Myopia Control
New Treatment for an Old Disease
Prevention & Slowing the Progression Myopia

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Disclosures

Dr. Mickles

Speaker, Consultant
Research Funding

Alcon
J&J Vision
SynergEyes
Tangible Science

Dr. Tea

None
Myopia Control or Not......That is the Question?

5 year old male

OD 5.75-1.00x180
OS -5.75-1.00x180

Distance ortho
Near 2 eso

Both Parents & older brother are high myopes
Having Trouble Keeping Up-to-Date?

Myopia Management
what we know is changing at a Rapid pace

https://www.computerworld.com/article/2502371/it-management-it-picks-up-the-pace.html
What's New in Scleral Lenses?

The Big picture
- Prevention
- Control
- Success
- Tips for practitioners

Myopia Management…….

Course Goal

What Are the Latest Developments in Myopia Management

You will be armed with the latest evidence-based strategies & recommendations to have successful outcomes with your patients.
Why Should You Care?

Myopia is reaching epidemic levels around the globe

In the U.S., rates of myopia have almost **doubled** in 30 years

**50%** of the world population will be **myopic by 2050**

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A Huge Myopic Population Exist

2.5 billion 2020  ~5 Billion 2050


Image: Nature Daily
Why Myopia Management?

Myopia can result in visual devastation

Greater risk of RD, macula degeneration, glaucoma, early onset cataracts, peripheral retinal degeneration, choroidal neo*
Why Myopia Management?

Impaired Quality Of Life

People with a high myopia experience impaired quality of life similar to that of people with keratoconus.

(Rose et al BJO 2000 and Takashima et al Jpn J Ophthalmol 2001)
What's New in Scleral Lenses?

Prevention

What Are the Latest Developments in Myopia Management?
MYOPIA Management

What’s the Goal?

1. Prevention of myopia onset
2. Slowing myopia progression
PREVENTION of myopia onset

Strongest predictors of myopia development

1. Number of parents with myopia
2. Amount of time spent playing outdoors
Risk Factors
Risk Factors

1. Genetics
2. Near work
3. Outdoor play time
4. Night lights
5. Accommodative dysfunction
1. Genetics

There is a strong association between number of myopic parents and the risk of childhood myopia development.

- Zero parents with myopia = 10% risk
- One parent with myopia = 20-25% risk
- Two parents with myopia = 40-50% risk

Zero Parent with Myopia

10%

Jones et al. 2007
One Parent with Myopia

20%-25%

Jones et al. 2007
Two Parents with Myopia

40%-50%

Jones et al. 2007
2. Near Work

NO LINK found between myopia development and amount of near work. (Jones-Jordan et al. 2011)

NO LINK found between rate of progression and amount of near work. (Jones-Jordan et al. 2012)
Near Work and Myopia DEVELOPMENT

CLEERE Study  
831 myopes \( \geq 0.75 \)D  
587 emmetropes \(-0.25\) and \(+1.00\)D  
- Parent supplied visual activity data – 5 years before and 5 years after myopia onset  
- Age, Sex, Ethnicity-matched  
- Hours per week  
  - Reading for pleasure  
  - Studying  
  - Using computer/playing video games  
  - Watching TV  
  - Playing outside/sports

Results  
- Hours of near work did not differ before myopia onset  
- Hours of near work greater in myopes than emmetropes at onset and in 4 of 5 years after onset  
- Hours of outdoor/sports fewer for myopes 3 years before onset and 4 years after onset  
- Studying and TV watching not different before myopia onset

Conclusions  
- Myopia onset may influence children’s near work behavior, lack of difference before onset argues AGAINST near work being major cause of myopia development.  
- Outdoor activity stronger influence than near work on development of myopia.
Near Work and Myopia PROGRESSION

CLEERE Study  835 myopes $\geq 0.75$D

- Parent supplied visual activity data
- Average activity data at beginning and end of 1 yr progression interval

