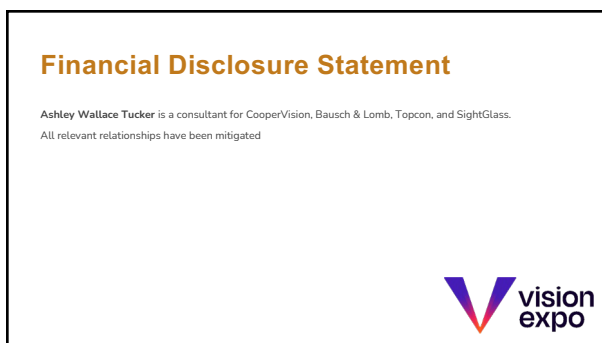




1



2

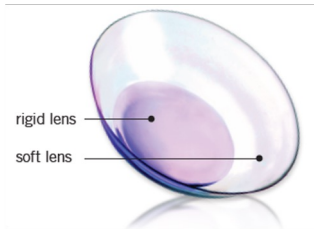


3



4

What is a hybrid lens?

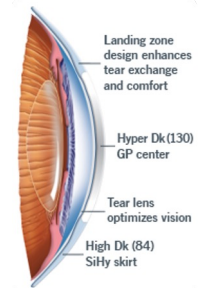


- Combines two types of lens materials into one unique lens
- Center consists of rigid gas permeable material to provide clear and stable vision
- Surrounding soft skirt provides comfort throughout the day

5

Additional Advantages of Hybrid Lenses

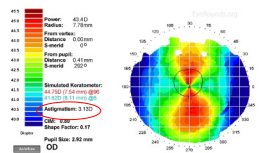
- Great option for astigmatic patients
- Vision NOT affected by lens rotation
- 130-Dk GP and 84-Dk silicone hydrogel soft skirt provide excellent oxygen transmission
- Tangible™ Hydra-PEG coating provides increased lubricity
- SoftCushion® Comfort Technology enhances comfort



6

GOOD candidate for HYBRIDS

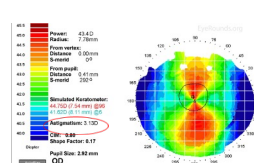
- Low to high astigmats
- Unhappy toric SCL wearers
- Intolerant RGP wearers
- Presbyopic combined with astigmatism
- Soft MF wearers who want crisper vision with a greater range
- Corneal astigmatism **MUST** match refractive cylinder
 - -2.00-3.00x180



7

POOR candidates for HYBRIDS

- Last resort patients
- Patients who prefer convenience over everything
- Ocular surface/dry eye patients
- Non-compliant patients
- Patients with residual astigmatism
 - -2.00-5.00x180



8

Most EXCITING Advantage:

Exclusively available from independent eyecare professionals—not available online or through mass merchandisers!

9

Hybrid Portfolio

SynergEyes A, KC, PS, MF

Duette

Duette Progressive

SynergEyes iD

SynergEyes iD Multi-Focal EDOF

UltraHealth

UltraHealth FC

10

Fitting Process

- Fitting Set
- Empirical Fitting
- Online Calculator
- Consultation

11

KEY Data Points for REGULAR CORNEA

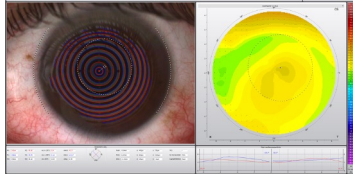
- Manifest Refraction
- Keratometry Values
- HVID

Horizontal Iris Visible Diameter (HVID)

12

KEY Data Points for IRREGULAR CORNEA

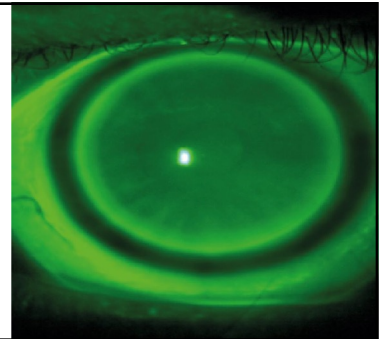
- Manifest Refraction
- Topography
 - Eccentricity value
- HVID



