

*Jason R. Miller, OD, MBA, FAAO*

# **Innovations in Specialty, Irregular Corneas & KCN with Contact Lenses**

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# Agenda

- Developing Optometric Subspecialties
- CL market overview and trends
- Specialty Lenses
- Irregular Corneas
- KCN
- Case Studies

# All of these terms are used with Large Diameter RGP's, EXCEPT:

- a. Sagittal Height or Depth (SAG)
- b. Midperipheral Vault
- c. Skirt Size
- d. Limbal Clearance
- e. Scleral Alignment

# Optometric Sub-specialties: Developing a Referral Network

# What's Your Competitive Advantage?

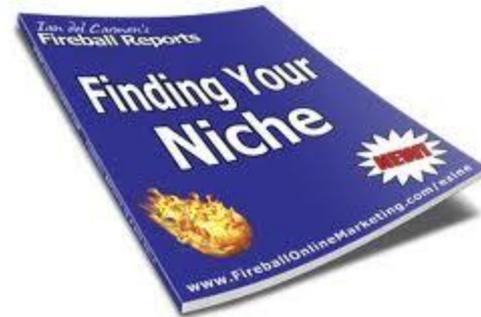
- Why should patients choose your practice?
- Name your competitive advantages



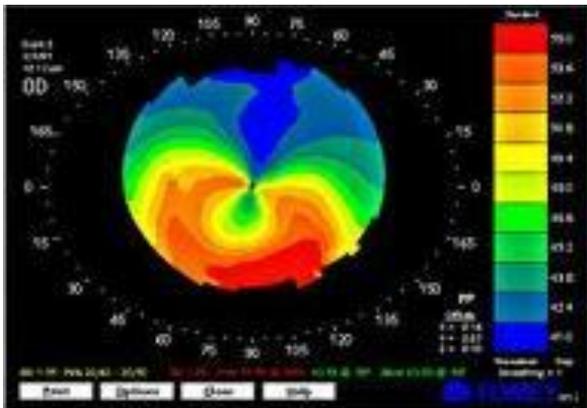
Being more deliberate with business!

# What is Your Niche?

- Optometric Subspecialties
  - Primary Care Optometry
  - Cornea and Contact Lenses
  - Geriatric Optometry
  - Pediatric Optometry
  - Low Vision Rehabilitation
  - Vision Therapy and Rehabilitation
  - Ocular Disease
  - Refractive and Ocular Surgery
  - Neuro-Rehabilitative Optometry



# Provide Specialty Contact Lenses



# Specialty Contact Lenses

1. Is a big market for this under-treated  
Optometric specialty
2. Can be difficult to treat successfully

# Prepare

- The 3 biggest issues:
  1. Getting patients!
    1. Most of these patients will be concentrated at ophthalmology offices (especially cornea specialists).
    2. Reaching out and networking with the cornea specialist will be the most productive route.
    3. Could find a great referral source from fellow OD's.

# Why We Hesitate to Refer to Each Other?

- Lack of awareness
- Fear of losing the patient
- Uncertainty of specialty care
- Medico-legal concerns



# Prepare

2. Experience!
  1. Residency
  2. Build It as you go – the referring doctor will have more confidence in you after several successful referrals.
  3. Workshops

# Prepare

3. Equipment!
  1. Topography is the big one
  2. Full range of diagnostic fitting sets that will allow them to fit a wide spectrum of patients is important.
  3. Anterior segment camera or imaging device

# Importance of a Referral Letter

- Establish our roles in medical and specialty eye care
- What did you find?
- What are your recommendations?
- When do you plan on seeing the patient again?
- ***"The most important aspects of a referral letter are the diagnosis and your recommendations. Keep it short, sweet and to the point."***



## Case Example

# John (Executive), 50 yo Referral from OMD Cataract Surgeon

<b>Chief Complaint</b>	Unhappy with current CL's. Comfort just ok and vision unstable. Is only wearing CL's part-time
<b>Previous CL Rx</b>	OD: Proclear MF Toric 8.4 -1.50-1.75x005 / +1.50D D: 20/30- N: 20/40-2 OS: Proclear MF Toric 8.4 -1.50-1.75x170 / +1.50N D: 20/30 N: 20/30-2 Over-Refracton: no improvement with flippers.
<b>Manifest Refraction</b>	OD: -1.50-2.25x004 D: 20/15 OS: -1.75-2.25x171 D: 20/15 ADD: +2.25 N: 20/20 OU
<b>Dominance</b>	R eye dominant with +2.00 Fog
<b>Pre-Fitting Conference (PFC)</b>	Demonstrated issues with respect to astigmatism improvement in crispness – a huge difference and <b>Discussed New Designs.</b>
<b>Diagnostic CL Fit</b>	??

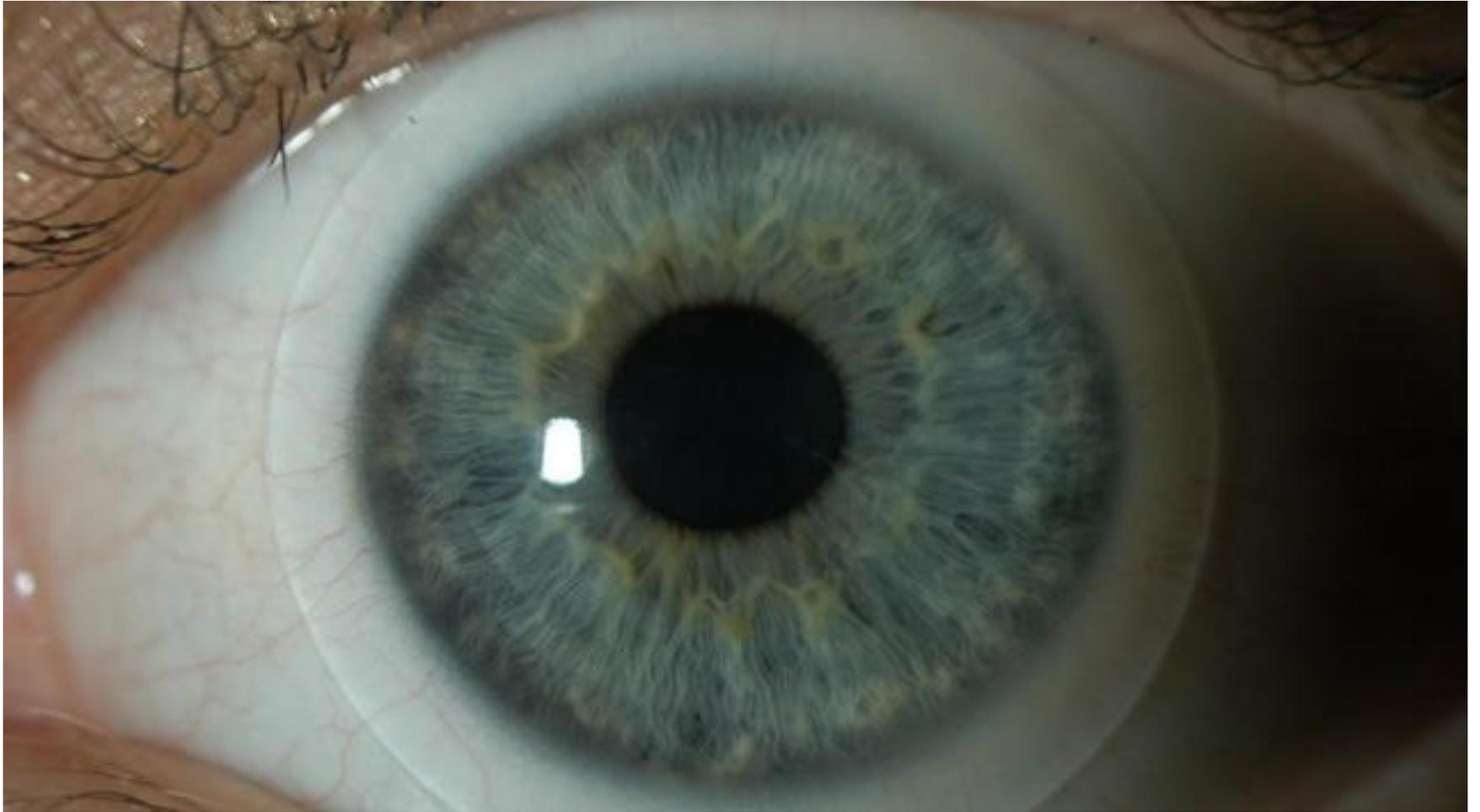
# Keratometry Values

- 44/46@180 OD and OS
- 2.00D of corneal cylinder and 2.25DC in MR
- Lenticular Cylinder was less than 0.50DC = good candidate for the RGP MF or Duette MF