Results

- Hours of reading for pleasure not significantly associated with annual myopia progression
- Hours of other near activities not significantly associated with annual myopia progression
- Hours of outdoor/sports not significantly associated with annual myopia progression
- Studying and TV watching not different before myopia onset
- Each additional 10 hours of reading associated with small annual increase $-0.08$D

Conclusions

- Near work had little effect on rate of myopia progression
- Outdoor activity had little effect on rate of myopia progression
3. Outdoor Play Time

Amount of time spent outdoors protective against the onset of myopia. (Jones et al. 2007)

Effect on rate of progression? (Jones-Jordon et al. 2012, Xiong 2017)

Outdoor vs Indoor Vision

1. Light level
2. Spectral composition of light
3. Dioptric topographies
Outdoor vs. Indoor Vision

1. Ambient Light Level
# Outdoor vs. Indoor Light Levels

<table>
<thead>
<tr>
<th>OUTDOOR LIGHTING</th>
<th>Illumination (ftcd)</th>
<th>INDOOR LIGHTING</th>
<th>Illumination</th>
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<tbody>
<tr>
<td>Sunlight</td>
<td>10000</td>
<td>Public areas with dark surroundings</td>
<td>20 to 50</td>
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<tr>
<td>Full Daylight</td>
<td>1000</td>
<td>Warehouses, Homes, Theaters</td>
<td>150</td>
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<td>Overcast Day</td>
<td>100</td>
<td>Easy Office Work, Classes</td>
<td>250</td>
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<td>Normal office work, PC work, Study library, Groceries, Labs, Show rooms</td>
<td>500</td>
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<td></td>
<td></td>
<td>Super markets</td>
<td>750</td>
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<tr>
<td></td>
<td></td>
<td>Mechanical workshops, normal drawing work</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Detailed drawing work</td>
<td>1500 to 2000</td>
</tr>
</tbody>
</table>
High Ambient Light Treatment??

Smith et al 2012
Ashby & Schaeffel, 2010
Norton & Siegwart, 2013
Monkeys

The FDM results suggest that the protective effects of outdoor activities against myopia in children are probably in part due to exposure to the higher light levels normally encountered in outdoor environments.

The failure of elevated lighting levels to alter the time course (at least in monkeys) or end point for negative lens compensation indicates that defocus signals can override the effects of high ambient lighting.
Outdoor vs. Indoor Vision

2. Spectral Composition
Outdoor vs. Indoor Vision
3. Dioptic Topography

Charman et al. 2011
4. Night time lighting

Initial reports of association between childhood myopia and night-time lighting before age 2 could not be confirmed in subsequent studies.

• Patient population
• Parental myopia
  ◦ Families with 2 myopic parents reported using night-lights significantly more than families with zero or 1 myopic parent.

5. Accommodation

Accommodative patterns associated with myopia

- Increased AC/A ratio is early sign of becoming myopic (Mutti et al. 2017)

- Increased accommodative lag occurs AFTER myopia onset (Mutti et al. 2006)
Adenosine Receptor Antagonists
- Caffeine
- 7-methylxanthine

Myopia Control Summary

- Adler
- Church
- Katz
- Walline
- Edwards
- Yang
- Gwiazda
- Harada
- Fulk
- COMET2
- Chang
- Sankaridurg
- Siutkowski
- Tan
- Himoda
- Keita
- Cho
- Chu
- Shah

- 19% - 7%
- 18%
- 35%
- 42%
- 52%
- 81%

GP
Bifocal / PAL
Pirenzepine
Spectacles
OK
Walline
Sankaridurg
Atropine
Soft Bifocal
Slide Courtesy of Jeff Walli
Risk Factors

1. Genetics
2. Near work
3. Outdoor play time
4. Night lights
5. Accommodative dysfunction
What Are the Latest Developments in Myopia Management?

Control
MYOPIA Management

What’s the Goal?

