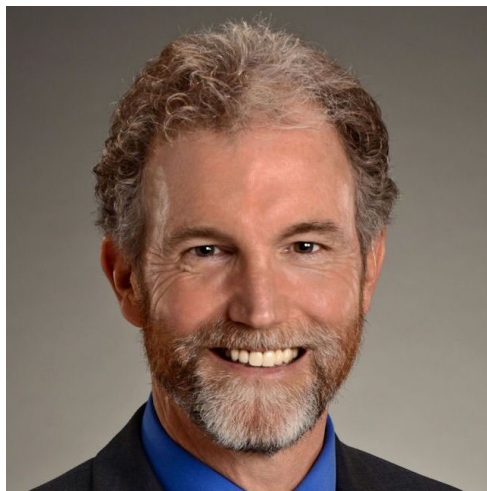




# 2019 Practice Development Educational Series

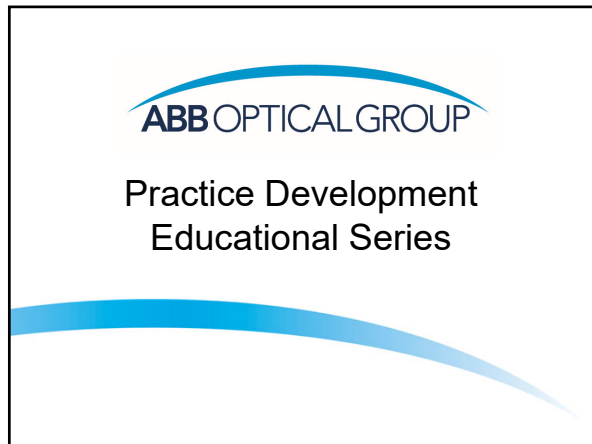
## Getting the Most Out of Presbyopic Contact Lens Options

**Thomas G. Quinn, OD, MS**




# Practice Development Educational Series

## Getting the Most Out of Presbyopic Contact Lens Options



Practice Development Educational Series			
Tools	Date	Time	Speaker
Scleral Lens Design and Fitting: The Basics	Available for viewing online		Maria Walker OD, FLS, FAAO
Getting the Most out of Presbyopic Contact Lens Options	Thursday, June 13, 2019	9-10PM ET	Thomas Quinn OD, MS, FAAO
Strategies for Solving Contact Lens Complications	Thursday, September 17, 2019	9-10PM ET	Clark Chang OD, FAAO
Practice Management Tips for Billing and Coding and other issues to build your Specialty Contact Lens Practice	Thursday, December 12, 2019	9-10PM ET	Stephanie Woo OD, FAAO, FLS



- Dr. Quinn is in group practice in Athens, Ohio.
- He has served as chair of the American Optometric Association's Contact Lens and Cornea Section Council and is a diplomate of the Cornea, Contact Lens and Refractive Technologies Section of the American Academy of Optometry
- He's an advisor to the Gas Permeable Lens Institute (GPLI); is past chair of the EastWest Eye Conference; and is a co-administrator for Vision Source with his wife, Dr. Susan Quinn.
- In addition to private practice, Dr. Quinn serves as Associate Professor of Clinical Practice for The Ohio State University College of Optometry and Clinical Assistant Professor for The Ohio University College of Medicine.

## Getting the Most Out of Presbyopic Contact Lens Options

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### Disclosures

- ABB
- Alcon
- Allergan
- Bausch & Lomb
- BioScience Communications
- CooperVision
- GPLI
- STAPLES Program
- JJ VC Vistakon


### Who are we talking about?

Gen Xers (45-54 yo)

- Tech savy
- High level of activity
- Adaptable
- Value freedom

Baby Boomers (55-64 yo)

- Desire to stay active
  - Socially
  - Intellectually
  - Physically



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### Getting the Most Out of Presbyopic Contact Lens Options