# Patient View with STCL's:

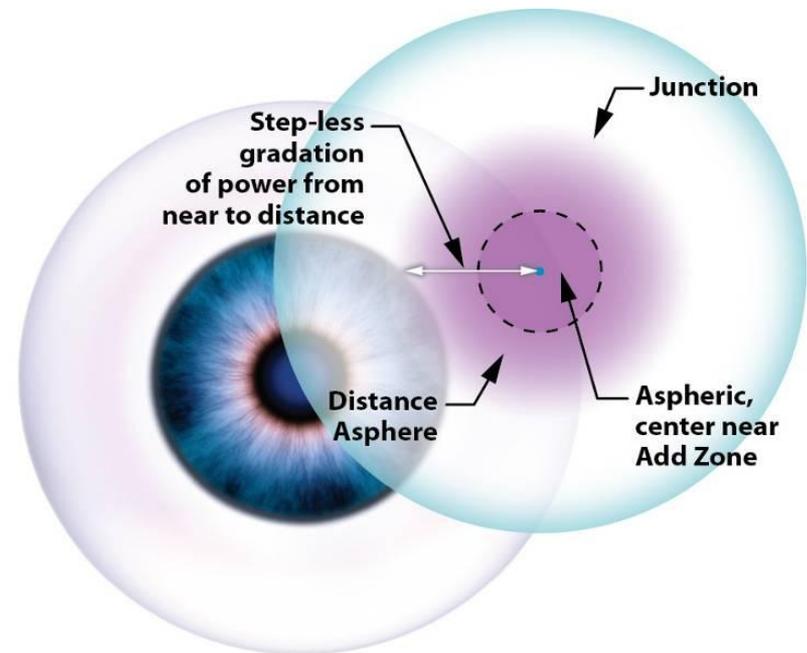


# Hybrid

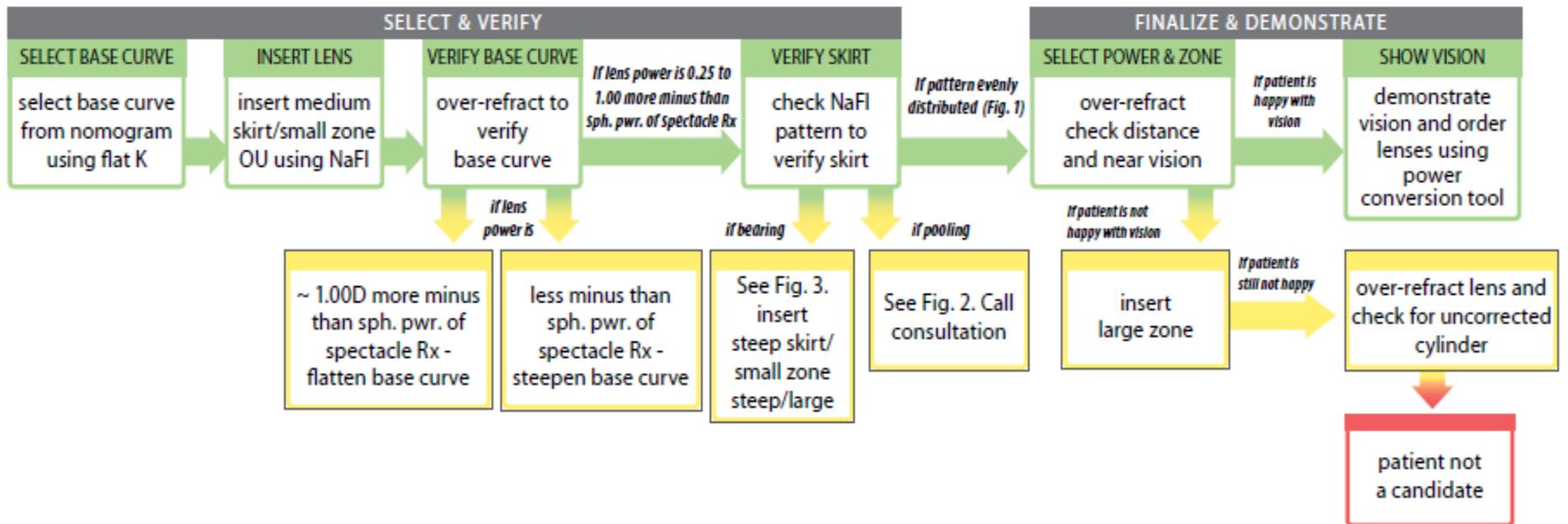


# Duette Multifocal Design

- Simultaneous Vision
- Center near
- Continuous change in power (Near to Distance)
- Aspheric (lineless)
- Two sizes: Small and large
- Same power in both zones
  - **Small zone** – power more concentrated
  - **Large zone** – power more dispersed
- **No add power change each year!!**