1. Prevention of myopia onset
2. Slowing myopia progression
Controlling Myopia

INEFFECTIVE STRATEGIES
1. Undercorrection
2. SV Gas Permeable Contact Lenses
3. Segment Bifocal or Progressive Addition Lenses

PROMISING TREATMENTS
4. Topical Pharmaceuticals
5. Executive BF and Prisms
6. Ortho K and Soft BF Contact Lenses
INEFFECTIVE STRATEGIES

1. Undercorrection of Myopia

- Hyperopic defocus promotes eye growth and myopia development.
- Myopic defocus limits eye growth and promotes formation of hyperopia.

Question:
- Does undercorrection (myopic defocus) slow myopia progression?

Answer:
- NO. Opposite effect observed. Fully corrected eyes progressed slower than under-corrected eyes (Chung et al. 2002)
- Under-correction may promote growth similar to mechanism in deprivation myopia that outweigh effects of myopic defocus.
1. Undercorrection of Myopia

Adler & Millodot (2006)
- 6-15 yo
- Undercorrected by 0.50

Chung et al. (2002)
- 9-14 yo
- Undercorrected by 0.75

RESULTS:

Adler & Millodot
- Fully corrected: -0.82 D progression
- Undercorrected: -0.99 D progression

Chung et al.
- Fully corrected: -0.77 D progression
- Undercorrected: -1.00 D progression

Undercorrection NOT effective tx in slowing down progression of myopia in children.
INEFFECTIVE STRATEGIES

2. Gas Permeable Contact Lenses

- Rigid, gas permeable lenses can mold cornea.

**Question:**
- Does RGP lenses slow myopia progression?

**Answer:**
- Some reduction in myopia progression but NO change in reducing axial length (Walline et al. 2004)
- Since treatment effects are only corneal, effect only temporary, therefore GPCs should not be fit solely for myopia control purposes.
2. Gas Permeable Contact Lenses

**Katz et al. (2003)**
- 6-12 yo
- SV Spectacles vs. RGP
- 2 years

**Walline et al. (2004)**
- 8-11 yo
- SV SLC vs. RGP
- 3 years

**RESULTS:**

**Katz et al.**
- SCL: -1.33 D 0.84mm
- RGP: -1.28 D 0.79mm

**Walline et al.**
- SCL: -2.19 D
- RGP: -1.56 D
- Corneal curvature steeper for SCL group
- Axial length difference not statistically different

GPCs do not slow rate of myopia progression and should NOT be fit solely for myopia control.
INEFFECTIVE STRATEGIES

3. Segment BF and PALs

- Myopes tend to under-accommodate at near (Gwiazda et al. 1993)
- This results in HYPEROPIC blur at near. Hyperopic blur drives myopia.

**Question:**
- Does reducing accommodative lag with near add reduce progression?

**Answer:**
- No impact of bifocals on slowing myopic progression (Grosvenor et al. 1987)
- Statistically significant, but clinically insignificant reduction in progression (Gwiazda et al. 2003) -0.20 over 3 years
Controlling Myopia

INEFFECTIVE STRATEGIES
1. Undercorrection
2. SV Gas Permeable Contact Lenses
3. Segment Bifocal or Progressive Addition Lenses

PROMISING TREATMENTS
4. Topical Pharmaceuticals
5. Executive BF and Prisms
6. Ortho K and Soft BF Contact Lenses
4. Topical Pharmaceuticals – Antimuscarinic agents

- **Topical Pirenzepine** was found to slow myopia progression in two major studies
  - 51% reduction in progression U.S. Study
  - 77% reduction in progression Singapore
- Topical pirenzepine not commercially available in USA

- **Topical Atropine** is most effective, but have side effects of blur and photophobia
  - Prevention of myopia onset (Fang et al. 2010)
  - Slows progression of myopia (Chua et al. 2006, Wu et al. 2011)
4. Topical Pharmaceuticals – antimuscarinic agents

Fang et al. (2010)
• 0.025% Atropine
• Progression and Onset
• 1 year

Chia et al. (2016) ATOM Studies
• 0.5%, 0.1%, 0.01% Atropine
• Phase 1, 2, 3
• 5 years

