

Monovision Issues

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

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

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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ORIGINAL ARTICLE

Visual Performance of Subjects Wearing Presbyopic Contact Lenses

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ABSTRACT

Purpose: The purpose of this study is to assess the visual performance of subjects wearing gas-permeable (GP) contact lenses, soft bifocal contact lenses, GP monovision lenses and spectacles.

Methods: The study included 32 subjects between the ages of 42 and 65 years wearing GP monovision, Acuvue & Johnson bifocals, GP Essentials (Blanchard) multifocals, and progressive addition lenses (PAL); spectacles group were eight subjects in each of these groups who were already wearing these modalities. Binocular low (18%) (95%) contrast acuities were recorded using the Bailey-Lovie chart; binocular contrast sensitivity from 1.5 to

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

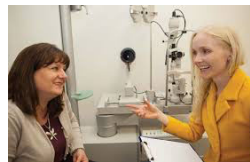
CL MULTIFOCALS DO NOT WORK . . . UNTIL YOU FIT THEM!

- 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

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)

Patient Selection and Communication



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.

Bennett E. Contact lens correction of presbyopia. *Clin Exp Optom* 2008; 91: 3: 265-278.

Be Enthusiastic!

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

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?

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

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

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

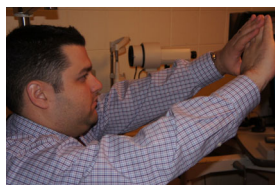
Adaptation/Len Changes

- 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."

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

Determining the Dominant Eye



Soft Multifocal Lenses

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)

Silicone Hydrogel Multifocals Definitive material (Contamac)

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

Daily Disposable Multifocals

	Dailies AC+	Dailies Total 1	1 day AV Moist	Biotrue for Presb.	Proclear 1 day MF	Clariti 1 day MF	NaturalVue MF 1 day
Manuf.	Alcon	Alcon	J&J	B+L	Cooper Vision	Cooper Vision	Visioneering Tech.
Lens Design	Center near	Center near	Center near	Center near	Center near	Center near	Center distance
Material	Hydrogel	SiHy	Hydrogel	Hydrogel	Hydrogel	SiHy	Hydrogel
Monthly counter-part	Air Optix MF	Air Optix MF		PV 2 for presbyopia & Ultra for presbyopia			
Add	Lo, Med, Hi	Lo, Med, Hi	Low, Mid, High	Low, High	One add up to +2.50	Low, High	One add up to +3

Fitting Tips

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



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

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



Fitting Tips

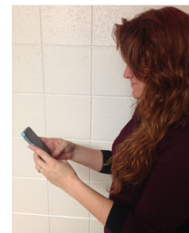
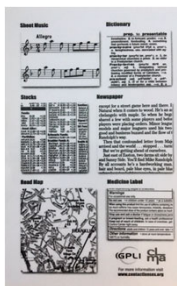
- Assess vision binocularly
- Over-refract monocularly with both eyes open
- Use everyday reading material
- Dispense trials
- Follow-up in 2 weeks-Allow the patient to adapt
- It is okay to have less than 20/20 VA



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Checking Near Vision

Use good illumination with real world materials



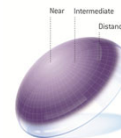
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Center Near Designs

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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



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Dailies Aquacomfort Plus Multifocal & Dailies Total 1 Multifocal



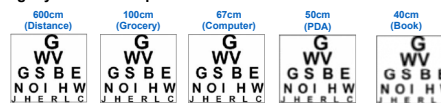
- Available in a 30 or 90 pack
- AC+ BCR 8.7/ Total 1 8.5
- Powers +6.00 to -10.00
- Material- Nelfilcon A (same as Dailies AC+) or Delefilcon A for Dailies Total 1

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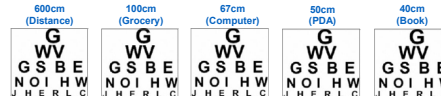
Innovation by Design

