

1  **Multifocal Contact Lens Patient Selection, Fitting and Problem-Solving**

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COPE Course ID: 63329-CL

Qualified Credit: 2 hour(s)

2  **Presbyopic Market**

- 74 million Baby Boomers born between 1946-1964\*
- 66 million Generation Xers born between 1965-1980\*
- In 2010, about 1/3 of US population was between 40-59 years of age.
- In 2015 US census data reports 40% of the population is over 45
- In the next decade, 28% of all contact lens wearers will be >50 y.o.
- 90% of all CL wearers between 35-55 have worn CL's majority of their life

\*Pew Research Center

3  **Presbyopic Market**

- Steady growth of multifocals
- Surpassed monovision
- Presbyopes are in their peak earning period
- Knowledge of multifocal contact lenses is limited
- More tech savvy, desire high technology
- Want information
- Fit early

4  **Growth of Multifocals from Contact Lens Spectrum 1/2019**

5  **Contact Lens Spectrum 1/2016**

6  **Contact Lens Alternatives for Presbyopia**

- Single Vision/Reading Spectacles
- Monovision
- Bifocals/ Multifocals

7  **Monovision Issues**

- Depth Perception
- Possible Suppression
- Contrast Sensitivity/Vision Loss
- Night Driving
- Liability

## 8 **Driving/Critical Vision Tasks**

- Monovision wearers have difficulty suppressing headlights with night driving with one-third experiencing glare
- It is advised for monovision patients to avoid driving or operating dangerous machinery during adaptation
- Over-correction spectacles strongly recommended

## 9 **MONOVISION VERSUS CL BI/MULTIFOCALS**

- Johnson J, et al; Multivision Vs. Monovision: A comparative study: presented at CLAO, Feb, 2000
- 6 weeks GP multifocal; 6 weeks monovision (or vice versa)
- 75% who completed study preferred multifocal

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## 11 **Monovision Versus CL Bi/Multifocals**

- Rajagopalan A, et al: CONCLUSIONS
- GP wearers exhibited highest contrast sensitivity at all frequencies, high and low contrast acuity and least disability glare; soft bifocals were second; monovision last in all categories

## 12 **CL MULTIFOCALS DO NOT WORK . . . UNTIL YOU FIT THEM!**

- Jones et al J Br Contact Lens Assoc, 1996
- 160 non CL wearers placed into reactive and proactive groups (in the latter CLs were actively discussed as a corrective option)
- Only 9/80 in reactive group were fit into CLs
- 46/80 in proactive group - including 21/33 presbyopes - were fit into CLs

## 13 **2016 Annual Report (Nichols J, CLS 1/17)**

- Survey via Jeff Johnson OD (Vice-President, Robert W. Baird & Co.)
- For presbyopes wearing CLs, practitioner preference was:
  - Multifocal lenses: 75% (59% in 2008)
  - Monovision: 17% (27% in 2008)
  - Over-spectacles: 8% (14% in 2008)

## 14 **Patient Selection and Communication**

### 15 **Patient Selection**

- Positive Outlook for MF's in general (gen xers!!)
- Patients that currently wear GP/soft lenses without significant dryness or other comfort issues
- Unsatisfactory vision with monovision

New CL wearers that are motivated to remain free from glasses and desire good vision at all distances

If interested, mention all options to them.

16  **Be Enthusiastic!**

- Avoid negative comments
- Instill confidence
- Believe in them, so your patient will believe in them

17  **Explore the Patient's Visual Environment**

- Hobbies
- Occupation
- Everyday tasks
- What do they want the lenses for?
- What are the primary tasks?
- What are the near, intermediate and distance tasks?

