



Presents:

WAVE Extremes

Take a Walk on the Wild Side

Ken Maller, OD, FAAO, Dipl. (CCLRT), FIAO, FIAAOMC, FSLs, Dipl. ABO

5333 North Dixie Highway Suite #101

Fort Lauderdale, FL 33334

954.493.5052

Consultation: www.noblur.com/consu.html

Introduction

- ▶ Oculus, WAVE – Consultant
- ▶ Fitter
 - Solo, Private, Contact lens only practice
 - Irregular corneas
- ▶ Previously National Clinical Support
 - Fellow WAVE users that need help on a case by case basis
- ▶ Lectures, Webinars
 - Formal instruction for WAVE users
- ▶ Private Practitioner Consultation Services
 - Case-by-case help, or one-on-one training (phone, in-person)
 - Remote fitting, telemedicine
- ▶ Beta Tester
 - Developmental input (CSP & WAVE, AXL WAVE)
- ▶ Authored the 1st Certified WAVE Designers program
- ▶ Currently guiding WAVE training

Orthokeratology – Case #1

The Young High Myope

- ▶ 5 year old black male
- ▶ Spectacle Rx (10 months old)
 - OD -5.50 DS 20/400
 - OS -5.50 DS 20/400
- ▶ Manifest Refraction
 - -8.50 DS 20/50-
 - -8.25 DS 20/50
- ▶ General Health, Good, (-) meds, (-) allergy
- ▶ Hx of strabismus surgery at 2 yo
- ▶ Hx myopia steadily increasing since birth
- ▶ Sees pediatric Ophthalmologist every 3 months
- ▶ No contact lens history
- ▶ Parents/Grandparents interested in myopia management

