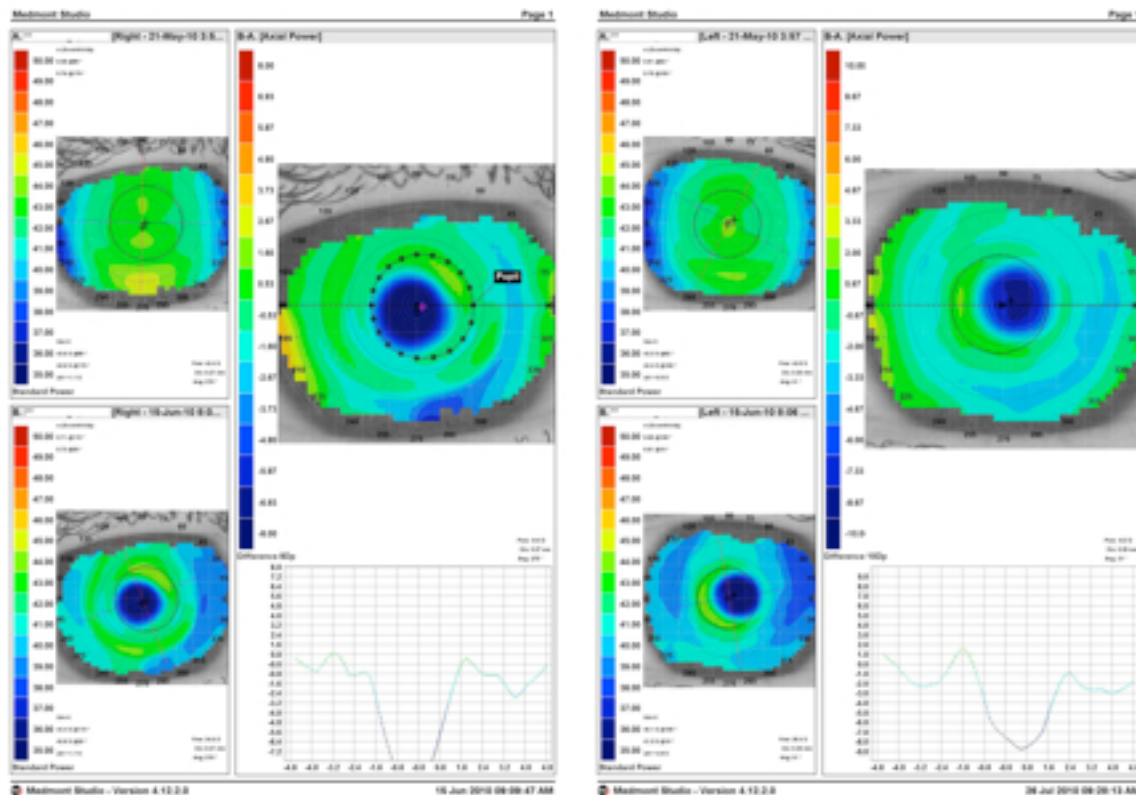
OD 42.25/43.00 @ 082

OS 42.25/42.75 @ 089

Lenses selected were ShinyEyes GOV XM lenses, a specialty lens for high orthokeratology corrections, in Paragon HDS 100: OU 10.14 / +2.00D / 11.20. The reverse geometry design featured a spherical base curve, 5mm BOZD and an aspheric alignment curve with appropriate edge lift.

14/June/2010: Lenses were fitted and observed to center well with appropriate bullseye fluorescein pattern and sufficient movement.