13

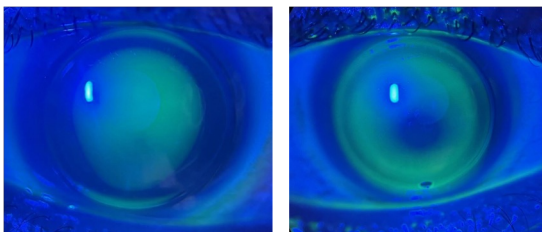
Ideal Fit

- Good centration
- Optical zone over the pupil
- 0.5mm to 1.00mm of movement with each blink
- GP portion in alignment with the cornea



14

Poor Fluorescein Patterns

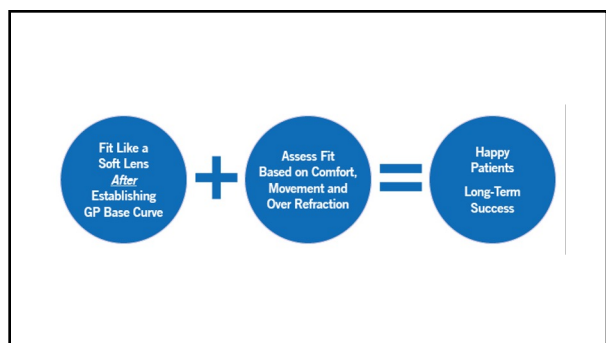
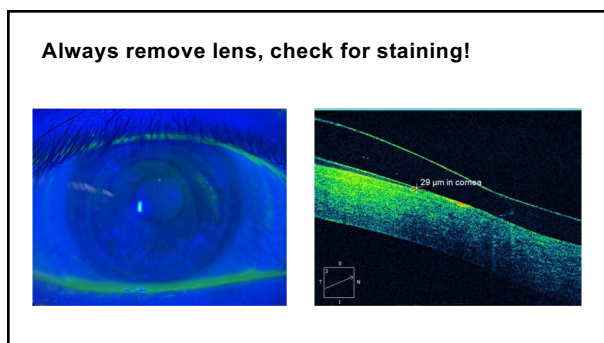
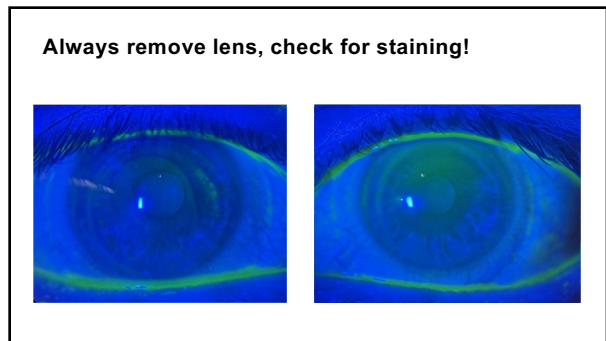
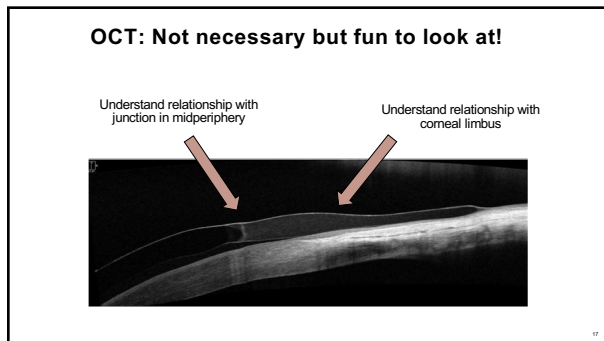


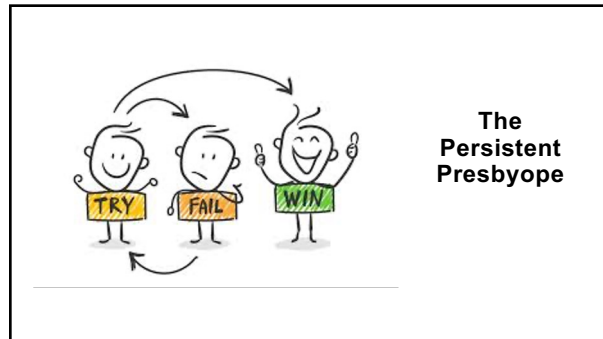
15

OCT: Not necessary but fun to look at!