3/5/07

Target = Full Rx
OD -8.50 DS
OS -8.25 DS

Orthokeratology - Case #1

The Young High Myope

▶ Sim Ks – overall flat corneas

3/5/07

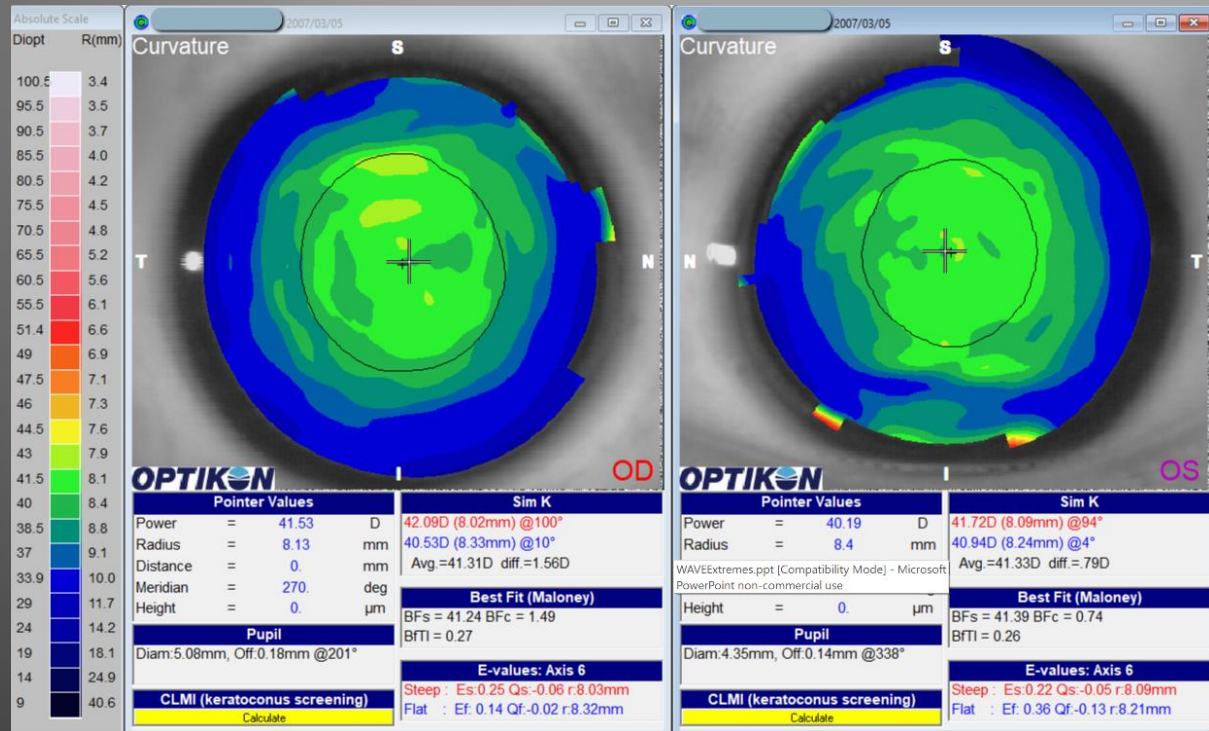
▶ 40.53/42.09 @ 100

▶ 40.94/41.72 @ 094

▶ Pupils

▶ 5.08 mm

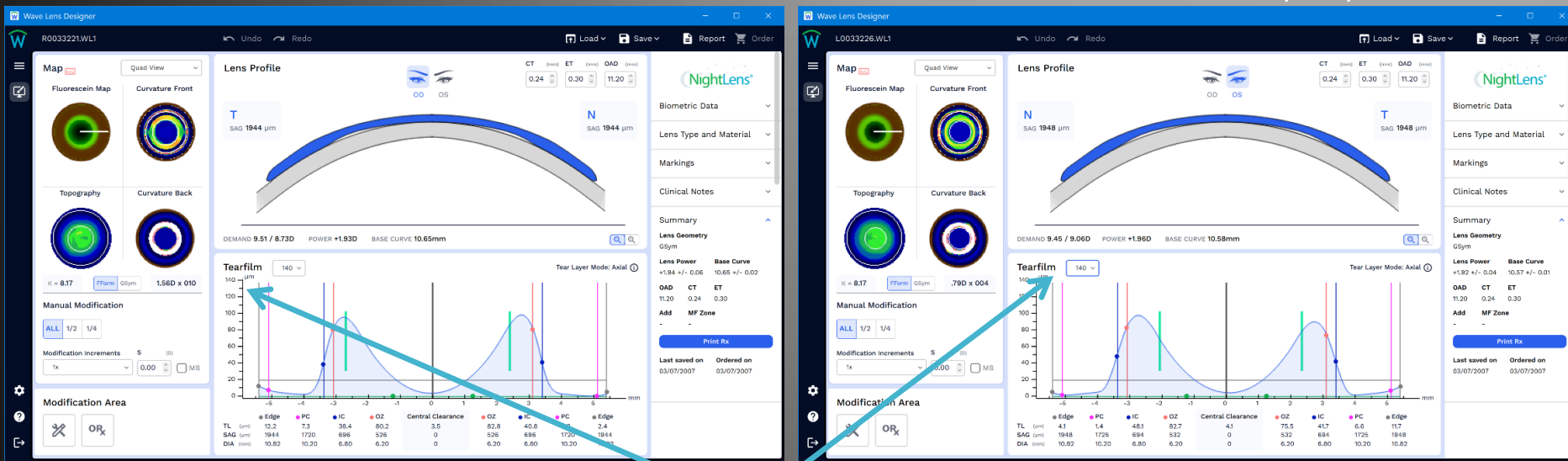
▶ 4.35 mm



Orthokeratology - Case #1

The Young High Myope

3/5/07



OD

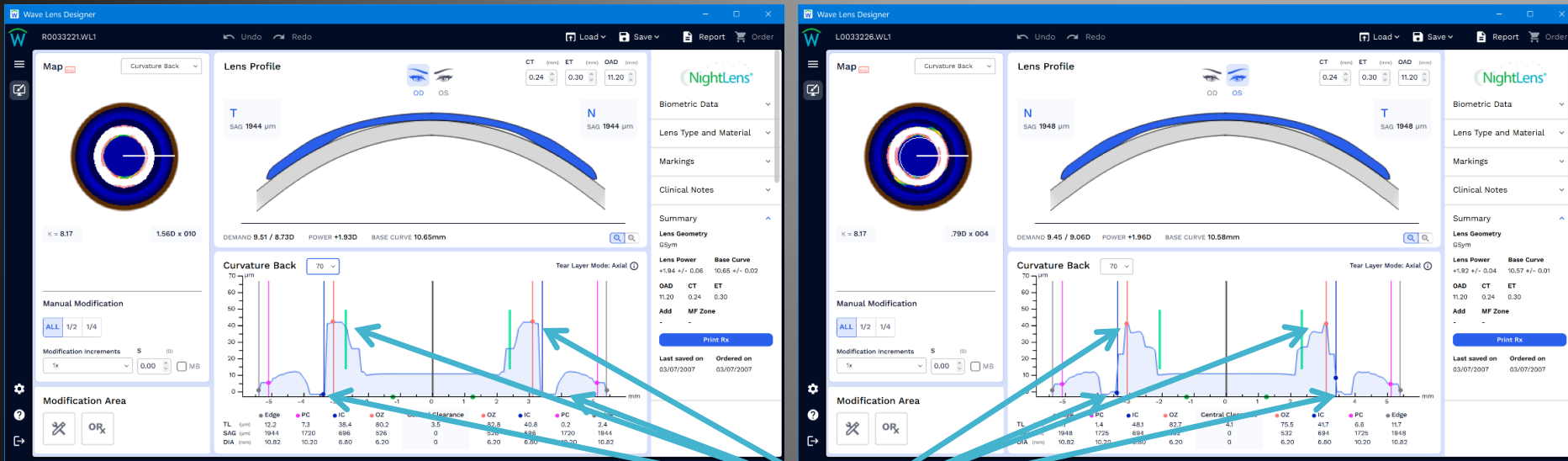
140µ Display

OS

Orthokeratology - Case #1

The Young High Myope

3/5/07



OD

Lathe Limits (absolute)
Steepest 3.00mm
Flattest 1.00M

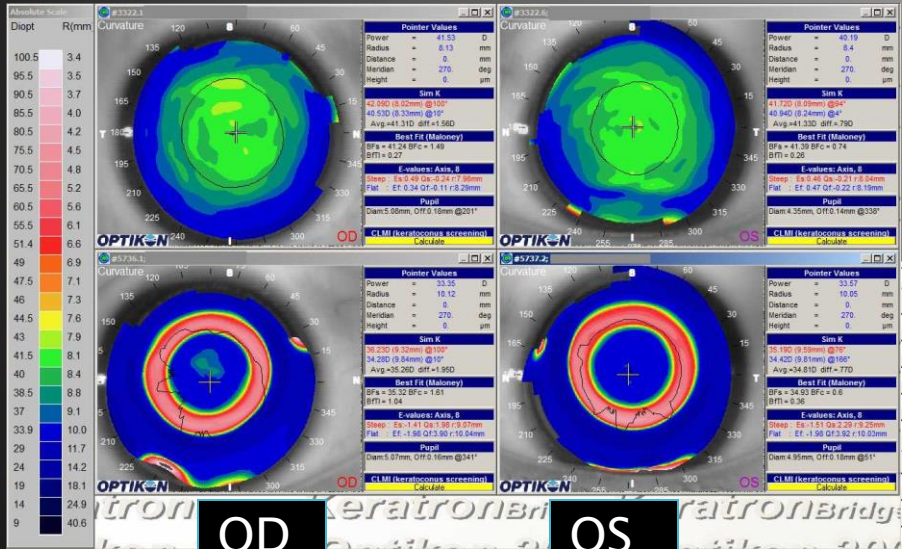
OS

Orthokeratology - Case #1

The Young High Myope

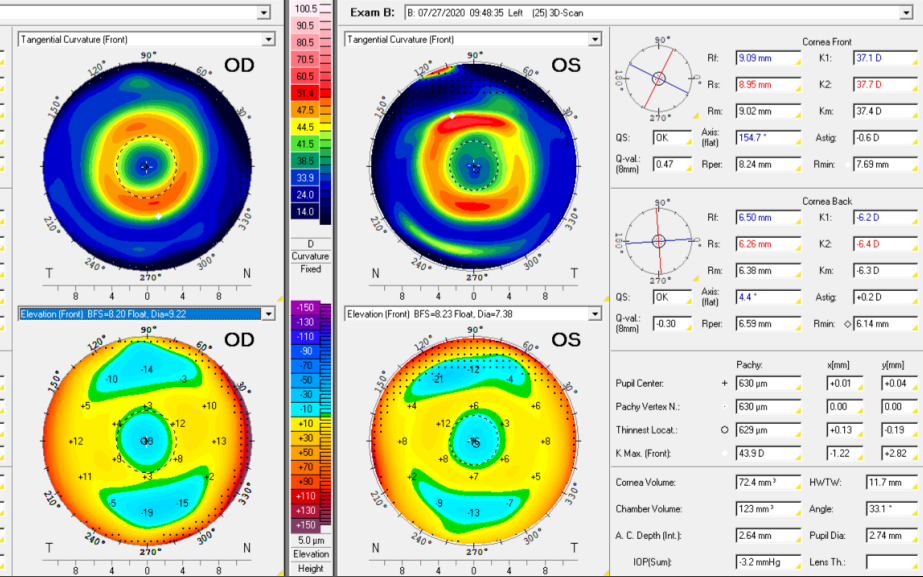
3/25/15

7/27/20



OD

OS



OD

OS

Orthokeratology – Case #2

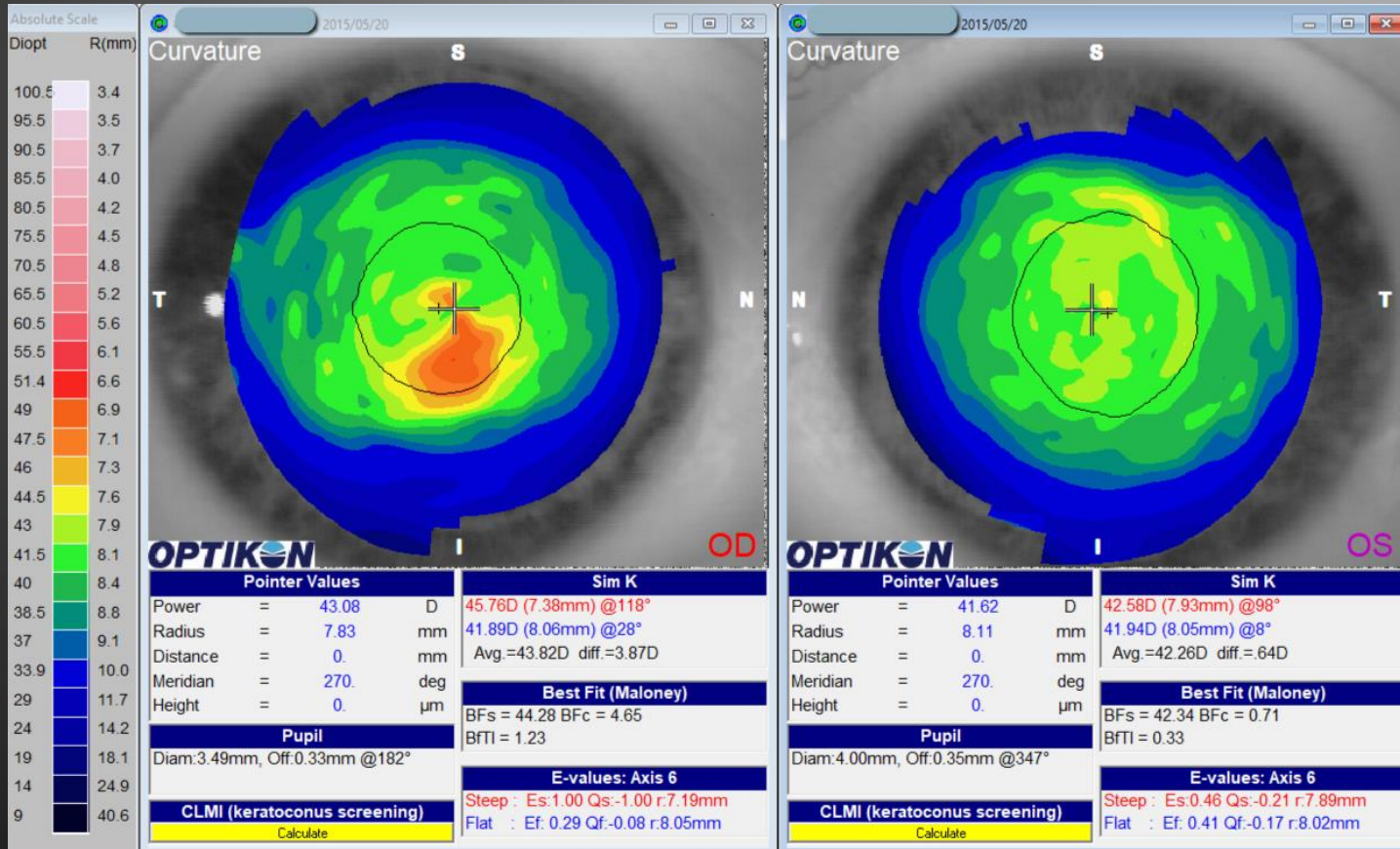
The Irregular Presbyope

- ▶ 40 year old white male
- ▶ Referred as Keratoconus suspect
- ▶ Spectacle Rx (1 year old)
 - OD Plano–2.50 x 031 20/80–
 - OS +0.25–1.25 x 099 20/20
- ▶ Manifest Refraction
 - +0.50–3.25 x 045 DS 20/60–
 - –0.25 DS 20/20
 - Add +1.25
- ▶ General Health, Good, (–) meds, (–) allergy
- ▶ No contact lens history
- ▶ Unhappy about needing reading spectacles