18  **Patient Communication**

- Address visual needs prior to selecting lens design
  - Which visual demand motivated your patient to seek MFCLs?
    - Computer, cell phone, watch, deskwork, etc
    - Often times, just achieving that 'need' creates a happy experience!
- Setting expectations
  - "I want you to be able to do most things, most of the time."
  - Underpromise & Overdeliver

19  **Patient Communication**

- Setting expectations:
  - Use words like: balancing the vision demand in the contact lenses, functional vision, freedom from glasses
  - Avoid using: blurry, compromise, less than perfect, less crisp, glasses will always be better

20  **Educate**

- Longer fitting process possible-multiple visits
- Some adaptation required
- Share success stories
- Educate about the design
- Make them a partner in the process
- Try "real world" environment- not 20/20

- Cover fees

21  **Adaptation/Len Changes**

- Vision will improve over time
- Lens changes are the rule (1/eye initially, then 1/patient)
- 6 - 8 weeks to adapt
- No Monday morning surprises
- BOTTOM LINE: "If you are patient and motivated, there is an 80% success rate with these lenses."

22  **Prefit Evaluation**

- Evaluate the tears, cornea and lid
- Evaluate the anterior and posterior health
- Current refraction and add
- K values
- Dominant Eye
- Pupil Size
- HVID
- Lower Lid position

23  **Determining the Dominant Eye**

24  **Soft Multifocal Lenses**

25  **Silicone Hydrogel Soft Multifocals**

- Air Optix Multifocal, Dailies Total 1 (Alcon)
- PureVision Multifocal, PureVision 2 for Presbyopia, Ultra for Presbyopia, Ultra MF for Astigmatism (Bausch + Lomb)
- Biofinity Multifocal, Clariti 1 day MF, (CooperVision)
- Acuvue Oasys for Presbyopia (J&J)

26  **Silicone Hydrogel Multifocals  
Definitive material (Contamac)**

- NaturaSOFT MF (Advanced Vision Tech)
- Intellwave MF & Toric (Art Optical)
- Metrofocal Definitive and Toric (Metro Optics)
- C-Vue Advanced Hydravue MF (Unilens)
- 
- ❖Specialty powers, more parameters

27  **Daily Disposable Multifocals**

28  **Fitting Tips**

- Understand the designs
- Know the materials and replacement schedules
- Follow the fitting guides
- Don't jump from design to design

29  **Fitting Tips**

- Low Rx or emmetropes less successful
- $\leq 0.75D$  astigmatism or use toric multifocal
- Start with best corrected sphere, vertexed back
- Current refraction and add
- Dominant eye
- Consider D/C monovision before fit

30  **Fitting Tips**

- Use normal room illumination
- Use least minus/most plus Rx
- Let lenses settle 10-20 minutes
- Hand-held trial over-refraction
- Change power in small 0.25 steps
- Use the lowest add possible –  
Round down

31  **Fitting Tips**

- Assess vision binocularly
- Over-refract monocularly with both eyes open
- Use everyday reading material
- Dispense trials
- Follow-up in 2 weeks-Allow the patient to adapt
- It is okay to have less than 20/20 VA
- 

32  **Checking Near Vision**  
**Use good illumination with real world materials**

33  **Center Near Designs**

- 34  **Air Optix Multifocal**
- Alcon
  - Monthly replacement SiHy
  - Daily or Extended wear up to 6 nights
  - 3 add powers (Lo, Med, Hi)
  - Center near
  - Dk/t= 138
  - BCR 8.6, Powers +6 to -10
- 35  **Dailies Aquacomfort Plus Multifocal & Dailies Total 1 Multifocal**
- Available in a 30 or 90 pack
  - AC+ BCR 8.7/ Total 1 8.5
  - Powers +6.00 to -10.00
  - Material- Nelfilcon A (same as Dailies AC+) or Delefilcon A for Dailies Total 1
  -
- 36
- 37
- 38
- 39
- 40
- 41  **Air Optix Multifocal**  
**Rx -2.75 Add +2.00 OD Dominant Eye**  
**Initial Trial lens selection**
- 42  **Air Optix Multifocal**  
**Poor distance vision**  
**Step 1**
- 43  **Air Optix Multifocal**  
**Poor distance vision**  
**Step 2**
- 44  **Air Optix Multifocal**  
**Poor Near Vision**  
**Step 1**
- 45  **Air Optix Multifocal**  
**Poor Near Vision**  
**Step 2**
- 46  **Dailies Total 1 MF Case**  
Case-49yo currently wearing Air Optix MF