RESULTS:
Fang et al.
- Atropine: -0.14 D 21% onset
- Control: -0.58 D 54% onset

Chia et al.
- Phase 1 – Greater effect in higher dose with inverse effect during washout, so 0.01% best over 3 years
- Phase 2 – Restarted on Atropine 0.01%
  24% 59% 68%
- Phase 3 – Progression and axial elongation lowest in 0.01% group after 5 years.
Atropine Dosage

Fang et al.
• 0.025

Chia et al.
• 0.500
• 0.100
• 0.010 **

Yam et al.
• 0.050 **
• 0.025
• 0.010

Yam et al. 2019 (LAMP Study)

Conclusions:

The 0.05%, 0.025%, and 0.01% atropine eye drops reduced myopia progression along a concentration-dependent response. All concentrations were well tolerated without an adverse effect on vision-related quality of life. Of the 3 concentrations used, 0.05% atropine was most effective in controlling SE progression and AL elongation over a period of 1 year.

Ophthalmology 2019;126:113-124
PROMISING STRATEGIES

5. Executive Bifocals with Prism

- Some effect in slowing progression of myopia found with +1.50 Executive BF and 3BI Prism (Cheng et al. 2010 and 2014)
5. Executive Bifocals with Prism

3 year study
8-13 yr olds
Progression of at least -0.50 per year

① SV lenses
② +1.50 BF
③ +1.50 BF with 3BI (BFP)

• Lag of Accommodation
• Near Phoria Status

RESULTS:
① SV: -2.06D 0.82mm
② BF: -1.25D 0.57mm
③ BFP: -1.01D 0.54mm

• Both BF groups better than SV
  • Amount of progression
  • Axial length

• High lag: BF and BFP no different
• Low lag: BFP better than BF

(Cheng et al. 2010 and 2014)
PROMISING STRATEGIES
6. Multifocal Contact Lenses and Orthokeratology
Contact Lenses

Orthokeratology OR Soft Multifocals
Ortho-k and soft multifocals inhibit myopia progression by inducing peripheral retinal myopic defocus.
Ortho-K or Soft Multifocals?

5 year old male

OD -5.75 -1.00 x 180
OS -5.75 -1.00 x 180

Distance ortho
Near 2 eso

Denies allergies or dry eye
Pupil size 4.5 mm normal illumination
Is Ortho-K OK?

Ideal Candidates for myopia control

Large pupils

Myopes <6D of sphere

Children unable to wear softs CLs due to allergies

Athletes
Orthokeratology
Ideal Candidates

- Larger pupils facilitate the myopia control outcome
- The peripheral myopic defocus will lie in the pupil
- The peripheral myopic defocus will lie outside of the pupil for small pupils & will limit the efficacy of myopia control

The average treatment zone for OK is 3.5 mm with 1.5 to 2.0 mm zone of peripheral myopic defocus so a 5mm pupil (3.5 + 1.5 mm) is ideal
Above pupil is too small

Smith EL 3rd. Optical treatment strategies to slow myopia progression: effects of the visual extent of the optical treatment zone. Exp Eye Res. 2013
Orthokeratology

IDEAL CANDIDATES

Myopes with up to 6.00D of sphere*

The FDA approval for ortho-K:
Temporary reduction of myopia up to –6D of sphere with up to 1.75 D of WTR, 0.75 ATR astigmatism*

Attempting to correct greater than 4.00D increases the risk of central staining (Liu 2016)

High levels of correction (> 4.00D) also increases the risk of a decentered lens and treatment zone.

*Ortho-K is Approved for all ages not myopia control

Spherical corneal GP on high toric cornea
High Cyl >1.75 D is not ideal unless you have a toric ortho-K option


Courtesy of Christine Sindt OD and Melanie Frogozo OD
Orthokeratology
Ideal Candidates
Athletes especially swimmers

Say NO to H₂O!
Don’t wear your contact lenses while swimming.
www.cdc.gov/contactlenses
Orthokeratology Options

Many more..........

DreamLens
Emerald
Wave
NightLens
PARAGON
Bausch & Lomb
Vision Shaping Treatment
Many more.........
Is Ortho-K Best?