# Minutes-to-Fit Success Guide



# Incorrect Skirt Curve

## Skirt Curve Too Steep

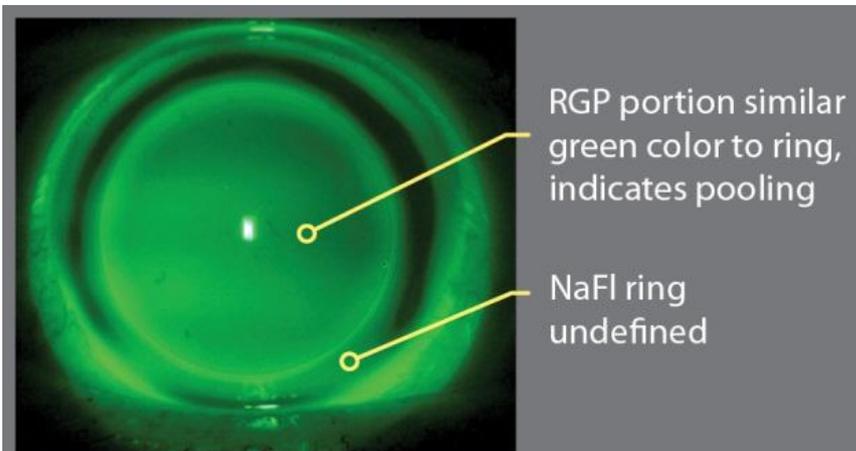


FIG 2 - SKIRT TOO STEEP:  
pooling

*Patient may feel discomfort or awareness under the lid right away.*

## Skirt Curve Too Flat

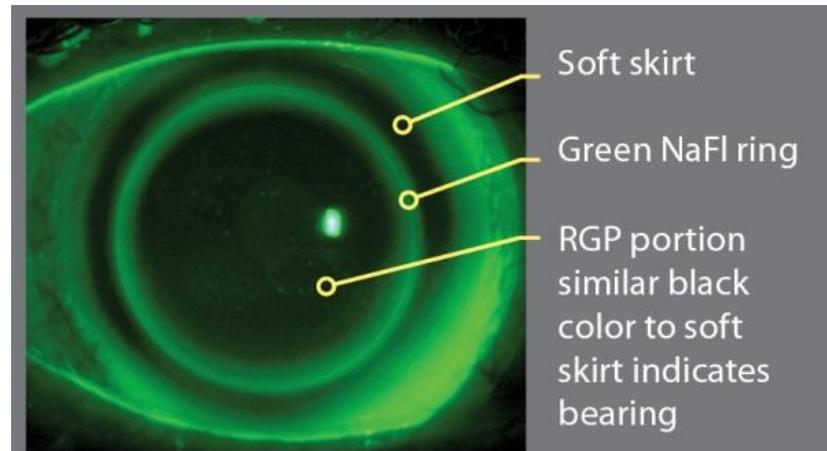
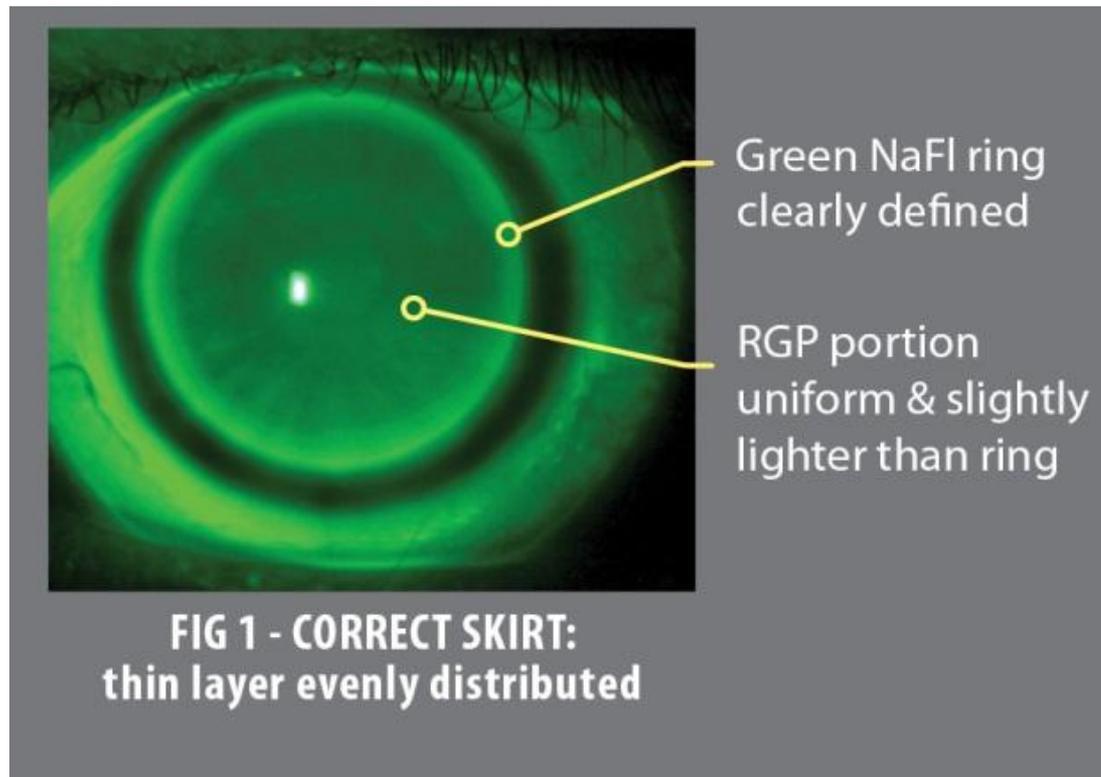


FIG 3 - SKIRT TOO FLAT:  
black color indicates bearing

*Patient may not feel immediate discomfort if skirt is too flat. Only after 4-5 hours of wear.*

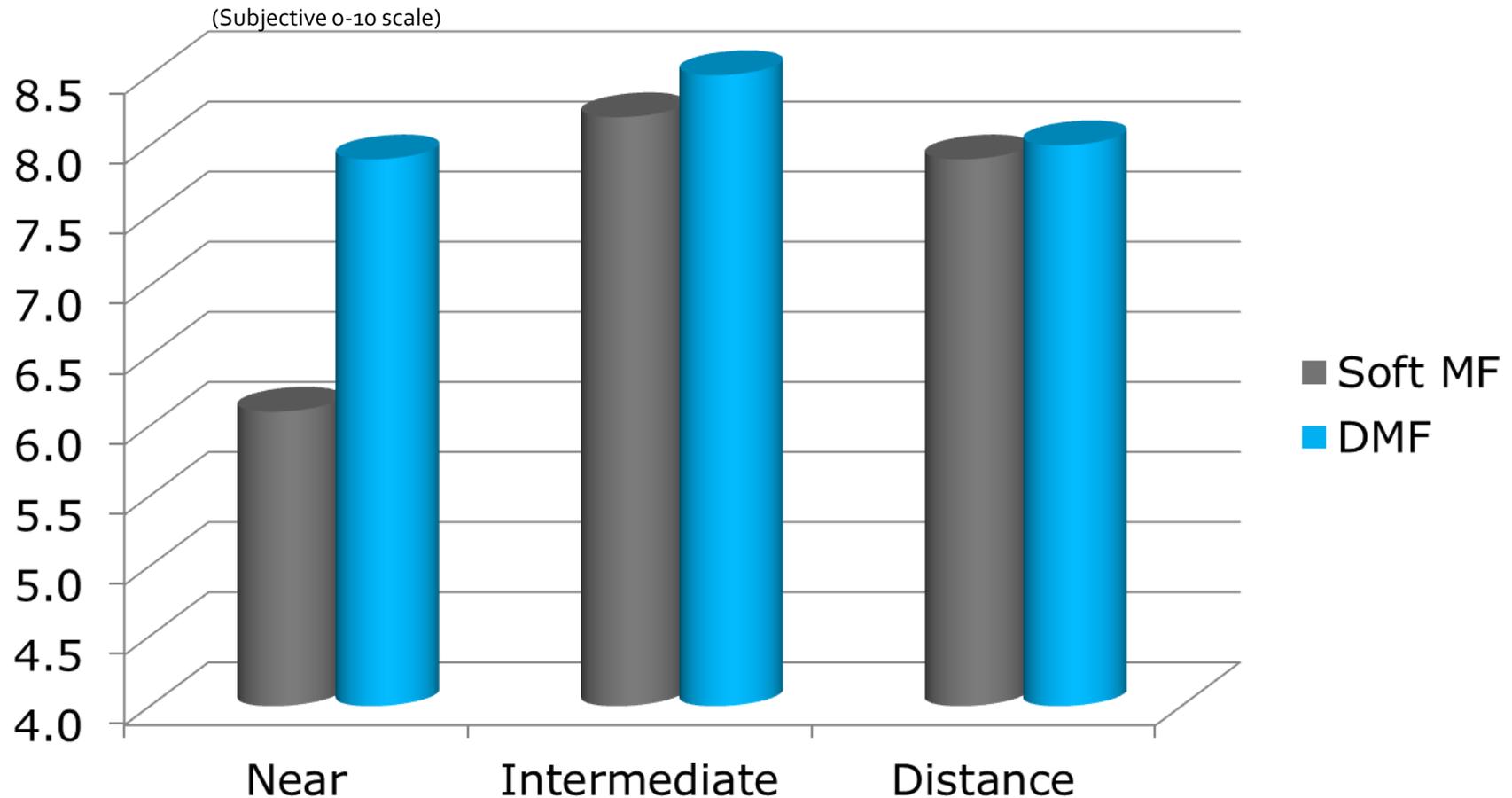
## 2. Check NaFl for Fit

*After 3 minutes, evaluate the pattern.*



*Patient will be comfortable.  
Movement similar to a soft lens.*

# Duette Multifocal (DMF) vs. Soft Multifocal Vision at Various Distances



# Set Fitting Fees Appropriately

○ A contact lens **Fitting or Refitting** is necessary if the patient has no previous history of contact lens wear or if there is a need / desire to change the current contact lens fit. This charge will be in addition to the comprehensive eye examination fee. This fee will cover the initial evaluation and all contact lens related follow-up visits for a period of 3 months. If necessary, it will also include the cost of any additional contact lens training classes needed for those individuals needing contact lens instruction for insertion, removal, and lens care.

· The **Contact Lens New Fit / Refit fee** will range in price depending on the complexity of contact lenses worn:

- **Standard** Contact Lens Refit (Soft Spherical) \$\_\_\_\_
- **Advanced** Contact Lens New Fit (New Wearer) or Refit (Toric, Extended Wear) \$\_\_\_\_
- **Superior** Contact Lens New Fit (New Wearer) or Refit (RGP, Multifocal, Hybrid) \$\_\_\_\_
- **Medical** Contact Lens New Fit or Refit (CRT, Post Surgical, Keratoconus) \$\_\_\_\_

○ Contact lens prescriptions are valid for **1 year**.

Patient Initial\_\_\_\_\_

○ I have been advised of the risks of sleeping in contact lenses. I understand that if I am sleeping in my lenses, Drs. Kuhlmann, Miller and Mundy may reserve the right to release the prescription in increments smaller than one year and require additional contact lens checks to assess the health of the eye as professionally necessary.