#### MULTIFOCAL vs MONOVISION

Let Science Speak

#### MULTIFOCAL vs MONOVISION:

- MV vs Essential GP (Johnson, 2000)  
75% preference for multifocal
- MV vs Acuvue Bifocal (Situ et al, 2003)  
68% preference for multifocal
- MV vs Soflens MF (Richdale et al, 2006)  
76% preference for multifocal
- MV vs Air Optix Aqua MF (Woods et al, 2015)  
51% preference for multifocal  
37% preference for monovision  
12% didn't like either



"That's not been my experience"

#### MULTIFOCAL vs MONOVISION:

- MV vs Acuvue Bifocal (Situ et al, 2003)  
68% preference for multifocal  
Issues with near vision in low light
- MV vs Soflens MF (Richdale et al, 2006)  
76% preference for multifocal  
Issues with near vision in low light

#### Restaurant Tools

- Magnifiers
- Light
- Apps



#### What's the best way to assess MF performance?

- Woods, J, et al (2009)
  - Assessed both objective and subjective results/ratings
- ➔ Objective testing (exam room)
  - Monovision "best performer" for high- and low-contrast near vision tests
- ➔ Subjective ratings ("real world")
  - Monovision "lowest performer"
  - Multifocal contact lenses "highest performer" in areas such as: Night driving, television, computer

Woods, J, et al. "Early Symptomatic Presbyopes – What Correction Modality Works Best?" *Eye & Contact Lens* 2009;5: 221 – 226.

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## Getting the Most Out of Presbyopic Contact Lens Options

### What do we fit?

- The Decision Drivers
  - Astigmatic error
    - Where's the flinch level?



TABLE 5.

Visual acuity improvement from using a toric contact lens instead of a spherical lens

Test condition	≤1 D	1.25–2 D
Photopic		
High contrast	3 letters 0.06 ± 0.10	11 letters 0.22 ± 0.16
Low contrast	3.5 letters 0.07 ± 0.14	12.5 letters 0.25 ± 0.14
Mesopic		
High contrast	5.5 letters 0.11 ± 0.12	11 letters 0.22 ± 0.16
Low contrast	3.5 letters 0.07 ± 0.12	8.5 letters 0.17 ± 0.13

Eyes were separated by having ≤1.00 D of astigmatism or 1.25 to 2 D of astigmatism (as referenced to the corneal plane).

Richdale, Kathryn et al, *Visual acuity with spherical and toric soft contact lenses in low-to moderate- astigmatic eyes*, *Optom and Vision Science*, 84(10):969-975, Oct 2007

### The Astigmatic Component

- 0.75 DC is the “flinch level”

### Prevalence of 0.75 DC or greater

- In at least one eye: 47.4%
- In both eyes: 24.1%
- Myopes vs Hyperopes: 31.7% vs 15.7%
- WTR vs ATR: 32.9% vs 29.1%
- Conclusion:
  - “We estimate that approximately 1/3 of potential CL wearers require astigmatic correction

Young G et al, *Prevalence of astigmatism in relation to soft contact lens fitting*, *Eye Contact Lens*, Jan 2011

### Astigmatism and Age

- *Prevalence* of astigmatism increases with age<sup>1,2,3</sup>
- *Amount* of astigmatism increases with age<sup>3</sup>
  - 0.05D per decade
- *Axis* changes from WTR to ATR<sup>2,3,4</sup>
  - Due to corneal shape changes

1. Sanfilippo PG et al, *Acta Ophthalmol*, 2015 (Australia)
2. Liu YC et al, *Invest Ophthalmol Vis Sci*, 2011 (China)
3. Schuster AK et al, *Graefes Arch Clin Exp Ophthalmol*, 2017 (Germany)
4. Leung TW et al, *Optom Vis Sci*, 2012 (Hong Kong)

### The Astigmatic Component

- 0.75 DC is the “flinch level”
  - Especially if:
    - Low spherical error
    - Dominant eye
    - ATR axis
- Is it corneal astigmatism?