- 5 yo old male
- Nonathlete Denies allergies
- Distance ortho Near 2 eso
- -5.75- 1.00x180 OD, OS

Child photo
Soft Multifocals
Ideal Candidates

- Responsible enough to wear lenses during the day
- Low and high myopes
  Ortho-K can be more challenging to fit (>5D)
- Low astigmats
  Very limited reusable soft multifocal toric options
  No daily disposable multifocal toric option
Soft Multifocals?

5 yo male

-5.75-1.00x180 OD, OS

Nonathlete
Denies allergies

Distance ortho
Near 2 eso

Very mature
For age

Corneal Plane
-5.50-0.75x180
Soft Multifocal Options

Currently recommendation is *Center-Distance for effective myopia control
Soft Multifocals: ADD

A. +1.00D
B. +1.50D
C. +2.00D
D. +2.50D
Soft Multifocals: When the ADD is Too Much

If the add power creates issue
The best 1st option is to....

- Reduce the Add
- Add more minus to the spherical power

OR

-5.00 DS + 2.50 ADD

-5.00 DS + 2.00 ADD

-5.50 DS + 2.50 ADD

Walline 2017
Newer Daily Disposable Multifocal Options

Visioneering Technologies

CooperVision (Not available in U.S.)

Marketed specifically for myopia management
Launched in Canada 2018

Both Center-Distance designs
Coming Soon

SYNERGEYES EXTENDED DEPTH OF FOCUS (EDOF) LENS
Outcome

8 yo male
-5.00-1.00x178 OD, OS
Stable VA
Near 4 exo
Good PFV
SE: -6.25 at 5yo to -5.50 at 8 yo
Distance ortho

No Significant Myopic Progression!
Which is the most effective option?

70-80%

Side effects:
- Blurred vision
- Photosensitivity*

Ortho-K
45%

Ortho-K and soft multifocals have similar efficacy *

Slightly better efficacy with concentric ring design than aspheric design

Soft Multifocal
38%
Which soft design?

Aspheric design

Concentric Ring
MiSight 1 Day

Image Credit Dinardo A, Rosen C. CLS 2017
Concentric Ring

Treatment zones create myopic defocus.
Two correction zones that help correct myopia in all gaze positions.
Children can see clearly while slowing their myopia progression

3 year findings ~60% less myopia progression
MiSight 1Day

Image credit CooperVision MiSight 1 Day
Which contact lens myopia control option is the safest?

The risk of MK....

Overnight Ortho-K = daily wear of reusable soft
*Daily disposable wear < soft reusable

Children (aged 8-12) have a lower rate of infection than teens & adults
  Attributed to better compliance & closer parental supervision

Safer Than You Think
Low Risk of CL-related inflammatory events

Bullimore MA 2017; Wagner H et al 2014
Benefits of myopia control outweigh the risks of daily wear of contact lenses

BULLIMORE, M. RITCHEY ERIC. PAPER PRESENTED AT AMERICAN ACADEMY OF OPTOMETRY 2019

Years of uncorrectable visual impairment that may be prevented by lowering patients’ ultimate level of myopia was compared to the corresponding years of visual impairment (from MK) associated with 5-years of CL wear.
Which Option is preferred by parents?


Ortho-K (29.4)
Soft MF (17.6)
Bifocal glasses (5.9)
Eye drops (0)

N=196, 3 University Sites
Corneal GP multifocals
Scleral GP multifocals
Hybrid Multifocals
Ortho-K Scleral

(concerns of corneal swelling
No study showing effective in myopia control/large treatment zone
Myopia reduction up to 6D)

Chen et al. Myopia control using toric orthokeratometry (TO-SEE-STUDY).
IOVS 2013
N=80
Toric ortho-k lenses were effective (52% slower) in slowing myopia for children with moderate-to-high astigmatism

4D of cyl

4.5 D of cyl

Fadel D. Herzberg C. Is Ortho-K possible with corneo-scleral lenses. CLS 2016
Yin Li. Off-label use of scleral contact lens for orthokeratometry following an unsuccessful corneal gas permeable fit. Poster presented at GSLS 2014.
Orthokeratology
IDEAL CANDIDATES

What about High Myopes?