○ I understand that if I have any discomfort including pain, redness, or blurred vision, I am to discontinue lens wear immediately and notify EyeCare Professionals of Powell at 614-793-0700. Dr Kuhlmann's after office hour's phone number is 614-582-9096, and Dr. Miller's number is 614-296-1175.

○ I am wearing \_\_\_\_\_ contact lenses. These lenses are to be discarded every \_\_\_\_\_. These lenses (have / have not) been approved by the doctor for extended wear. I have been instructed to follow the doctor's recommendations for lens wear, and I have been informed of the risks associated with non-adherence to this schedule.

# Myopia Control

- Great frontier
- Lots of theories, lots of research
- Could be emerging area of specialty
  - Keep eyes open



# Myopia Control – How much would change your Prescribing Habits?

- a. At least 25% reduction
- b. At least 40% reduction
- c. At least 60% reduction
- d. At least 80% reduction

# Myopia Control - Theories

- Outdoor activity is protective for myopia.
  - Hours playing sports and outdoor activities have a lower incidence of myopia.
  - Greater levels of sun exposure results in greater levels of Vit. D in the blood (Don Mutti research)
- Lens de-focus and axial elongation.
  - Peripheral versus central de-focus.

# Role of Peripheral Blur

- Peripheral retina can mediate refractive development centrally.
- This theory = **Peripheral hyperopia** can be a **stimulus** and may even precede the development of Myopia
- Difference in animal and human studies are not an exact science.
  - It seems to be more complex in human studies.  
**Put a diffuser on or create a lens that causes relative peripheral myopia can slow axial growth.**

# MPC Lenses

## Evaluation of A Unique Myopia Progression Control Lens

Jason R. Miller, OD, MBA, FFAO; Eye Care Professionals of Powell, Powell, Ohio, USA  
 Sally M. Dillehay, OD, EdD, FFAO; Visioneering Technologies, Inc. Alpharetta, GA, USA  
 Bill Long, BS, MBA, FFAO, FBCLA; Independent Project Management, Dacula, GA, USA

### Abstract

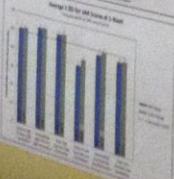
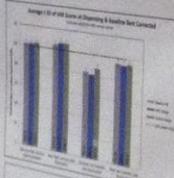
Children with high myopia progression are at high risk for retinal detachment and other serious complications. Myopia progression control (MPC) lenses have been shown to reduce myopia progression in children. This study evaluated the effectiveness of MPC lenses in reducing myopia progression in children with high myopia progression. The study included 100 children with high myopia progression (average age 10.5 years). The children were randomized into two groups: MPC lenses and control lenses. The MPC group showed a significant reduction in myopia progression compared to the control group. The MPC lenses were found to be effective in reducing myopia progression in children with high myopia progression.

### Subject Baseline Profile

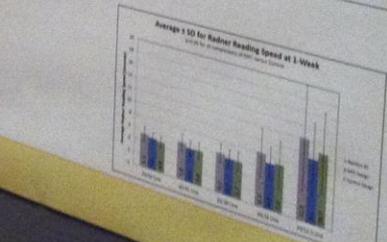
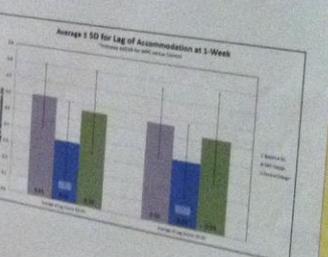
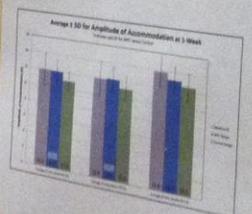
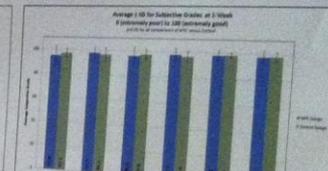
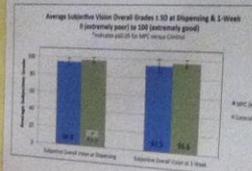
Myopia Lens Power, VA, & Years	Average 1 SD (min-max)
Current O. Power (D) (SD)	-3.25 ± 1.06 (1.00 - 6.50)
Current O. Power (VA) (SD)	20/40 ± 1.51 (20 - 65)
Years in Wearing Current Brand	1.6 ± 1.3 (0 - 4)

Number of Children with Myopia Progression	SD (min-max)
Control Group	0.25 (0.00 - 0.75)
MPC Group	0.15 (0.00 - 0.40)

### Results



### Results



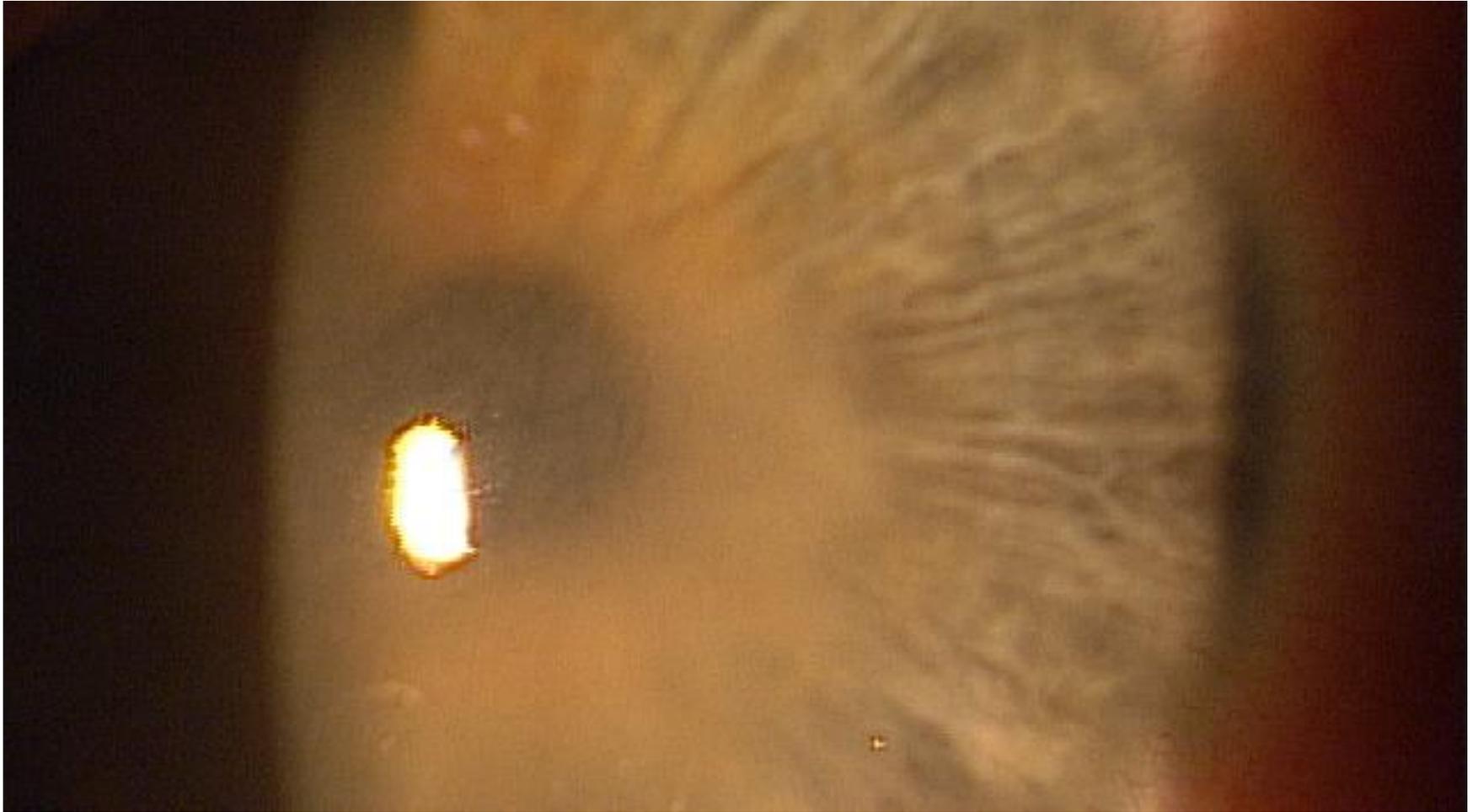
# Myopia Control -

- Current research data is showing **Center-Distance Contact Lens** designs can create about 40% reduction in Myopia, better than Orthokeratology
- Research aimed at optimizing this design.
- Would like to get to **50%** reduction and that may be the ceiling.

