

## Eyes on Myopia Control Management

BCOA Gold Coast 2026

Brianna Rhue, OD, FAAO, FSLs  
brhue@drcontactlens.com




## Financial Disclosures

- Dr. Brianna Rhue, in the past 24 months has:
  - Ocumetra- Advisory Board
  - Sydnexis- PAC
  - Coppervision- PAC
  - Johnson and Johnson- MAB
  - Visionary Optics- Co Founder
  - Dr. Contact Lens- Co Founder

All of the relevant financial relationships listed for this individual have been mitigated.

## 4:00pm on a Friday



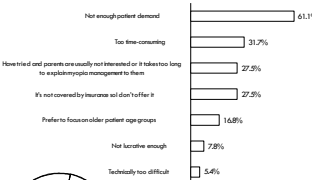
## Goals

- Understand the treatment options available and what is coming
- How to stand up your clinic for success
- Which treatment to choose in which case
- Treat your patients how we would treat our own kids
- Start talking about it with your patients

## Are you practicing myopia management?

- A. Yes- I am all the way in
- B. No-
- C. Dabbling-
- D. I want to learn more

## WHY ARE YOU NOT DOING MYOPIA MANAGEMENT

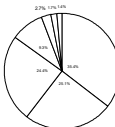


Reason	Percentage
Not enough patient demand	61.1%
Too time-consuming	31.7%
How tired and parents are usually not interested or it takes too long to explain myopia management to them	27.5%
It's not covered by insurance and don't offer it	27.5%
Prefer to focus on older patient age groups	16.8%
Not lucrative enough	7.8%
Technically too difficult	5.4%

Yes: 63.6% No: 36.4%

## BARRIERS FOR PARENTS SAYING "YES"

- ☐ Treatments not covered by vision or medical insurance
- ☐ Cost to parents
- ☐ Parent never heard of treatments for progressive myopia
- ☐ Parent not convinced of long-term eye health issues associated with myopia
- ☐ Most treatments not FDA approved
- ☐ Not recommended by a medical doctor, e.g., pediatrician, GP, ophthalmologist

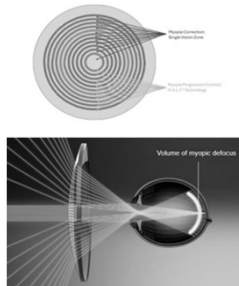


Barrier	Percentage
Treatments not covered by vision or medical insurance	27%
Cost to parents	17%
Parent never heard of treatments for progressive myopia	14%
Parent not convinced of long-term eye health issues associated with myopia	14%
Most treatments not FDA approved	14%
Not recommended by a medical doctor, e.g., pediatrician, GP, ophthalmologist	14%

## Recent News – 09.25.2025



LENS PARAMETERS AVAILABLE  
Sphere: 0.00D to -10.00D in 0.25D steps  
Cylinder: 0.00D to -4.00D in 0.25D steps



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## Recent News PDUFA Date 10.2025



**Sydnexis Announces European Commission Approval of SYD-101, the First and Only Pharmaceutical Treatment for Slowing the Progression of Pediatric Myopia**

Share X O D ...

Exclusive-Licensing Partner Santen Will Commercialize SYD-101 Under the Brand Name *Aylunexa*™ in the European Union

Sydnexis's low-dose atropine eye drop, SYD-101 (marketed as *Aylunexa*® by Santen), is approved in the **European Union (EU)** and the **United Kingdom (UK)**, making it available in about 28 European countries, with licenses for the Europe, Middle East, and Africa (EMEA) regions, but it is not yet approved in the U.S. The approval in Europe and the UK serves as a major step for the treatment of childhood myopia progression outside the United States. [View more](#)



RELEASE VERSIONS

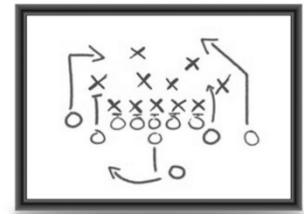
**Sydnexis Receives Complete Response Letter from FDA for SYD-101 to Slow Pediatric Myopia Progression**

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## A little about me...



## Thank You... 2015

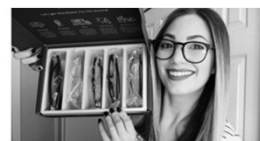


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## My Myopic Passion



## The Disruptees can become the Disruptors



How many ODs, ethically, have stopped fitting single vision soft lenses on kids who are progressing myopes? No judgement. Even if not doing myopia control, would you fit a multifocal just to get some plus on the eye?

This is almost as ridiculous as saying you'd refuse to give a myopic child glasses because they're likely to progress. I'm all for advocating myopia control but there is not an ethical conflict here.

Like Reply 28 77

Dear Lord... Myopia is not the plague! Enough of this fear mongering. Thank God I'm a -3, my daughter a -5.50, and my wife a -6!!! It helps immensely with our CI at 12, 16, 20 XP respectively.

Like Reply 28 70



1800contacts®

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# CURIOSITY



Ask why 5 times! ✨

# ?

Who is it up to decide if it  
is important or not to  
treat...  
You or the Parent/Patient?

“

The cost of being wrong is  
less than the cost of doing  
nothing.  
– Seth Godin, Tribes



# MYOPIA



**A progressive disease  
that causes eyeball  
growth.**

Which results in:  
Higher Co-Morbidity Disease  
Risk  
Blurry Vision  
&  
Changing Prescriptions

## Is Pediatric Myopia Progression Considered a Disease?

YES, it is a disease; not just a refractive condition (October 2024)



This congressionally funded organization was created in partnership with numerous key organizations, including AAO and AOA



## The NASEM Consensus Study Report: *Myopia is a Disease*

>1,000 studies were referenced in the 375-page published Consensus Study Report

**Conclusions:** Treatment options for myopia progression have increased in the last 20 years and include multifocal optical corrections and the sole pharmacological treatment: atropine eye drops (Conclusions 7-1, 7-2). Time outdoors during daylight is an emerging treatment strategy, especially in the younger years (Conclusion 7-3). Further research is needed to understand the mechanism of action of the current treatments that have limited effects and can cause rapid eye growth after cessation of treatment (Conclusions 7-4, 7-5). Safety of myopia treatments is paramount due to the probable need for daily applications (e.g. of atropine) for a decade or more of life (Conclusion 7-6). The current state of knowledge of treatment options reflects our limited understanding of both the fundamental mechanisms of eye length regulation and how treatments act to alter the progression—and perhaps even the onset—of the disease (Conclusion 7-9).