Orthokeratology - Case #2

The Irregular Presbyope

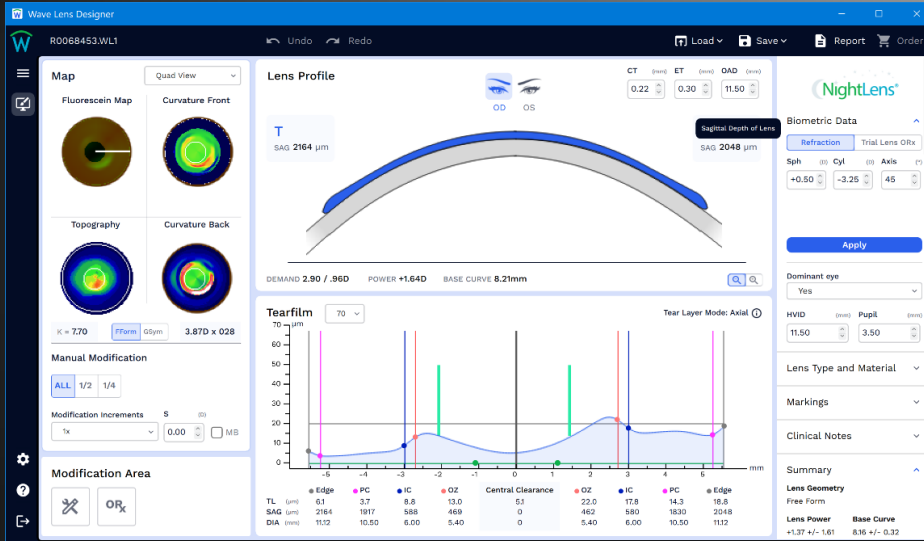
5/20/15



Orthokeratology - Case #2

The Irregular Presbyope

5/20/15



OD

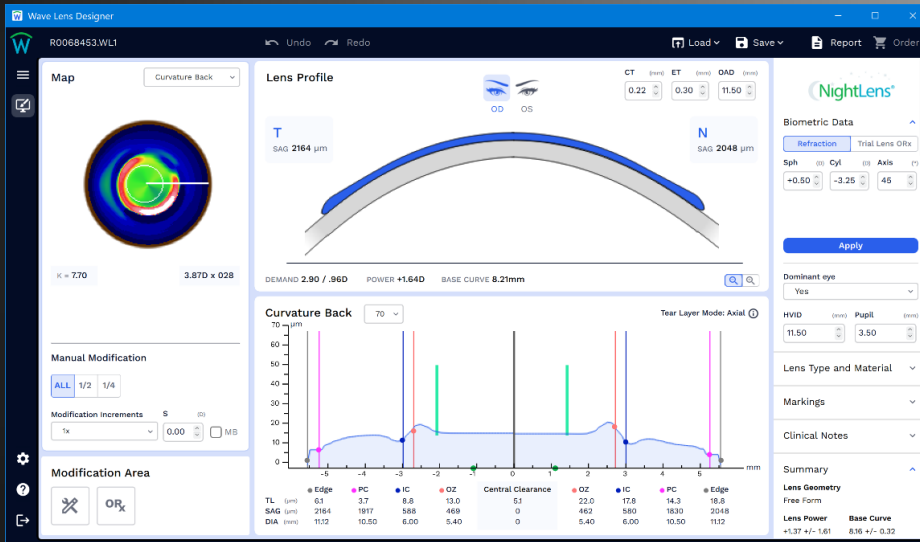


OS

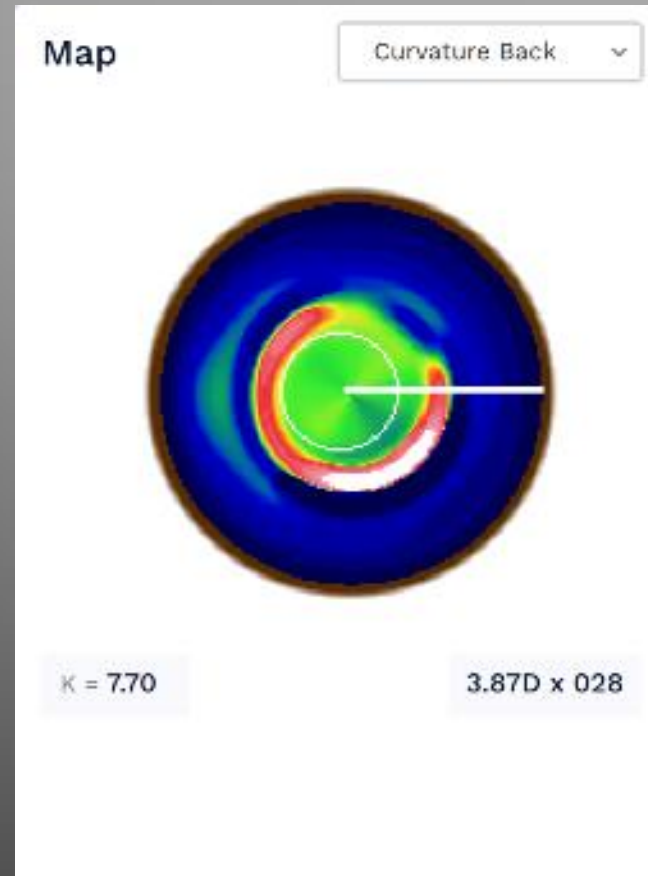
Orthokeratology – Case #2

The Irregular Presbyope

5/20/15



OD

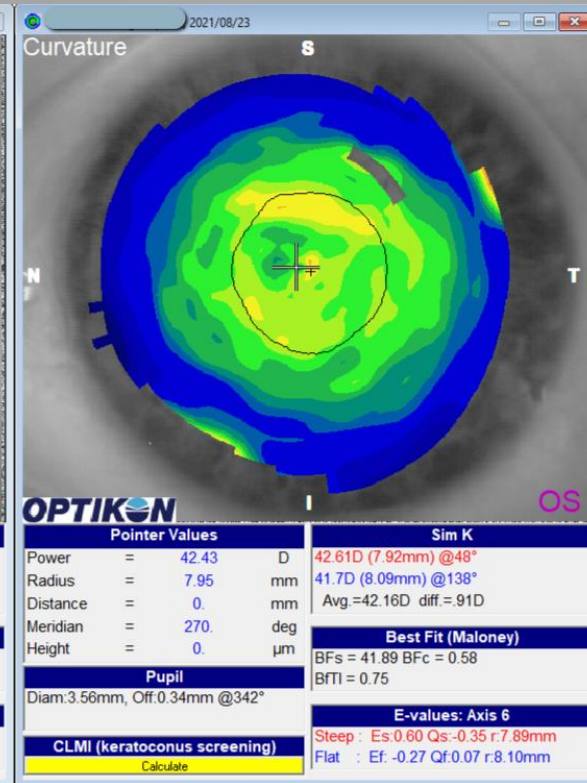
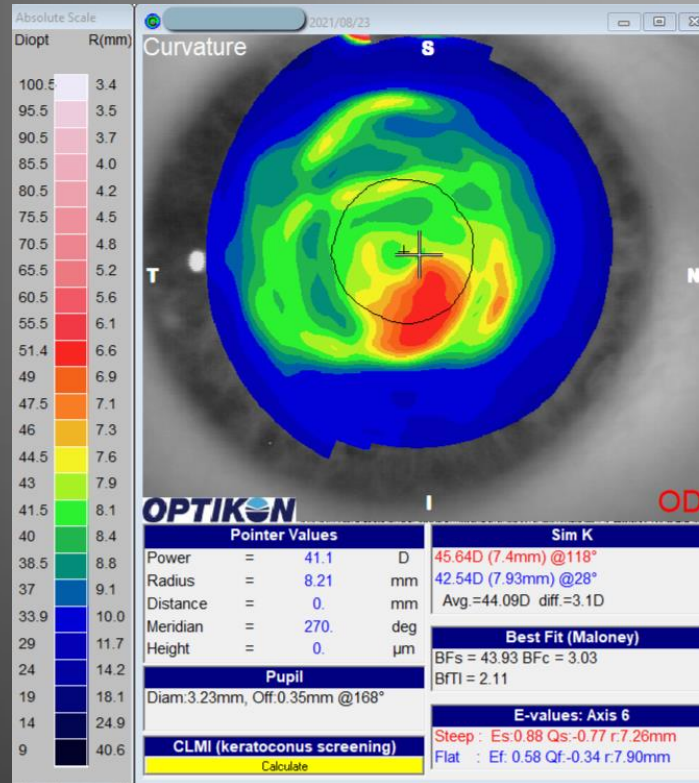


Orthokeratology - Case #2

The Irregular Presbyope

8/23/21

- ▶ VAsc
 - ▶ OD 20/20-
 - ▶ OS 20/15
- ▶ Near
 - ▶ OD 20/20
 - ▶ OS 20/20
- ▶ Manifest Refraction
 - ▶ +0.25-0.50x040
 - ▶ Plano



OD

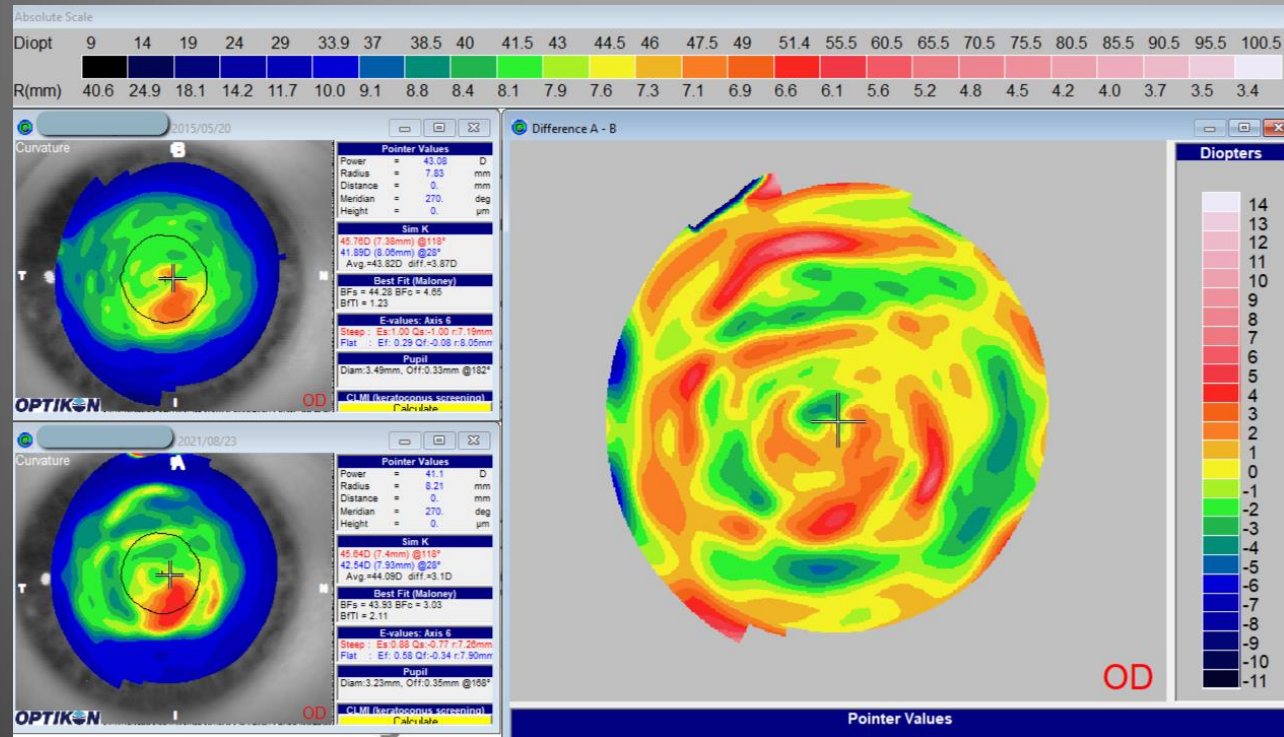
OS

Orthokeratology – Case #2

The Irregular Presbyope

8/23/21

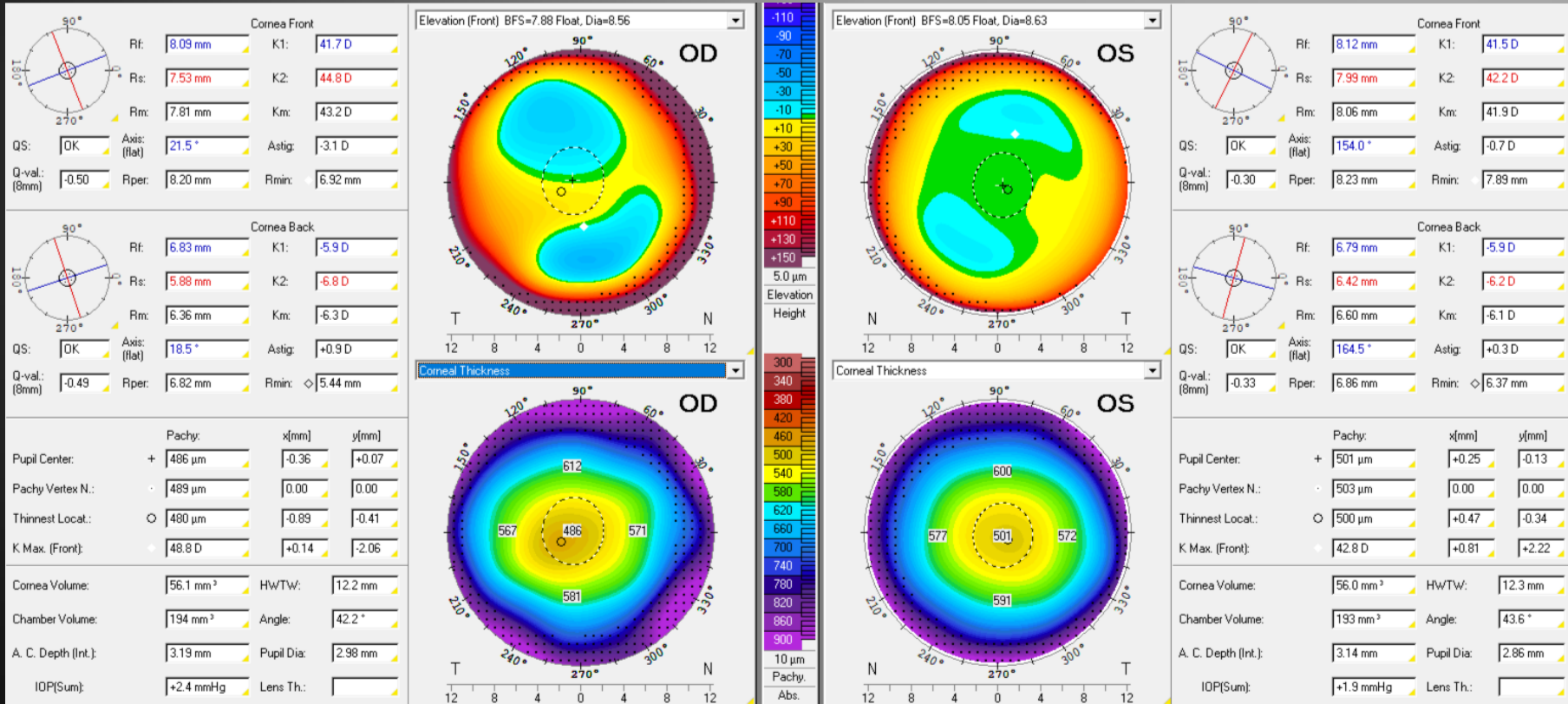
- ▶ VAsc
 - ▶ OD 20/20–
 - ▶ OS 20/15
- ▶ Near
 - ▶ OD 20/20
 - ▶ OS 20/20
- ▶ Manifest Refraction
 - ▶ +0.25–0.50x040
 - ▶ Plano