Courtesy of Alcon

Case 1A: Early Presbyope with Slightly Reduced Amplitude of Accommodation



Case 1B: Early Presbyope with Slightly Reduced AA + **LO ADD lens**



Visual Acuity Image Simulation using ZEISSNIH analysis image software

Courtesy of Alcon

Innovation by Design

Case 2A: Established Presbyope with Reduced Amplitude of Accommodation

600cm (Distance) 100cm (Grocery) 67cm (Computer) 50cm (PDA) 40cm (Book)

Case 2B: Established Presbyope with Reduced AA + MED ADD lens

600cm (Distance) 100cm (Grocery) 67cm (Computer) 50cm (PDA) 40cm (Book)

Courtesy of Alcon

Innovation by Design

Case 3A: Established Presbyope with Minimum Amplitude of Accommodation

600cm (Distance) 100cm (Grocery) 67cm (Computer) 50cm (PDA) 40cm (Book)

Case 3B: Established Presbyope with Minimum AA + HI ADD lens

600cm (Distance) 100cm (Grocery) 67cm (Computer) 50cm (PDA) 40cm (Book)

ZEMAX is a registered trademark of Zemax Development Corporation

FITTING GUIDELINES

AIR OPTIX AQUA MULTIFOCAL contact lenses

For crisp, clear vision at all distances, follow this simple process for more successful fits.

- Select initial lenses**
 - Determine vertex corrected, best minus/best plus, spherical equivalent distance Rx for power selection.
 - Determine spectacle add correction lens best ADD, do not over-correct.
 - Choose initial ADD (0, MED, HI) based on the chart to the right.
- Evaluate trial lenses**
 - Allow 5 to 10 minutes.
 - While lenses are settling, take patient from exam room to a real-world setting—hallway, dispensary room with outside view. Have patient look at a distant object, like a building or street sign. Always check vision under binocular conditions. Without occluders, perform monocular and binocular DISTANCE over-refraction using hand-held lenses or 0.25D step figures, using base-in prism until patient will accept at distance. Aim for maximum plus with maximum distance clarity.
 - If over-refraction is other than plano, go immediately to new trial lenses, keeping ADD power the same.
 - Check patient's near visual quality under normal viewing conditions, preferably with everyday materials—reads, magazine, cell phone.
 - If distance and near vision are satisfactory, dispense lenses and neutral patient to use good light when reading fine print. Let them experience the lenses in their natural environment.

Consider dispensing diagnostic lenses—it is highly recommended that further procedures for enhancing vision NCD be performed until the patient has experienced "real world" vision for approximately one to two weeks.

ENHANCED VISION GUIDE

AIR OPTIX AQUA MULTIFOCAL contact lenses

Near Vision Enhancement

Distance Rx eyes with greatest PLUS ACCEPTANCE (see Step A and Step B below) by adding +1.25 spherical lens. Best plus acceptance will occur when the distance Rx lens over-corrects. Consider the eye for which binocular vision from best with the +1.25 is the most distant eye.

Step A: Add the greatest distance Rx over-add with +0.25 over the near distance eye to determine if near vision is acceptable and distance vision is still acceptable.

Step B: If near vision is still satisfactory, adjust ADD as determined by adding the distance power by +0.25.

Step A: Place a new trial lens with the same ADD as the eye.

Step B: If near vision is still satisfactory, adjust ADD as determined by adding the distance power by +0.25.

Distance Rx	Distance ADD	Distance Rx	Distance ADD	Distance Rx	Distance ADD
-1.00 to -2.00	+1.25	-1.00 to -2.00	+1.25	-1.00 to -2.00	+1.25
+1.00 to +2.00	+1.25	+1.00 to +2.00	+1.25	+1.00 to +2.00	+1.25

Distance Vision Enhancement

If distance over-refraction did not improve distance visual acuity, see chart to the right.

