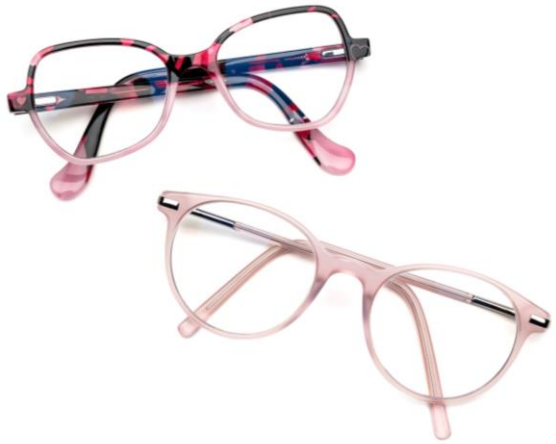
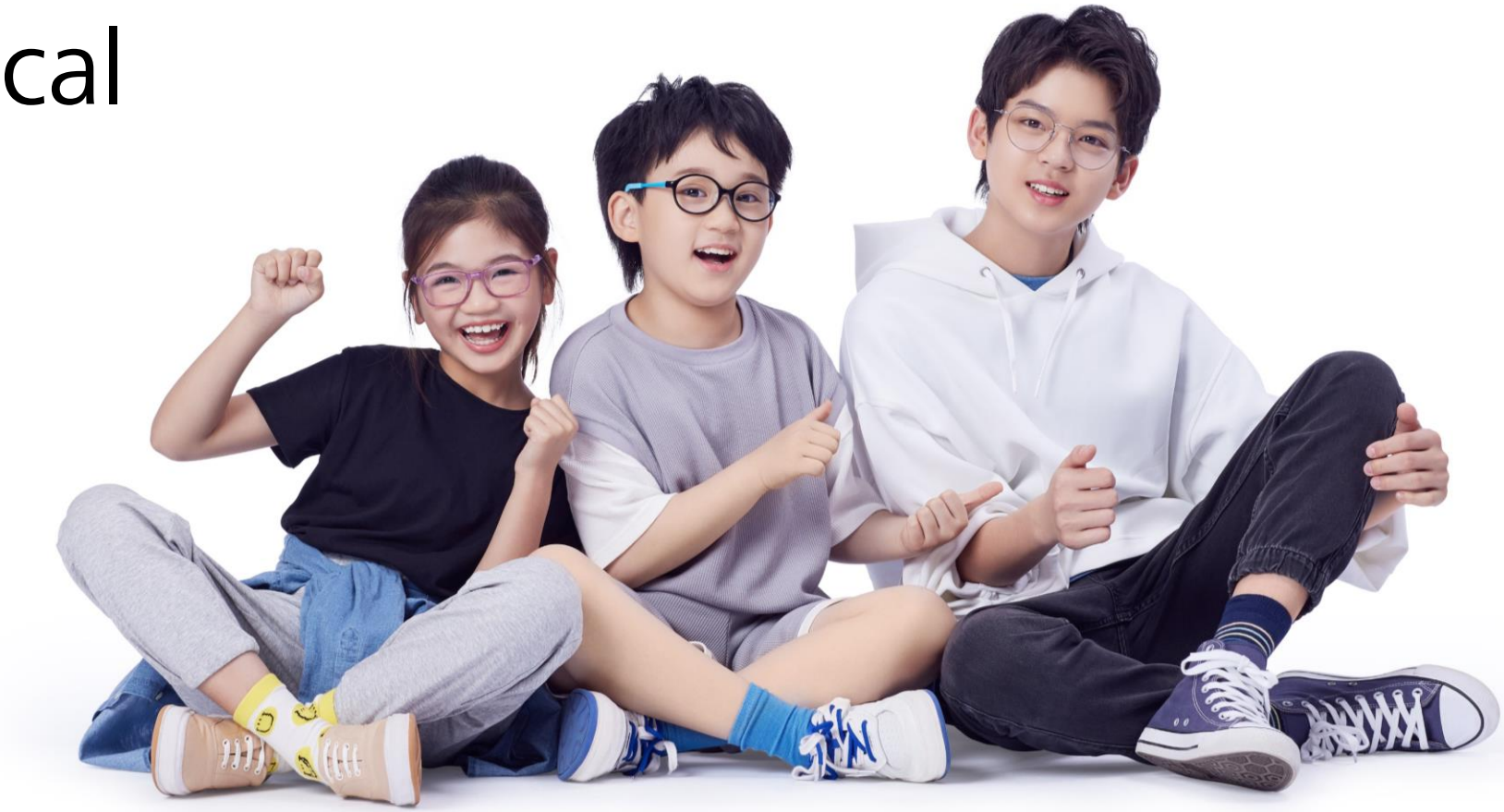
Myopia Management guideline:

Summary of clinical information





Myopia management guideline
Preamble

This guideline summarizes the available clinical data, options and recommendations for the treatment and prevention of myopia. It cannot and should not replace an individual eye examination and treatment by an eye care professional.

The decision to treat a child should be based on the refractive error along with the individual overall risk profile.

Treatments should be comprehensive, including lifestyle advice, provision of full refractive correction for full-time use, along with an available form of myopia management intervention to reduce or arrest further myopia progression.

- Myopia is becoming more prevalent with a higher prevalence and earlier onset of myopia observed in many parts of the world. Even though trends are similar, absolute numbers in the form of myopia prevalence and growth rates vary between different geographic regions of the world, with lifestyle (e.g., urban/rural), and with different ethnic backgrounds.
- Clinical experts recommend… a detailed history and evaluation of risk in order to have a reliable decision basis. Ideally a patient / child will have a longitudinal record of refractive and anatomical development to consider need for Myopia Management (MM).
- The current best practice defines 3 levels for recommendation of MM:
  - "No MM recommended" for non-myopic eyes with development that is within normal range.
  - "MM may be an option" for pre-myopes with an elevated risk profile for progression. Based on the assessment, patient motivation and individual circumstances, MM may be applied here.
  - "MM recommended" for myopic eyes at risk of progression.
- Regular / periodic eye examination and an evaluation of risk factors is recommended to ensure appropriate treatment strategy.
- It is understood that the body of evidence will grow, with further data and information being available from more regions of the world. ZEISS Vision Care is constantly reviewing the state of science and updating its materials accordingly.