# Stay Tuned...



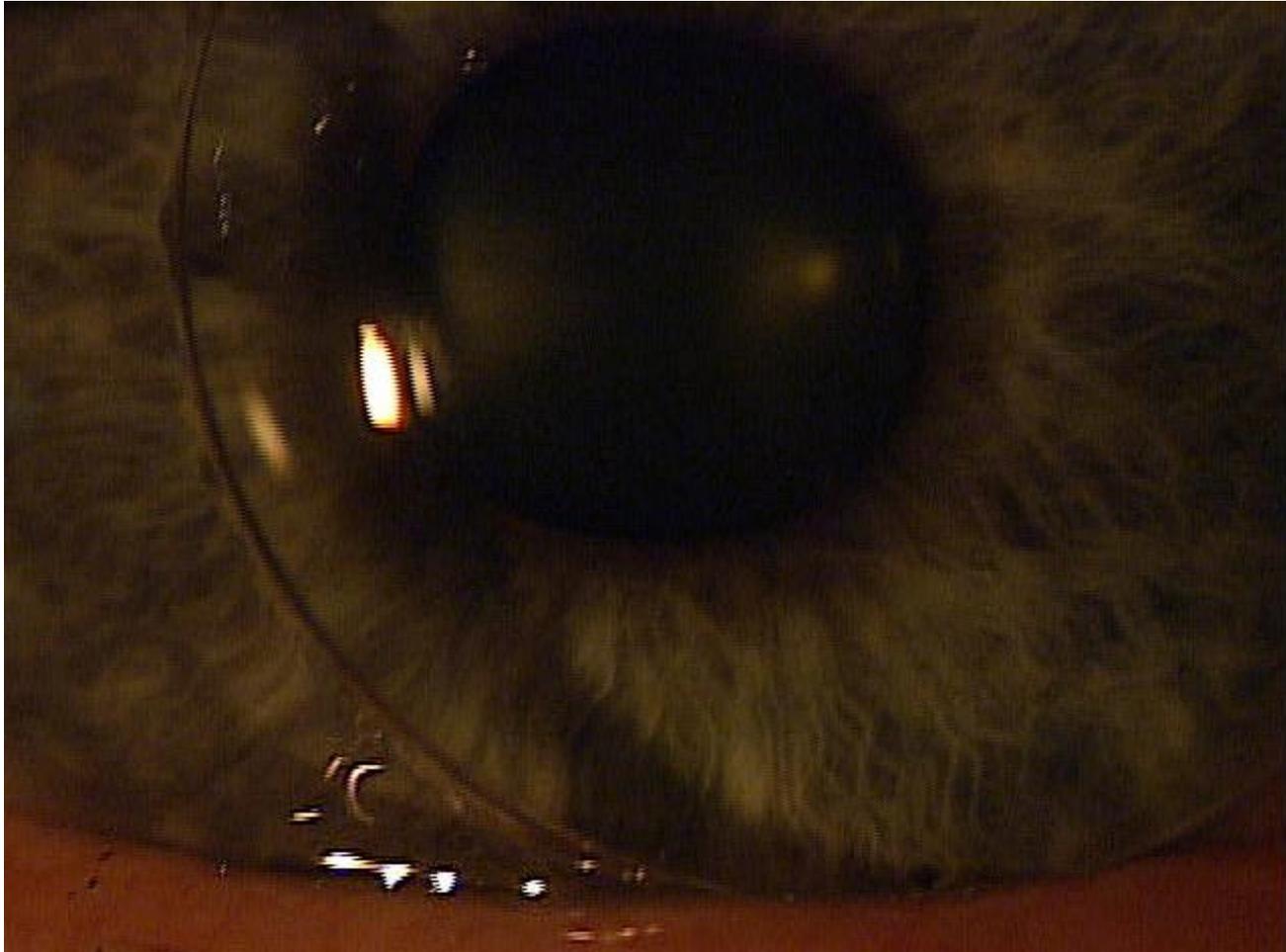
# Irregular Corneas / Corneal Dystrophy



# RGP's

- Surgical Error
  - Post-surgical complication
  - Pre-existing corneal dystrophy
  - Post-surgical trauma
- 
- Need fitting sets, go through training, workshops, etc.
  - Watch for scleral bearing

# Post Lasik



# Post-Lasik - Go Bigger

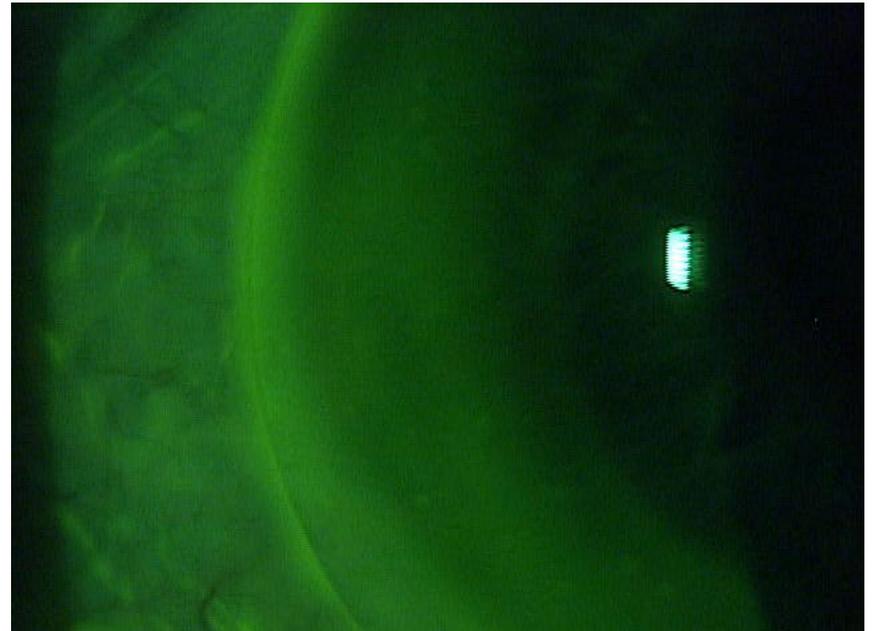


# Case – Post RK Nightmare

- High Cylinder (3.50DC in each eye) – have tried custom soft toric with no success on stability and vision
- Reverse Geometry, large diameter (12.0mm RGP)
  - Boston EO material
  - Ordered with fitting set evaluation (sent special set into office to try)

