

MYAH

How to: enhance your myopia management using the MYAH growth curves.



Your MYAH now has a new powerful tool on-board, supporting you with myopia management decisions and aiding communication with parents.

Myopia is a disease of (excessive) axial elongation. By using the latest extensive axial length dataset based on thousands of children collected by Erasmus University Medical Center (Rotterdam, NL)¹, not only can you monitor axial length, you can also compare measurements with reference growth curves and hence understand a child's risk of myopia in adulthood.

Many parents/guardians are familiar with growth charts for their child's height and weight, making this tool invaluable for communication with the parents of myopic children, particularly pre-myopes and low-myopes, where the urgency of intervention is difficult to appreciate based on the refractive error.

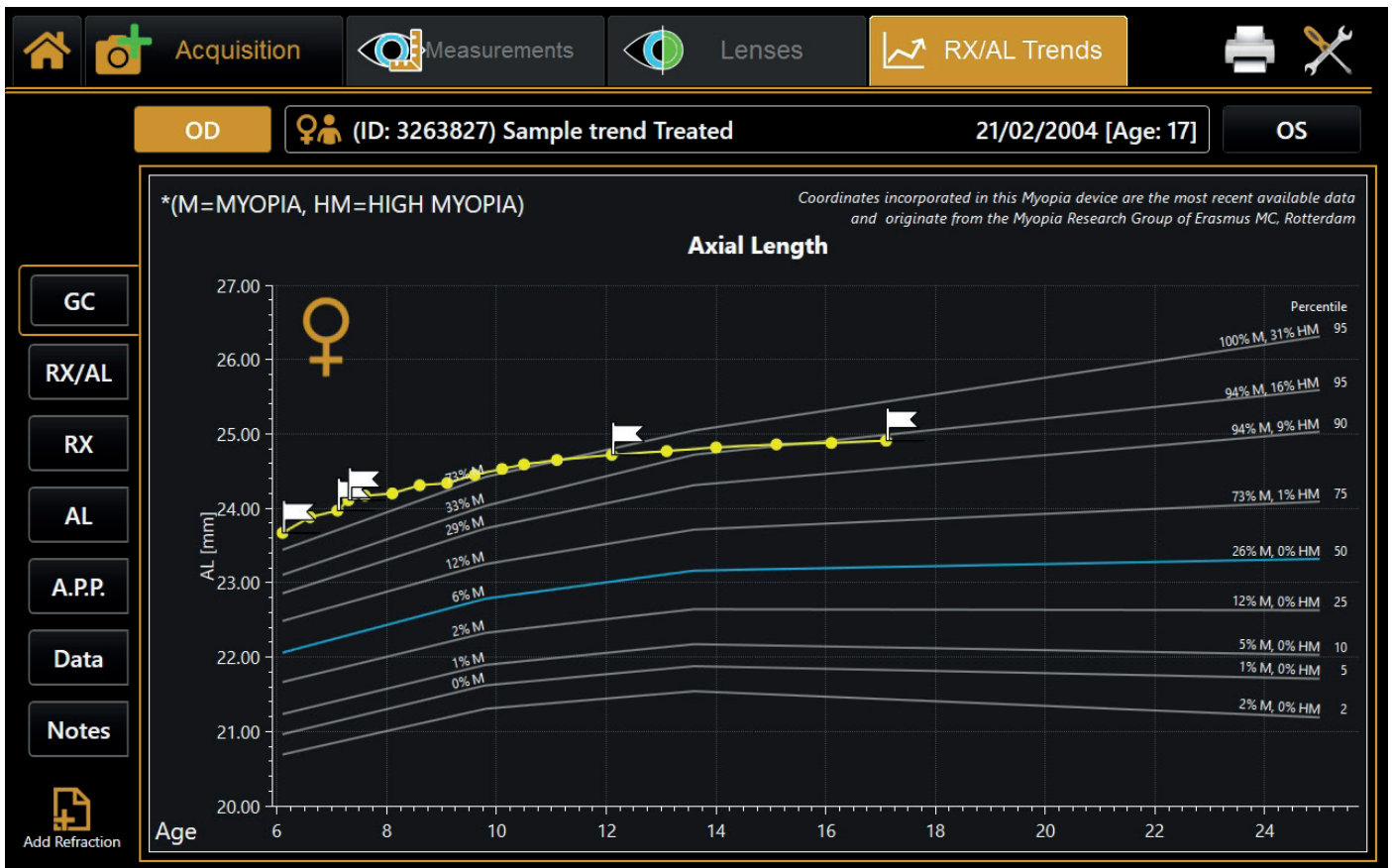
Insight from the initial assessment

Axial length measurements are quick and easy to capture, even in young children. The growth curves allow easy comparison of measurements with the average for that age group and gender. Even a single measurement provides information on the risk of myopia and high myopia in later life. This feature enables you to start the conversation with parents on the first visit and provides additional evidence to support your clinical recommendations.