OD -0.75 Low Add and OS -2.50 Low add

- Refraction OD -0.75-0.75 X100 Add +1.50  
OS -2.50 DS Add +1.50  
Dominant eye OS
- Occasional lens wear
- Refit Dailies Total 1 MF  
OD -0.75 Low/ OS -2.50 Low
- VA Distance 20/20+, Near 20/25 OU

47  **PureVision 2 for Presbyopia**

- Bausch + Lomb
- Monthly replacement/SiHy
- Daily wear to Continuous wear up to 30 days
- Low and high adds
- Center near
- 3 zone progressive design
- Overall thickness profile is thinner compared to PV MF
- Power +6 to -10

48  **PureVision 2 for Presbyopia**

49

50  **PureVision 2 for Presbyopia**  
**Rx -2.50 Add +2.00 OD Dominant Eye**  
**Initial Trial lens selection**

51  **Ultra for Presbyopia and Ultra for Astigmatism Multifocal**

- Bausch + Lomb
- BCR 8.5, Power +6 to -10, Toric +4 to -6, 3 cyl. powers & around the clock correction
- Samfilcom A
- Monthly, daily wear
- 2 add powers Low and High
- Same design as PV 2 for Presbyopia
- Dk/t 163, 46% water content
- Moisture seal technology

52  **Biotrue for Presbyopia**

- Bausch + Lomb
- BCR 8.6, Power +6 to -9
- Nefofilcon A, Same as Biotrue ONEday

- 30 & 90 pack
- Low & high adds
- Same design as PV2 for Presbyopia
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53  **Clariti 1 Day Multifocal**

- CooperVision
- Silicone Hydrogel-Somofilcon A
- BCR 8.6, Power +5 to -6
- Two adds
- 30 & 90 pack
- Dk/t=86
- 

54  **1 day Acuvue Moist Multifocal**

- Johnson & Johnson Vision Care
- AV2 material 30 & 90 packs
- BCR 8.4
- UV Blocker
- Powers +6 to -9
- Adds:  
Low, Mid & High

55  **1 day Acuvue Moist Multifocal**

56  **1 day Acuvue Moist MF Case**

- Case- 55yo currently in monthly multifocals
- OD -3.75-0.75X115, OS -5.75-0.25X147  
Add +2.25 Dominant eye OS
  - Vertex, spherical equivalent
  - OD -3.75, OS -5.50
  - Lens selection: OD -3.75 High OS -5.50 Mid

57  **Center Distance Designs**

**\*Center Distance Designs also used for Myopia Control**

58  **Biofinity Multifocal**

- CooperVision
- Monthly replacement
- Daily or extended wear
- Powers +6 to -10
- 4 add powers (+1.00, +1.50, +2.00, +2.50)
- Center Distance and Center Near lens



- BCR 8.6

59  **Biofinity Multifocal Design**

60  **Biofinity Fitting Guide**

61  **Fitting Steps**

- Determine from Refraction, Best Vision Sphere, adjust for vertex distance
- Determine dominant eye
- Evaluate at distance and near binocularly and then monocularly