OD

Orthokeratology - Case #2

The Irregular Presbyope



Elevation and Corneal Thickness Maps
 OD 20μ Thinner than OS

Orthokeratology – Case #3

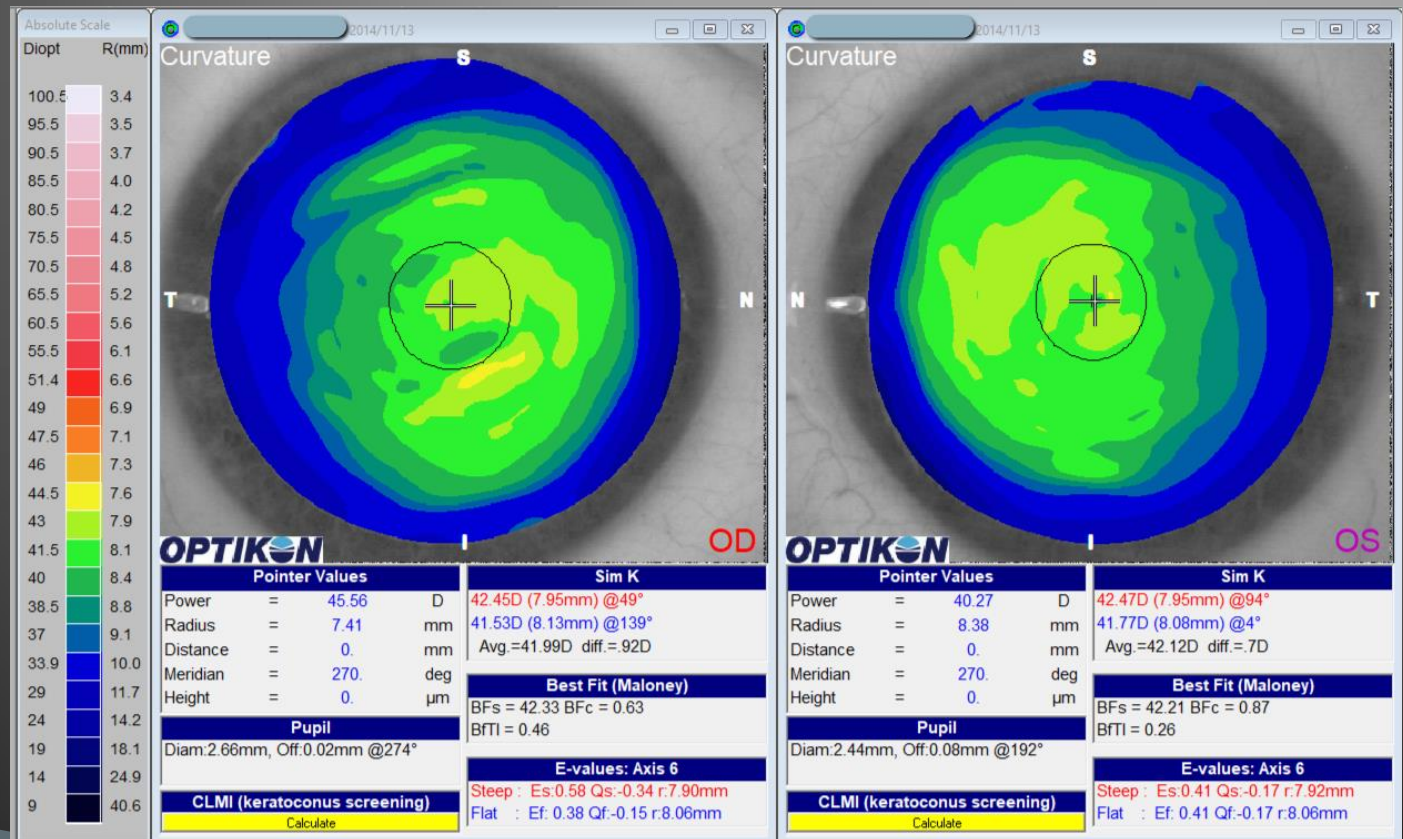
The High Hyperopic Presbyope

- ▶ 52 year old white male
- ▶ Manifest Refraction
 - +4.00–0.50 x 118 20/20
 - +4.25–0.50 x 040 20/20
 - Add +2.50
- ▶ General Health, Good, (–) meds, (–) allergy
- ▶ Through consultation
- ▶ Attorney with excessive nearpoint needs

Orthokeratology - Case #3

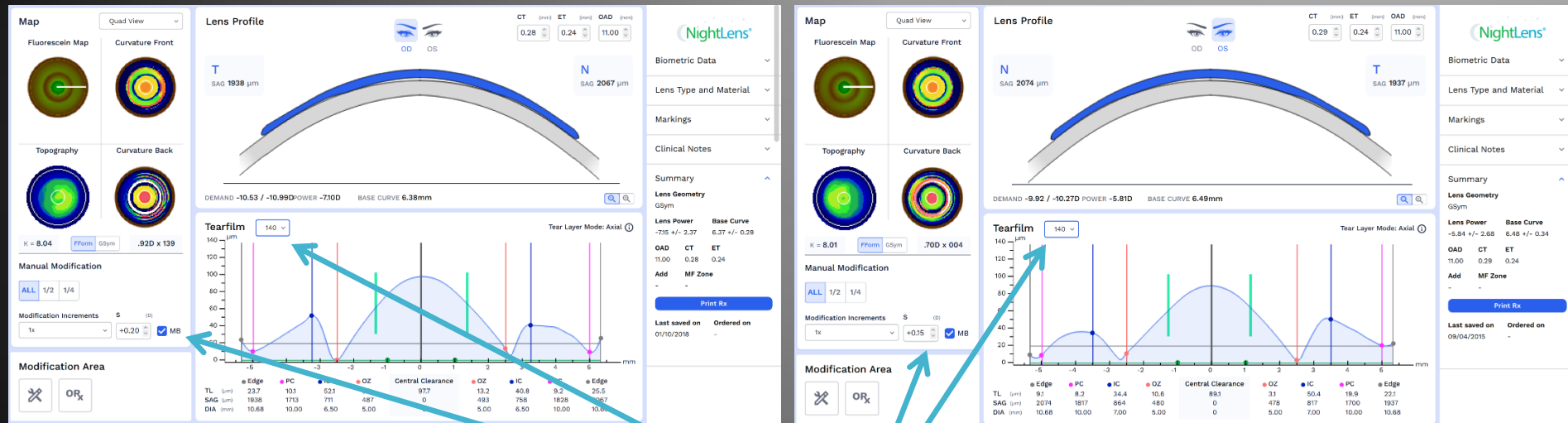
The High Hyperopic Presbyope

11/13/14



Orthokeratology - Case #3

The High Hyperopic Presbyope



OD

OS

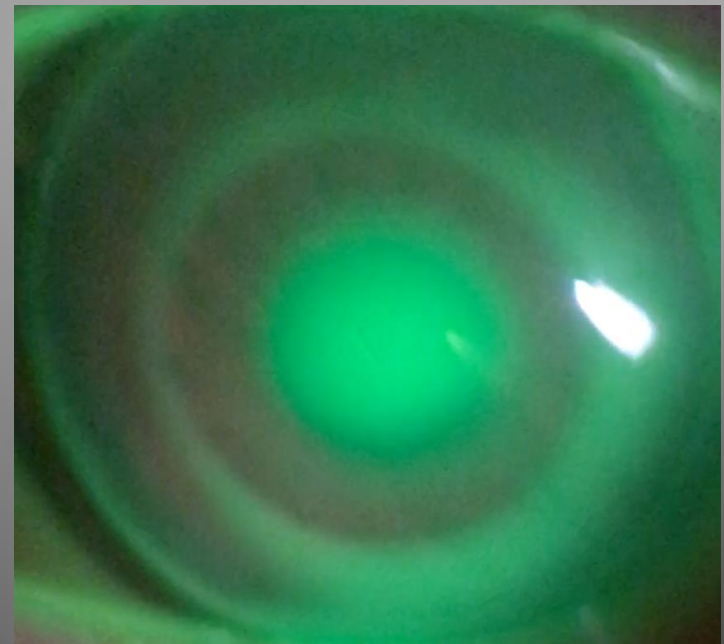
140µ Display
MB Box checked
S Value +0.20, +0.15