# Large Diameter RGP's

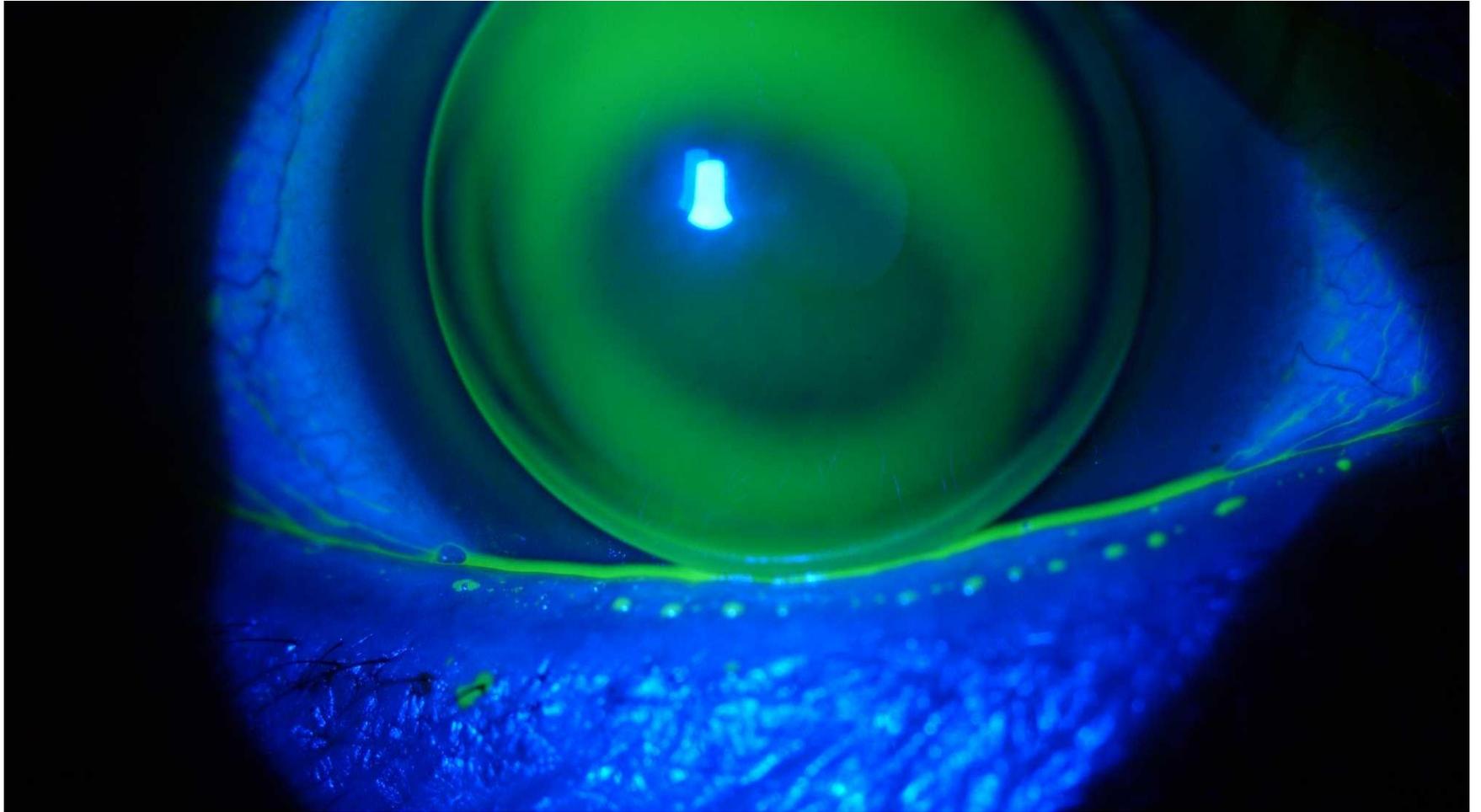
- Change modalities as necessary in order to improve outcomes.
- Large diameter lenses work best for severely distorted corneas.



# Large Diameter Lens Terminology

- Sagittal Height or Depth (SAG)
- Midperipheral Vault
- Limbal Clearance
- Scleral Alignment
- Compression and Impingement

# Keratoconus



# Common RGP KCN Lenses

- Rose K
- Comfort Cone
- Miniscleral
- K Vault
- Many more

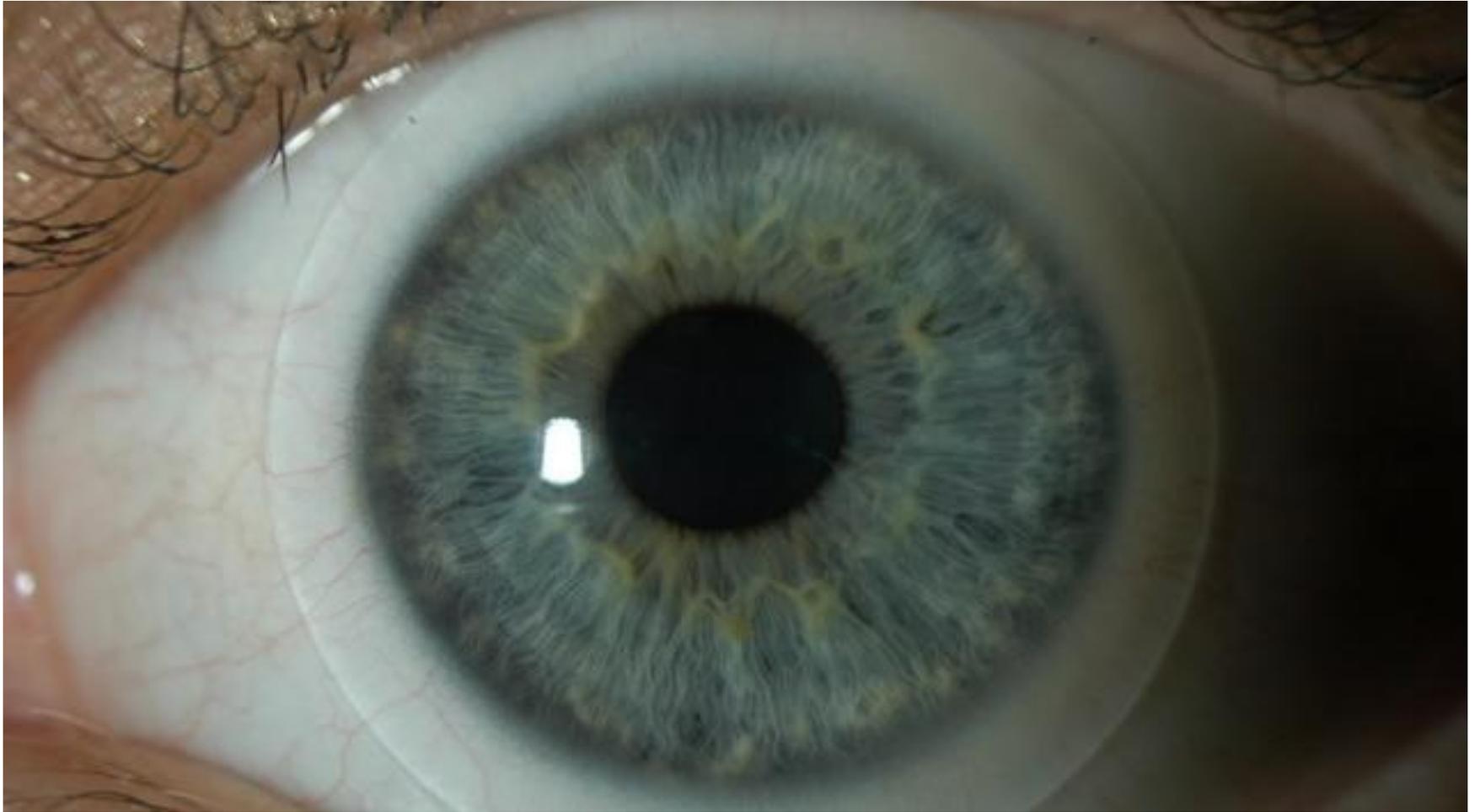
# RGP Fitting Techniques for Keratoconus

1. Apical Clearance
  2. Apical Touch
  3. 3 Point Touch (Korb et al, 1982)
- If showing significant epithelial disruption, consider refitting with sufficient apical clearance. Literature supports less risk of scarring
  - Denaeyer G, CL Spectrum Nov, 2011; 20.