Myopes with less than 6.00D of sphere*

Attempting to correct greater than 4.00D linked with increased corneal staining (Liu 2016)

High levels of correction (> 4.00D) also increases the risk of a decentered lens and treatment zone.

The FDA approval for ortho-k: Temporary reduction of myopia up to –6 D of sphere with up to 1.75 D of astigmatism *

https://www.eyecarehuntsville.com/myopia-control.html
https://www.opticianonline.net/cet-archive/140
Some treat Max 4D with ortho-K
Any residual refractive error is corrected with specs

**Partial reduction OK effectively** slowed myopia progression in high myopes > 6D
63% slower than the control group (Charm, Cho 2013)

More studies are needed

**Partial Ortho-K maybe OK**
Clever Combos

Soft Multifocals
Bifocal & Atropine in Myopia (BAM) Study
(Biofinity Multifocal & 0.01% Atropine). Ongoing

0.025% atropine+ Ortho-K was 53% more effective than Ortho-K alone
More effective with lower amounts <6D of myopia Wan L et al. 2018
0.01% atropine + Ortho-K was 50% more effective than Ortho-K alone
Kinoshita et al. 2017
Combined Atropine With Orthokeratology in Childhood Myopia
Control (AOK)-A. Ongoing

Soft Multifocals
Bifocal Spectacles

70% reduction in children with esophoria
Aller et al. 2016

Ortho-K

https://moneyqanda.com/earn-money-thinking-box/
Management Options
What Are the Latest Developments in Myopia Management?

Measuring Success
Clinically meaningful myopia control

1. Refractive error
   - 0.50 D per year
   - 0.1mm
   - 50% reduction

2. Axial length
   - 0.1mm to 0.2mm per year

Zhao et al. 2002
MYOPIA
CONTROL

Tools of the Trade
Tools

1. Axial length measures
   - Contact biometry
   - Non-contact biometry

https://www.aao.org/basic-skills/ascan-biometry-applanation-technique
Tools

2. Refractive Error
   - Cycloplegic autorefraction
   - Open field autorefractor
     - Measures both eyes at the same time
     - Open view window allows you to choose target
     - Can measure peripheral refraction

When should We Stop?
Age to Discontinue Myopia Control

8 yo male

-5.00-1.00x178 OD, OS

2019

Little evidence on when it is appropriate to stop myopia control

Suggested to continue myopia control at least through the age during which their myopia is expected to progress (age 15 or 16)

2027
A rebound effect has been shown with 1% atropine
Small rebound effect with low concentration atropine

Maybe a rebound effect with Ortho-K
No evidence of rebound effect with soft multifocals

More studies are needed
What Are You Waiting For?
What Are You Waiting For?

- High Myopia prevention
- Safe
- Increased Revenue
- Parents Are Interested

Control of myopia may become the standard of care
Parents Are Interested

70% of parents wanted to pursue myopia control

were unaware of myopia control & complications of high myopia

Parents Perceptions of Myopia and Myopia Control
Meyer, Mickles, Cox, Kollbaum ARVO, AAO 2016
196 subjects, 3 University Sites

Cheung et al. 2014
Offer communication tools to help parents understand myopia and the steps that they can take to help their children
What is myopia?

Myopia is blurry long-distance vision, often called “short-sighted” or “near-sighted”. A person with myopia can see clearly up close - when reading a book or looking at a phone - but words and objects look fuzzy on a blackboard, on television or when driving. But a pair of glasses aren't the whole story.

The prevalence among Australian 12 year olds has doubled in 6 years. Myopia in kids tends to progress or get worse throughout childhood, and higher levels of myopia are associated with higher eye disease risks in adulthood. If your child already wears glasses, you can do something to stop their vision worsening, if they don't you can assess their risk of developing myopia.