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## Getting the Most Out of Presbyopic Contact Lens Options

### Corneal Astigmatism $\neq$ Spectacle Astigmatism

- Toric Soft Options
  - Toric SV Soft Distance OU with readers
  - Monovision
  - SV Toric one eye/ Multifocal one eye
  - Toric MF Soft

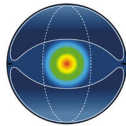


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### Soft Toric Multifocals

- Benefits
  - Come in custom parameters
    - High cylinder powers
    - Custom add sizes
- Challenges
  - Currently limited to monthly, quarterly or annual replacement options
  - No or limited diagnostic fitting sets

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### Soft Toric Multifocal Fitting Tips

- Fix astigmatism correction first
  - Then employ multifocal fitting strategies
- Order 3 diagnostics per eye
  - on spectacle axis and either side
  - What axes?

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### Initial Diagnostic Axes

- Assume  $\geq 0.75$ DC of residual cylinder is unacceptable
- How much axis mislocation of a given toric power will induce this level of residual astigmatism?
  - 30° mislocation: Residual cyl = toric power in lens
    - Eg. -2.25 DC lens misaligns 30° = 2.25D residual
    - 2.25 DC lens misaligns 10° =  $2.25/3 = 0.75$ D residual
- E.g. Spectacle Rx: -1.00-2.25x090
  - Order axes: 090, 080, 100

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Toric Lens Power (D)	Degrees of Lens Rotation Inducing 0.75D* of Residual Astigmatism
0.75	30
1.25	18
1.75	12
2.25	10
2.75	8
3.25	7
3.75	6
4.25	5
4.75	4.5
5.25	4
5.75	3.5

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### Corneal Astigmatism = Spectacle Astigmatism

- A Multitude of Multifocal Options!
  - Toric Soft MF
  - Hybrid MF
  - GP MF (Corneal and Scleral)



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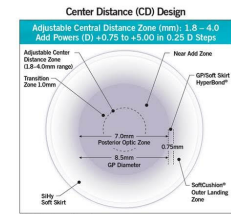
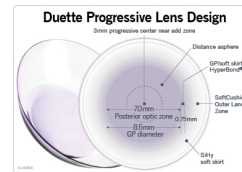
## Getting the Most Out of Presbyopic Contact Lens Options

### What do we fit?

- The Decision Drivers
  - Astigmatic error
  - What are they used to?
    - Are they happy?

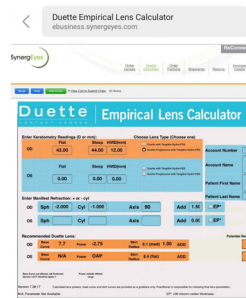
### Hybrid Multifocal Designs

- Duette Progressive (CN)
  - Adds:
    - +1.00, +1.75, +2.50



### Hints on Hybrids

- Rigid Center
  - 0.50-0.75 STK
  - 0.1 mm BC steps
- Soft Skirt
  - Flat
    - Good comfort
    - No edge lift
    - Good centration



### Scleral Multifocals!



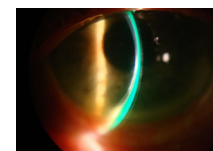
How to determine the severity of the anomaly so that the proper treatment regimen can be implemented.

