Course #

113

Simplified Soft Contact Lens
Multifocal Prescribing

SECO UNIVERSITY
Simplified SCL multifocal prescribing

Milton M. Hom, OD, FAAO, FAAAII
Diplomate, American Board of Optometry
eyemage@mminternet.com

Disclosures
Last 12 months:
- Allergan
- AMO
- Bausch/Valeant
- Alcon
- Cooper
- Shire

CL Multifocals
- Monovision
- Multifocals
- Bias/dominance
- Algorithm

Not All Presbyopes Are Alike

Not All Presbyopes Are Alike

Monovision

Awareness of Multi-Focal Contact Lenses

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Are Contact Lens Wearers Interested in Multi-Focal Lenses?

Are Contact Lens Wearers Interested in Multi-Focal Lenses?

- Best monovision patient is Emmetropes
- 85% rule: (CL considered successful 85%)
- Supplemental Specs (NV or DV)
- Multifocals should be first option
- New definition of monovision

Awareness 40-55y
Fewer than half familiar with CL MF

Not familiar with CL MF

Are Contact Lens Wearers Interested in Multi-Focal Lenses?

Are Contact Lens Wearers Interested in Multi-Focal Lenses?

CLOSE TO THREE QUARTERS INTERESTED

INTERESTED

VERY INTERESTED

NOT INTERESTED

INTERESTED

44%
30%
26%

44%
30%
26%

26%
30%
44%
“Prescription of bifocal CL is generally considered to be difficult and the success rate is low.”

“Only 17%...prescribed binocularly...Biasing...is more likely to increase success.”

Multifocals

<table>
<thead>
<tr>
<th>Multifocal</th>
<th>Monovision</th>
</tr>
</thead>
<tbody>
<tr>
<td>17% Empirical fit (Binocular)</td>
<td>35% Empirical fit</td>
</tr>
<tr>
<td>83% Bias (distance or near)</td>
<td>65% Bias (distance or near)</td>
</tr>
</tbody>
</table>

Multifocals

“Fitting a first time presbyopic correction with...MF lens required the same chair time as fitting...monovision”
Woods J. Woods CA. Fonn D. Comparison of the simplicity of completing an initial fit of symptomatic early presbyopes with monovision and an aspheric multifocal silicone hydrogel #80089 AAOpt 2008.

Rules

Three Rules:
Communicate
Communicate
Communicate

Four Things
They exist
They cost more
They work
They work really well

Intermediate VA better for MF
Near stereopsis better for MF
MF vision rated higher than monovision

Monovision: 3.3 ± 1.0 lenses
Multifocal: 3.3 ± 0.8 lenses
Woods J. Woods CA. Fonn D. Comparison of the simplicity of completing an initial fit of symptomatic early presbyopes with monovision and an aspheric multifocal silicone hydrogel #80089 AAOpt 2008.

It’s all about vision
Primary Multifocal Design Options:
- PureVision Multifocal (B&L)
- Air Optix Multifocal (Alcon/Ciba)
- Oasys for Presbyopia (Vistakon)
- Proclear EP, PC, PC Toric, Biofinity Multifocals (Cooper)
- Custom Multifocal Soft
- Custom Multifocal GP
- Hybrid Multifocals

Absence of Accommodation: Image clarity at different distances

Center near zone
Aspheric back surface
Aqua moisture system
3 add powers

Air Optix Aqua Multifocal
- Poor distance
- Add minus
- Poor near
- Add plus
In early presbyopes, Air Optix Aqua Multifocal (Ciba Fitting Nomogram) has an 86% success rate.

**DAILIES® AquaComfort Plus® Multifocal Contact Lenses**

**NEW DAILIES® AquaComfort Plus® Multifocal Contact Lenses**

- **Material**: Senofilcon A (OASYS™)
- **Base Curve**: 8.4mm
- **Diameter**: 14.3mm
- **Dk/t**: 147

**Oasys for Presbyopia**

- **Material**: Senofilcon A (OASYS™)
- **Base Curve**: 8.7
- **Center Thickness (mm)**: 0.09
- **Power Range**: ±3.5D
- **Add Power**: 1.50, 2.00, 2.50
- **Diameter**: 8.9mm
- **Base Curve**: 8.7
- **Center Thickness (mm)**: 0.09 - 0.04
- **Breakaway/Removal**: Spherical: daily wear / daily disposable
- **Pack Size**: 30, 60 lenses

**“Multizone Aspheric” Design**

- **Material**: Senofilcon A
- **Base Curve**: 8.4mm
- **Diameter**: 14.3mm
- **Dk/t**: 147