Distance Rx	Distance ADD	Distance Rx	Distance ADD	Distance Rx	Distance ADD
-1.00 to -2.00	+1.25	-1.00 to -2.00	+1.25	-1.00 to -2.00	+1.25
+1.00 to +2.00	+1.25	+1.00 to +2.00	+1.25	+1.00 to +2.00	+1.25

AIR OPTIX AQUA MULTIFOCAL contact lenses

Product Information: [www.alcon.com](#)

For further information, or if the visual result is still not satisfactory, please call our toll-free number at 1-800-941-7948 for additional support.

Visit [alcon.com](#) for more details.

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ALCON MULTIFOCAL PORTFOLIO FITTING GUIDE

STEP 1: INITIAL LENS FIT

Start with a new spectacle Rx to begin the Alcon Multifocal contact lens fit or refit in a different Alcon Multifocal lens material.

Determine initial contact lens power using vertex-corrected, most PLUS, spherical equivalent distance Rx, then add +0.25D for each eye.

Determine the lowest acceptable spectacle ADD, then select the contact lens ADD (0, MED, HI) using this chart.

Allow for 5-10 minutes of real-world exposure (outside the exam room) before assessing visual performance.

STEP 2: DISTANCE OVER-REFRACTION

With both eyes open, use hand-held lenses to perform distance over-refraction on each eye separately, by adding plus in 0.25D steps until patient reports decline in distance vision. Verify results binocularly by having the patient look at distance and near objects through the hand-held lenses.

Apply new lenses based on the over-refraction (keeping the ADD the same), if needed.

If vision is functional, dispense trial lenses for a 5-7 day real-world evaluation and schedule a follow-up visit.

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Air Optix Multifocal Rx -2.75 Add +2.00 OD Dominant Eye
Initial Trial lens selection

Air Optix Multifocal Poor distance vision
Step 1

Air Optix Multifocal
 Poor distance vision
 Step 2

The image shows two eye diagrams. The left diagram has a blue circle over the center of the eye with the text '-2.50 Add Lo'. The right diagram has a blue circle over the center of the eye with the text '-2.50 Add Med'.

Air Optix Multifocal
 Poor Near Vision
 Step 1

The image shows two eye diagrams. The left diagram has a blue circle over the center of the eye with the text '-2.50 Add Med'. The right diagram has a blue circle over the center of the eye with the text '-2.00 Add Med'.

Air Optix Multifocal
 Poor Near Vision
 Step 2

The image shows two eye diagrams. The left diagram has a blue circle over the center of the eye with the text '-2.50 Add Med'. The right diagram has a blue circle over the center of the eye with the text '-2.50 Add Hi'.

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

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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

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PureVision 2 for Presbyopia

Next-generation 3-Zone Progressive™ Design
 For clarity where it counts—in the real world.

The diagram shows a cross-section of a lens with three zones: 'Near' (center), 'Intermediate' (middle), and 'Distance' (periphery). Text descriptions for each zone are provided. The 'Near' zone is described as having more add power across the center. The 'Intermediate' zone is described as a wider zone where add power gradually transitions to an accurate distance power. The 'Distance' zone is described as optimized for a more natural visual experience.

From Bausch + Lomb

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How to fit NEW PureVision² For Presbyopia

Designed for improved near and intermediate vision while continuing to provide excellent distance vision** and exceptional comfort.

Key Features:

- SPECIFIC ADD: BOTH EYES
- +0.75 to +1.50D Low Add
- +1.75 to +2.50D High Add

Select Initial Lenses:

- Select specific addition and Add power
- Determine specific distance for distance vision
- Select lens addition and specific lens design (distance correction) from specific Rx, adjusted for vertex distance if necessary
- Choose the lens based upon the above selection and when Add power

Suggested Patient Criteria:

- Good distance and intermediate vision
- Refractive adaptation to greater than 100D

Evaluate Initial Lenses:

- Allow trial lenses to equilibrate for at least 10 minutes before assessing fit and vision
- Evaluate distance and near vision thoroughly in normal wear conditions
- Vision at distance and near are satisfactory; distance lenses and schedule follow-up exam within 12 weeks

To Refine Near Vision:

If patient is wearing low Add lenses:

	DOMINANT EYE	NON-DOMINANT EYE
INITIAL LENS	Low Add	Low Add
REFINEMENT 1	Low Add	PureVision ² For Presbyopia Full Add

If patient is wearing low High Add lenses:

	DOMINANT EYE	NON-DOMINANT EYE
INITIAL LENS	High Add	High Add
REFINEMENT 1	High Add	Add +0.25D to the non-dominant eye

To Refine Distance Vision:

If patient is wearing low Add lenses:

	DOMINANT EYE	NON-DOMINANT EYE
INITIAL LENS	Low Add	Low Add
REFINEMENT 1	Low Add	PureVision ² For Presbyopia Full Add

If patient is wearing low High Add lenses:

	DOMINANT EYE	NON-DOMINANT EYE
INITIAL LENS	High Add	High Add
REFINEMENT 1	High Add	High Add

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PureVision 2 for Presbyopia

Rx -2.50 Add +2.00 OD Dominant Eye
Initial Trial lens selection

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

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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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Clariti 1 Day Multifocal

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

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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

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1 day Acuvue Moist Multifocal

For the best balance of distance and near vision			For patients requesting an enhancement for distance vision or near vision		
ADD	EYE	LENS SELECTION	ENHANCED DISTANCE VISION	ENHANCED NEAR VISION	
+0.75D to +1.25D	Dominant Eye	LOW	1-DAY ACUVUE® MOIST Brand SPHERE	LOW	
	Non-dominant Eye	LOW		LOW	
+1.50D to +1.75D	Dominant Eye	MID		MID	
	Non-dominant Eye	MID		MID	
+2.00D to +2.50D	Dominant Eye	HIGH		HIGH	
	Non-dominant Eye	HIGH		HIGH	

Allow for 10 minutes of real-world exposure (outside of the exam room) before assessing visual performance.

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

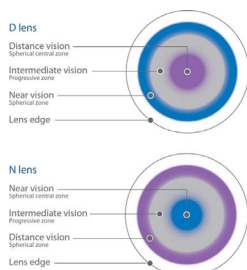
Center Distance Designs

*Center Distance Designs also used for Myopia Control

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

Biofinity Multifocal Design



Courtesy of CooperVision

Biofinity Fitting Guide

Biofinity® multifocal lens fitting guidelines

A simplified fitting philosophy

Our user fitting process is based on eye care professionals' real-world experience.

• Fits lens brand ADD powers in those similar to ones typically used in real-world practice.

• Fitting higher ADD powers continues to be flexible, giving you more options for exceptional vision performance.

Initial visit

Step 1: Start with a new refraction and verification of eye distance fitting technique.

Step 2: Check for obvious contraindications to contact lens wear and determine correction for the entire distance.

ADD	Distance eye	Near correction eye	Visual acuity expectations when using D and N lens combination
+1.00	D	D	20/20
+1.50	D	D	20/20
+2.00	D	N	20/20
+2.50	D	N	20/20

Step 3: Although the lens will optimize acuity, allow patients to adapt to lens for a minimum of 15 minutes when wearing the lens. Observe patient's visual performance and determine if the lens is the best fit for the patient's needs.

Step 4: If the patient is not satisfied with the lens, check for contraindications to contact lens wear and determine if the lens is the best fit for the patient's needs.

Checklist

Checklist Item: Provide maximum eye power for Distance vision. Not sufficient near correction with the lens.

Checklist Item: Check the lens ADD power when possible. Not sufficient near correction with the lens.

Checklist Item: Check real-world vision with the lens.