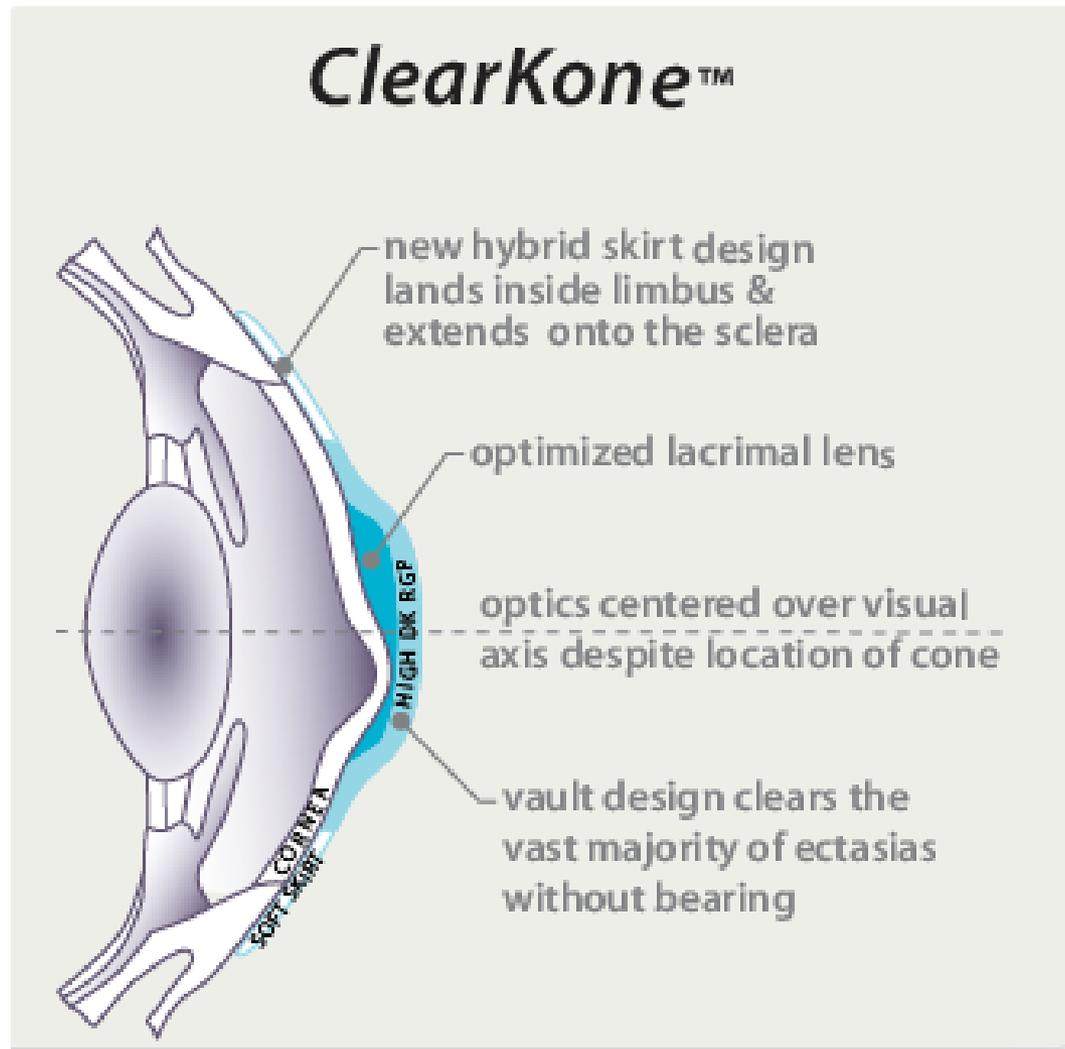
# Keratoconus



# Hybrid

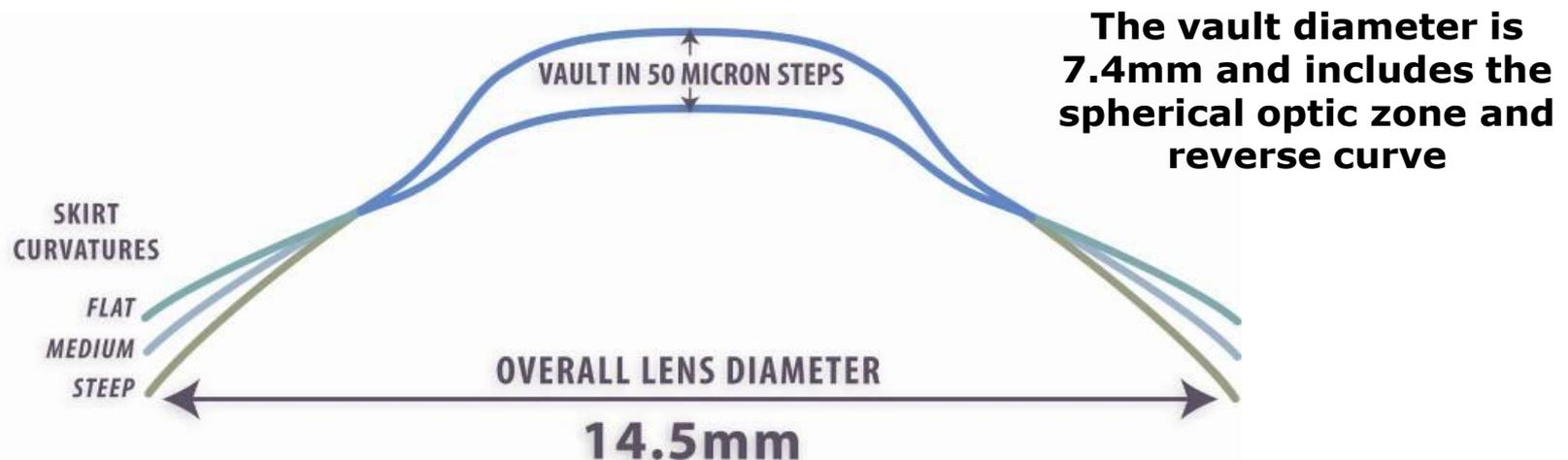


# ClearKone Lens Design



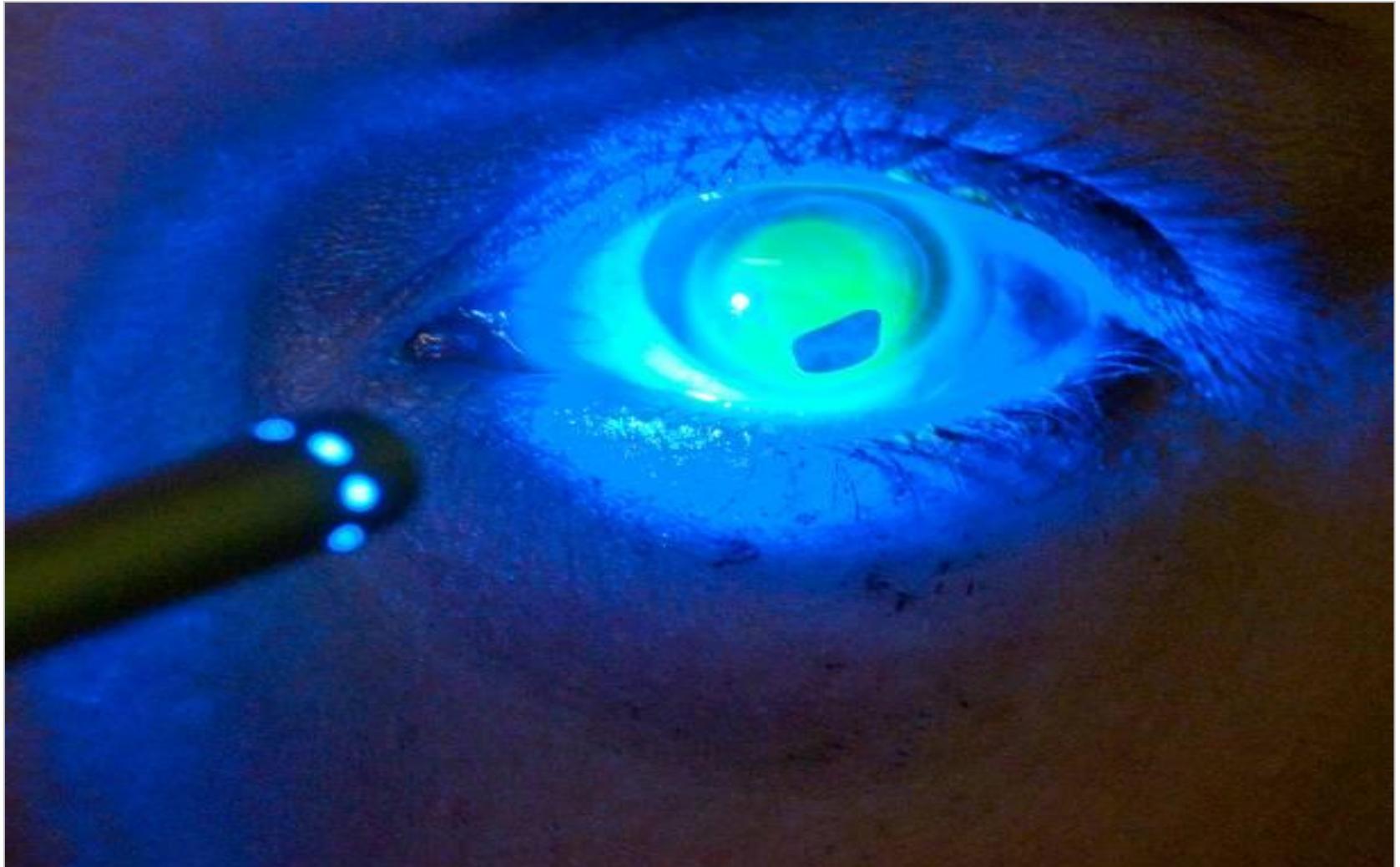
# Vault and Skirt Curvature

*ClearKone* is available in 11 different vaults of which each can be ordered in 4 different skirt curvatures; flat, medium, steep and steep2.