**Air Optix Aqua Multifocal**

- **Poor Distance**
  1. Add minus
  2. Reduce Add (Non-dom)

- **Poor Near**
  1. Add plus
  2. Reduce Add (Non-dom)

**74% success**

In 2 visits

**Oasys for Presbyopia (Fitting Nomogram) 74% success In 2 visits**

**“Unlike many other multifocal contact lenses, the Air Optix Aqua Multifocal lens’ Enhanced Vision Guide does not advise us to address distance problems by putting on a single-vision lens on one eye.”**


**“It is almost always possible to achieve good distance vision by changing to a lower ADD in moderate to advanced presbyopes”**

“It is so rare that distance vision is compromised with the LO ADD that no recommendation is offered for improving distance vision in these patients.”

Proclear EP

+1.00 Add
• Center distance
• Excellent for early presbyopia
• Excellent for modified monovision (“enhanced mono”)

Proclear EP

+1.25 Add
Fits like sphere
Center distance

Cooper Vision Multifocals
Balanced Progressive Technologies
• Proclear EP
• Proclear Multifocal and XR Multifocal
• Proclear Toric Multifocal
• Biofinity Multifocal
• Proclear 1 day MF

Proclear Multifocal

D = Distance center lens
N = Near center lens
Four adds: +1.00, +1.50, +2.00, +2.50 + XR

Proclear MF XR

<table>
<thead>
<tr>
<th>Water Content</th>
<th>BC</th>
<th>DIA</th>
<th>Sphere</th>
<th>ADD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proclear Multifocal</td>
<td>62%</td>
<td>8.7</td>
<td>14.4</td>
<td>+4.00 to -8.00 (0.25 steps) D and N lenses</td>
</tr>
<tr>
<td>Proclear Multifocal XR</td>
<td>59%</td>
<td>8.4</td>
<td>14.4</td>
<td>+4.25 to +20.00, -6.25 to -20.00 (0.50 steps after +/- 6.50) D and N lenses</td>
</tr>
</tbody>
</table>

The lens is a double slab off back toric with markings at 3 & 9 o’clock.
**Proclear MF Toric**

- Material: comfilcon A
- Wearing Schedule: Monthly/DW
- Water Content: 59%
- Diameter: 14.4
- Sphere Powers: +3.00 to -20.00 (±0.25 steps after +/- 6.50)
- Cylinder Powers: 0.00 to 0.75
- Axis: 5º around the clock
- Lens Design: D lens, N lens

**Biofinity Multifocal**

- Product specifications
  - Material: comfilcon A
  - Water content: 58%
  - Base curve: 8.6 mm
  - Diameter: 14.0 mm
  - Dk: 128
- Lens Design: D lens, N lens
  - Sphere power: +6.00D to –8.00D
  - ADD power: +1.00, +1.50, +2.00, +2.50
  - Handling tint: Sofblue™ visibility tint

**Biofinity Multifocal**

- Simple steps to increase success at the initial multifocal lens fitting visit

  **Step 1**
  - Confirm refraction and determine eye dominance.
  - Non-dominant eye: Choose lens with appropriate distance Rx.
  - Dominant eye: Choose lens with the recommended “near boost” power added to the distance Rx, per the patient’s ADD requirements.

  | Patient's ADD | Near boost | Sample refraction: +2.00 R, +1.00 L
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>+3.00 to +2.00</td>
<td>+0.25 L</td>
<td>+2.00 R, +0.75 L</td>
</tr>
<tr>
<td>+1.00 to +0.25</td>
<td>-0.75 D</td>
<td>+0.25 R, +0.25 L</td>
</tr>
<tr>
<td>-1.00 to -1.75</td>
<td>-1.25 D</td>
<td>+0.75 R, +0.75 L</td>
</tr>
<tr>
<td>-2.00 to -3.00</td>
<td>-2.50 D</td>
<td>+0.75 R, +1.00 L</td>
</tr>
</tbody>
</table>

  **Step 3**
  - Allow lenses to settle before accessing vision. If patient is satisfied with vision, dispense.

  **Optimisation**
  - To improve distance vision, perform over-refraction in +/– 0.25 D steps to eliminate eye under binocular conditions.
  - To improve near vision, perform over-refraction in +/– 0.25 D steps to non-dominant eye under binocular conditions.

