Jason R. Miller, OD, MBA, FAAO

Innovations in Contact Lenses
What is the Primary Reason for Contact Lens Dropouts?

1. Non-Compliance
2. Discomfort
3. Allergies
4. Presbyopia
Agenda

- Multifocal Contact Lenses
- Daily Disposable Lenses
- Kids and Contact Lenses
- Maximizing Comfort
- Practice Management Pearls and
- Case Studies along the way
Global Patient Concerns

• 130 million contact lens wearers worldwide
• Every year we lose from 13 to 22 million patients
• What do most patients want?
  - All-day comfort
  - Convenience
  - Sharp, stable vision
• Patients expect safety
Facts!

- Lots of New CL Wearers Annually

- Lots of Dropouts Annually
  - Discomfort = Primary Reason
  - Presbyopia = 2\textsuperscript{nd} Biggest Reason
Presbyopic Contact Lenses
Opportunity is Knocking!!

• **Survey of 500 presbyopic patients¹**

  • *Only 8%* of current CL wearers reported being *told about multifocal CLs* when first complaining about their near vision

  • *33%* of respondents indicated they would likely *seek services of another practitioner* if their current practitioner did not inform them of multifocal options

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What’s Stopping You?

- “There’s not much $$ in multifocal contact lenses.”
- “It is too difficult to make the patient happy.”
London Business School Study

- Mark Ritson, PhD., marketing professor
- Which Patients Are More Profitable?
- Lifetime Value of Spectacle Wearers versus Lifetime Value of Contact Lens Wearers:
  - How much is spent?
  - How often?
  - How long?
- Analyzed Net Revenue.
CL patients are 60% more profitable than spectacle only wearers.
Spectacle wearers = Higher initial profit.
CL patients = ↑Frequency of eye exams.
Many contact lens patients also buy spectacles.
“We realized that much of the optical industry is ironically very myopic.”
Lost CL Patient = Lost Revenue
Consider This:

- The Presbyope is the **greatest source** of potential revenue in ECP practice.
- How many presbyopic contact lens patients **do not** have spectacles?
- How many presbyopes make their family’s practitioner choices?
Which Patients Do You Target?

- How do you choose who to fit with Multifocal SCL’s?
  - a. Those who request them and will pay my fitting fee
  - b. Only ideal candidates for them; talk everyone else out of them
  - c. I proactively discuss with everyone
Be Proactive and Be Rewarded!

- 50% of my patients are emerging to full presbyopes: **Refits generate $$$**
- Strong opportunity to capture emmetropic or low hyperopic presbyopes who desire to “lose” their reading glasses for social wear or sports: **Part-time wear is an attractive option!**
- Contact lens exams generate consistent and steady revenue!
When Do You Start?

• At what age do you transition to Multifocal SCL’s?
  a. Age 42, usually prior to any near symptoms
  b. Early Presbyopia, usually 43-47, when patients start complaining about their near vision
  c. Mid-Presbyopia, usually 48-52, when near symptoms become worse
  d. Advanced Presbyopia, usually >52 year old
(Why Not?) Start ‘Em Early!

- Smoother visual adaptation due to less asphericity in lower add requirements
- Reduces the frustration level and lessens the dropout rate
- Corresponds with their adaptation to progressive spectacles; many times the CL adaptation is easier!
- Leads to enthusiastic referrals
What Is Your Approach?

- What is your primary (or initial) contact lens fitting technique for presbyopes?
  a. Monovision
  b. Distance SV with over-readers
  c. Multifocal contact lenses
  d. Some other Combination (ie. Multifocal lens in 1 eye and SV in other eye)
Which is better...?
Monovision vs. Multifocal SCLs

- Richdale et al (2005)¹
  - Crossover study comparing multifocal (B&L SofLens® Multi-Focal contact lenses) and monovision (SofLens® 59) correction
    - 76% preferred multifocal to monovision correction
    - After 1 year, 60% of those in multifocal SCLs still wearing at least 3 days/wk., while none of monovision wearers were

- Benjamin (2007)²
  - Compared Proclear® Multifocal to Proclear® spherical lens monovision
  - Subjects preferred multifocals to monovision 2.28 to 1

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SofLens is trademark of Bausch & Lomb, Inc.
Proclear is a trademark of CooperVision, Inc.
Patient Selection

- Ideal Candidates
  - Current soft lens wearers with emerging presbyopia
  - Patients in monovision or monovision drop-outs
  - *Single vision contact lens wearers using reading glasses
  - *Patients dissatisfied with spectacle multifocals
  - First-time contact lens wearers, Type A personality / Engineer?
Setting Expectations

- Whether through glasses or contact lenses, switching focus will not be quite as smooth and seamless as it was a few years ago 😞
- “Correcting presbyopia through contact lenses will allow you to perform about 90% of your visual tasks without glasses. Auxiliary eyewear may be necessary for certain tasks”
- We “customize” the vision for the distances which are most consistently required and critical for your everyday needs and, if we have to “compromise”, we do so for the least important or frequent tasks.
Listen to your patient needs!
Check Your Ego At The Door!