16





21

PATIENT BACKGROUND

- 51 yo, Hispanic Male, Works in IT
- Medical and Ocular History unremarkable
- Has tried several presbyopic SCL options – MF torics and monovision – with NO success
- Since he works in IT, computer and near vision are very important to him. Every lens we tried up to this point compromised his overall vision thus he always reverted to his PALS. He is VERY motivated to be in contact lenses and is always willing to try something new.

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SynergEyes iD Multi-Focal EDOF

- Has a unique power profile that is non-monotonic and aperiodic.
- Unique combinations of Higher Order Aberrations are utilized to elongate the patient's depth of focus, for clearer vision at near, intermediate and distance.
- Linear skirt based on HVID

Power Profile is non-monotonic and non-periodic. This unique power profile provides:

- Good vision at all viewing distances, minimizing visual disturbances like ghosting and halos
- Consistent performance across pupils, decentration and individual's ocular aberrations

SynergEyes iD MF EDOF: Patented Optical Design Technology

Continuously and rapidly varying power profile. Non-monotonic and aperiodic. Not a zonal bifocal, aspheric or diffractive. Illustrative power profile only.

Other Commercially Available Multifocal Designs

Zonal concentric lenses:
Periodic power changes discrete and wide zones of same power.

Aspheric lenses:
Monotonic progressive power change.

23

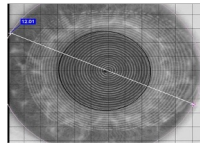
SynergEyes iD Multifocal EDOF Lens Parameters

Diameter	14.5mm
Skirt	38 to 49 in increments of 1 step to accommodate HVID range of 10.0 to 13.0mm. HVID outside the measurements will default to 10.0 or 13.0mm.
Base Curves	7.30mm to 8.30mm in increments of 0.01mm
Multifocal Lens Powers	+5.50 to -10.00D +5.50 to -8.00D in 0.25D steps -8.50 to -10.00D in 0.50D steps Add Power: Low, Medium, High

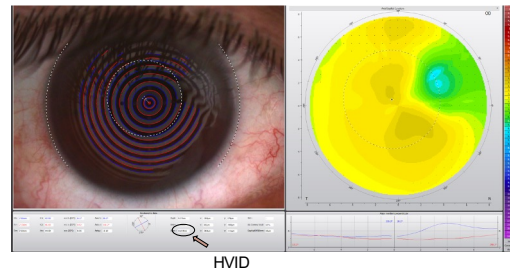
24

OBJECTIVE FINDINGS: Oculus 5M Keratograph

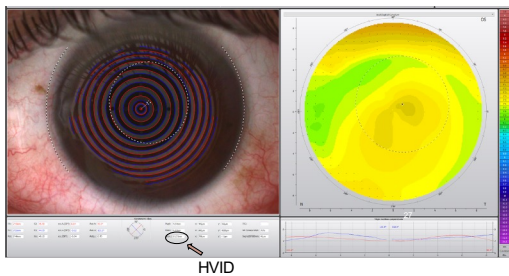
- Manifest Refraction:
 - OD -0.75-3.00x037
 - OS -3.00-1.00x092
 - Add: +2.00
- Keratometric Readings
 - OD 46.00 @ 118 / 42.90 @ 028
 - OS 45.40 @ 043 / 44.70 @ 133
- Horizontal Visible Iris Diameter (HVID)
 - OD 11.04 mm
 - OS 11.21mm



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26



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Ordering Process

- Used the Empirical Lens Calculator
- Easy and Efficient!
- Enhanced Profile automatically added to OD lens due to higher cylinder power
- Opted against the HydraPeg since he is a first time hybrid wearer – concerned about added trouble with removal. Also, he never really mastered removal of SCLs either.

 A screenshot of the Empirical Lens Calculator software interface. It shows a form with fields for patient information, lens parameters, and a "Call Consultation" button at the bottom.