**Sauflon 1 day MF**

- somofilcon A
- Center near
- +6.00 to -10.00
- One Add power
- Low up to +2.25
- High +2.25 to +3.00

**Custom Hydrogel Multifocals**

- Sphere, Cyl. (+/- 0.12D), Axis (1 degree)
- BC, TD, FG, CT, OZ (fitting nomograms based on corneal sagittal height)
- Designs: Aspheric (ant vs. post), Concentric (distance vs. near center), Translating, Combination designs, control over “zone sizes”
- Materials: hydrogels and now SiHy’s

**Custom Hydrogel Multifocals**

- Special Eyes
- Metro
- Visionary
- Geiex
- Unilens
- Westcon
- United
- Poyvue
- Blanchard
- Alden
Gas Permeable Multifocal CL's
- Premier Optics
- Proprietary and Custom Designs
- Aspheric (ant/post), Concentric, Translating*, Combination designs
- Ability to fit on irregular corneas (keratoconus, post surgical, etc.)

Gas Permeable Multifocal CL's
- Reclaim (Blanchard)
- Renovation (Art)
- Essential (Blanchard)
- Boston MultiVision (Polymer Tech.)
- Tangent Streak series (Fused)
- Solution & Essential Solution (X-Cel)
- Bi-Expert (Polymer Tech.)
- Rose K + front add
- RSS + Reclaim MF

Hybrid & Combination Multifocals
- SynergEyes Duette Progressive
- Figgyback GP/disposable systems

Available Parameters
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Curves</td>
<td>7.1mm to 8.3mm in 0.2mm steps</td>
</tr>
<tr>
<td>Skirt Curves</td>
<td>8.7 (flat), 8.4 (flat) and 8.1 (medium)</td>
</tr>
<tr>
<td>Lens Powers</td>
<td>+5.50D to -10.00D</td>
</tr>
<tr>
<td>Add Zone Size</td>
<td>3.0mm</td>
</tr>
<tr>
<td>Add Powers</td>
<td>+1.00D, +1.75D and +2.50D</td>
</tr>
</tbody>
</table>

How We Calculate the Empirical Order
- Base curve aligned as closely as possible to flat K
- 8.4 (Flat) skirt
- Lens power based on spherical component of the spectacle Rx
  - Account for tear lens (either + or -) created by GP center
  - We do not use the spherical equivalent

Fundamentals of Fitting Duette
The GP Dilemma
- GP’s historically deliver crisp, constant, superior vision compared to SCL’s
- GP fitters know that a consistently centered lens aligned with the flattest K would deliver the highest success
- Unfortunately corneal toricity defeats that goal
- As corneal toricity increases, the GP must be fit steeper than the flattest K to enhance centration...eventually demanding a back surface toric
- Centration frees us to always fit in alignment with the Flat K!

Fitting Multifocals

STEP #1 – PATIENT SELECTION
- Identify patient’s expectation
- Match visual needs and personal disposition
- Occupation / Avocation / Vision Demands
- Refractive Error considerations
- Ocular Surface & Tear film status
- Systemic and ocular health & medications
Multifocals

27% Poor distance vision
22% Poor near vision
17% Binocular (empirical fit)

Finn D, du Toit R, Situ P, Simpson T, Bayer S
Determination of lens prescription for monovision and Acuvue Bifocal contact lenses (poster) Optom Vis Sci 2000;77(s):160.

Establish Bias if needed:
“Mono-Plus/Mono-Minus”
(one eye bias distance one eye bias near)

Often you have to:
Establish Dominance

Dominance
Sighting dominance
Swinging-plus test
Near point of convergence
Occupational demands

Dominance
Sighting dominance

Dominance
Swinging-plus test
Hold +1.50 D trial lens over one eye
Walk around room
Most comfortable = near eye

Dominance

Dominance vs preference

Dominance

“VA is not improved when eye dominance is used...for selection”

Robboy MW Cox IA. Braimak P. Effects of sighting and sensory dominance on monovision high and low contrast acuity. JGL 1996;17:299-301.

Gromacki S. Monovision and bifocal CL. In: M. Horn A. Bruce eds. Manual CL Prescribing and Fitting 3e 2006;Elsevier

“Switching eye function can relieve...even the vaguest of symptoms”

Robboy MW Cox IA. Braimak P. Effects of sighting and sensory dominance on monovision high and low contrast acuity. JGL 1996;17:299-301.

Gromacki S. Monovision and bifocal CL. In: M. Horn A. Bruce eds. Manual CL Prescribing and Fitting 3e 2006;Elsevier
"If patients experience good distance vision, they will wear their lenses in.
If they don’t, they will carry their lenses in.”