Myopia occurs when the eyeball grows too quickly in childhood, or starts growing again in adulthood

Childhood onset myopia is most commonly caused by the eyes growing too quickly, or continuing to grow after age 10-12 when eye growth should normally cease. Genetics, environment and the individual’s characteristics can all contribute to this excess growth.
Survey Complete!

Your child has a **Medium/High risk** of myopia progression

**Genetics Risk**

**High risk**

With both parents being myopic, your child has a six times higher risk of myopia development or progression.

**Environmental Risk**

**Medium risk**

Medium outdoor time and high near work time is a medium risk. Head outdoors more to reduce risk!

**Individual Risk**

**High risk**

There is greater likelihood of myopia progression in the first few years from becoming myopic, so it is important to keep up regular eye exams.
Brien Holden Vision Institute Calculator

Demonstrates the possible benefits over time of treating myopia progression
Discuss risk versus benefit with patients

Control Rate (%)
- \( \times 36 \) 70 86

Retrieval Error (D)
- \( \times 5.00 \)

Myopia Management Option:
- Orthokeratology

Percentage reduction in progression of myopia compared to standard correction e.g. single vision spectacles.

43%

If treated with Orthokeratology that provides 43% control, then the level of myopia at 17 may be:

-6.85D

If myopia control treatment is not commenced immediately, the final level of your child's myopia at 17 may be:

-8.25D
Primary Myopia Control Method

- 39% Soft Multifocal
- 25% Ortho-K
- 20% Pharmaceutical Agent
- 11% A combination
- 5% I don't utilize myopia control in my practice

What Are We Waiting For?

Bennett, Barnett, Paul. Contact Lens Spectrum 2019
Audience of lecture attendees at Optometry’s Meeting 2018
Biggest Challenge to incorporating Myopia control

1. Expense to the patient
   - 52%

2. Complex fitting/ Learning Curve
   - 26%

Other reason: Limited number of patients who would benefit

Bennett, Barnett, Paul. Contact Lens Spectrum 2019
Attendees polled at Optometry’s Meeting Lecture
Continuing Education
Vision by Design conference
Global Specialty Lens Symposium
Managing Myopia CE Program (Brien Holden Institute)
Gas Permeable Lens Institute Webinars

CL Manufacturers
Info to train O.D.s to learn how to fit their lens designs
Streamlined the fitting process & training troubleshooting cards
Myopia progression control patient ed tools

Success is in Reach
Nationwide, multi-center study determined that the 1st-fit success with empirically designed ortho-K lenses was greater than 80% SMART Study 2009
Stabilizing Myopia by Accelerating Reshaping Technique (SMART) study.

Having Trouble Keeping Up-to-Date?

What Are You Waiting For?
Getting Up to Speed
The International Myopia Institute created a DEWS like report

Special Issue  IOVS. February 2019
IMI – Myopia Control Reports Overview and Introduction

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Tips for Practitioners
Points to Consider

Myopia control is not FDA Approved*
Myopia control is off-label
Ortho-K is FDA approved for myopia reduction, **NOT** myopia control

Potential Complications
Abrasions, infections etc.

Potential Complications-What to Do
Return to Eye Doctor ASAP

Care
Avoiding water, etc.

Financial policy
Fitting and fees are non-refundable

Side effects (Atropine)
Avoidance of other anti-cholinergics

[Create A Consent Form](www.fda.gov/forpatients/clinicaltrials/informedconsent/default.htm)
Myopia Control Selection

Choose a myopia control option that best fits the patient’s and parent’s lifestyle

“Contacts Heck NO”!

Ineffective if not going to use management

Try other myopia control options i.e. Low dose atropine
Monitor Closely

Cyclo Refraction

Axial length

BV & Accommodative testing
Myopia Management
Increasing prevalence & Detrimental Impact
think about reducing myopia

Sight is a gift
Myopia Management....

- Prevention
- Control
- Success
- Tips for practitioners
Improve Future Lives

Early detection & intervention

Reduce the impact of myopia on ocular health & quality of life
Drs. Mickles & Tea

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