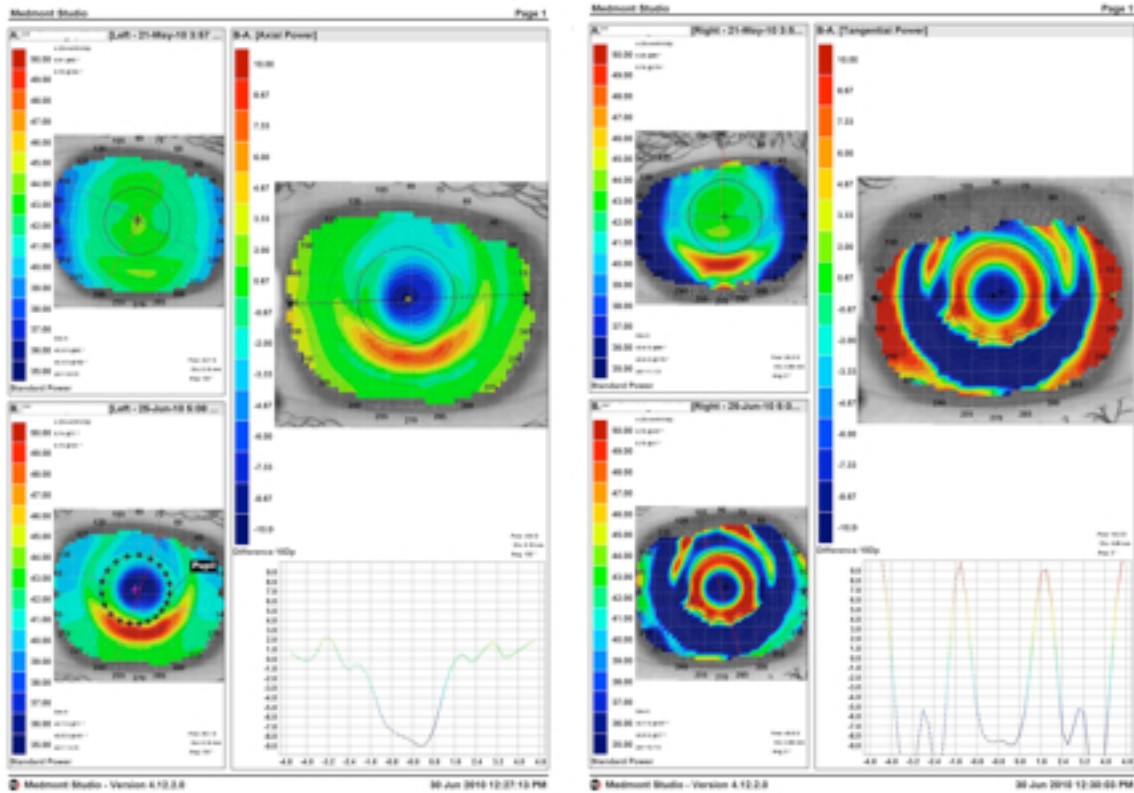
15/June: Significant treatment occurred overnight and -1.00D soft lenses were dispensed, but the patient required -4.00D correction by mid afternoon.



By day three the correction was lasting well into the evening, requiring re-application of OK lenses only for driving.