Myopia management guideline

Overview of the myopia management workflow

1 **History & risk factors**

2 **Evaluation**

3 **Categorization**

Non-myopes

Pre-myopes & myopes

4 **Recommendation**

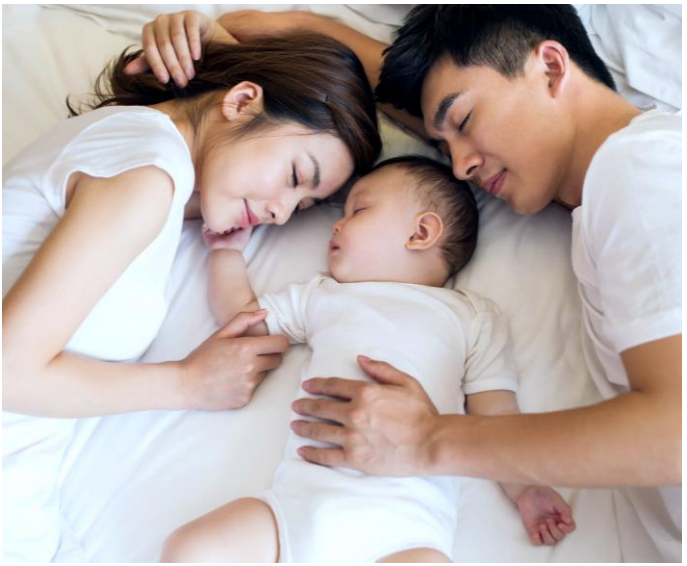
Behavioral recommendations

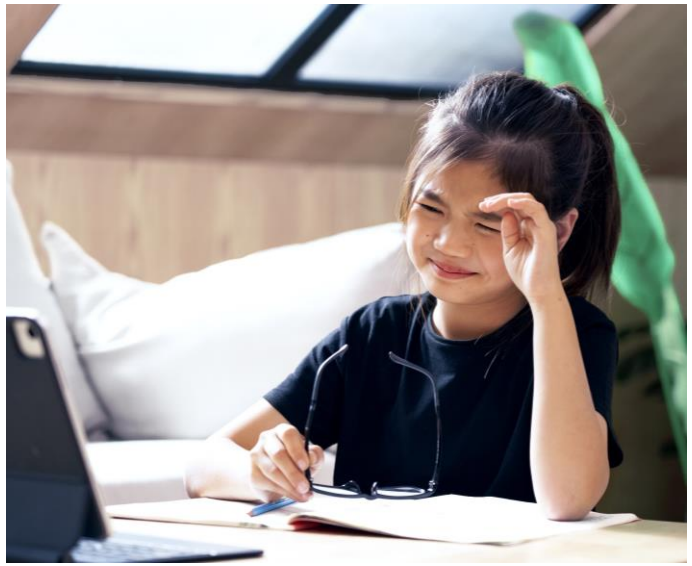
Recommendations for intervention
+ Behavioral recommendations

5 **Monitoring**

Myopia management guideline
History & risk factors

1





Risk factors

- Younger age
- Parental myopia
- East-Asian and South-East-Asian ethnicity
- Lack of outdoor time
- Excessive near-based time
- History of fast progression

Myopia management guideline
Evaluation

2

To consider

- Eye examination
- Cycloplegic refraction
- Rule out any other ocular condition

Myopia management guideline
Categorization

3 Cycloplegic refractive error is the best predictor for myopia onset and the best way to diagnose myopia.[1]

≤ 6 years

7-10 years

> 10 years

	≤ 6 years	7-10 years	> 10 years
Non-myope	> +0.75D	> +0.50D	> +0.00D
Pre-myope	Between +0.75D and -0.50D with risk factors* present		
Myope	-0.50D or worse		

***Risk factors for myopia progression**: Younger age, parental myopia, East-Asian and South-East-Asian ethnicity, lack of outdoor time, excessive near work time, history of fast progression. Progression differs by age, ethnicity, and gender. See Gifford KL, Richdale K, Kang P, et al. (2019)[2] for further information.

Myopia management guideline
Recommendation

4	Recommendations for intervention	Behavioral recommendations
Non-myope	Normative development No myopia management recommended	• > 2 hours outdoor time / day • Reduce time on near-based activities, take breaks and look into the distance • Regular eye exams
Pre-myope	Consider risk factors.* Myopia management can be an option Select appropriate myopia management strategy for the individual child**	• > 2 hours outdoor time / day • Reduce time on near-based activities, take breaks and look into distance • Regular eye exams
Myope	Myopia management recommended if one or more risk factors* present Select appropriate myopia management strategy for the individual child**	• > 2 hours outdoor time / day • Reduce time on near-based activities, take breaks and look into distance • Regular eye exams

***Risk factors for myopia progression**: Younger age, parental myopia, East-Asian and South-East-Asian ethnicity, lack of outdoor time, excessive near work time, history of fast progression. Progression differs by age, ethnicity, and gender. See Gifford KL, Richdale K, Kang P, et al. (2019)[2] for further information.