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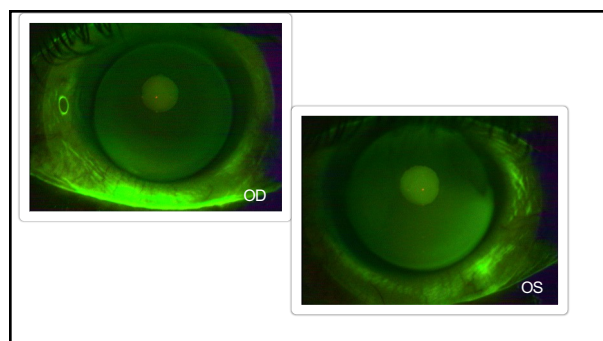
Additional Options <input checked="" type="checkbox"/> Enhanced Profile <input type="checkbox"/> Tangible Hydra-PEG				Additional Options <input type="checkbox"/> Enhanced Profile <input type="checkbox"/> Tangible Hydra-PEG			
Suggested Lens Parameters: SynergEye® ID MF EDOF							
Base Curve	Skirt	Power	Add Power	Base Curve	Skirt	Power	Add Power
7.69	42	-1.75	High	7.48	42	-3.25	High
Calculated Residual Astigmatism : 0.00				Calculated Residual Astigmatism : -0.35			
<input type="button" value="CLEAR ALL"/> <input type="button" value="GENERATE LENS"/>				<input type="text" value="Patient's First Name"/> <input type="text" value="Patient's Last Name"/>			

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DISPENSING VISIT

- PARAMETERS
 - OD: ID MF EDOF BC = 7.69 SK= 42 Power = -1.75 Add = High
 - OS: ID MF EDOF BC = 7.48 SK= 42 Power = -3.25 Add = High
- Visual Acuity
 - Distance OD: 20/20- OS: 20/20- OU: 20/20
 - Near: OD: 20/25 OS 20/25 OU: 20/20
- Well centered fit (better centration OS) with appropriate clearance and movement.
 - Ordered steeper BC OD to improve centration

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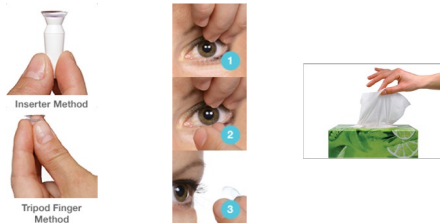


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Insertion and Removal Tips



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Lens Care Reminders

- Daily Cleaning: MPS or H₂O₂ based cleaner
- Filling Solution: PF Saline
- Rewetting Drops: PF only
- Replacement Schedule: every 6 months



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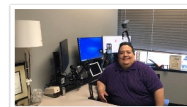
FOLLOW-UP VISIT

- PARAMETERS (New Lenses)
 - OD: iD MF EDOF BC = 7.58 SK = 42 Power = -2.25 Add = High
 - OS: iD MF EDOF BC = 7.48 SK = 42 Power = -3.25 Add = Hig
- Visual Acuity
 - Distance OD: 20/20- OS: 20/20- OU: 20/20
 - Near: OD: 20/25 OS 20/25 OU: 20/20
 - Over-Refracton
 - Distance: OD -0.25, OS +0.00
 - Near: OD plano, OS plano
- No additional changes needed.
- Pt has been wearing lenses successfully with no issues but chooses to wear PALs on occasion and THAT'S OK!!

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OUTCOME/CLOSING COMMENTS

- Due to his irregular astigmatism, finding a soft toric lens that would sit properly on his cornea without causing fluctuating vision was a daunting task.
- The SynergEyes iD MF EDOF lens neutralized most of his corneal astigmatism which allowed him to not only have clear vision but also consistent vision!