TABLE 1  
Available Multifocal Scleral Lenses

Company	Brand	Multifocal Power (D)	Multifocal Style
Acculens Inc.	EasyFit Plus Comfort SL Plus Maxim Plus	+1.00 to +3.50 Aspheric up to +1.75	Center near, Dual aspheric with center distance progressive optics
Art Optical Contact Lens Inc.	SoClear Progressive	+1.00 to +3.50	Center near
Advanced Vision Technologies	AVT scleral	+0.50 to +3.50	Center distance, Back aspheric, front toric
Blanchard Contact Lens Inc.	OneFit P&A OneFit 2.0	Up to +2.25 D lens and N lens Up to +2.25 D lens and N lens	Center near Center near
Dakota Sciences LLC	SoClear Progressive	+1.00 to +3.50	Center near
Essilor of America Inc.	Jupiter Plus	+1.75	Center distance
EyePrint Prosthetics LLC	EyePrint Pro	Unlimited add powers	Back-surface center distance variable zone, Front toric
GP Specialists	iSight	+0.50 to +5.00	Center distance, Center near
Lens Dynamics Inc.	Dyna Semi-Scleral	Up to +2.75	Multifocal aspheric front surface, Spherical front optic zone, Back spherical surface
	Dyna Scleral	Up to +2.75	Multifocal aspheric front surface, Spherical front optic zone, Back spherical surface
Metro Optics	iSight Scleral	+3.00	Center distance
TruForm Optics Inc.	DigForm 15 DigForm 16.6 DigForm 18	Up to +3.50 Up to +3.50 Up to +3.50	Center near Center near Center near
Valley Contax, Inc.	Custom Stable CSE Near 2.0 (clinical study name)	+1.50 to +3.50 +1.25 to +3.25	Center near Binocular distance and near system
Wave LLC	Multifocal	Up to +5.00	Center distance, Center near

### Scleral Multifocals

- Most are center near
- Key considerations:
  - Size of add
  - Strength of add
  - Location of add
  - Other optical irregularities?
    - Eg. keratoconus



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## Getting the Most Out of Presbyopic Contact Lens Options

### Examination Procedures and Techniques



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### Tips for Fitting Translating Designs

- Corneal GP Lenses

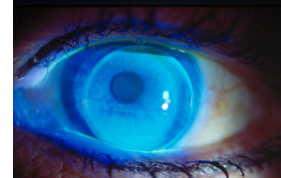


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### Selecting Seg Height

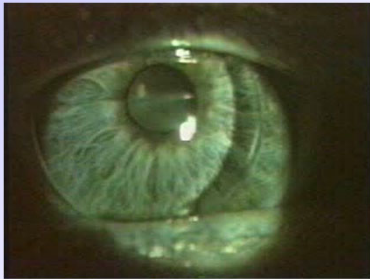


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### Selecting Seg Height



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### Selecting Seg Height

Goal: Just below lower pupil margin  
Where to start?  
*1mm below geometric center of lens*

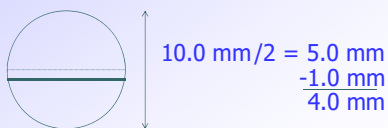


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### How's this look?



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### Getting the Most Out of Presbyopic Contact Lens Options

#### The Intermediate Distance?

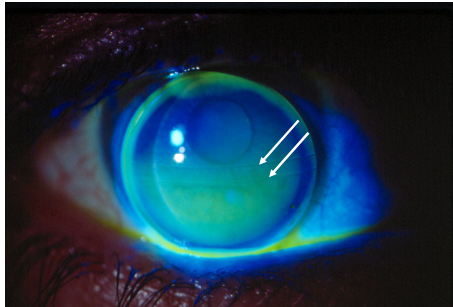


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#### Progressive Optics

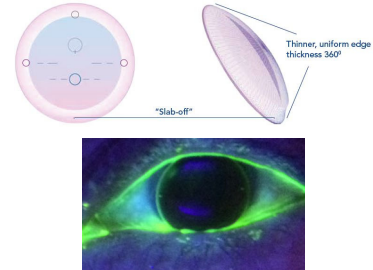


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#### Over Specs for Computer



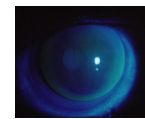
• Lenses compliments of  
Irving Yaross, OD (Chicago)

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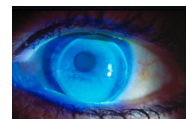
#### GP Multifocal Developments



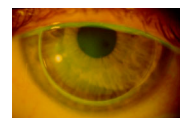
High Eccentricity  
Back Surface



Low Eccentricity  
Back Surface



Translating Design



Front Surface  
Asphere

#### Tips for Fitting Simultaneous Vision Designs

- Corneal GP Multifocals
- Soft Multifocals
- Hybrid Multifocals
- Scleral Multifocals

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#### Fitting Corneal GP Lenses

- The Basics of the Fit
  - Lens movement
  - Lens centration
  - Fluorescein pattern
    - Helps us control centration and movement!