Orthokeratology – Case #3

The High Hyperopic Presbyope



OD

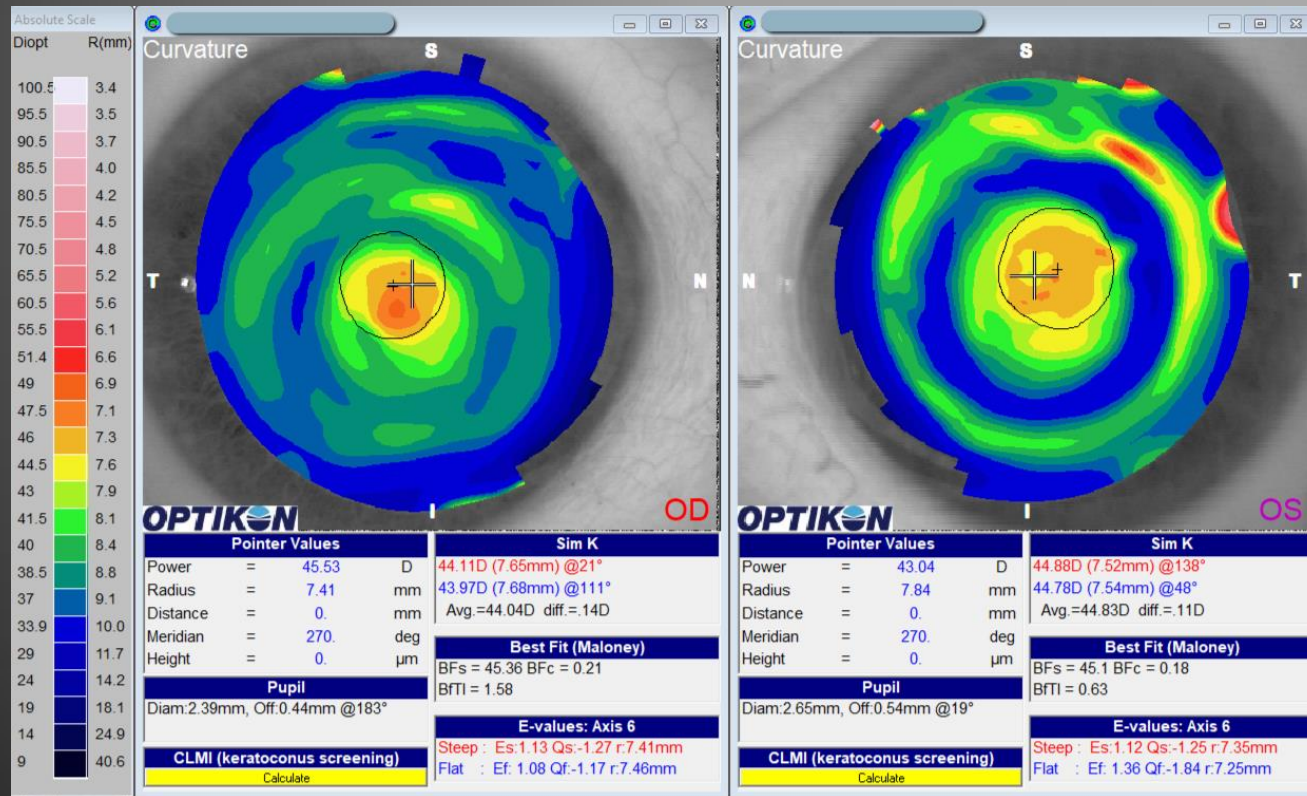


WAVE's Theoretical NaFl Display

Actual Lens on Eye NaFl Display

Orthokeratology - Case #3

The High Hyperopic Presbyope

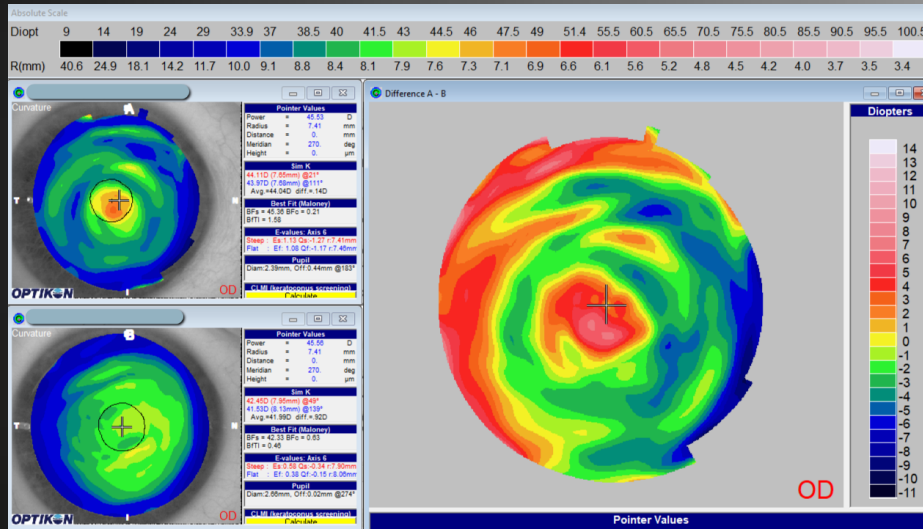


OD

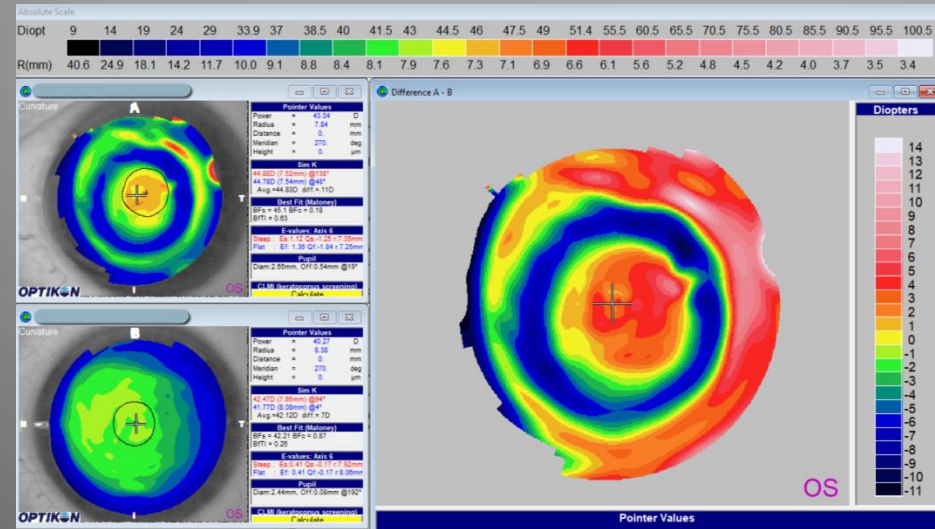
OS

Orthokeratology - Case #3

The High Hyperopic Presbyope



OD



OS

- ▶ VAsc
- ▶ OD 20/25+
- ▶ OS 20/20-
- ▶ Near
- ▶ OD 20/20
- ▶ OS 20/20

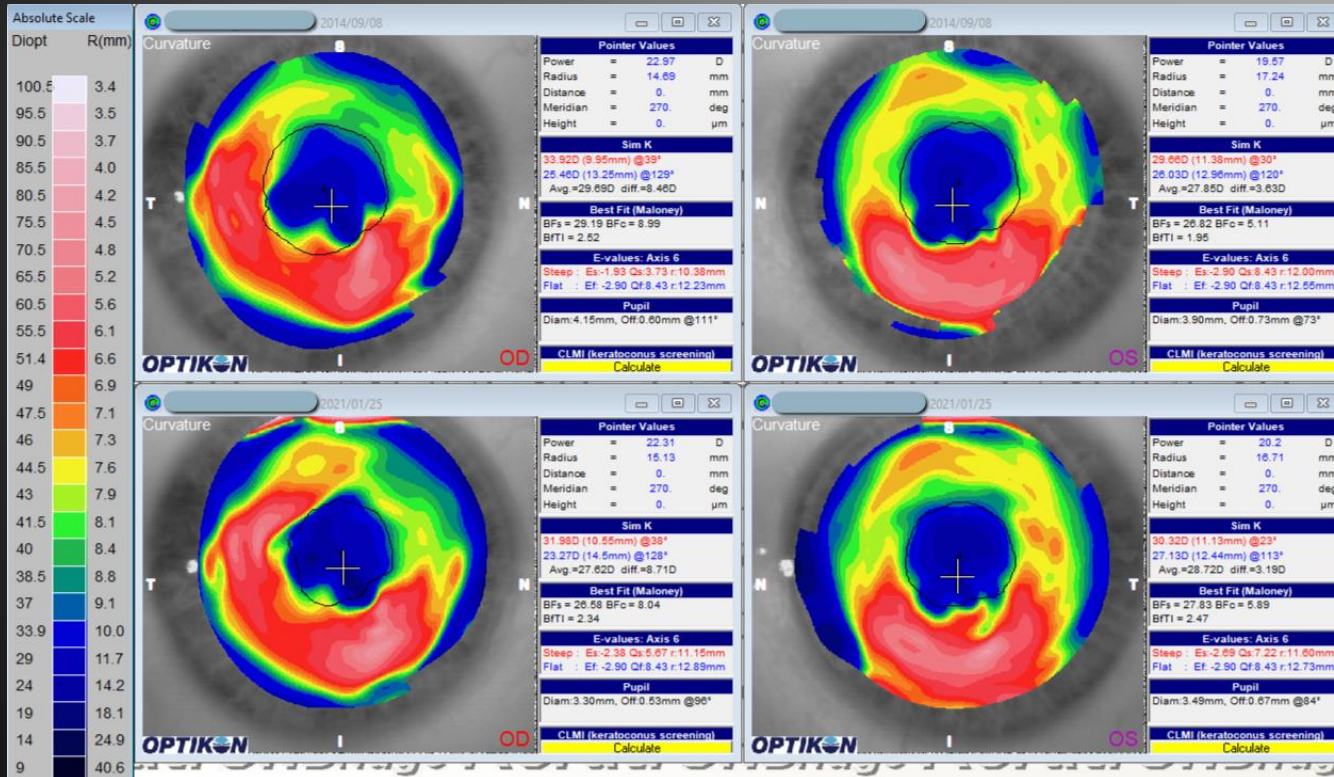
Post RK – Case #4

The Flatter than Flat, RK Presbyope

- ▶ 50 year old white male
- ▶ My patient for 7+ years
- ▶ History RK ODx1, OS,1 ~25 years earlier
- ▶ Manifest
 - ▶ +9.00–3.00x120 20/60–
 - ▶ +6.25–1.50x075 20/50–
 - ▶ Add +2.50
- ▶ General Health, Good, (–) meds, (–) allergy
- ▶ Prior to 7 years, multiple CL failures (Soft, corneal/scleral GP)
- ▶ Successful 7 years in corneal GP multifocals (14–16 hours/day)
- ▶ Continued concern RK vascularized scars

Post RK - Case #4

The Flatter than Flat, RK Presbyope



9/8/14
(Prior to fit)

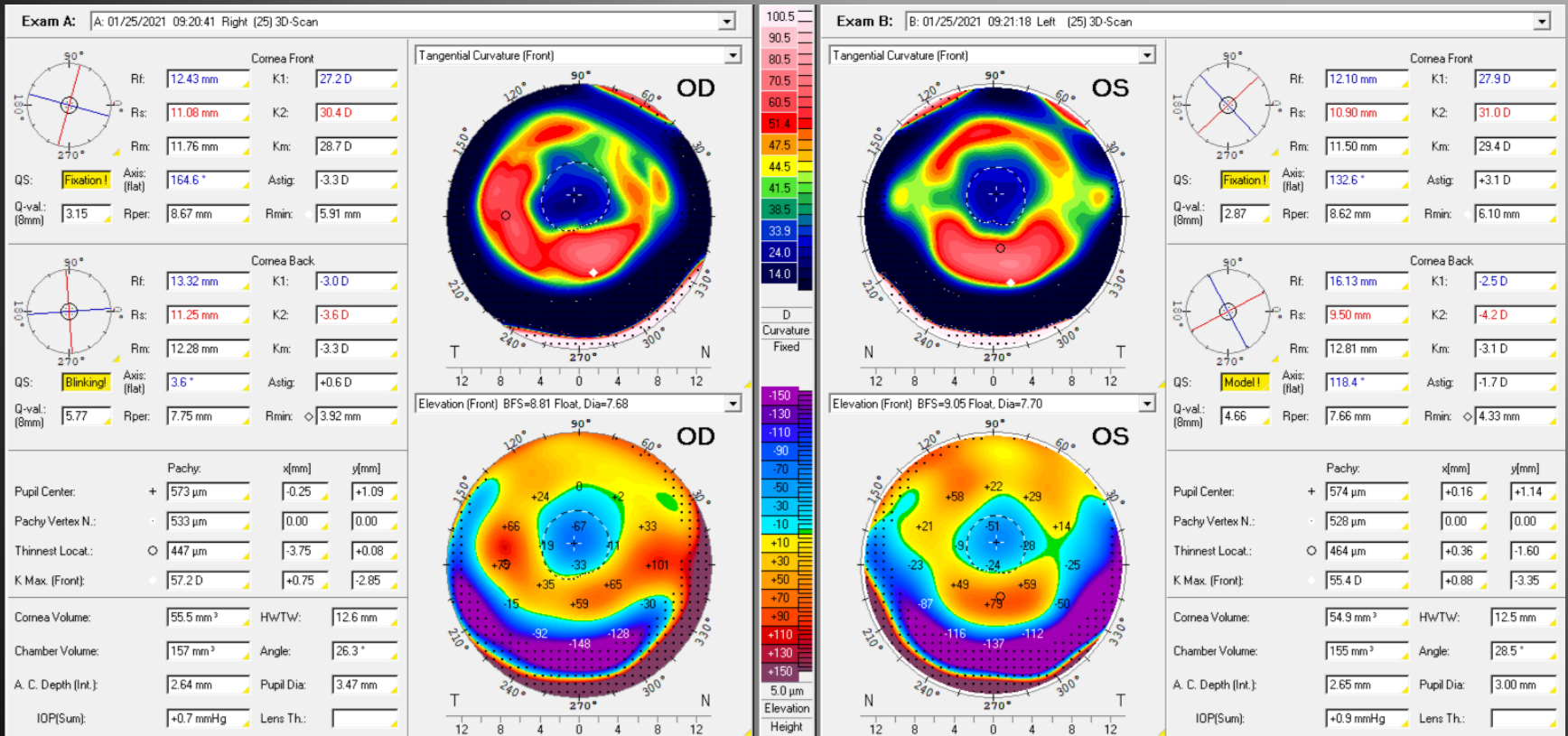
1/25/21
(Upon lens removal)