** Myopia management strategies include spectacle lens, contact lens, orthokeratology, atropine, and light-based interventions.[3-5]

Myopia management guideline
Monitoring

5

	Time interval for follow-up	Procedures & evaluation
Non-myope	Yearly review	• Eye examination • Cycloplegic refraction* • Evaluate risk of myopia onset
Pre-myope	Closer follow-up	• Eye examination • Cycloplegic refraction* • Axial length measurement (recommended)** • Evaluate risk of myopia onset
Myope	• First follow-up at 6 months • Later follow-ups can be longer based on progression	• Eye examination • Cycloplegic refraction* • Axial length measurement (recommended)** • Evaluate myopia progression – **Slow**: Continue treatment – **Faster** than expected at given age***: Closer monitoring, review & adapt treatment strategy

* Cycloplegic refraction is the gold standard to assess refractive error. Non-cycloplegic assessment will overestimate refractive error and may result in falsely identifying an eye as myopic.
** The best way to monitor progression is to measure axial length. Axial length measurements are sensitive and optical biometers deliver reliable accuracy.
*** Progression differs by age, ethnicity, and gender. See Gifford KL, Richdale K, Kang P, et al. (2019)[2] for further information.

Myopia management guideline
Summary of clinical information

1 History & risk factors

- Younger age
- Parental myopia
- East-Asian and South-East-Asian ethnicity
- Little outdoor time
- Increased near-based time
- History of fast progression

2 Evaluation

- Eye examination
- Cycloplegic refraction
- Rule out any other ocular condition

Cycloplegic refractive error is the best predictor for myopia onset and the best way to diagnose myopia.[1]

3 4 Categorization & Recommendation

Non-myopes
- ≤ 6 years: **> +0.75D**
- 7-10 years**: > +0.50D**
- > 10 years: **> +0.00D**

– Normative development.
– No myopia management recommended

Pre-myopes
≤ 6 years to >10 years: Between **+0.75D and -0.50D** with risk factors present.

– Consider risk factors. Myopia management can be an option.
– Select appropriate myopia management strategy for the individual child.

Myopes
≤ 6 years to >10 years**: -0.50D or worse**

– Myopia management recommended if one or more risk factors present.
– Select appropriate myopia management strategy for the individual child.

Behavioral recommendations:
- > 2 hours outdoor time / day
- Reduce time on near-based activities, take breaks and look into the distance
- Regular eye exams

5 Monitoring

Yearly review
- Eye examination
- Cycloplegic refraction*
- Evaluate risk of myopia onset

Closer follow-up
- Eye examination
- Cycloplegic refraction[4]
- Axial length measurement (recommended)
- Evaluate risk of myopia onset

First follow-up at 6 months.
Later follow-ups can be longer based on progression.
- Eye examination
- Cycloplegic refraction[4]
- Axial length measurement (recommended)
- Evaluate myopia progression
  Slow: Continue treatment
  Faster than expected at given age[2]: Closer monitoring, review & adapt treatment strategy

Myopia management guideline
Summary of clinical information

References

[1] Flitcroft DI, He M, Jonas JB, et al. IMI – Defining and classifying myopia: a proposed set of standards for clinical and epidemiologic studies. Invest Ophthalmol Vis Sci. 2019;60:M20–M30. https://doi.org/ 10.1167/iovs.18-2595

[2] Gifford KL, Richdale K, Kang P, et al. IMI – Clinical Management Guidelines Report. Invest Ophthalmol Vis Sci. 2019;60:M184–M203. https://doi.org/10.1167/iovs.18-25977

[3] Wildsoet CF, Chia A, Cho P, et al. IMI – Interventions for Controlling Myopia Onset and Progression Report. Invest Ophthalmol Vis Sci. 2019;60:M106–M131. https://doi.org/ 10.1167/iovs.18-25958

[4] Jong M, Jonas JB, Wolffsohn JS, et al. IMI 2021 yearly digest. Invest Ophthalmol Vis Sci. 2021;62(5):7. https://doi.org/10.1167/iovs.62.5.7

[5] Sankaridurg P, Berntsen DA, Bullimore MA, et al. IMI 2023 digest. Invest Ophthalmol Vis Sci. 2023;64(6):7. https://doi.org/10.1167/iovs.64.6.7

Seeing beyond