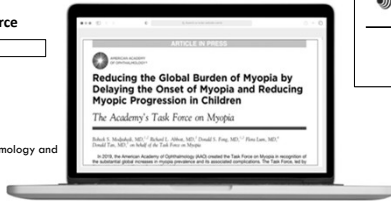
Myopia is a disease with increasing worldwide prevalence and severity—recognition of the impact of its downstream complications needs to be taken seriously. Importantly, the committee recommends that the Centers for Medicare & Medicaid Services classify myopia as a disease and therefore a medical diagnosis (Recommendation 8-5). This reclassification is to ensure efforts are undertaken not only to treat blurry vision resulting from uncorrected or under-corrected refractive error but also to ensure that stakeholders such as federal and state agencies, professional associations, patients, and caregivers are investing in the prevention and management of myopia. Funding agencies should support innovative, multidisciplinary research to identify mechanisms and novel treatments for myopia. Collaborative efforts involving healthcare providers, policymakers, researchers, and funding agencies are essential to tackle this disease effectively.

## Societies Recognize the Myopia Epidemic

### Global Myopia Task Force

June 2021

- AAO (Ophthalmology)
- AAOpt (Optometry)
- AAFP (Family Physicians)
- AAP (Pediatricians)
- AAPOS (Pediatric Ophthalmology and strabismus)



"Myopia is a growing public health problem that carries significant visual morbidity on an individual- and population-based level."

United Healthcare has joined the board of GMAC (October GMAC meeting)



## Is Pediatric Myopia Progression a Disease?

Microsoft-Open AI's Chat GPT Engine categorized myopia as a "disease", not a "condition"

**You** Recent experience with a prominent AI response system (Microsoft Copilot, powered by Open AI's Chat GPT), why is myopia not a disease when it impairs normal functioning and is characterized by specific signs and symptoms that lead to severe sight threatening co-morbidities and blindness?

**Copilot** The answer in the past was: Myopia, also known as nearsightedness, is a common eye condition where distant objects appear blurry while close objects can be seen clearly. This occurs because the light entering the eye is focused in front of the retina instead of directly on it.

**You** The answer now

**Copilot** The answer now is: Myopia is a common eye condition characterized by the refractive error in the cornea and the shape of the eyeball, which causes light entering the eye to be focused in front of the retina instead of directly on it. This results in distant objects appearing blurry while close objects can be seen clearly. Myopia is classified as a refractive error, which is a type of eye disorder where the eye does not bend light correctly, resulting in blurred vision.

**Why Myopia is Considered a Disease**

1. **Impairment of Normal Functioning:** Myopia impairs the ability to see distant objects clearly, which can significantly affect daily activities such as driving, attending school, and working safely.
2. **Specific Signs and Symptoms:** It is characterized by symptoms like blurry distance vision, squinting, headaches, and eye strain.
3. **Potential for Severe Complications:** High myopia can lead to serious complications such as retinal detachment, glaucoma, and cataracts, which can be sight-threatening.

**Management and Treatment**

1. **Corrective Lenses:** Glasses or contact lenses are commonly used to correct the vision.
2. **Refractive Surgery:** Procedures like LASIK can permanently correct the refractive error.
3. **Regular Monitoring:** Regular eye exams are crucial to monitor and manage the condition, especially to prevent or address complications.

So, while myopia is often managed effectively with corrective lenses or surgery, it is indeed recognized as a disease due to its impact on vision and potential for serious complications.

On you have any more questions about myopia or its management? (1) ChatGPT (2) (3) Myopia (4) (5) Myopia

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## Dr. Chat GPT

What should I do for my child who has myopia?

If your child has myopia (nearsightedness), there are several steps you can take to manage their condition and ensure their visual health. Here are some recommendations:

1. **Schedule an eye exam:** Schedule an appointment with an ophthalmologist or optometrist to get a comprehensive eye examination. This will help determine the severity of your child's myopia and provide appropriate recommendations.
2. **Monitor vision regularly:** Keep track of any changes in your child's vision when reading, watching TV, or playing. They will have specific eye exams and vision therapy sessions.
3. **Encourage healthy visual habits:** Encourage your child to take frequent breaks when reading or using digital devices. Encourage your child to take frequent breaks when reading or using digital devices. Encourage your child to take frequent breaks when reading or using digital devices.
4. **Provide proper lighting:** Ensure that your child has adequate lighting when reading or watching TV. Encourage your child to take frequent breaks when reading or using digital devices.
5. **Consider specialized lenses:** Your eye care professional may recommend specialized lenses to correct your child's vision. These can help your child see more clearly and comfortably.
6. **Encourage outdoor activities:** Encourage your child to spend time outdoors. This can help your child's eyes relax and may help slow down the progression of myopia.
7. **Regular monitoring and compliance:** Regular eye exams and compliance with recommended treatment are crucial for managing your child's myopia. Regular eye exams and compliance with recommended treatment are crucial for managing your child's myopia.

Remember, it's crucial to follow the guidance of an eye care professional who can assess your child's needs and provide personalized recommendations. Regular eye exams and open communication with your eye care provider will help ensure the best possible care for your child's myopia.

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## Standing Up Your Myopia Management Practice

- Education
- Program
- Equipment
- Pitch
- Parent Questions

## Myopia Belief Busting

1. Myopia is just a refractive error
2. That kids can't get off devices
3. Be careful and not treating is safer
4. Atropine is bad
5. Myopia spectacles are going to save myopia
6. Kids can't wear contacts
7. Ortho k is hard or bad
8. Genetics can't be stopped
9. This is hard to implement
10. Parents won't pay for this treatment



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## Myopia Control vs Myopia Management

### Myopia Control

Slows the progression of myopia in age-appropriate children

- MiSight

### Myopia Management

Refers to the decision to implement a strategy to slow down the progression of myopia in a child

- Low-dose atropine
- Ortho-k
- Soft multi-focals
- Spectacles



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## Our Digital Era



## The Perfect Storm/Opportunity

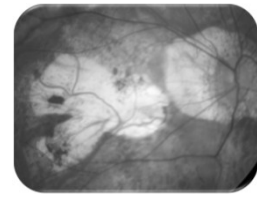
- The perfect storm
  - Genetics
  - Indoor vs outdoor time
  - Near work/computers/phones/tablets
  - Online schooling
- FDA approved treatments
  - MiSight (Approved November 15, 2019)
  - Abiliti ortho-k (Approved May 12, 2021)
  - Essilor Stellest lens (Approved September 25, 2025)
- Off Label
  - Low Dose Atropine
- On the horizon low dose atropine, Abiliti Daily Lens
- Look at each case individually to decide what is best for the child/parent/family



## Plant Seeds



## Myopia, so What



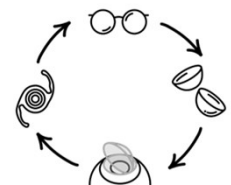
## Reframing Myopia



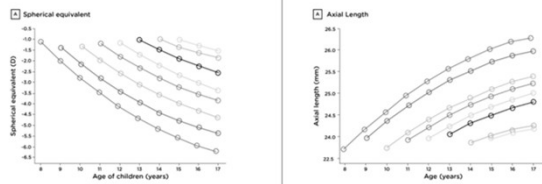
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## Lifecycle of Myopia

- Pediatrician
- First pair of glasses
- Fitted with contacts (if right for the child)
- Interested in Refractive Surgery
  - LASIK (SMILE)
  - PRK
  - ICL
- Refractive Cataract Surgery
- Retinal specialist



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- The earlier the onset the higher chance for high myopia

Chua SY, Sabanayagam C, Cheung YB, Chia A, Valenzuela RK, Tan D, Wong TY, Cheng CY, Saw SM. Age of onset of myopia predicts risk of high myopia in later childhood in myopic Singapore children. *Ophthalmic Physiol Opt*. 2016 Jul;36(4):388-94. doi: 10.1111/opo.12305. PMID: 27350183.