OD

OS

Post RK - Case #4

The Flatter than Flat, RK Presbyope



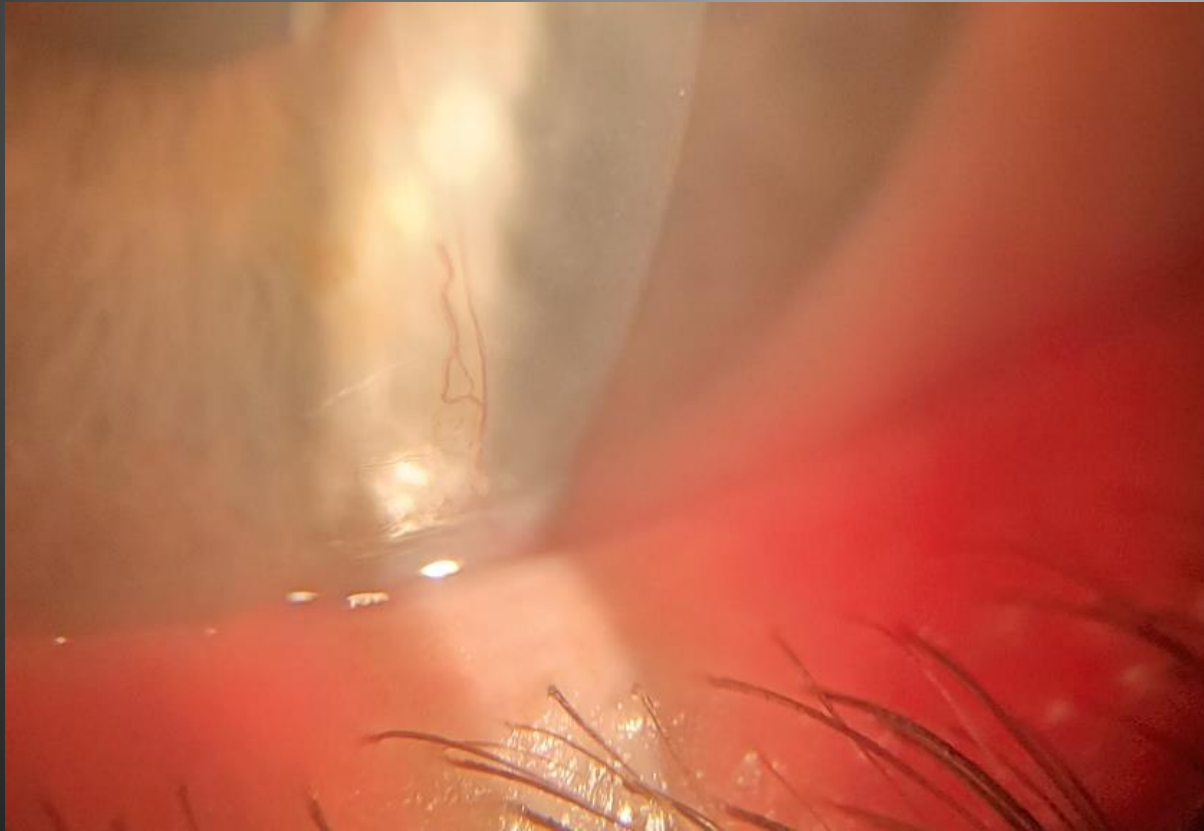
OD

OS

Post RK - Case #4

The Flatter than Flat, RK Presbyope

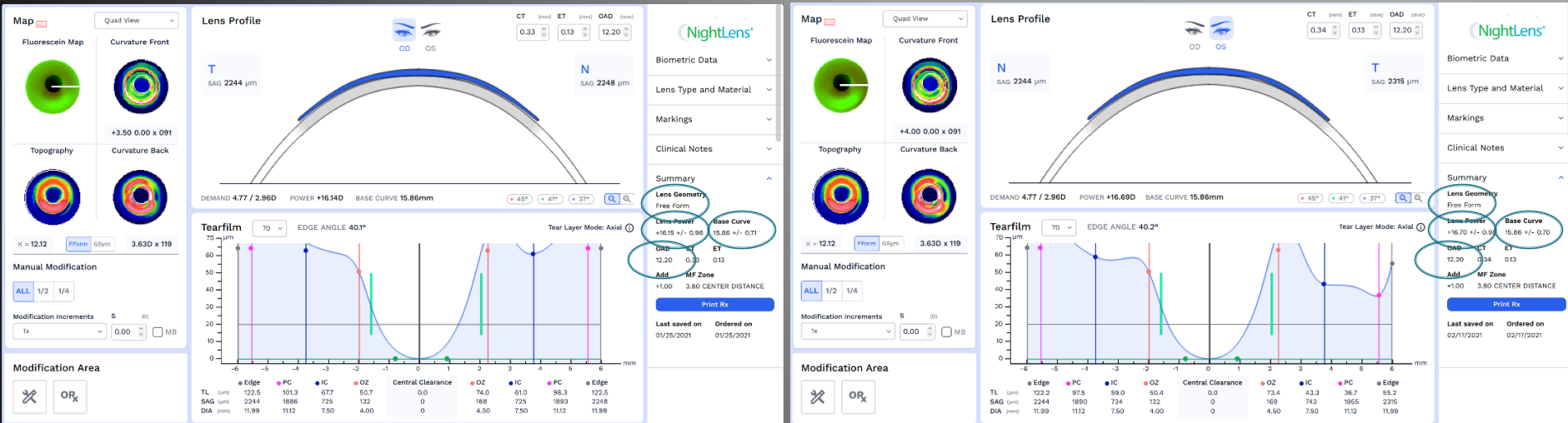
OD



1/25/21

Post RK – Case #4

The Flatter than Flat, RK Presbyope



OD

OS

Optimum Infinite material, FreeForm Symmetry
 12.20mm Diameter on 12.50mm Cornea
 Base Curve Median = OD 15.86mm, OS 15.86mm (~21.25D)
 Power Median = OD +16.15D, OS +16.70D

CLVA OD 20/20-, OS 20/20, Near J1

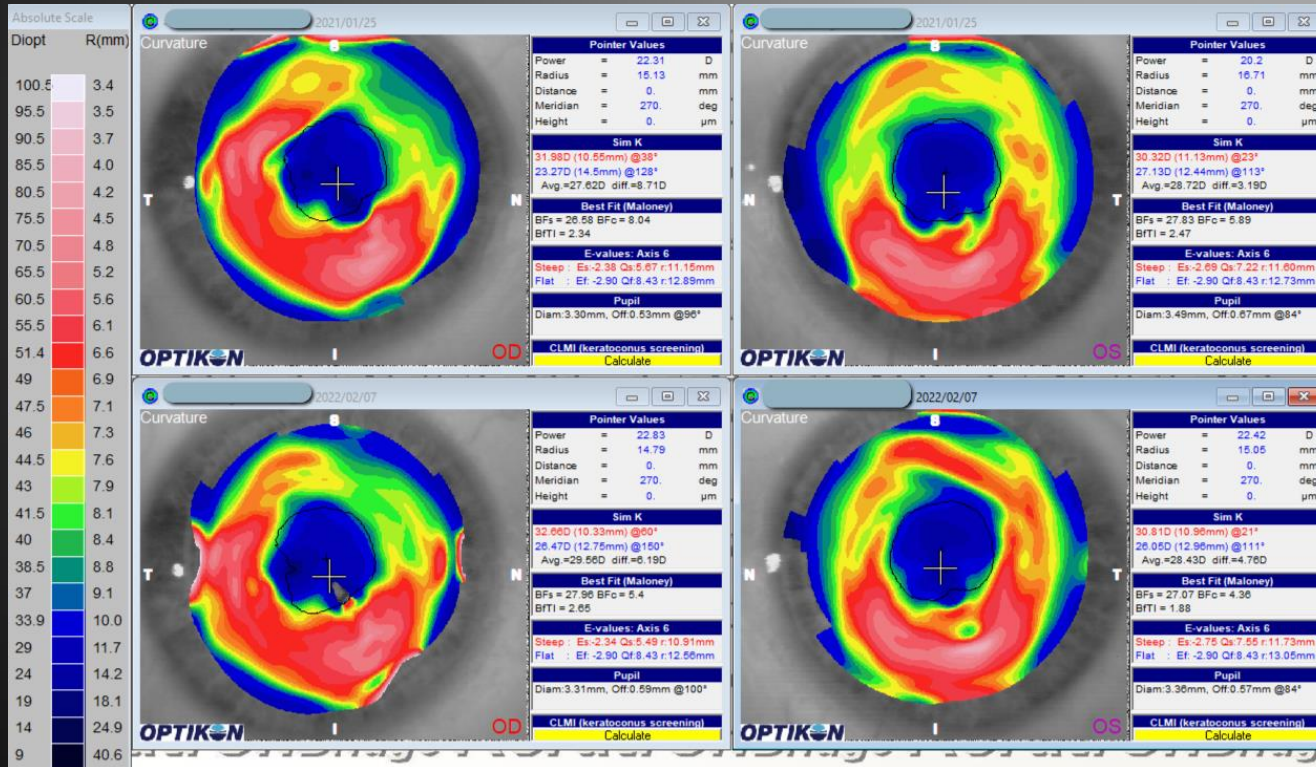
Post RK – Case #4

The Flatter than Flat, RK Presbyope

- ▶ 51 year old white male
- ▶ My patient for 8+ years
- ▶ General Health, Good, (–) meds, (–) allergy
- ▶ Subjectively patient notices significant problems while wearing the right lens
 - ▶ Lens wear time is limited
 - ▶ Removing/cleaning/reapplying several times a day
 - ▶ Photophobia
 - ▶ Eye feels achey and generally uncomfortable
- ▶ OS remains trouble-free

Post RK - Case #4

The Flatter than Flat, RK Presbyope



OD

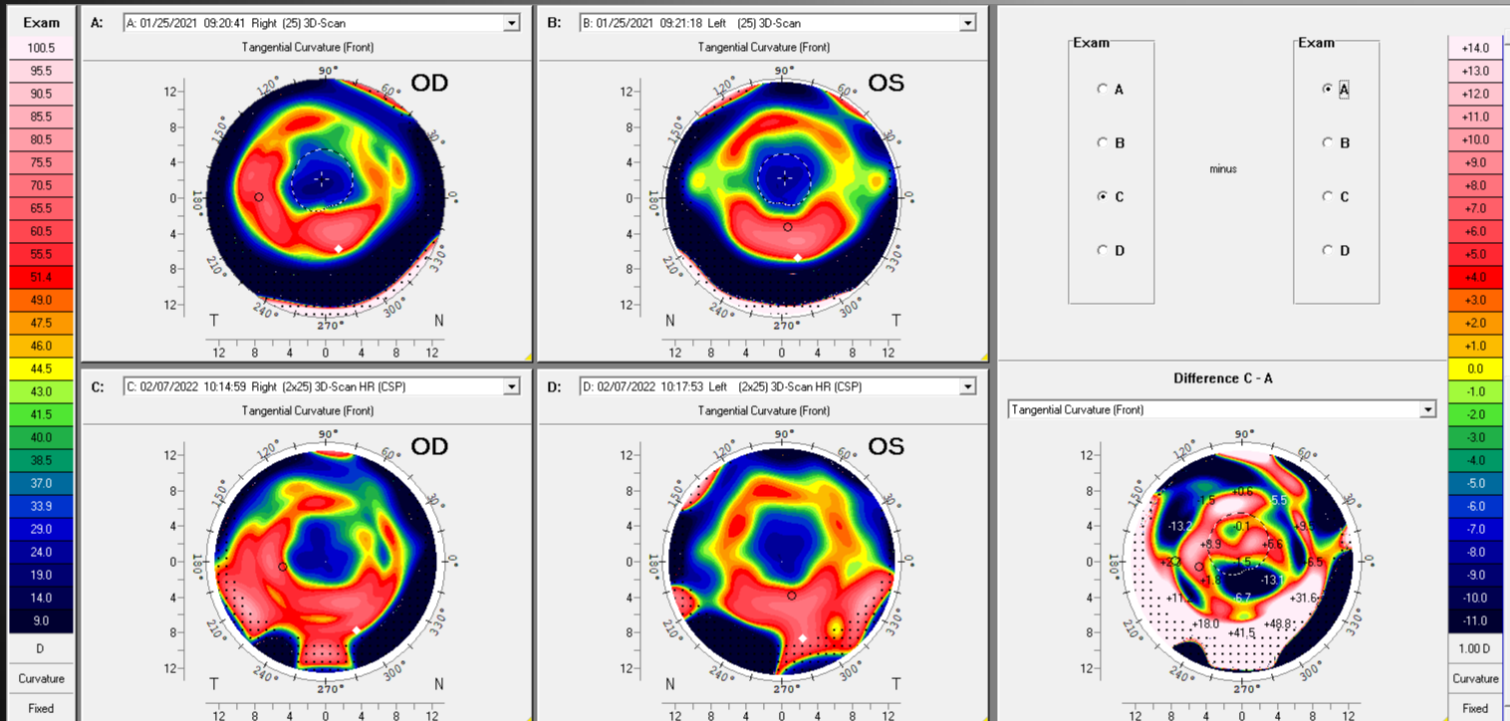
OS

1/25/21
(Upon lens removal)

2/7/22
(Upon lens removal)