Multifocal Man
Contact Lens Usage Drops Off Dramatically With Age

Contact Lens Usage by Age

Vision corrected population
Contact lens wearers percentage of population

% of Population

25-29: 45 [Contact lens usage]
30-34: 24
35-39: 24
40-44: 22
45-49: 19
50-54: 15
55-59: 12
60+: 3
Refine, Refit or Refund?

- On average, how many follow-up visits does it take to fit Multifocal CL’s?
  a. 0, No follow-up visits needed
  b. 1-2
  c. 3-4
  d. >4 or more
It's not very difficult to figure out when to fit multifocal lenses, it is hardest to decide when to stop fitting multifocal lenses...
Understanding the design and Fitting guide are the keys to success with multifocal contact lenses.
Multifocal Designs

- Translating
  - Segmented
- Simultaneous
  - Concentric
  - Aspheric
Aspheric / AspherCentric

- Design delivers near, intermediate and distance prescriptions at the same time.
- Seeks to provide the most natural vision experience.
- **Gradual change** between viewing zones vs. the “jump” between zones seen with previous designs.
- Can be used in conjunction with the concentric design (**AspherCentric**).
Pupil Size and Design
Pupil Size and Design

- Important for trouble-shooting:
- Too large a pupil will not constrict enough to gain good near vision (if Center-Near Design)
- Too small a pupil may diminish distance vision (if Center-Near Design)
Fitting Tip For Success

Assess vision using real world targets and lighting
### Beth (Pharma Rep), 50 yo NP

<table>
<thead>
<tr>
<th>Chief Complaint</th>
<th>Unhappy with current CL’s. Comfort just ok and vision unstable. Is only wearing CL’s part-time (toric mono)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Previous CL Rx</strong></td>
<td><strong>OD:</strong> Biofinity Toric 8.7 -3.50-0.75x010</td>
</tr>
<tr>
<td></td>
<td>D: 20/25- N: 20/60-2</td>
</tr>
<tr>
<td></td>
<td><strong>OS:</strong> Biofinity Toric 8.7 -1.75-0.75x150</td>
</tr>
<tr>
<td></td>
<td>D: 20/60 N: 20/30-2</td>
</tr>
<tr>
<td></td>
<td>Over-Refraction: no improvement OD w/ flippers</td>
</tr>
<tr>
<td><strong>Manifest Refraction</strong></td>
<td><strong>OD:</strong> -3.75-0.25x014</td>
</tr>
<tr>
<td></td>
<td>D: 20/15</td>
</tr>
<tr>
<td></td>
<td><strong>OS:</strong> -3.25-0.75x149</td>
</tr>
<tr>
<td></td>
<td>D: 20/15</td>
</tr>
<tr>
<td></td>
<td><strong>ADD:</strong> +2.00</td>
</tr>
<tr>
<td></td>
<td>N: 20/20 OU</td>
</tr>
<tr>
<td><strong>Dominance</strong></td>
<td>R eye dominant with +2.00 Fog</td>
</tr>
<tr>
<td><strong>Pre-Fitting Conference (PFC)</strong></td>
<td>Demonstrated cylinder to patient and some improvement in crispness – not a huge difference.</td>
</tr>
<tr>
<td></td>
<td>Discussed New Designs.</td>
</tr>
<tr>
<td><strong>Diagnostic CL Fit</strong></td>
<td>??</td>
</tr>
</tbody>
</table>
You are an excellent candidate for multifocal contact lenses!
Options:

1. Discontinue CL’s and Rx Spectacles.
2. Continue with Current Rx – Add Over-Readers.
3. Slight Monovision or Modified Monovision.
4. Modified Multifocal.
5. Multifocal CL’s.
Beth (Pharma Rep), 50 yo PP

- 1-week post-dispense progress visit:
  - Vision and comfort pretty good, improved near.  
    OD: D: 20/20-  N: 20/30-  
    OS: D: 20/25  N: 20/30+2  
    OU: D: 20/20  N: 20/25  
  - Good centration, coverage and mvmt OU  
  - No change with over-refraction

- Final CL Rx:
  - OD: Air Optix MF  
    8.6 -3.75 / Med Add  
  - OS: Air Optix MF  
    8.6 -3.25 / Med Add
Why Choose a Specific Design?