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8 y/o  
OD: -1.75 AL: 23.40  
OS: -1.00 AL: 23.19



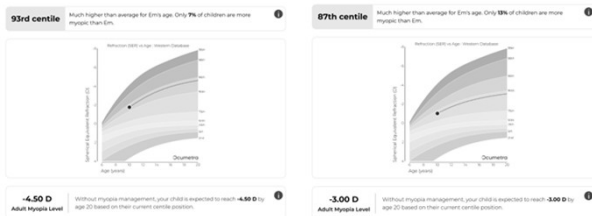
Opted for MiSight Lenses

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10 y/o  
OD: -1.75 AL: 23.35  
OS: -1.00 AL: 23.21

• 8 Years old

OD: -1.75 → -7.50 AL: 23.40  
OS: -1.00 → -5.50 AL: 23.19



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## Pre-Myopes



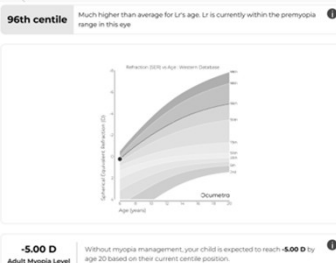
"An ounce of prevention is worth a pound of cure."  
Benjamin Franklin

≡ < +0.75 @ 6-7yo is high risk

- Independent of family history, ethnicity and other optical and environmental factors.<sup>7</sup>
- Fastest change in refraction is year before onset.
- Watch for eso and lag of accommodation

Jones-Jordan LA, Sinnott LT, Manny RE, Cotter SA, Kleinstei RN, Mutti DO, Twilker JD, Zadnik K, Ethnicky TCLEo, Refractive Error Study Group. Early Childhood Refractive Error and Parental History of Myopia as Predictors of Myopia. *Invest Ophthalmol Vis Sci*. 2010;51(1):115-21

## 6 year old... First Eye Exam



OD: +0.25 22.96  
OS: +0.25 22.80

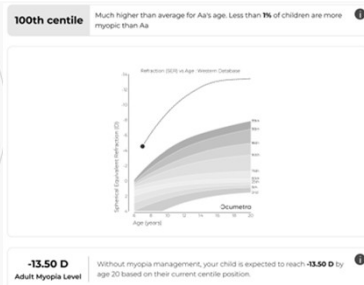
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## What is the Cycloplegic Refraction?

Age	Normal	Refractive Error @ Risk
6 years old	+1.75 → +1.50	+0.75 or less
7 years old	+1.50 → +1.25	+0.50 or less
8 years old	+1.00	+0.50 or less
9 years old	+0.75	+0.25 or less
10 years old	+0.50	+0.25 or less
11 years old	+0.50 → +0.25	0.00 or less

- Tropicamide 1%, 2 drops 5 mins apart
- Follow up every 6 months, sooner if risk factors are high or patient is changing

## 7 Year Old

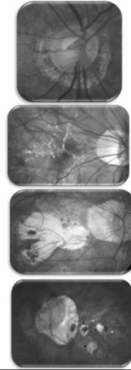


OD: -4.50 24.00  
OS: -4.50 24.10

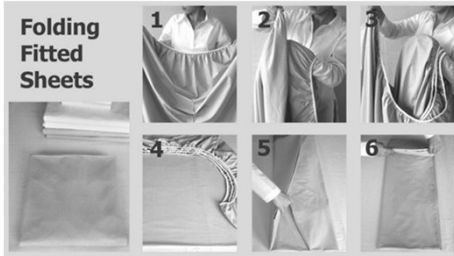
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## Why the Big Deal?

- Myopic Maculopathy
  - Stretched blood vessels
  - Peripapillary atrophy
  - Posterior staphyloma
  - Lacquer cracks
  - Geographic atrophy
  - Subretinal hemorrhages
  - Choroidal neovascularization

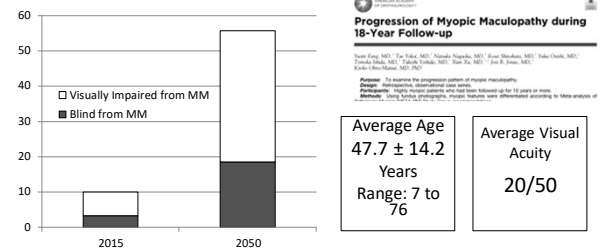


## Folding Fitted Sheets



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## Myopic Maculopathy



Fricke et al. Global prevalence of visual impairment associated with myopic macular degeneration and temporal trends from 2000 through 2050: systematic review, meta-analysis and modelling.  
Fang Y, Tolkei T, Nagakura N, Shinohara K, Onishi Y, Ishida T, Yoshida T, Xu X, Jonas JB, Ohno-Matsui K. Progression of Myopic Maculopathy during 18-Year Follow-up. Ophthalmology. 2018 Jun;125(6):863-877. doi: 10.1016/j.ophtha.2017.12.005. Epub 2018 Jan 19. PMID: 29371021.



risk

a situation involving exposure to danger

Thinking the one and the same as you

Similar possible chance probably doubtful danger

How serious is it to you the day?

expose (someone or something valued) to danger, harm, or loss.

How serious are the clinical risks of progressive myopia?

WHO predicts Myopia to be the #1 cause of blindness worldwide in the future (Cataract is presently)

"10 million people had visual impairment from myopic maculopathy in 2015, of whom 3.3 million were blind. By 2050, visual impairment will grow to 55.7 million (1 in 75), 18.5 million of whom will be blind. The risk of myopic maculopathy and its impact on public health are not limited to high myopes."

Myopes of less than 5 diopters contributed 43% of the cases of myopic maculopathy in the Australian Blue Mountains Eye Study."