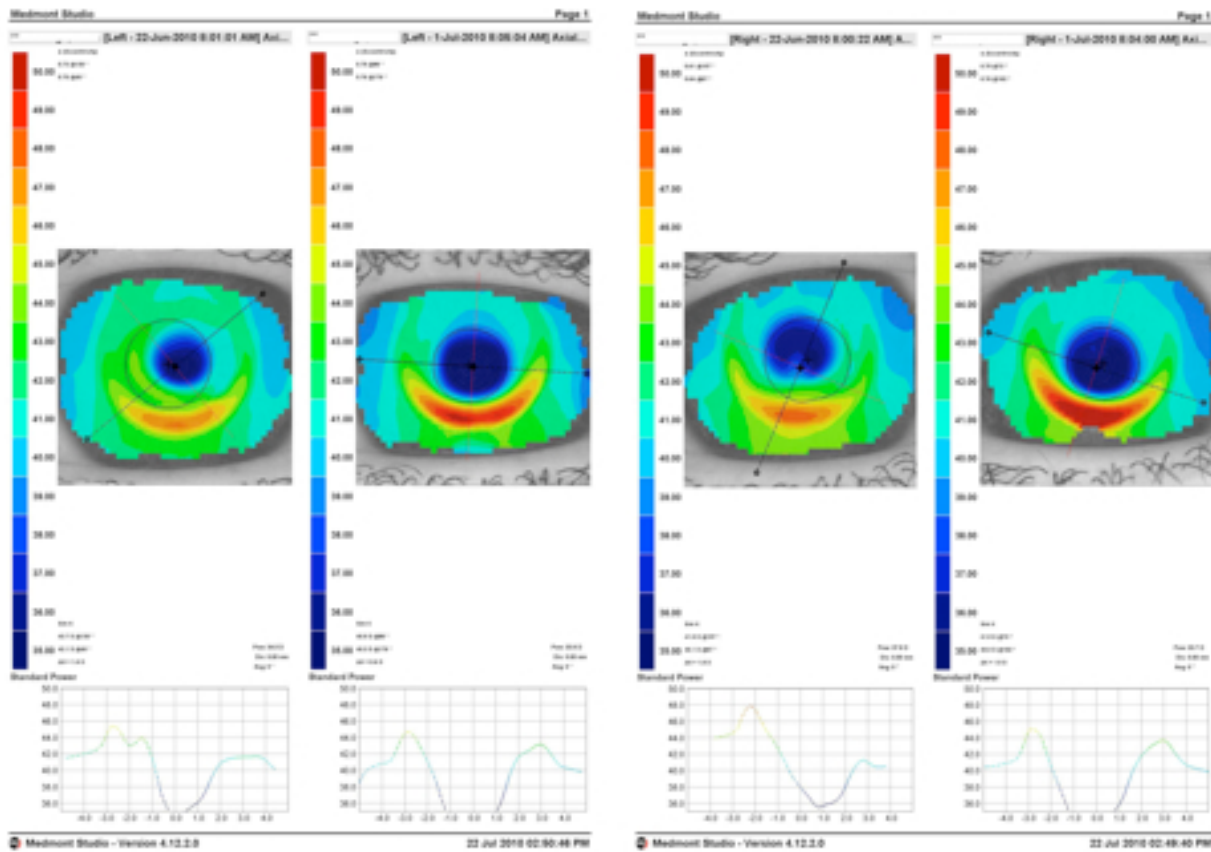
### **Glare**

By 25/June, all-day full treatment was achieved with excellent daytime vision, but the small treatment zone was causing too much glare in low light conditions.



Oftentimes by loosening the peripheral alignment curves and flattening the base curve radius, the lens will settle in closer to the cornea by a few microns, thereby increasing the treatment zone diameter.

New lenses were ordered and dispensed: OU 10.17/+2.00/11.20. After one week of wear, the treatment zone diameters improved enough to allow for much more comfortable vision in dim illumination.



13/July: Unaided visual acuities were 20/20 in each eye and 20/15 OU. Refraction as measured by Ophthonix Z-View Aberrometer:

OD: -0.25 -0.25 X 013

OS: +0.25 -0.25 X 173

### ***“Emmetropia”***

Although full correction was not the goal with this patient, the overrefraction is minimal and the visual acuity very satisfactory.

Aside from high myopia, there were several aspects to this case that made it a bit more challenging. While corneas can be routinely taken to 36.00 diopters (9.38mm), moving on to 34.00 diopters (9.93mm) can sometimes be more tedious. Furthermore, the patient’s unwillingness to discontinue (R)GP wear and return to baseline corneal topography was a handicap. When a successful finish relies on differences of a few microns, it would be good to know where the starting line was. This could certainly explain having to adjust the fit midway through the treatment.

Correcting these levels of high myopia with orthokeratology is an off label use in the United States, and should be monitored more closely for possible adverse reactions.

That being said, this could be a viable adjuvant to traditional methods of treatment for higher myopia.

**Bruce T. Williams, OD, FOAA**

Bruce Williams, OD, FOAA, practices in Seattle with an emphasis on complex contact lens fitting including orthokeratology. He is actively involved in clinical trials for several lens manufacturers and has published, lectured and conducted workshops across the US as well as in Canada, Australia, Korea, Singapore and the UK. Currently he is working with extreme molding and multi-geometry lenses for correction of higher degrees of myopia, astigmatism, hyperopia and presbyopia. Dr. Williams is a Fellow of the Orthokeratology Academy of America and a member of its Board of Directors. Other memberships include the AOA, British Orthokeratology Society and the British Contact Lens Association.