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PATIENT BACKGROUND

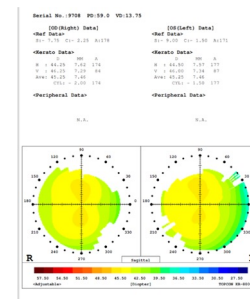
- 13 yo, Asian female
- Has been a spectacle wearer since age 6
- Virtual school for the last 6 months – reports worse vision for the last 1 month
- Avid reader
- Mother, Father and younger brother all moderate myopes
- Has worn daily disposable SCLs for recreation
- Family now very interested in myopia management options

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OBJECTIVE FINDINGS

- Manifest Refraction:
 - OD -7.25-2.50x177
 - OS -8.50-1.25x180
- Manifest Refraction (8 months prior):
 - OD -6.50-2.00x175
 - OS -7.50-1.25x180
- Keratometric Readings -Topcon Auto-refractor/Auto-keratometer
 - OD 44.25 @ 174 / 46.25 @ 084
 - OS 44.50 @ 177 / 46.00 @ 087
- Horizontal Visible Iris Diameter HVID (Slit Lamp Reticle)
 - OD 11.2mm
 - OS 11.2mm

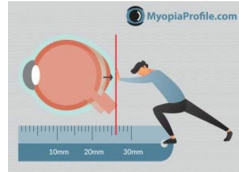
39



40

Myopia Management Options

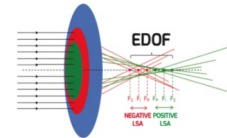
- MiSight **X**
- Orthokeratology **X**
- Soft Toric MFs
- Custom Soft Toric MFs
- SynergEyes iD MF EDOF
- Atropine + SV SCLs **X**



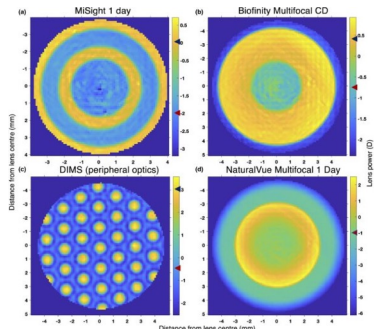
41

Advantages of EDOF Design

- Creates a range of clear vision at different distances on the visual axis.
- For Myopic children, the EDOF aims to provide competing signals on the retina - one to correct vision, and another in front of the retina, creating relative myopic defocus to slow eye growth.



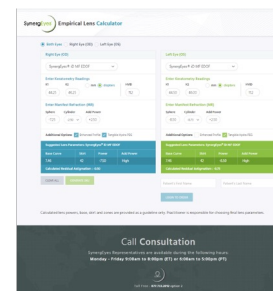
42



43

Ordering Process

- Used the Empirical Lens Calculator
- Enhanced Profile automatically added to OD lens due to higher cylinder power
- Added HydraPeg for additional comfort
- NOTE: off-label use of EDOF lens for myopia management
- Opted for High Add to maximize anti-myopia effect in the peripheral retina



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DISPENSING VISIT

- **PARAMETERS**
 - OD: ID EDOF MF BC = 7.46 SK= 42 Power = -7.50 Add: High
 - OS: ID EDOF MF BC = 7.46 SK= 42 Power = -8.50 Add: High
- **Visual Acuity**
 - Distance OD: 20/20- OS: 20/20- OU: 20/20
 - Near: OD: 20/20 OS 20/20 OU: 20/20
- Slightly decentered temporally OU with appropriate clearance and movement.
- She reported great near vision but noticed "wavy" distance vision.

45

45

FOLLOW-UP VISIT

- **Visual Acuity**
 - Distance OD: 20/20- OS: 20/20- OU: 20/20
 - Near: OD: 20/20 OS 20/20 OU: 20/20
- **Over-Refracton**
 - Distance: OD -0.25, OS -0.25 (no visual acuity improvement)
 - Near: OD plano, OS plano
- Pt reported improvement in overall vision – no more wavy vision.
- Noticed temporal injection OS>OD but pt had no complaints.

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Call with consultation team:

- Due to redness temporally OU and decentration, we decided to alter the fit
- **PARAMETERS**
 - OD: ID EDOF MF BC = 7.38 SK= 42 Power = -8.00
 - OS: ID EDOF MF BC = 7.38 SK= 42 Power = -9.00
- Steepened BC to improve centration which should help with redness.

