

# MYOPIA MOMENT

## USING REFRACTIVE ERROR TO IDENTIFY PRE-MYOPIA IN CHILDREN

Identifying children at risk of developing myopia can be done by evaluating risk factors such as family history of myopia, refractive error, lifestyle, certain vision disorders, and age of onset.

Myopia can be predicted before onset in young children. This Myopia Moment provides a brief overview of how to use refractive error to evaluate pre-myopia in a child.



### CLINICAL BACKGROUND

- Children can be at risk of developing myopia even if they present with minimal refractive error, including emmetropia or less hyperopia than expected for their age.
- What is considered normal refractive error expected for a child's age can be influenced by ethnicity.



### SITUATION GLOBALLY

Population-based data on what is accepted as "normal" development of refractive status in children is not available for many parts of the world and across ethnicities.

### Who's more at risk of developing myopia?



+0.50 D Age 6

*Risk profiles for illustrative purposes only*



+1.25 D Age 6

### WHAT CAN YOU DO?

- Develop an understanding of the normal refractive development of the population you serve in your community.
- Use your own insight and clinical experience, in conjunction with evidence from well-designed studies, to evaluate whether a child is less hyperopic than he or she should be at appropriate age milestones.



### GENERALISED DATA

International Myopia Institute: Pre-myopia is defined as a refractive state of an eye of  $\leq +0.75$  D and  $> -0.50$  D in children where a combination of baseline refraction, age, and other quantifiable risk factors provide a sufficient likelihood of the future development of myopia to merit preventative interventions.



### IMPORTANT

Using a baseline refraction alone to define a child as pre-myopic is helpful and should be considered in conjunction with other risk factors that that may be present.

#### Risk factors (modifiable):

- <2 hours of outdoor time per day
- Excess viewing of digital devices and other near work

#### Risk factors (non-modifiable):

- Age: younger age of onset
- Family history: myopic parent(s) and ethnicity
- Other vision disorders



Remember that a child may pass a vision screening and still be at risk of developing myopia.

Children should be seen for a full eye examination early, prior to beginning school, and regularly to monitor refractive status and assess overall risk for myopia.



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Prepared by the World Council of Optometry Myopia Management Resource Committee 2021

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