"Light rays from near, mid-range and distance enter the pupil at the same time"
"The brain must learn to select the image it wants and filter out the other images"
"Best vision after the brain has learned to adjust (1-2 weeks)"

Rules
Golden rule

Rules
Four days
81 presbyopes
4 multifocals
(Acuvue BF, Focus Progressives, Proclear MF, SofLens MF)
4 days

Rules
Four days
At 4 days:
Differences stereopsis and near range of clear vision
Satisfaction, comfort, visual quality
Ghosting, halos decreased


CL MF questionnaire
70 CL experts
7 questions
Rated 0 to 5
Scored 0 to 100 (best)
eyemage@mminternet.com

CL MF questionnaire

Lighting conditions
Low contrast, Normal light 3 letter loss
High contrast, Low light 5.32 letter loss
Low contrast, Low light 6.1 letter loss
Sanders E, Wagner R, Reich LN. Binocular distance visual acuity in “balanced progressive” simultaneous vision bifocal contact lenses #078195 AAOpt 2007
**Procedure**

Over-refraction
Auto-refractor
Push plus
Dist/near/intermediate vision
Sit in front of computer
Change room illumination
Use loose trial lenses to refine
Dispense lenses
Follow-up 4 days

**Fitting matrix**

<table>
<thead>
<tr>
<th>Resultant</th>
<th>Air Optix MF</th>
<th>Oasys Presbyopia</th>
<th>Pure Vision 2 presbyopia</th>
</tr>
</thead>
</table>
| Poor Distance   | 1. Over-refraction
                 | 2. Lower Add     | Lo-SV (dist)            |
                 |               | Hi-Lower Add (dist) | Lo-SV (dist)
                 |               |                       | Hi-Lower Add (dist) |
| Poor Near       | 1. Add plus (near)
                 | 2. Increase Add (near) | Lo-Increase Add (near) |
                 |               |                        | Hi-Add Plus (near) |
| Poor Dist & Near| Over-refraction | N/A               | Over-refraction |

**Algorithm 4**

<table>
<thead>
<tr>
<th>Bias</th>
<th>Low Spect Add +1.00 +1.50</th>
<th>High Spect Add +1.75 +2.50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance</td>
<td>1. Proclear EP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Oasys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Any MF</td>
<td></td>
</tr>
<tr>
<td>Intermediate</td>
<td>Any aspheric MF</td>
<td>PV2 Presbyopia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Any aspheric MF</td>
</tr>
<tr>
<td>Near</td>
<td>1. PV2 Presbyopia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Biofinity MF/Freq 55/</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proclear</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Air Optix MF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(High Add) DACP MF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Synergics</td>
<td></td>
</tr>
<tr>
<td>Toric</td>
<td>1. Proclear toric MF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Custom designs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Monovision (MV)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Modified MV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. GP MF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Custom designs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Synergies</td>
<td></td>
</tr>
</tbody>
</table>

**Distance bias High Add**

- **Binocular Simultaneous**
  - PV2 Presbyopia
  - Air Optix Med Add/DACP MF

- **Monovision**
  - Biofinity MF D&N
  - Biofinity MF 2xD
  - Single Vision dist (modified MV)

**Pupils**

**Large pupils**
Distance compromise in center distance
Near compromise in center near

**Small pupils**
Distance compromise in center near

“Pupil sizes are important, especially in the relative extremes”
Davis RL, Eiden SB. A rational approach to fitting multifocal lenses. CL Spectrum 2010 Feb 96-45,47.
**Pupils**

<table>
<thead>
<tr>
<th>Bias</th>
<th>Distance bias</th>
<th>Near bias</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small 3mm or less</td>
<td>Distance center D&amp;N</td>
<td>2 x N Center near D&amp;N</td>
</tr>
<tr>
<td>Normal room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large 6mm or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal room</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Distance bias Large Pupil**

<table>
<thead>
<tr>
<th>Binocular Simultaneous</th>
<th>Monovision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision correction preference in presbyopes #93658 AAOpt 2009</td>
<td></td>
</tr>
<tr>
<td>PAL (Varilux Comfort) vs MF</td>
<td>11% preferred PAL</td>
</tr>
<tr>
<td>11% preferred MF</td>
<td>78% preferred both</td>
</tr>
</tbody>
</table>

27 subjects

PAL: stationary precise vision
MF: social and active activities

“Benefits of PALs and MF... [are] complimentary”

“Clinicians can better satisfy their presbyopic patient’s needs by prescribing both PALs and MF”

CLMFL’s work for 75-80% of the time
Over glasses sometimes needed
0.25 D change can be significant
Don’t over-minus
Bias low add
Use mixed adds

Tips

Thank you!

Milton M. Hom, OD, FAAO.
eyemage@mminternet.com