Post RK - Case #4

The Flatter than Flat, RK Presbyope



1/25/21

2/7/22

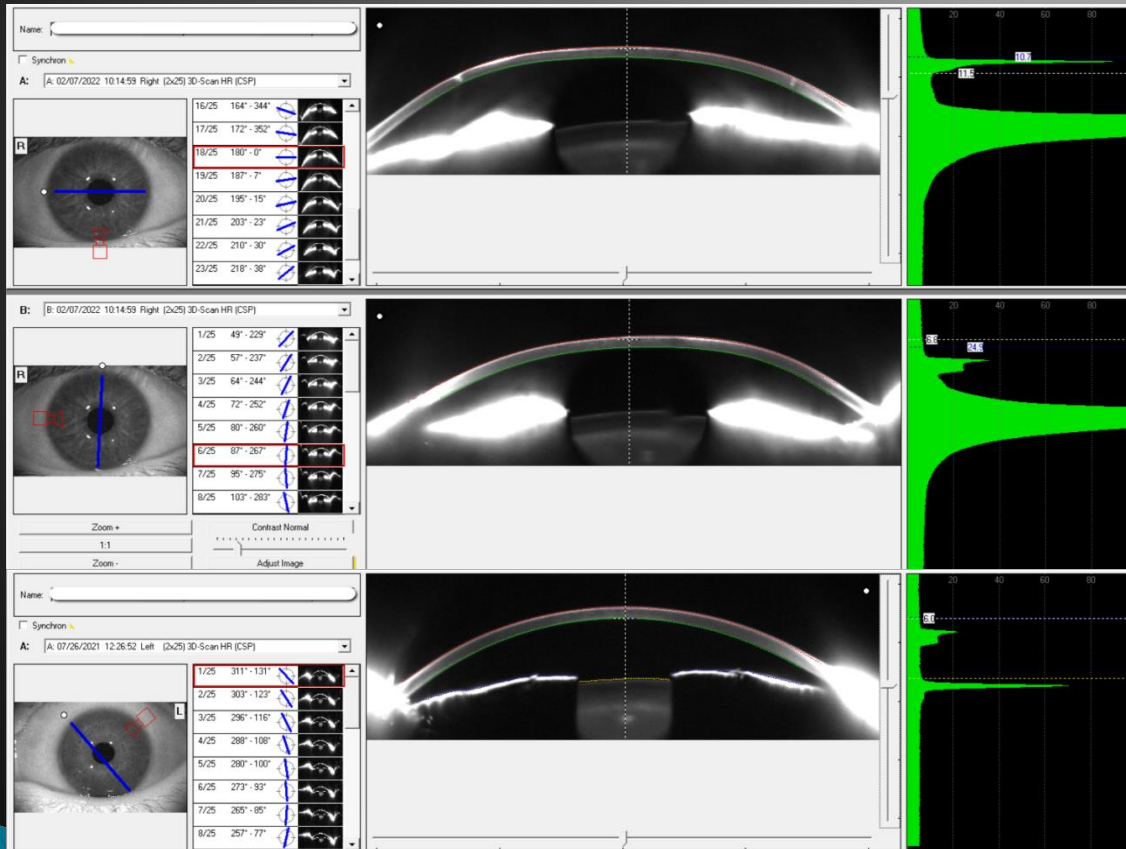
OD

OS

Δ OD

Post RK - Case #4

The Flatter than Flat, RK Presbyope



180°

2/7/22

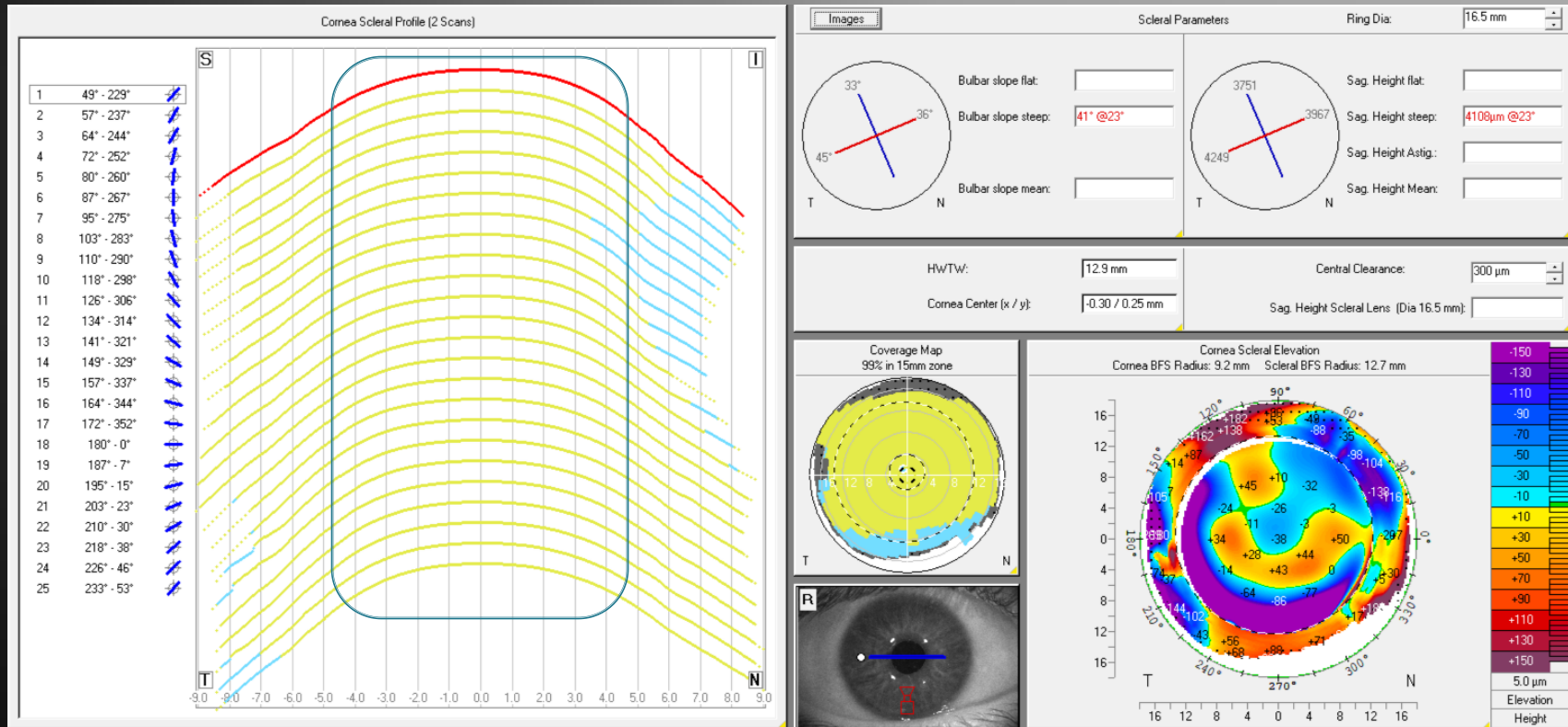
OD

090°

Normal Cornea

Post RK - Case #4

The Flatter than Flat, RK Presbyope



OD

CSP Scan
16.5mm for 12.5mm Cornea

Post RK – Case #4

The Flatter than Flat, RK Presbyope

OD

CLVA OD
Distance 20/20–
Near J1

Full day wear
No removal

(–) Photophobia

(–) Irritation



Optimum Infinite material, FreeForm Symmetry
16.50mm Diameter on 12.50mm Cornea
Base Curve Median = OD 8.79 mm
Power Median = OD +1.05D (Add +1.50 2.3 CN)

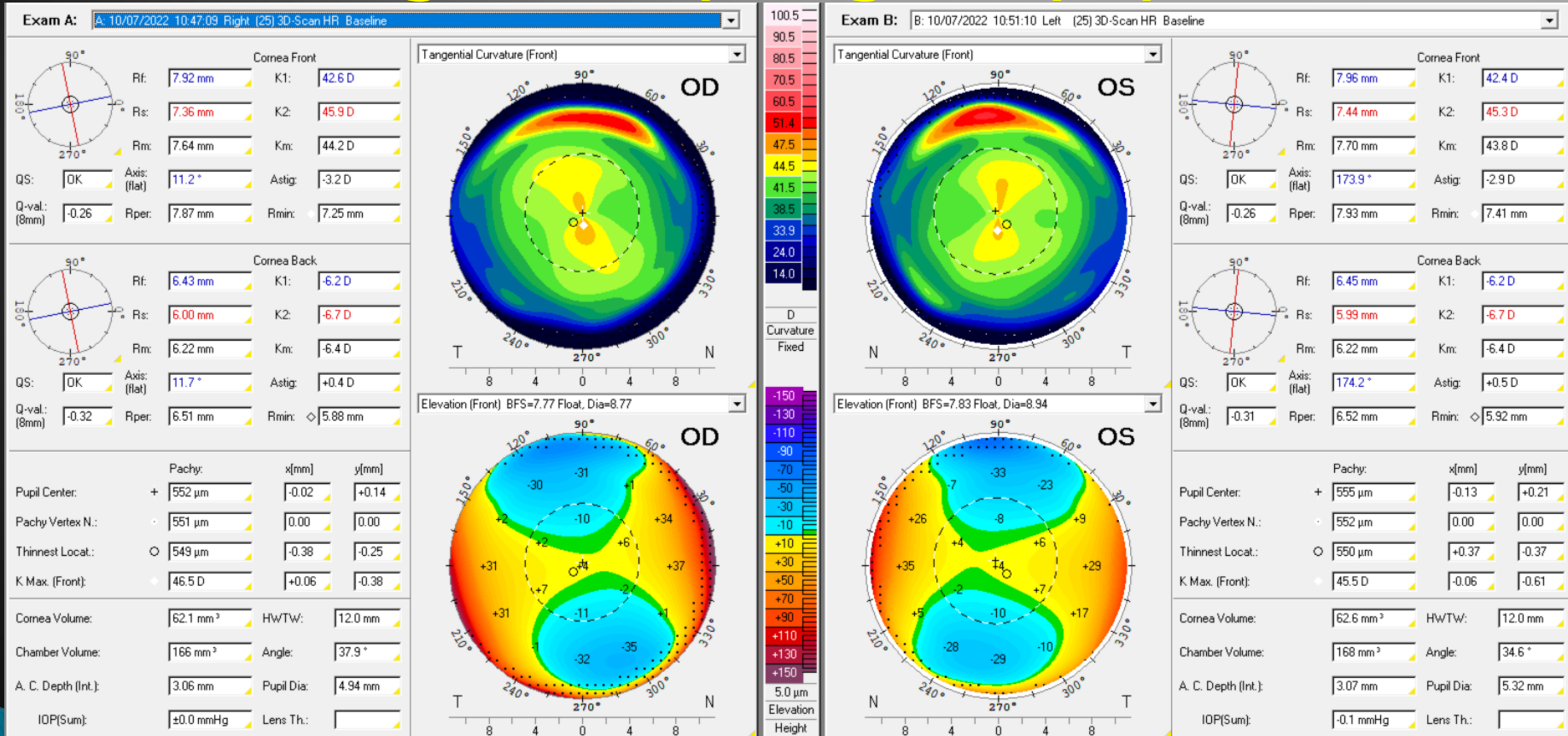
Orthokeratology – Case #5

The Young, Really High Myope

- ▶ 7 year old asian female, myopia management consult
- ▶ Through consultation, Dr. Albert Pang, Plano TX
- ▶ Current Spectacles
 - ▶ OD – 11.00–4.00x180
 - ▶ OS – 10.50–3.50x005
- ▶ Manifest Refraction
 - ▶ OD – 11.00–4.00x180 20/50
 - ▶ OS – 11.50–3.50x180 20/50
 - ▶ OU 20/40
- ▶ General Health, Good, (–) meds, (–) allergy
- ▶ No contact lens history, very interested in OrthoK