Data derived from:

• Blue Mountains Eye Study, 2001 (n=3000 patients)

• Beaver Dam Eye Study, 2001 (n=4000 patients)

• Rotterdam Eye Study, 2001 (n=10000 patients)

• Rotterdam Eye Study, 2010 (n=10000 patients)

• International Myopia Study, 2010 (n=10000 patients)

• International Myopia Study, 2010 (n=10000 patients)

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• International Myopia Study, 2010 (n=10000 patients)

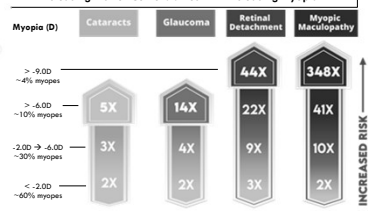
• International Myopia Study, 2010 (n=10000 patients)

• International Myopia Study, 2010 (n=10000 patients)

• International Myopia Study, 2010 (n=10000 patients)

• International Myopia Study, 2010 (n=10000 patients)

• International Myopia Study, 2010 (n=10000 patients)

Increasing Risk of Comorbidities with Increasing Myopia<sup>1</sup>

WHO predicts Myopia to be the #1 cause of blindness worldwide in the future (Cataract is presently)

"10 million people had visual impairment from myopic maculopathy in 2015, of whom 3.3 million were blind. By 2050, visual impairment will grow to 55.7 million (1 in 75), 18.5 million of whom will be blind. The risk of myopic maculopathy and its impact on public health are not limited to high myopes."

Myopes of less than 5 diopters contributed 43% of the cases of myopic maculopathy in the Australian Blue Mountains Eye Study."

## The First Step – The Trigger

- History- patient and family
- Refraction
- K readings
- Axial Length
- Calculator
- Discussion
- Treatment Selected
- Evaluation Visits Scheduled

Simple scales

Complex fails

## LEAVE NO ONE BEHIND!

### Myopia Kids

- ALL kids in your office Get evaluated
- They fatigue on free follow ups

The phrase:  
"we can see what will happen"  
no longer applies.

ALERT: We know what is going to happen!



## The Myopia Equation

### Patient Data

- Current Age
- Ethnicity
- Age of onset
- Indoor/Outdoor time
- K Readings
- Refraction
- Axial Length

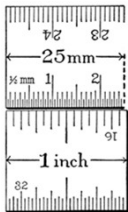
VS.

### Patient Data

- Child willingness
- Parent willingness
- Cleanliness
- Able to sit still

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## Move from diopters → millimeters



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## Equipment

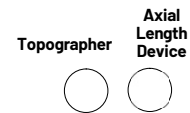


Photo Courtesy Joshua Pasol, MD

## Axial Length

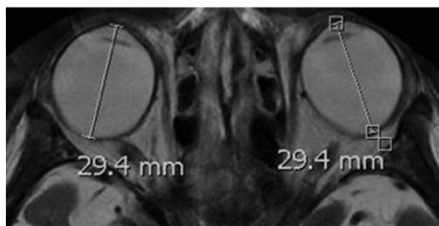
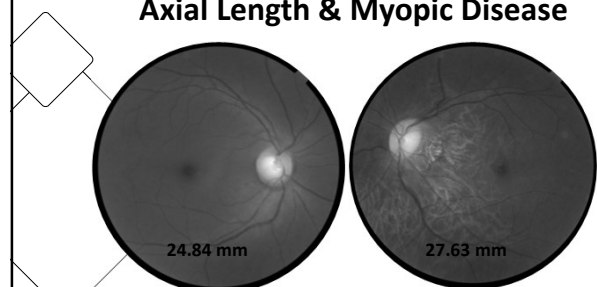


Photo Courtesy of Joshua Pasol, MD

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## Axial Length & Myopia Disease



\*Diopters are easy to measure, but myopia management is about axial length control\*



## Axial Length Devices



## Measuring Axial Length



Dalton	Myself	Dalton	Myself
OD: 22.92	OD: 25.11	OD: +1.00	OD: -5.50
OS: 22.94	OS: 25.17	OS: +1.00	OS: -5.50

## Axial Length Norms\*

Age	Girls	Boys	European	Chinese
6- 7 yo	22.75 mm	23.05 mm	22.33 mm	22.77 mm
8-9 yo	23.29 mm	23.65 mm	23.05 mm	24.02 mm
10-11 yo	23.76 mm	24.09 mm	-	-
12-14 yo	23.80 mm	24.25 mm	23.40 mm	24.69 mm

\*Caution must be taken when applying this data clinically, as many confounding factors affect these norms, including but not limited to, gender and racial background.

Fuensanta A. Vera-Diaz, OD, PhD, FAAO. The Importance of Measuring Axial Length. Review of Myopia Management. August 9, 2020 <https://reviewofmm.com/the-importance-of-measuring-axial-length-when-managing-childhood-myopia/>

## Axial Length & Refractive Error

	Refractive Error	Axial Length
OD	-4.75-0.75x010	23.91
OS	-5.00-0.75x180	24.11

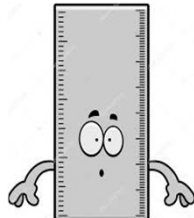
	Refractive Error	Axial Length
OD	-5.50-0.50x180	27.28
OS	-5.50-0.50x165	27.24

\*Refractive error does not correlate with axial length

## Axial vs Refractive

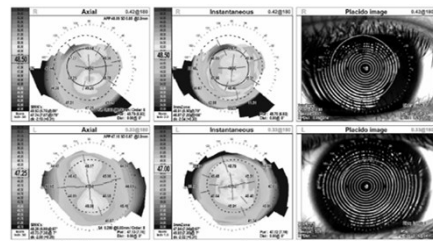
- 5 Year old- Parents worried about retina and wanted second opinion on what to do

- Current Spectacle:
  - OD: -8.00-0.75x164 20/100
  - OS: -5.00-1.75x178 20/60
- Refraction:
  - OD: -10.00-2.00x180 20/60-
  - OS: -5.50-2.00x010 20/50
- Cyclo:
  - OD: -10.00-2.00x180
  - OS: -5.50-2.25x010

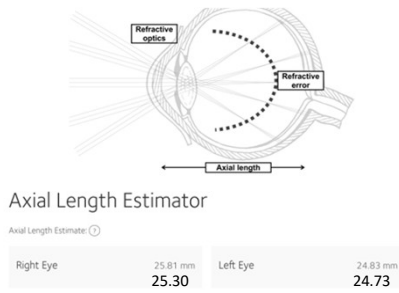


## 5 Year Old

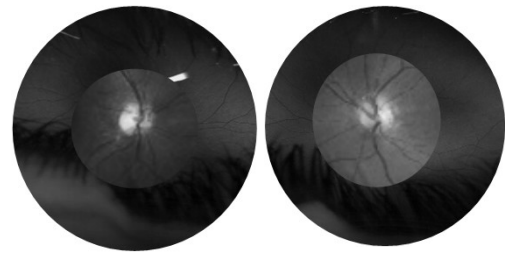
	Refractive Error	Axial Length	K's
OD	-10.00-2.00x180	25.30	49.93@089/47.74@179
OS	-5.50-2.00x010	24.73	48.28@097/45.73@007