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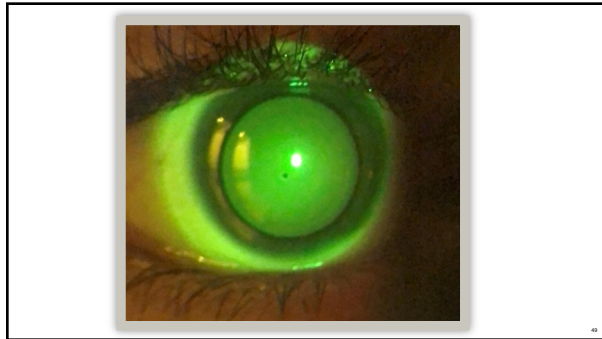
47

FOLLOW-UP VISIT

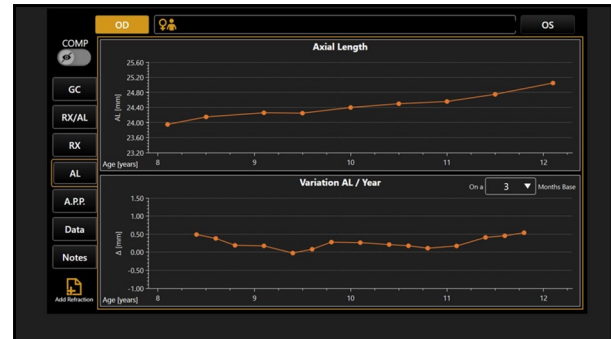
- **Visual Acuity**
 - Distance OD: 20/20- OS: 20/20- OU: 20/20
 - Near: OD: 20/20 OS 20/20 OU: 20/20
- **Over-Refracton**
 - Distance: OD -0.25, OS -0.25 (no visual acuity improvement)
 - Near: OD plano, OS plano
- Pt reported no redness or discomfort in new lenses!
- Follow-up care every 3 months due to high risk for continued progression.

48

48



49

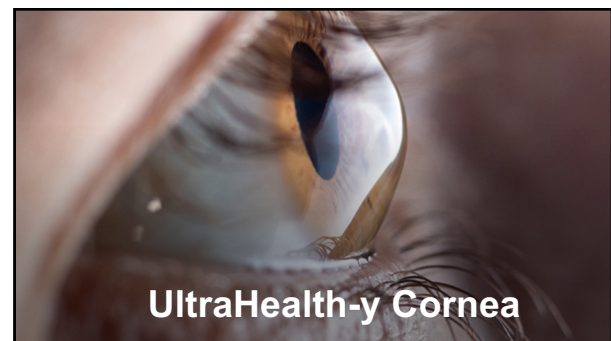


50

OUTCOME COMMENTS

- Think outside the box...
- This patient's myopia is progressing at a rapid rate – intervention is imperative!
- Her high Rx and moderate astigmatism OD creates barriers to most CL options except for the...SynergEyes MF EDOF lens design!
- Although off label, this lens is ideal for what we are trying to achieve for this patient – clear vision with myopic defocus in the peripheral retina.
- Close follow-up is warranted to ensure the desired results.

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Advantages of HYBRIDS for Irregular Cornea

- Hybrid design provides superior centration compared to GP lenses.
- Stable platform keeps optics centered over visual axis.
- Rigid lens material neutralizes corneal irregularity.
- Optimized reverse geometry design results in lower lens powers and reduction of aberrations.
- Vaults over most ectasias without bearing to ensure corneal surface integrity.

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Call CONSULTATION!

- What's needed:
 - Best possible refraction
 - HVID
 - Topography
 - Keratometry Values
 - Eccentricity value

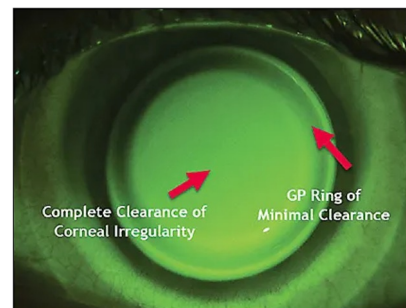


58

Dispense Visit

- OD: SynergEyes UltraHealth 150 Vault / 8.1 MED skirt / 14.5 DIA / -0.50 D.S.
- Visual Acuity
 - OD 20/20
- Great centration and appropriate movement and fit
- No rebound redness post lens removal

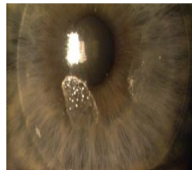
59



60

Follow-up Visit

- VERY happy with the lenses BUT reported deposits on the lenses that could not be removed with digital rubbing



61

Problem SOLVED!