62  **Biofinity MF Case**

59 year old OD -4.00, OS -4.50 Add +2.25

OD dominant eye

Vertex back OD -3.75, OS -4.25

OD lens -3.75 D lens +2.00 add

OS lens -4.25 N lens +2.00 add

Distance VA OD 20/20, OS 20/20, OU 20/20

Near VA a little blurry

Final lenses OD -3.75 D lens, +2.00 add, OS -4.00 N lens +2.50 add

Distance VA OD 20/20, OS 20/25, OU 20/20

63  **Emerging Presbyopes**

Case -44yo, previous soft lens distance only wearer

Currently taking glasses off to see near

Refraction OD -2.25-0.50X150 Add +1.25 Dominant eye

OS -2.75-0.25X15 Add +1.25

Biofinity MF OD -2.50 Add +1.00 D lens

OS -2.75 Add +1.50 D lens

VA 20/20+ OU distance, 20/20 OU Near

64  **Proclear Multifocal and MF Toric**

- CooperVision
- Same design as Biofinity Multifocal
- Daily wear
- BCR 8.7 Sphere, 8.4/8.8 Toric
- Proclear XR Multifocal:  $\pm 20$ , BCR 8.7
  - Adds +1.00 to +4.00 in 0.50D steps
- Proclear MF Toric:  $\pm 20$ , -0.75 to -5.75 cyl in 5 degree steps, +1.00 to +4.00 Adds
- Online calculator or call consultants

65  **Proclear Multifocal Toric Case**

Rx -3.50-2.00 X 10 OD  
 -3.50-1.50 X 170 OS  
 Add +1.75  
 Keratometry 44.00/46.00 OU  
 Dominant eye OD  
 Fit Proclear MF Toric  
 OD -3.50 -1.75X10 D lens Add +1.50  
 OS -3.50-1.25X170 N lens Add +1.50

66  **Acuvue Oasys for Presbyopia**

- Johnson & Johnson
- 2 week replacement
- Daily or Extended Wear
- Powers +6 to -9
- 3 add powers (Low, Mid & High)
- Aspheric Zonal Design-Center Distance
- BCR 8.4

67  **Acuvue Oasys Add Selection**68  **Acuvue Oasys for Presbyopia**69  **NaturalVue Multifocal 1 day**

- Visioneering Technology
- Neurofocus Optics Technology-uses extended depth of focus
- Add up to +3.00
- Powers +4.00 to -12.25
- BCR 8.3, Diameter 14.5
- 30 & 90 packs

70  **General MF Troubleshooting**

- Poor distance VA – Add minus by 0.25 steps to dominant eye only &/or decrease add dominant eye
- Poor near VA – Add plus by 0.25 steps to non-dom eye &/or increase add non-dominant eye
- If  $\geq 0.50D$  change is required in distance may need to alter add powers
- Use flippers for Over-refraction
-

71  **Troubleshooting Soft MF**

- Address distance problem first
- Confirm dominant eye (especially if VA's don't meet expected values)
- Always recheck VA with an OR at distance & near
- Monocular acuities are useful for determining which lens may need to be altered
- Change power in small 0.25 steps
- Use the lowest add possible -Round down
- It is okay to use unequal adds

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72  **Online calculators or apps**

- CooperVision OptiExpert Fitting App-Available through app store  
<https://coopervision.com/practitioner/tools-and-calculators/optiexpert>
- Johnson & Johnson Fitting Calculator  
<https://jnjinstitute.com/online-profed-resources/resources/acuvuer-multifocal-calculator>
- Alcon CL Virtual Consultant  
[https://virtualconsultant.alcon.com/best\\_match.jsp](https://virtualconsultant.alcon.com/best_match.jsp)

73  **Gas Permeable Bifocals/Multifocals**74  **RULE OF THREE'S**

- Number of Fits
- Patient Consultation
- Pre-Fit
- Fitting
- Problem-Solving

75  **PRE-FIT FACTORS**

- Pupil Size
- Tear Film
- Lower Lid Position/tightness

76  **DESIGNS IN COMMON USE**

- Aspheric Multifocal
- Concentric/Annular
- Translating Segmented

77  **Aspheric Advancements**

- Has evolved into a very popular type due to advancements in technology

- New Technology resulting in better polished surfaces, & higher refractive index materials
- Addition of higher add power lenses
- Lower eccentricity lens designs
- Translation???