## Calculating Axial Length with What You Have



## 5 Year Old



TX: Update RX parents education full time wear  
Start Atropine 0.025% 1 drop QHS  
RTC 4 weeks atropine follow up then every 3 months

Select the treatment that is best appropriate for the patient and the family

### Myopia Treatments

Indoor/Outdoor Time

Myopia Spectacles

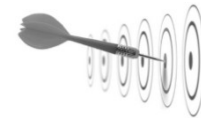
Low Dose Atropine

Dual-Focus Soft Lenses

Orthokeratology

## Goal

Keep myopia below -3.00  
and  
Axial length below 26mm



## Suggested Interventions

Milton Horn, OD & Brianna Rhue, OD  
It is up to the clinician to decide if off label\* options are an option for each case.

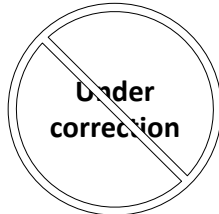
Age	PL to +0.75D	-0.50 to -1.00D	-1.25 to -2.00D	-2.00D+	Cyl < 1.00D	Cyl > 1.00D
<6y	Lifestyle Prophylactic Atropine*	Atropine* Misight* Myopia Specs	Atropine* Misight* Myopia Specs	Atropine* Misight* Myopia Specs	Atropine* Misight* Myopia Specs	Atropine* Myopia Specs
	PL to +0.75D	-0.50 to -1.00D	-1.25 to -2.00D	-2.00D+	Cyl <1.00D	Cyl > 1.00D
6y	Lifestyle Prophylactic Atropine*	Atropine* Misight* Myopia Specs	Atropine* Misight* Myopia Specs	Atropine* Misight* Myopia Specs Combo Therapy	Atropine* Misight* Ortho-k Myopia Specs	Atropine* Myopia Specs** Ortho-k
	PL to +0.50D	-0.50 to -1.00D	-1.25 to -2.00D	-2.00D+	Cyl <1.00D	Cyl > 1.00D
7-8y	Lifestyle Prophylactic Atropine*	Atropine* Misight* Myopia Specs	Atropine* Misight* Ortho-k Myopia Specs	Atropine* Misight* Ortho-k Myopia Specs Combo Therapy	Atropine* Misight* Ortho-k Myopia Specs	Atropine Myopia Specs Ortho-k
	PL to +0.25D	-0.50 to -1.00D	-1.25 to -2.00D	-2.00D+	Cyl <1.00D	Cyl > 1.00D
9-10y	Lifestyle Prophylactic Atropine*	Atropine* Misight* Myopia Specs	Atropine* Misight* Ortho-k Myopia Specs	Atropine* Misight* Ortho-k Myopia Specs	Atropine* Misight* Ortho-k Myopia Specs	Atropine* Ortho-k Myopia Specs
	Emmetropia	-0.50 to -1.00D	-1.25 to -2.00D	-2.00D+	Cyl <1.00D	Cyl > 1.00D
11+y	Lifestyle	Atropine* Misight* Myopia Specs	Atropine* Misight* Ortho-k Myopia Specs	Atropine* Misight* Ortho-k Myopia Specs	Atropine* Misight* Ortho-k Myopia Specs	Atropine* Ortho-k Myopia Specs

## Treatment Goals

- Present the options to the parent and child and decide together what is best
- Set realistic expectations for treatment
- Atropine, MF contacts, Ortho-k, myopia spectacles all have around 50%-70% efficacy \*depending on studies
  - Children will still likely progress depending on age of onset
  - Which ever method you choose you are providing evidence based myopia treatment
- Atropine should be reserved for younger children
- Contacts lenses should be fit as soon as patient and parent are ready
- Dual treatments are becoming more common

## Single Vision Glasses & Contacts

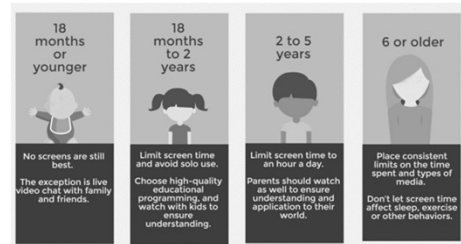
- Single vision glasses & contacts have **NO** effect on slowing progression
  - 80% of practitioners acknowledged this
- 64% of myopic children around the world are treated with a single vision option



James Wolffsohn: Global trends in myopia management attitudes and strategies in clinical practice – 2019 Update

## Screen time Recommendations Have the Discussion

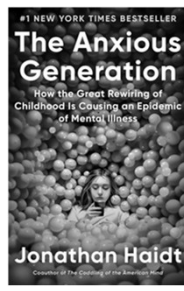
American Academy of Pediatrics  
DEDICATED TO THE HEALTH OF ALL CHILDREN



American Academy of Pediatrics

## Pre-Myopes- Hyperopic Reserve

- Discuss indoor/outdoor time
- Re-evaluate in 6 months
- Can prophylactically treat with low dose atropine
  - 0.01%, 0.025%, 0.05%



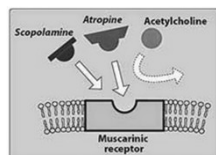
## Atropine Treatment Protocol

- 1 drop 0.025% or 0.05%(QHS) daily
- Can start as young as 3 years old
- Slows rate of progression by 30% - 70% concentration & formulation dependent
- In the first 6 months, may still see progression



## Atropine MOA Theories

- A non-specific muscarinic receptor antagonist
- Anticholinergic that binds to M1, M2, M4, and M5 receptors
- May act on one or more muscarinic acetylcholine receptors in the retina or directly on scleral fibroblasts to slow eye growth
- May prevent choroidal thinning due to hyperopic defocus<sup>7</sup>



**Does not work by blocking accommodation<sup>8</sup>**

8. McBrien NA, Moghaddam HO & Reeder AP. Atropine reduces experimental myopia and eye enlargement via a nonaccommodative mechanism. Invest Ophthalmol Vis Sci 1993; 34: 205–215  
17. Samuel T-H, Chiang and John R. Phillips, "Effect of Atropine Eye Drops on Choroidal Thinning Induced by Hyperopic Retinal Defocus," Journal of Ophthalmology, vol. 2018,

## Atropine Evaluation Schedule

- 4 week follow up (make sure they got their drops and are using them)
- 4 months after starting to ensure no side effects/compliance
- Start assessing treatment efficacy at 6 months
- Assess for progression every 6 months
  - VA
  - Binocular vision
  - A-scan
  - Refraction/Topography
  - If >0.25-0.50 D of change at 1year consider changing dosage
- If stable for 2 years or past the age of 16→ Taper

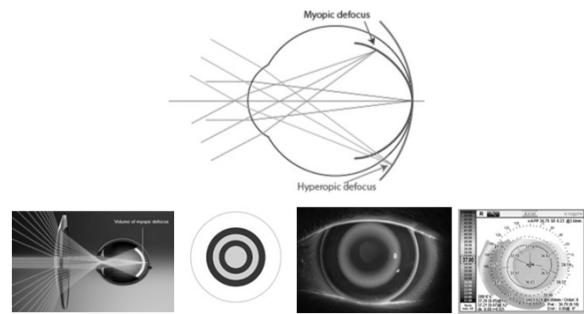
## How Long Will They Be On Drops?