1. Flexibility with Design and Power Ranges!
2. Comfort!
Finally:

3. Be Familiar with all the Designs
Achievements

- Improved self-perception.
- Patient’s feel and looks younger.
- Increased self-esteem.
- Freedom from reading glasses.
- Increased patient expectations
- Increased loyalty
- Increased practice profitability
- Increased referrals
Daily Disposables
A 2008 U.S. Market Snapshot

A 2011 U.S. Market Snapshot

The contact lens market is shifting to one-day and one-month replacement.

**Dollar Market Share by SCL Modality**

- **DAILY**
- **2-WEEK**
- **MONTHLY**

Source: Based on third party industry report, January 2008 to October 2011; Alcon data on file.
Let’s Look At Your Practice

What percentage of your patients wear daily disposable contact lenses?

a. <10%
b. 10-20%
c. 20-30%
d. >30%
Noteworthy:

- 34% of worldwide soft contact lens revenue
- 35% of contact lens sales in Europe
- 55% of contact lens sales in Asia
Rate This Question

How important is compliance of a lens modality in determining whether you prescribe the lens?

a. Not important at all
b. Somewhat important
c. Big impact on which lens I prescribe
Risk Assessment:

- 3 in 5 contact lens wearers do not wash their hands prior to handling the lenses.
- 1 in 5 people don’t use fresh solution every time they store their lenses.
- 2 in 5 people have put their contact lenses in their mouth to clean them.
- 7 in 10 contact lens wearers admit to swimming in their lenses.

Daily and monthly replacement yields higher patient compliance than 2-week replacement.

<table>
<thead>
<tr>
<th>% of patients who are compliant with MRRF*</th>
<th>One-day replacement lenses</th>
<th>One-month replacement SiHy lenses</th>
<th>2-week replacement SiHy lenses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>88%</td>
<td>72%</td>
<td>48%</td>
</tr>
</tbody>
</table>

Note: Compliance with manufacturer-recommended replacement frequency (MRRF) based on a survey of 1,654 contact lens wearers in the U.S. Wearers of daily disposable and monthly replacement lenses and non-SiHy daily disposable lenses represented. Corrected for optometrist recommendation.

References:
“What is the primary reason you wear your lenses longer than recommended?”

- **51%** Forget day to replace
- **26%** To save money
- **11%** Lack of time
- **9%** No harm
- **3%** ECP said OK

Increased **compliance** can have a profound effect on your practice

- Prescribing replacement schedules with greater compliance may result in:
  - More frequent examinations
  - Increased professional fee revenue
  - Increased optical revenue
  - Greater contact lens product revenue
  - Greater patient loyalty and control

*Compliance with manufacturer recommended replacement frequency*
# Impact of Reducing Interval Between Contact Lens Exams

<table>
<thead>
<tr>
<th>Practice Gross Revenue</th>
<th>$500,000</th>
<th>$750,000</th>
<th>$1,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Exams Performed – Annually</td>
<td>1,700</td>
<td>2,550</td>
<td>3,400</td>
</tr>
<tr>
<td>Months between contact lens exams</td>
<td>Contact Lens Exams – Annually</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 months – National Average</td>
<td>510</td>
<td>765</td>
<td>1,020</td>
</tr>
<tr>
<td>17</td>
<td>540</td>
<td>810</td>
<td>1,080</td>
</tr>
<tr>
<td>16</td>
<td>574</td>
<td>861</td>
<td>1,148</td>
</tr>
<tr>
<td>15</td>
<td>612</td>
<td>918</td>
<td>1,224</td>
</tr>
<tr>
<td>14</td>
<td>656</td>
<td>984</td>
<td>1,312</td>
</tr>
</tbody>
</table>

Reducing the average interval between contact lens exams from 18 months to 16 months results in a 12.5% increase in the number of exams performed each year from existing wearer base.