The fit of the vault is independent of the fit of the skirt curve. Each should be fit separately.

# Check for Bubbles After Insertion



# Improve Insertion Technique



# Soft Lens Options for Keratoconus

- Custom soft contact lenses are becoming more popular for fitting keratoconus patients with several new fitting sets launched in the past year.
- Promising reports and studies being reported.
- NovaKone (Alden Optical), Kerasoft IC (Bausch + Lomb Boston Group)

# NovaKone (Alden Optical)

- Introduced towards the end of 2011.
- Made of hioxifilcon D which is 54% water.
- Standard diameter of 15.0mm, but can be made larger or smaller, as needed.
- +30.00D to -30.00D sphere in 0.25D steps.
- Up to -10.00D cylinder in 0.25D steps from 10 to 180.
- 5 “It Factors” that define center thickness in order to neutralize irregularities.

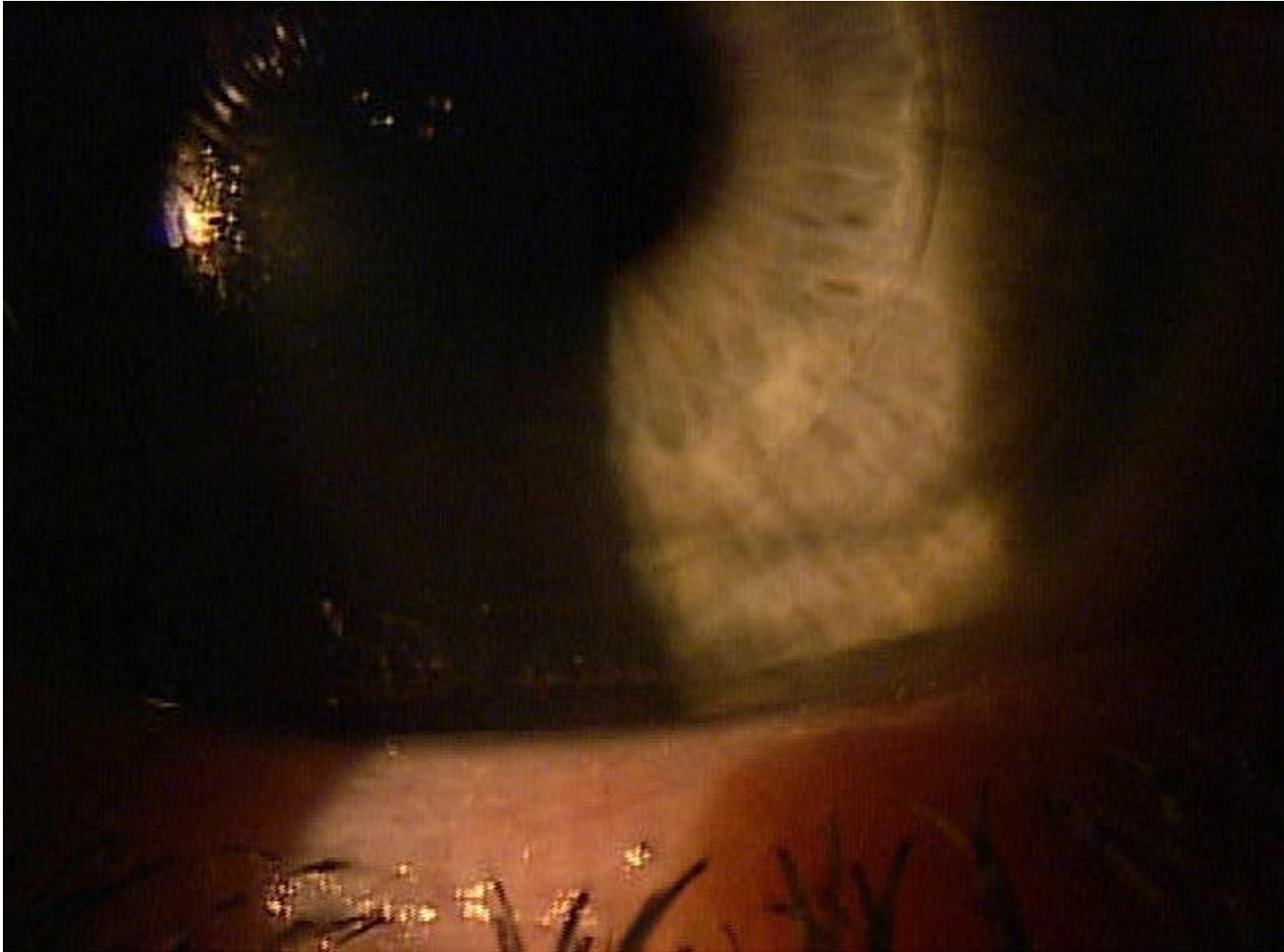
# Definitive Material

- Silicone hydrogel material custom soft lens
- Available through many distributors in a number of custom designs for irregular corneas.
- High Dk (60) and low modulus (0.35 MPa), works well in a number of applications.
- Recommend steeper base curves than traditional HEMA-based hydrogel material.
- Slight increase in GPC incidence

# Kerasoft IC (Bausch + Lomb Boston Group)

- Etrofilcon A material = custom latheable silicone hydrogel material that has a water content of 74%.
- The standard diameter is 14.5mm
- Comprised of a large central curve and peripheral curve.
- Can change the whole peripheral area either steeper or flatter to achieve a better fitting relationship.

# Kerasoft IC (Bausch + Lomb Boston Group)



# Getting Paid?

- It is important to remember two things:
  1. If you are a **participating provider** with a plan, you will need to determine if you need prior authorization.
  2. The benefit for "**medically necessary**" contact lenses is usually in addition to (and not a substitute for) eyeglasses. Check to see if you can also obtain spectacles for your patient as well.

# Billing and Coding

- Specialty CL Fits - categorized with corneal GP, piggyback, scleral and hybrid lenses.
- Most often talked about is keratoconus, pellucid marginal degeneration, post graft (PK) and corneal dystrophies

# Billing and Coding

- Fitting Contact Lenses –
- The prescription of CL's is not part of general ophthalmological services. Not bundled into something else.
- Follow-up appointments after a lens are not included in a fitting. If prescribed, can bill for them.

\*\*92070: Fitting of bandage contact lens... has been deleted

# Billing and Coding

- Fitting Contact Lenses –
- 92071 = Fitting of contact lenses for the treatment of ocular surface disease
- 92072 = Fitting of contact lens for the management of keratoconus, initial fitting

# Billing and Coding

- Fitting Contact Lenses –

\*\* Neither of those codes include “supply of lens” and will need to be billed with appropriate HCPCS V codes that most closely match the type of lens used.

# Billing and Coding

- Understand the rules for Specialty CL's –
- Every subsequent visit is billable and can use 99... Code for that visit.

# All of these terms are used with Large Diameter RGP's, EXCEPT:

- a. Sagittal Height or Depth (SAG)
- b. Midperipheral Vault
- c. Skirt Size
- d. Limbal Clearance
- e. Scleral Alignment

# Stay Connected

- There have been many technological advances in the contact lens industry and specialty contact lenses are alive and are growing in popularity because of their many uses.
- From Keratoconus to myopia control, it is important to stay up-to-date with the newest technologies available.
- Being comfortable with the multiple designs and their uses may open a new group of contact lens wearers.

[jasonrmiller@columbus.rr.com](mailto:jasonrmiller@columbus.rr.com)  
[millereyedoc@me.com](mailto:millereyedoc@me.com)

**THANK YOU!**

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