78  **Aspheric Translation**

79  **Aspheric Candidates**

- Any Add Power (Don't R/O High)
- Computer use
- Athletes
- Low lower lid &/or loose lids
- Small-avg. pupil size
- (very) Critical Vision not essential

80  **ASPHERIC MULTIFOCAL FITTING**

- Front surface fit "On K" Back surface fit 1 - 1.5D steeper than K
- Must center with limited movement with the blink
- Easy to fit via manufacturers' fitting guide/user friendly
- Good design to start with

81  **Topographic Changes with Posterior Aspheric Lens Designs**

82  **FRONT SURFACE ASPHERIC MULTIFOCAL DESIGNS**

- Have the benefit of avoiding back surface molding/topography changes
- Designs have variable add powers to meet patient needs: (i.e., often making effective center distance zone smaller with increase add power)

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84

85  **'REAL WORLD ENVIRONMENT'**

- Once the lenses have settled, have them perform relevant "real world" tasks (i.e., view SmartPhone, look at a computer, read a magazine, walk around the office to view at a distance, etc.).
- Woods et al(2009) c Air Optix Aqua Multifocal was preferred to monovision for "Real World" tasks: daytime & nighttime driving, watching TV

86  **OVER-REFRACTION**

Whereas monocular acuities at distance and near can be performed to assess vision, the over-refraction should be performed binocularly with the trial lens (often in the form of +/- 0.25 and 0.50D flip lenses) over the eye demonstrating reduced visual acuity. WOW !!!!!!!!

87  **ASPHERIC TROUBLESHOOTING**

- Inferior Decentration/Excessive Movement: Steeper Base Curve
- Insufficient Add Power:
  - Select Higher Add Lens Design
  - Use "Modified Bifocal"

88  **EXCHANGE RATES: THE RESULTS OF A LARGE PRACTICE**

- Practitioner DB: 710 GP multifocal lenses purchased over 3 years (10 patients/month)
- Average return rate of 42% (close to national average)

89  **TRANSLATING VISION**

- Prism Ballasted & often Truncated
- Crescent/Executive Seg
- High Dk Material
- Near image moves in front of pupil with downgaze
- Typically rests on or near the lower lid

90  **Reading Position of Translating Bifocal  
*Base Curve Selection (courtesy Firestone Optics)***

Proper base curve selection helps the lens to translate smoothly upward to position the seg line slightly above the pupil center during down gaze

91  **TRANSLATING VISION: CANDIDATES**

- Critical vision demands
- Any add powers (high add/limited IM)
- Lower lid near limbus/good tonicity
- Aspheric does not center
- Inferior Apex

92  **FITTING NUGGETS**

- Diagnostic set(s)
- Follow manufacturer's fitting guide
- Trial Lens O/R.
- Translating Pearls:
  - Position of lower lid to limbus
  - Seg line to lower pupil position
  - Evaluate translation in downward gaze

93  **Lid Position**

94  **SOLUTIONS (X-CEL)**

- One-piece crescent with monocentric optics
- Standard Lens = 9.6mm OAD; medium Prism; seg line 1mm below geometric center
  - +2.00D add, no truncation
  - User Friendly
- Fit and seg position similar to Tangent Streak (BCR slightly flatter than "K"; seg line at lower pupil margin)

95  **Translating Designs  
Intermediate Need**

- Examples:
  - Elevations Trifocal (Tru-Form)
  - Triune (Tru-Form)
  - Mandell Seamless (ABB-Concise)
  - Tangent Streak (ABB)
  - Presbylite (Lens Dynamics)
  - EZ Eyes (Essilor)
  - Accent (Accu Lens)
  - ESsential Solutions (X-Cel)

- Modified Bifocal
- Over-Spectacles
- 

96  **Expert Progressive (Art Optical/Essilor)**97  **Design Order Sheet (DOS)**98  **TRANSLATING VISION PROBLEM-SOLVING**