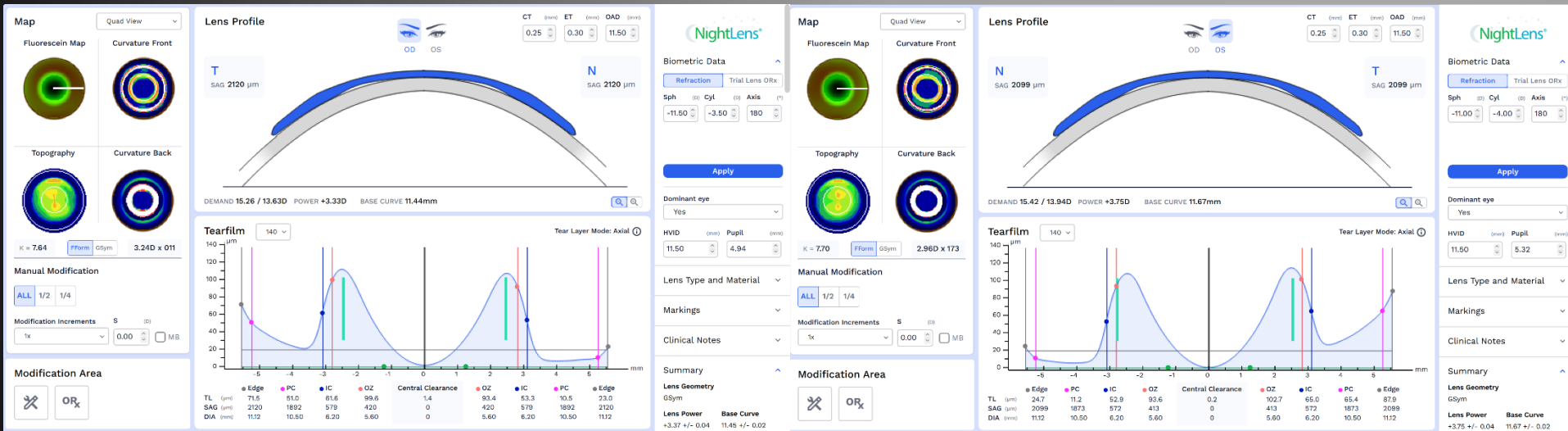
Orthokeratology - Case #5

The Young, Really High Myope



Orthokeratology - Case #5

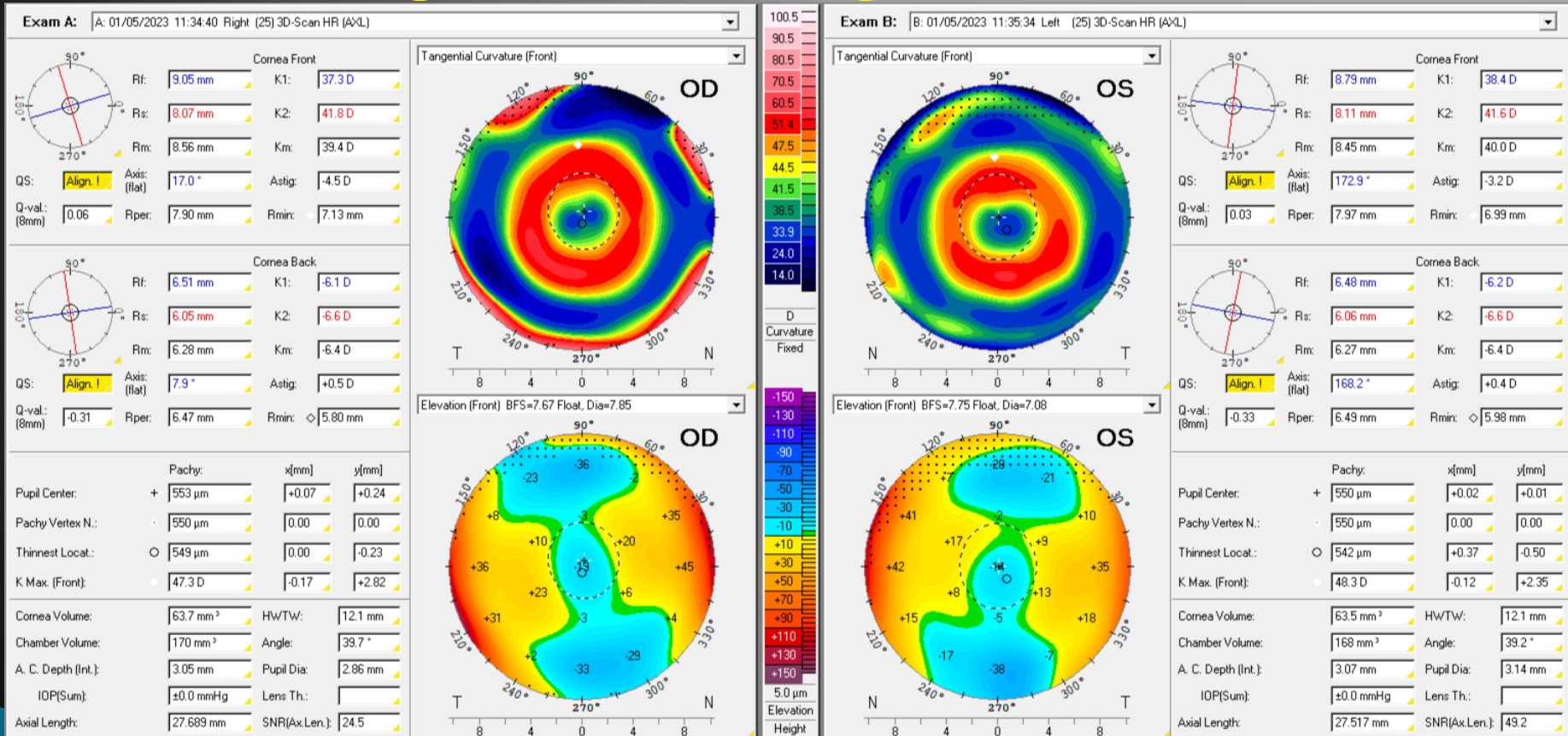
The Young, Really High Myope



G-Sym Symmetry, Display 140µ
 11.50 mm Diameter on 11.70 mm Cornea
 Base Curve Median = OD 11.45 mm, OS 11.67 mm
 Demand OD 15.26D, OS 15.42D

Orthokeratology - Case #5

The Young, Really High Myope



Orthokeratology - Case #5

The Young, Really High Myope

Tangential Curvature

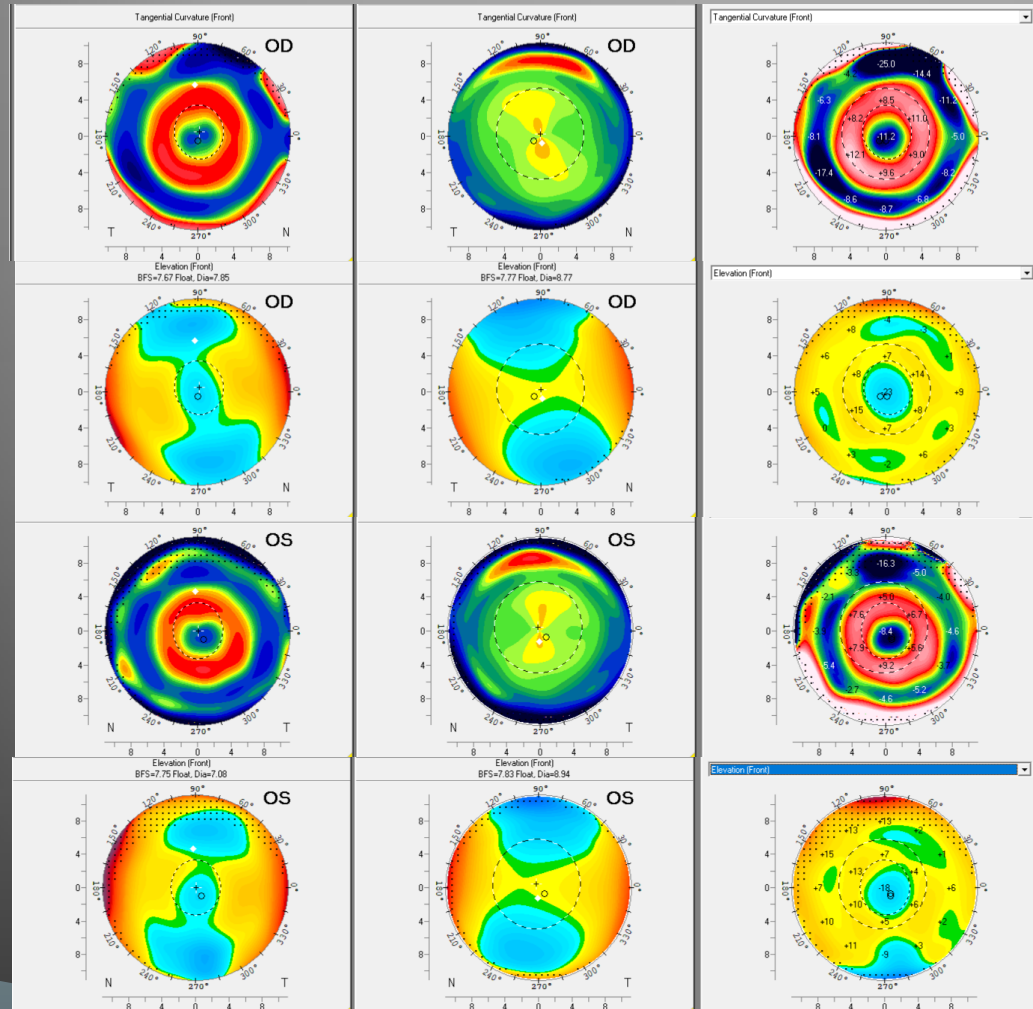
OD

Elevation

Tangential Curvature

OS

Elevation



Orthokeratology – Case #5

The Young, Really High Myope

- ▶ As of 1/3/2023
 - ▶ OD -1.25-1.25x180 20/40
 - ▶ OS -1.25-1.25x180 20/40
 - ▶ OU 20/30
- ▶ Biomicroscope
 - ▶ Unremarkable OD, OS
 - ▶ (-) NaFl staining
- ▶ Initially
 - ▶ OD - 11.00-4.00x180 20/50
 - ▶ OS - 11.50-3.50x180 20/50
 - ▶ OU 20/40
- ▶ VAsc > best corrected spectacle acuity (↓ Minification)

Conclusion

- ▶ The WAVE software provides a patient–unique reference surface constructed directly from the topography captured data
- ▶ WAVE provides the displays and tools to analyze and create the designer–specific fitting philosophy to align the posterior lens surface with the anterior cornea/scleral surface in a rotationally asymmetric manor
- ▶ WAVE often allows the design and manufacture of a lens achieving success where many laboratory designs fail

Wave Resources

▶ Private Consultation Services – 5 options

(advanced learning, non-FDA, elevated complexity, beyond WAVE's help desk, etc.)

1. Case-by-Case help

Learn as the cases present to you

2. Phone help per time units

Typically targeted learning for more specific case(s)/bail out a case

3. One-on-One Personal Time

Full day (or 2) targeting specific weaknesses and goals

4. Design & Supply

Cases done for non-Wave doctors

5. DVDs – Wave Winter Weekend Workshop

Approximately 16 hours of indexed material over 8 DVDs, covering a robust range of theoretical concepts and clinical applications for Wave, Orthok, Scleral lenses, Irregular corneas, etc.

Wave Resources

- ▶ www.WaveContactLenses.com
- ▶ Wavers Page (*password protected*):
 - Clinical Support
 - Concierge Lens Order Service
 - WAVE User Guide
 - WAVE Academy
 - Technical Support
 - Link to IOSS
- ▶ Resources Page (*open access*):
 - Webinars
 - Videos
 - Events
- ▶ WAVE Users Google Group:
 - **Discussion Forum** exclusive to WAVE users for sharing topics related to specialty contact lens fitting, discussing cases, and peer to peer advice