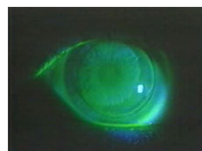


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## Getting the Most Out of Presbyopic Contact Lens Options

### Lens Selection

- Detailed refraction
  - "Push" Plus at distance
    - No more minus than absolutely necessary
  - No more add than absolutely necessary



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### Lens Selection

- Determine eye dominance
  - Sighting dominance
  - Sensory dominance



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### Sighting vs Sensory Dominance

- Pointer J, J of Optom, (2012) 5, 52-55
  - Method:
    - 72 Emmetropes
      - Sighting method: hole in the card
      - Sensory method: +1.50 blur test
  - Results:
    - Right eye dominance
      - Sighting method: 71%
      - Sensory method: 54%
    - Laterality was in agreement only 50% of the time!

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### The Blur Tolerance Test

- Have patient view object through best Rx
- Both eyes open
- Gradually add plus in front of one eye
- Ask the patient to report first blur
- Repeat for other eye

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### Blur Tolerance Test

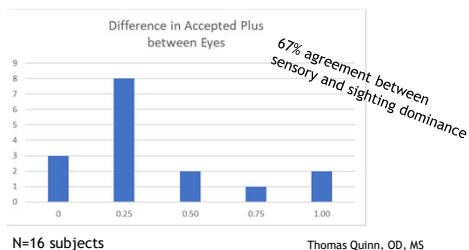


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Thomas Quinn, OD, MS  
Shane Foster, OD  
Rachel Lefebvre, OD  
Heather Van Law

### Lens Selection

- Follow the fitting guide!



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### Getting the Most Out of Presbyopic Contact Lens Options

#### Assessing Performance

- Scouting report
  - Open-ended questioning
- Real world environment
  - Lights up
  - Binocular conditions
  - Real world tasks
  - Loose lenses

#### Assessing Performance

- 20/40 line
- Text based near tasks
- Give it time!

#### Adaptation to Multifocal Optics

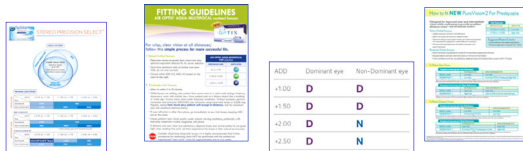
- Sheedy et al, *Optom Vis Sci*, June 1993
  - Noted significant improvement in complex task performance with concentric bifocal lenses
  - No improvement with monovision
- Pappas et al, *Eye Contact Lens*, May 2009
  - Assess performance of 88 subjects at dispensing and after 4 days of wear
  - "Early assessment is relatively unrepresentative of performance later on during multifocal contact lens wear."
- Fernandes et al, *Optom Vis Sci*, Mar 2013
  - Over 15 days, MF acuity at D and N *improved*
  - MV acuity remained the same or worsened

#### Adaptation to Multifocal Optics

- Lunghi C, Sale A  
*A cycling lane for brain rewiring*  
*Curr Biol.* Dec 7, 2015
- Old School: "Plasticity (of the brain) is maximal in early development...abruptly declines in adulthood."
- "Recent studies...have revealed a significant residual plastic potential of the adult visual cortex..."

#### Enhancing Performance

- 1: Always start with OR using loose lenses
  - To confirm distance Rx
- 2: Follow the manufacturer's guide!



#### When is enough...enough.

- You've set the right tone
  - The Sandwich Approach
- You've confirmed the Rx
  - Always confirm distance Rx first
- You've shared **The 3 Revelations**
  - "The goal is to meet most of your needs most of the time"
  - "You may need to give up a little bit of crispness for freedom"
  - "This is as good as it gets"

## Practice Development Educational Series

### Getting the Most Out of Presbyopic Contact Lens Options