Fitting Steps

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

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

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

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: ± 20 , BCR 8.7
 - Adds +1.00 to +4.00 in 0.50D steps
- Proclear MF Toric: ± 20 , -0.75 to -5.75 cyl in 5 degree steps, +1.00 to +4.00 Adds
- Online calculator or call consultants

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

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

Acuvue Oasys Add Selection

Initial CL Add	Spectacle Add
Low add	$\leq +1.25$
Mid	+1.50 to +1.75
Mid dominant eye, High nondominant eye	+2.00 to +2.50

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Acuvue Oasys for Presbyopia



Add power	First pair Dominant eye	First pair Non-dominant eye	Near complaint Dom eye	Near complaint ND eye	Distance complaint Dom eye	Distance complaint ND eye
+0.75-+1.25	Low	Low	Low	Mid	Sphere only	Low
+1.50-+1.75	Mid	Mid	Mid	Mid + 0.25 to sphere	Low	Mid
+2.00-+2.50	Mid	High	Mid	High +0.25 to sphere	Mid	Mid +0.25 to sphere

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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

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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

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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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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

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Gas Permeable Bifocals/Multifocals

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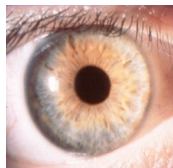
RULE OF THREE'S

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

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PRE-FIT FACTORS

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



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DESIGNS IN COMMON USE

- Aspheric Multifocal
- Concentric/Annular
- Translating Segmented

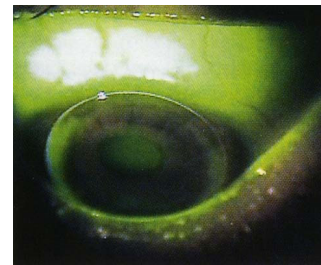
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Aspheric Advancements

- 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???

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Aspheric Translation



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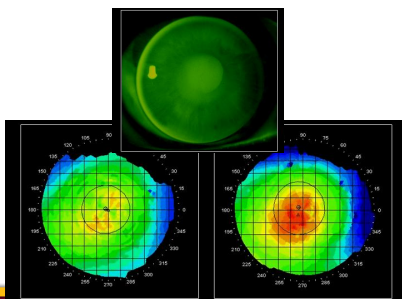
Aspheric Candidates

- 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

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

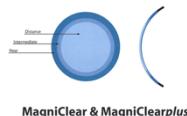
Topographic Changes with Posterior Aspheric Lens Designs



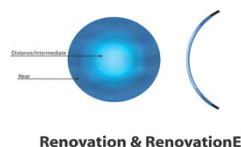
FRONT SURFACE ASPHERIC MULTIFOCAL DESIGNS

- 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)

Front Surface Technology



Front Surface Technology



'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

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 !!!!!!!!



ASPHERIC TROUBLESHOOTING

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

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)

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

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





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

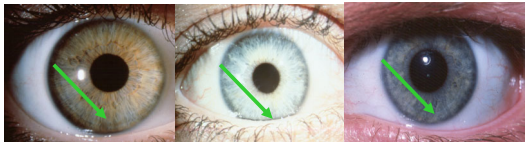


FITTING NUGGETS


- 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

Lid Position




Optimal Okay ???



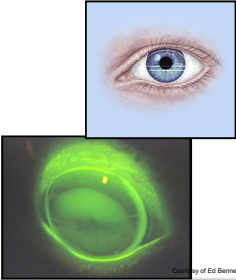

SOLUTIONS (X-CEL)

- 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)






Translating Designs Intermediate Need

- Examples:
 - Elevations Trifocal (Tru-Form)
 - Triune (Tru-Form)
 - Mandell Seamless (ABB-Concise)
 - Tangent Streak (ABB)
 - Presbylite (Lens Dynamics)
 - EZeyes (essilor)
 - Accent (Accu Lens)
 - ESSential Solutions (X-Cel)
- Modified Bifocal
- Over-Spectacles

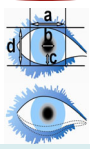



Expert Progressive (Art Optical/Essilor)