- Order one additional pair of lenses with Tangible HydraPeg
- This is a one-time coating that is added to the lens to help improve contact lens problems related to discomfort, dryness, fogging or deposits.
- Coating lasts the lifetime of the hybrid lens which is 6 months.
- Patient was instructed to continue use of a multi-purpose cleaner or hydrogen peroxide-based cleaner with the new lenses



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Outcome

- May have seemed like a hopeless situation due to lack of success in most other options
- UltraHealth should be considered as a first line option for KCN and irregular cornea patients – SCLERALS aren't always best!

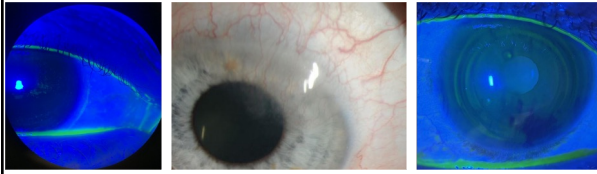
63



64

Corneal Hypoxia

- Corneal Neovascularization
- Rebound circumlimbal injection post lens removal
- Conjunctival staining of skirt



65

Corneal Hypoxia

- Poor Oxygen Permeability (Dk) due to soft skirt
 - Generally lower than the RGP center
- Tight fitting skirts
 - Due to poor fit
 - Due to lens overwear
 - Dry Eye Disease
- Poor compliance with replacement (every 6 months)

66

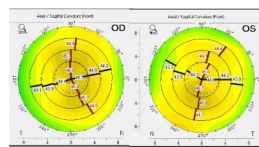
Case

- 27 year old high myopia, dry eye disease, myopic retinal degeneration

MRx OU -32.50-1.50x180 VA 20/40

Contact Lens History:

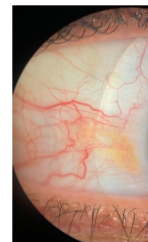
- Initially wore soft custom CLs + Spec Rx over top
- Transitioned to RGP; dropped out after 1 episode of decentration while driving
- Unable to insert Scleral Lenses
- Fit with Hybrid Lenses:
 - SynergEyes A -25.00 BC 7.30 Skirt 8.30 VA 20/40
 - Dk 100



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Case - 2 Years Later

- Good comfort, fit and vision with Hybrid Lenses
- AWT: 16 hours per day
- Unable to refit into higher Dk (Duette) due to power limitation (>20 D)
- Clinical Findings: worsening dry eye disease, conjunctival staining and keratinization under landing zone of skirt, corneal neovascularization
- No improvement with therapeutics
 - 0.05% Cyclosporine
 - Perfluorohexyloctane BID



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Case: Next Steps

- Referred for refractive surgery in order to reduce contact lens dependence
- s/p ICL OU
- End refractive result:
MRx OD -12.00+2.50x95, OS -10.25+2.50x88
- Contact Lens Rx (Daily Disposable Brand)
OD -8.00-2.25x010, OS 7.00-1.75x180 with wear time limited < 8h/day
- Ocular Surface Disease Managed with Topical Dry Eye Therapy (Cyclosporine 0.05% BID and Perfluorohexyloctane BID)



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Outcome

- Importance of routine follow-up (every 6 months)
 - Monitor both the hybrid lens fit AND the ocular surface
- Always remove the lens and check for corneal and conjunctival staining
- When indicated, therapeutically TREAT the ocular surface
- Always weigh the risk of contact lens wear VS surgical refractive options