- May add in another therapy to taper drops
- May start tapering past the age of 16



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## Controlling Peripheral Focus



## Optical Correction

CooperVision and Essilor Partner to Accelerate Access to SightGlass Vision Technology & Expand Myopia Management Category

February 05, 2021

**HOYA**  
Innovative Incorporated Multiple Segments (IMS)

**MyoVision™ by ZEISS**

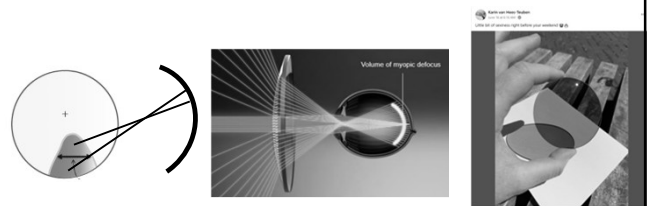
**ESSILOR**  
SEEING THE WORLD BETTER

ESSILOR'S GAME-CHANGING "STEELEST" LENS SHOWN TO SLOW DOWN MYOPIA PROGRESSION IN CHILDREN BY MORE THAN 60% AFTER ONE-YEAR INTERIM CLINICAL TRIAL

**MyopiLUX**  
MyopiLUX Max  
MyopiLUX Pro

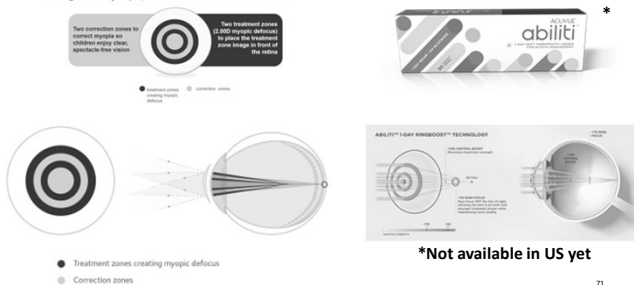
By limiting the extent of image focused within, near sight progress may be better

## Optical Correction



## Soft Contact Lenses

MiSight® 1 day myopia control soft contact lenses



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## MiSight Study

- Three-year randomized, controlled clinical trial (4 study sites)
- 135 children ages 8 to 12 at the start of treatment
- MiSight vs. conventional soft contact lens
- Results – (for the full three-year period) progression in myopia of those wearing MiSight lenses was less than those wearing conventional soft contact lenses
- In addition, subjects who used MiSight had less change in the axial length of the eyeball at each annual checkup.
- There were no serious ocular adverse events in either arm of the study

Slowed progression by:

**59%**  
cycloplegic spherical equivalent (SE)  
and  
**52%**  
mean axial elongation of the eye

<https://www.fda.gov/news-events/press-announcements/fda-approves-first-contact-lens-indicated-slow-progression-nearsightedness-children>

## The Future of Soft Contact lenses for Myopia Management

September 8, 2021

Johnson & Johnson Vision Receives Approval in Canada for ACUVUE® Abiliti™ 1-Day Soft Therapeutic Lenses for Myopia Management



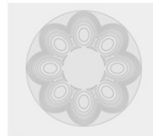
Menicon Bloom Day™

Menicon BLOOM™

### Benefits

- Soft daily contact lens CE approval for myopia control in Europe
- Myopia control and myopia correction combined
- Lens fitting and progress monitoring via optimized, easy-to-use Easyfit module
- Direct contact and monitoring of patients through the Menicon Bloom app and Menicon Bloom Easyfit
- Clear agreements between eye care specialist and patient through informed consent
- Very hygienic, a new set of lenses every day

Myoptechs™



## Dual Focus Soft Contact Lens Evaluation Schedule

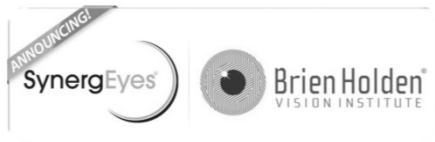
- Year 1 Follow up schedule
  - 1 week
    - Enroll in the program
  - 1 month
    - Can be done in the office (highly preferred) or via telemedicine
  - Then every 4 months for the first year
- Year 2 Follow up schedule
  - Annual exam
  - Every 6 months if progression has slowed <-0.50D



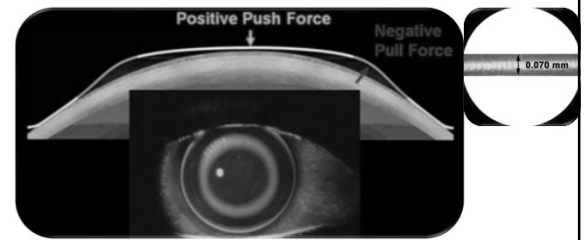
74

## Astigmatism >1.25

- Extended depth of focus
- Center distance
- Can fit empirically with K's and refraction
- Hybrid Lenses
- Ortho-k



## Ortho-K



- NaFL not visible if tear lens is <20 microns

## LASIK vs Ortho-k Anatomically

Flap = 90-110 microns

50 microns

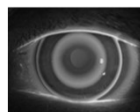
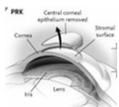
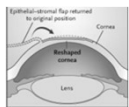
235 microns

500 microns

> 8-10 microns = -5.00D

-5.00 Myope = 75 microns

-9.00 Myope = 135 microns



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## Designing Ortho-k Lenses



Empirical Method

- Refraction
- HVID
- K's
- Topography



Trial/ Diagnostic Lens Fitting



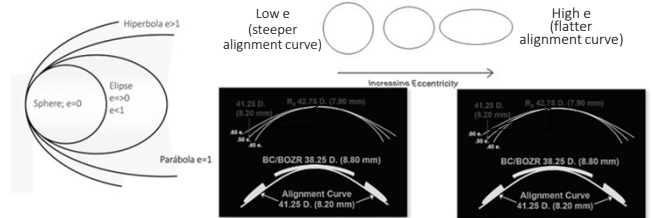
Topography based software designs

## Orthokeratology (Ortho-K)



## Corneal Contour

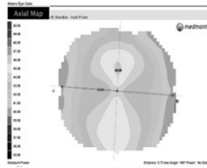
- The human cornea is not spherical or rotationally symmetric
- Asphere