Reference: MBA Best Practices of Contact Lens Management, March 2010
Case 1: Subjective

- 23 YO Male
- Wearing a two week replacement Silicone Hydrogel for past 3 years; current pair is 6 months old
  -2.00D/8.4 BC  20/30
  -2.00D/8.4 BC  20/30
- Wears contact lenses “all the time” but claims not overnight
- Replaces lenses “whenever they bother me”; buys two boxes at a time
- Generic Multi-Purpose Disinfecting Solution
- Seasonal and cat allergies. Eyes itch some of the time. Some light sensitivity-has to wear sunglasses outside.
- No oral or ocular meds
Case 1: Objective

- Over-refraction
  - 0.50 20/20-2
  - 0.50 20/20-2
- SLE c CL: some non-wetting areas & front surface deposits; just perceptible movement in primary gaze
- Manifest Refraction:
  - -2.50 DS 20/20-2
  - -2.50 DS 20/20-2
- SLE s CL: diffuse SPK OU c NaFl
- Diffuse conjunctival injection: Grade 2 OU
- Tarsal conjunctiva: Grade 1+ redness and roughness
Grade 2 Bulbar Conjunctival Injection
Lens Deposits & Non-Wetting
Grade 1 CLPC
Grade 1 CLPC
Grade 2 Diffuse SPK Corneal Staining
Assessments

- Patient non-compliant
- Simple Myopia
- Diffuse SPK OU: Possible reaction to Generic Multi-Purpose Disinfecting Solution
- CLPC O.U.
- Current contact lenses do not meet patient’s lifestyle or ocular health requirements
What are the potential ocular health benefits to wearing daily disposables?

What prevents you from prescribing more daily disposables?

How do you present daily disposables to a potential patient?
Kids and Contact Lenses
What Do You Think?

What's the minimum age you think children should be routinely fit with ELECTIVE contact lenses?

a. > 8 years old
b. > 10 years old
c. > 12 years old
d. when mature enough
Time for I/R Training

![Bar Graph]

- **Proportion** vs **Time (minutes)**

  - **Children**
  - **Teens**

  - Time categories: 0-20, 20-40, 40-60, 60-80, 80-100, 100-120, 120-140, 140-160, >160
Does this Matter?
Do you think that kids who consistently lose or break their glasses should be fit with contact lenses?
Medication

Should eye care practitioners use proparacaine on kids?
Case Study: Anisometropic Child

A 5-year-old presents with emmetropia in one eye and +5.00 (otherwise healthy) in the other. The child refuse to wear glasses and comply with patching. What would you choose?
Primary Patient Concern = Comfort

- Comfort
- Convenience
- Good Vision
- Safe
- Recommended
Reasons For Dropout

51% discomfort

Silent Sufferers

- Frustrated
- Lose confidence
- Stop referring other patients
- Leave the practice
- Lost growth opportunity
Dry Eye is More Prevalent in Contact Lens Wearers

- **Contact Lens Dryness Studies**
  - 52% CL / 24% Spectacle Wearers
    - Nichols (2005)
  - 43% CL / 15% Spectacle Wearers
    - Guillon (2002)
### Studies on Dry Eye Symptoms and Contact Lens Wear

<table>
<thead>
<tr>
<th>Study</th>
<th>Size</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doughty, et al (1997)</td>
<td>3285</td>
<td>50%</td>
</tr>
<tr>
<td>Brennan, et al (1989)</td>
<td>104</td>
<td>75%</td>
</tr>
</tbody>
</table>
Comfort is the Issue

How do we solve the problem?
What Variables Affect Comfort?

**Comfort Equation**

\[ \text{Comfort} = f(\text{ocular surface health}) \times f(\text{lens material and lens design}) \times f(\text{care system and compliance}) \]
The Importance of Surface Wetting

- A wet lens surface can increase tear film spreading, stability, and lubrication
- A wet lens surface can decrease friction, which can increase comfort
- A wet lens surface can positively impact visual acuity

Photos courtesy of Christine Sindt, OD
Soft lenses with a hydrophobic backbone start out with hydrophilic sites on the lens surface.

Figure 1. Orientation of hydrophilic sites in a lens in an aqueous environment.

As the tearfilm breaks up, hydrophobic-backbone starts at in with hydrophilic sites in a hydrophobic, non-wettable surface.

Figure 2. Orientation of hydrophilic sites in a dry environment.

Contact Lens Wetting and Lubrication Strategies

- **Internal Wetting Agent**
- **Packaging Solutions**
- **Emergent Macromolecules**
- **Surface-Locked Macromolecules**
- **Tailored Hydrophilic Sidechains**
- **Biomimicry**
- **Plasma Coating Technologies**

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Contact Lenses of the Future

- Enhanced wetting capabilities
- Improved contact lens care systems
- Possibly infused with pharmaceutical agents
- Improved multifocal designs
- Improved ocular health
What is the Primary Reason for Contact Lens Dropouts?

1. Non-Compliance
2. Discomfort
3. Allergies
4. Presbyopia
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THANK YOU!