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The Timing of Toricity

71

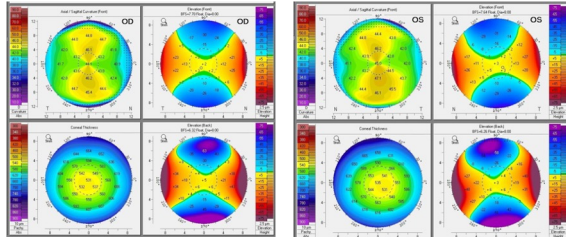
PATIENT BACKGROUND

- 16 yo asian male referred for Specialty Lens Fitting and Corneal Astigmatism monitoring
- Brother has KCN – pt has no signs of KCN but does have high cylinder with slight inferior>superior asymmetry
- Mild dry eye disease, using Artificial Tears BID OU
- Motivated for contact lenses due to wrestling
- Failed fit with soft toric lens options due to lens spinning/stability



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Corneal Topography



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Contact Lens Parameters

Manifest Refraction

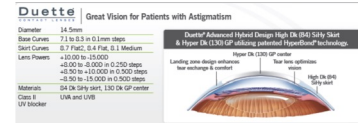
OD -6.00-4.50x176 VA 20/30

OS -5.75-5.00x12 VA 20/30

Initial Lens Parameters

OD - 5.75 / Duette Enhanced Profile / 7.9 / Flat Skirt 8.4, HydraPeg VA 20/30

OS - 5.75 / Duette Enhanced Profile / 7.8 / Flat Skirt 8.4, HydraPeg VA 20/30



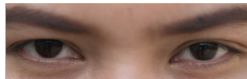
74

Contact Lens Adjustments

Follow-Up Visit:

Good comfort, awareness of lens

Clinical exam shows 1.5 mm of movement with blinking



New Lens Parameters

OD - 5.75 / Duette Enhanced Profile / 7.9 / **Medium** Skirt 8.1, HydraPeg VA 20/20

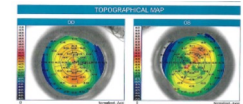
OS - 5.75 / Duette Enhanced Profile / 7.8 / **Medium** Skirt 8.1, HydraPeg VA 20/20

75

Topography Considerations

Corneal Warpage

- Reversible distortion of corneal curvature due to mechanical effect of CL
 - Rigid Center = Mechanical Pressure
 - Soft Skirt = Hypoxic Stress (if low Dk or ill fitting)
- Monitored by Topography
 - Corneal Ectasia (Keratoconus) = epithelial thinning
 - Corneal Warpage = epithelial thickening
- Complicate the monitoring of progressive conditions

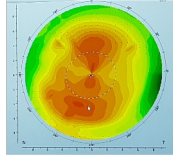


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Topography Considerations

Back to the case...

- Patient has risk factors to be monitored for risk of Keratoconus
 - Family history, age, level of astigmatism, dry eye disease
- Recommendation: Do not monitor image cornea immediately post lens wear
- Optimal waiting period to take topography after hybrid lens wear depends on lens wear and lens fit
 - Majority of cases, cornea may stabilize after 1 week of discontinuation



Patient's topography was taken post 48 hours of discontinuing Hybrid Lenses

Today, at the age of 22, he is stable and shows no signs of KCN

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Outcome

- Rigid lens optics can influence corneal topography and tomography measurements
- Be intentional on the choice of lens for monitoring progressive conditions
- Communicate clearly expectations and lens removal timeline for corneal imaging

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Final Clinical Pearls

- Add 2-3 drops of a low to mid viscosity preservative free drop within the bowl
 - Improves comfort upon application
 - Fills in pockets of air
 - Cushions the eye



- For complex corneas, don't always jump to a scleral!

- Try both the tripod method and the plunger method.
 - Not quite like a soft lens or a scleral.
 - Be patient!



- Don't use this lens a last resort option - so many patients can benefit from it!

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THANK YOU!!!

ashley.w.tucker@gmail.com
avanidaveod@gmail.com



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**On behalf of Vision Expo, we sincerely
thank you for being with us this year.**

Vision Expo Has Gone Green!

We have eliminated all paper session evaluation forms. Please be sure to complete your electronic session evaluations online when you login to request your CE Letter for each course you attended! Your feedback is important to us as our Education Planning Committee considers content and speakers for future meetings to provide you with the best education possible.