<https://www.clspectrum.com/issues/2017/march-2017/the-anatomy-of-a-modern-orthokeratology-lens>

## Topography Maps

- Axial Maps (Sagittal) → Power**
- Describes the surface relative to the optical axis
  - General view of the corneal contour
  - Highly dependent on patient fixation
  - Central information



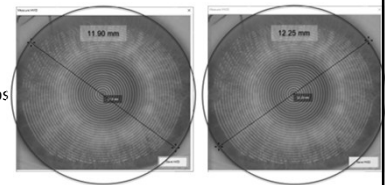
- Tangential Maps (Instantaneous or True Curvature) → Fit**

- Describes the corneal surface independent of the optical axis
- Shows small localized changes of the cornea
- Peripheral information



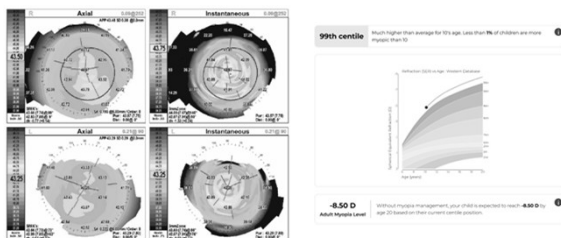
## Capturing Best Topography

- Capture 4-6 baseline maps
- Assess maps: delete poor maps
- Identify your best map
- Measure OVID (Oblique Visual Iris Diameter)

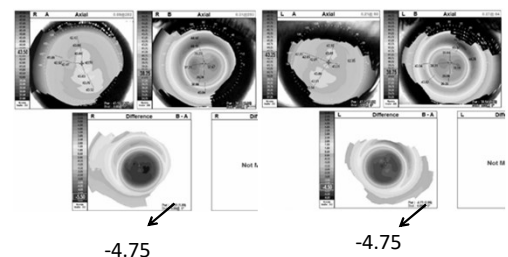


## 10 Year Old- Mother is a -6.00

- OD: -4.75 AL: 25.15
- OS: -4.50 AL: 25.46



## 1 Week Follow up- Difference Maps





When is my child done with treatment?

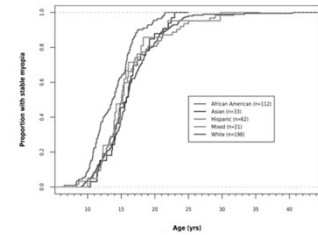
- When they reach ocular maturity or are ready for Refractive Stability
  - No change in MRX of more than -0.50 in approx. 1 year

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## At what age does Myopia Stabilize



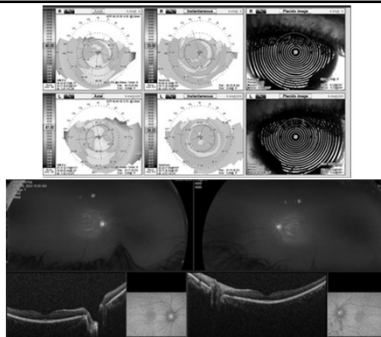
Age 15: 48%    Age 21: 90%  
Age 18: 77%    Age 24: 96%



Case 1  
21 Y/O

OD: -4.00-0.75x180  
40.52@031/39.11@121  
27.31

OS: -4.25-0.75x010  
41.31@113/39.99@023  
27.04

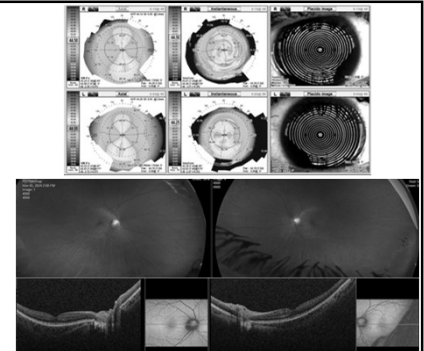


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Case 2  
37 Y/O

OD: -8.25-2.25x180  
45.25@094/42.88@004  
26.89

OS: -8.00-2.75x180  
45.55@087/42.83@177  
26.63

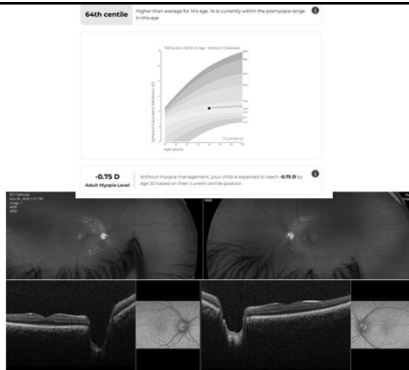


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Case 3  
14 Y/O

OD: pl-0.75x180  
41.87@093/40.18@003  
25.06

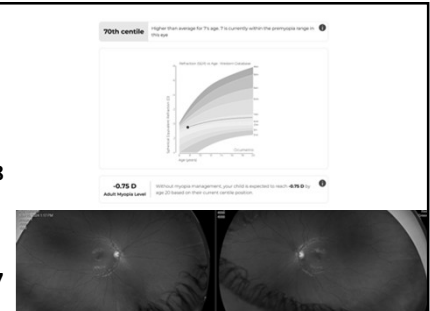
OS: pl-0.75x180  
41.41@095/40.18@005  
24.90