Account #:		Email:		
RIGHT EYE		Distance Rx Recent and optimized	LEFT EYE	
Reading Add		K readings		
Flat K	Axis	Flat K	Axis	
Steep K	Axis	Steep K	Axis	
				
Pupillary distance (PD)		Height from bottom of pupil to top of lower lid (mm)		
Pupil diameter (D)		Corneal diameter (C)		
Lower lid can be at limbus (best)		Lower lid can be at limbus (best)		
Lower lid can be above limbus (mark by + mm)		Lower lid can be above limbus (mark by + mm)		
Lower lid can be below limbus (mark by - mm; least ideal position)		Lower lid can be below limbus (mark by - mm; least ideal position)		



Design Order Sheet (DOS)

Right Eye		Left Eye
-1.50 -0.75 cx 05	Distance Rx	-1.50 -1.00 cx 180
+2.00D	Reading Add	+2.00D
44.00 / 45.00 @ 095	K-readings	43.50 / 45.00 @ 098
a) RVID		a) RVID
b) Pupil diameter		b) Pupil diameter
c) Lower lid height to lower pupil		c) Lower lid height to lower pupil
d) Palpebral fissure width		d) Palpebral fissure width
Lid position		Lid position
Tight, average, loose	Lid tonicity	Tight, average, loose

TRANSLATING VISION PROBLEM-SOLVING

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

EXCESSIVE ROTATION

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

LENS POSITIONS TOO HIGH

- Increase Prism by 0.50PD
- Flatten BCR 0.50D

NO LENS TRANSLATION

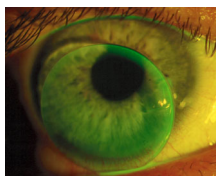
- Flatten Base Curve by 0.50D
- Increase prism and/or truncation

BLUR AT DISTANCE

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

Superior Flare

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



BLUR AT NEAR

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

PRESBYOPIC APPLICATIONS IN 2019

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

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!



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

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.

So₂Clear Multifocal Lens (Dakota Sciences/Art Optical)

Center Near, Front

Aspheric Allows for Vision at all distances. Strength of add and size of add are customizable to the individual patient.

Center Add Power +3.50
Add Zone = 2.25 mm

Center Add Power +1.88
Add Zone = 1.50 mm

PRESBYOPIC APPLICATIONS IN 2019

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

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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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PRESBYOPIC APPLICATIONS IN 2019

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

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Patient Candidates for Hybrid Multifocals

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

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Built on the Duette™ Platform

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Progressive GP Vision & Soft Lens Comfort **NEW in 2014**

3mm aspheric center near add zone: +1.00, +1.75 and +2.50 powers available

distance asphere
GP/soft skirt junction
SiHy soft skirt
7.0mm posterior optic zone
8.5mm GP diameter
0.75mm

*Utilizes entire posterior optic zone to distribute and support the weight of the lens.

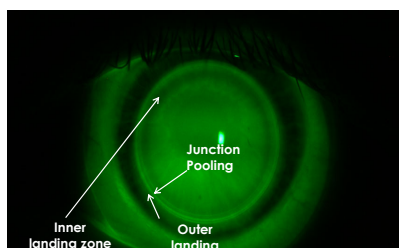
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Available Parameters

Base Curves	7.1mm to 8.3mm in 0.2mm steps
Skirt Curves	8.7 (flat2), 8.4 (flat) and 8.1 (medium)
Lens Powers	+5.50D to -10.00D
Add Zone Size	3.0mm
Add Powers	+1.00D, +1.75D and +2.50D

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Skirt Determination – Ideal Fit



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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)
- **THEY ARE UNCOMFORTABLE**
 - Have been found to be more initially comfortable than spherical lenses
 - Use of a topical anesthetic

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ISSUES & CONTROVERSIES

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

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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

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IN SUMMARY

Presbyopes represent the greatest
opportunity for contact lens practice
growth