- Excessive Rotation
- Lens Positions Too High
- No Lens Translation

99  **EXCESSIVE ROTATION**

- Flatten Base Curve Radius by 0.50D
- 
- Increase Prism 0.50PD

100  **LENS POSITIONS TOO HIGH**

- Increase Prism by 0.50PD
- Flatten BCR 0.50D

101  **NO LENS TRANSLATION**

- Flatten Base Curve by 0.50D
- Increase prism and/or truncation

102  **BLUR AT DISTANCE**

- Lens too high: Increase prism
- Lens too low: Increase OAD
- Seg Height is too high
- Excessive movement

103  **Superior Flare**

- Lens is too small
- Fit a larger lens to increase vertical height
- 

104  **BLUR AT NEAR**

Seg height too low  
 No translation  
 Patient drops head to read, not eyes  
 Excessive lens rotation

105  **PRESBYOPIC APPLICATIONS  
IN 2019**

- GP Lens Designs
- Scleral Lens Designs
- Post Refractive Surgery Designs
- Hybrid/Combination Designs

106  **Good Candidates for Scleral Multifocals (Woo, GSLS, 2015)**

- Patients with irregular corneas, desiring more freedom from glasses
- Patients with REGULAR corneas
  - Offering the best of both worlds: Great vision and great comfort
- Patients with dry eye symptoms
- Post refractive surgery patients (RK, LASIK, etc)
  - These patients never wanted to wear glasses anyway!
  - Usually more motivated!
- 

107  **Poor Candidates for Scleral Multifocals**

- Those with high/unreal expectations

- Patients with corneal scarring may have problems with glare/haloes/decreased vision
- Patients unwilling to learn a new modality of insertion and removal
- Patients who want to walk away with a multifocal TODAY

108  **Scleral Multifocal Designs**

- No translation required
- Most are concentric or aspheric designs
- Many scleral MF are center near, which have a similar design to other soft or GP designs
- Very customizable!
  - Changing diameter, base curve: no problem!
  - Some designs can adjust add power and zone size
  - Some designs available in toric or quadrant specific designs.

109  **So2Clear Multifocal Lens (Dakota Sciences/Art Optical)**

110

**PRESBYOPIC APPLICATIONS IN 2019**

- GP Lens Designs
- Scleral Lens Designs
- Post Refractive Surgery Designs
- Hybrid/Combination Designs

111  **POST-REFRACTIVE SURGERY MULTIFOCAL DESIGNS (Partial List)**

- Typically reverse geometry designs with add on the front surface
- LasikNear (Valley Contax)
- Art Optical – CLASIKcn
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112  **PRESBYOPIC APPLICATIONS IN 2019**

- GP Lens Designs
- Scleral Lens Designs
- Post Refractive Surgery Designs
- Hybrid/Combination Designs

113  **Patient Candidates for Hybrid Multifocals**

- Astigmatic presbyopes
- Soft multifocal patients with astigmatism
  - Great option since soft multifocals for astigmats is limited
- Soft toric monovision patients that want better vision
- Patients wanting to try the latest technology



114  **Built on the Duette™ Platform**115 116  **Available Parameters**117  **Skirt Determination – Ideal Fit**118  **ISSUES & CONTROVERSIES**

- THEY ARE NOT SUCCESSFUL
  - Numerous studies with 70 – 80+ success rate
  - With 56 different multifocal designs and 49 segmented translating designs (many with IM correction) they have to be successful (source: [www.gpli.info](http://www.gpli.info))
- THEY ARE UNCOMFORTABLE
  - Have been found to be more initially comfortable than spherical lenses
  - Use of a topical anesthetic
  - 
  -

119  **ISSUES & CONTROVERSIES**

- THEY ARE TOO EXPENSIVE
- Order warranted
- Utilize your CLMA member laboratory consultant
- Remember: there are many tools available

120  **RESOURCES**

- Your best resource is your laboratory consultant
- They can provide diagnostic fitting sets, online resources for the fitting and troubleshooting of their designs, and well as very good advice based upon extensive experience
- If possible, topographies and photos can be beneficial as well

121  **IN SUMMARY**

Presbyopes represent the greatest opportunity for contact lens practice growth