Case 4  
7 Y/O

OD: +0.50  
42.88@088/41.98@178  
22.77

OS: +0.50  
43.16@177/42.08@177  
22.77



Re-evaluate in 6 months

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**Case 5**  
8 Y/O

Last year -3.00, 1<sup>st</sup> Rx @4yo -1.00  
Mom: -3.25 Dad: plano

OD: -4.25-0.50x180  
45.98@098/44.88@008  
24.14

OS: -4.25-0.50x180  
46.62@076/45.06@166  
23.99

Began Ortho-k

**Case 6**  
8 Y/O

OD: -1.00-0.50x095  
44.76@086/44.35@176  
23.84

OS: -0.75-0.75x075  
45.00@086/44.70@176  
23.62

Opted for SV Specs...Re-evaluate in 3 months

**Case 7**  
9 Y/O

Can't See the Board

OD: 20/40- OD: -1.00  
OS: 20/40- OS: -1.25

OD: 43.83@086/42.40@176  
OS: 44.00@079/42.99@169

**Case 7**  
9 Y/O

Can't See the Board

OD: 25.01  
OS: 24.83

OD: 20/40- OD: -1.00  
OS: 20/40- OS: -1.25

**9 Year Old- Can't See the Board**

OD: -1.00  
OS: -1.25

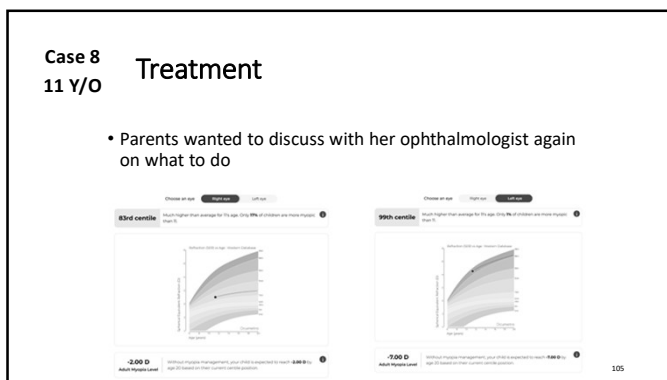
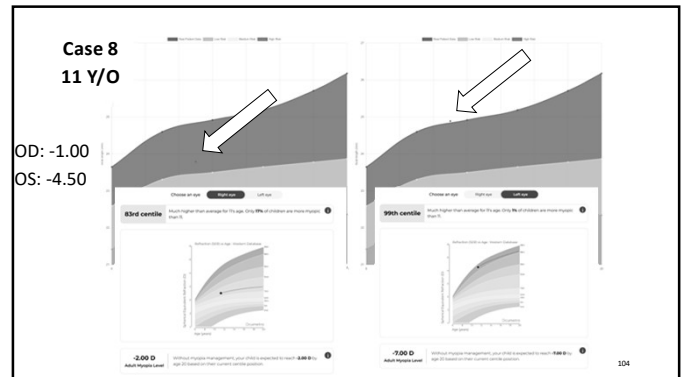
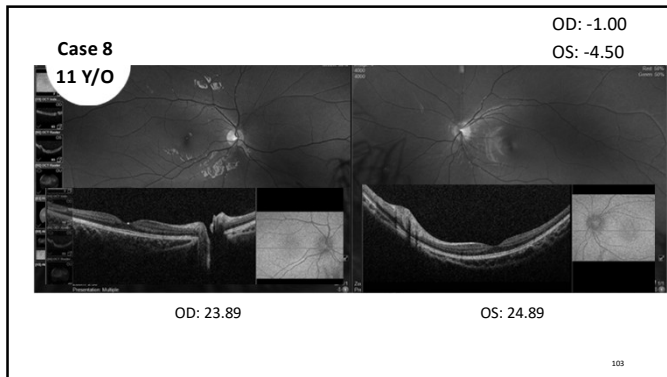
Parents opted for dual-focus contact lenses and began treatment that day

**Case 8**  
11 Y/O

**Second Opinion**

OD: 20/50- OD: -1.00  
OS: 20/400- OS: -4.50

OD: 43.87@086/42.40@176  
OS: 44.00@079/42.99@169



### Your Program

**Develop your program before you start treating your first patient**

**How will you present the options?**

- Comprehensive exam vs. Myopia consultation visit

**Chair cost—Charge appropriately & understand your value**

- Global Fee:
  - Ortho-K or Dual-Focus CL
  - Atropine, Spectacles

**Missed Evaluation Visits**

This is a non-covered service billed outside of any managed care insurance or vision program

### Setting Yourself and Your Patients up for Success

- Handouts
- Contracts
- Referral Letters
- Compounding Pharmacy
- Fitting Sets, Orthok Lab

### Who is going to be your main referral source?

# YOU!

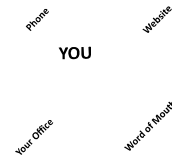
108

## Letters Back to the Pediatrician

- Once you do have a patient referral ensure you send a nice treatment plan letter back.
- Patient feedback loop

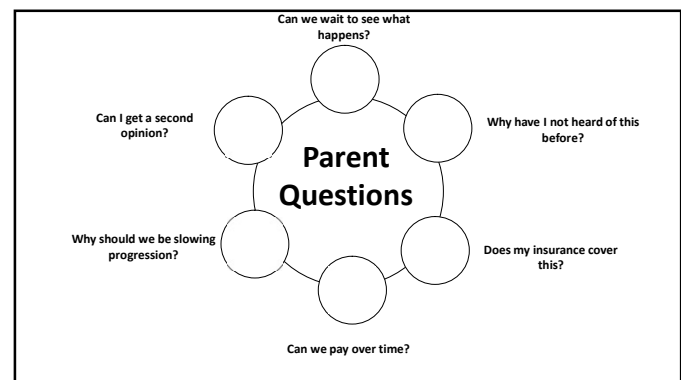


## Your Office and Your Team



## Your Pitch

- You already have a myopia clinic... Take the time and nurture it
- Discuss pros and cons of treatment
- Don't be discouraged by no
- Have both parents present at consult



Communication  
Connection  
Culture

+ Compassion

—————  
Patient and Practice Success

## Monday Morning... Now What?

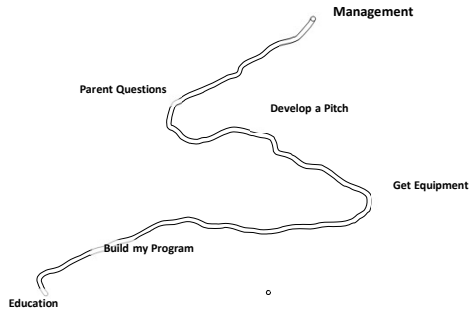
—————  
We need to be the ones to own this

—————  
Access the risk factors

—————  
Discuss options

—————  
Ask for help

## Expedition Myopia



## Other Pearls

- Talk about outdoor time
- Talk about screen time
- Talk about driving

Children who own a smartphone: Average screen time now ranges from 5.5 to 8.5 hours per day

For example, the percentage of kids from 8 to 18 years old who own smartphones steadily increased from 2015 to 2021; as of 2021, the 8- to 12-year-olds used screen media about 5.5 hours per day and the 13- to 18-year-olds used it about 8.5 hours per day (see Figure 5-4, Common Sense, 2021). Among households with children younger than age 6, smartphone ownership increased from 41% to 97% and tablet ownership increased from 8% to 75% from 2011 to 2020 (Larichius, 2022). While the global rise in myopia prevalence predates the advent of smart devices, the recent surge in electronic device usage has been argued to further add to the already high rates of myopia (Dzami et al., 2019; Foreman et al., 2021; Lanca & Saw, 2020). Gaining an understanding of the effects of electronic device use on myopia is crucial for shaping public health policies, educational strategies, clinical practice guidelines, and parenting approaches.

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## Providing Solutions Over Sales



The trick to forgetting the big picture is to look at everything close-up

Chuck Palahniuk

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## Generations to Come...

**You Got this!**

**Brianna Rhue, OD, FAAO, FSLs**  
brhue@drcontactlens.com