Axial length trend

Where axial length measurements are available over a series of visits, it is easy to evaluate the rapid speed of growth in untreated eyes. A positive trend line crossing the percentiles indicates acceleration of axial elongation and should raise concern, particularly in pre-myopic children.

Conversely, the effectiveness of a particular myopia intervention can be appreciated as the trend line slows and starts to move down the percentiles over time. Regular assessments allow the chosen strategy to be closely monitored and modified if required. It is important to explain to parents and children that some axial length elongation throughout childhood is normal. A complete halt of eye growth is not achieved with any intervention, but clinicians now have a choice of effective management options to reduce excessive elongation.



Example of right eye axial length data from a female child, plotted on the axial length growth curves (view of MYAH screen).

How to explain the charts to parents and children

The yellow data points and trend line show the measured axial length values at each visit. Measured axial length in mm (vertical axis) is plotted against the age of the child in years (horizontal axis).

The blue line on the chart represents the middle, or median of the reference data set. The grey lines above the blue line represent eyes that are longer than the median, and those below are shorter than the median.

The median and the percentile lines are based on the large population assessed by Erasmus University Medical Center¹. The growth curves are slightly different depending on whether your patient is male or female.

What is “average”? The blue line shows the median (50th percentile) axial length of the reference population for different ages. At any particular age, 50% of eyes are longer than this axial length value and 50% are shorter. On the far right of the blue line, the figure 26% M indicates that around 26% of children with a median axial length will be myopic by adulthood whereas none (0%) will have high myopia (more than -6D). The value on the left of the blue curve (6% M) indicates that 6% of children with a median axial length are myopic by the age of 9.

Increased myopia risk². If an axial length measurement falls above the blue line, closer to one of the higher percentiles, there is an increased risk of myopia in adulthood. For example, a 9 year-old child with an axial length measurement on the 90% percentile (the 2nd grey line above the blue, median line), has an eye in the top longest 10% of the population for their age. 29% of children in this group are myopic by age 9. If no myopia management takes place, they have an 87% chance of being myopic as an adult and a 9% chance of being highly myopic (more than -6D), with an increased risk of myopic eye disease including myopic maculopathy, retinal detachment, glaucoma and even cataract.

Special report for children and their parents/guardians

MYAH can now export a special report, which aims to provide a clear, easy to understand overview for the child and their parents/guardians. They can collect the reports over time and review their own progress. Any imported refractive error data is also included on the report.

Patient	Jane Treated		
Patient ID	3263827	Gender	F
Date of Birth	02/21/2004	Exam Date	05/20/2021

OD (Right eye)

(Left eye) OS

*(M=MYOPIA, HM=HIGH MYOPIA)
Coordinates incorporated in this Myopia device are the most recent available data and originate from the Myopia Research Group of Erasmus MC, Rotterdam

Exam Date (mm/dd/yyyy)	AL [mm] ¹	SE [D] ²	Intervention / Note
03/07/2021	24.91 (+0.03)	-3.00 (-0.13)	Stabilizing?
03/14/2020	24.88 (+0.02)	-2.88 (-0.13)	
03/19/2019	24.86 (+0.04)	-2.75 (-0.13)	
03/04/2018	24.82 (+0.05)	-2.63 (-0.13)	
03/12/2017	24.77 (+0.05)	-2.50 (-0.13)	
03/10/2016	24.72 (+0.07)	-2.38 (0.00)	Switched to MiSight lenses - patient preference

Exam Date (mm/dd/yyyy)	AL [mm] ¹	SE [D] ²	Intervention / Note
03/07/2021	24.82 (+0.01)	-2.63 (-0.25)	Stabilizing?
03/14/2020	24.81 (+0.02)	-2.50 (-0.25)	
03/19/2019	24.79 (+0.06)	-2.25 (-0.25)	
03/04/2018	24.73 (+0.10)	-2.00 (+0.13)	
03/12/2017	24.63 (+0.04)	-2.13 (-0.25)	
03/10/2016	24.59 (+0.11)	-1.88 (-0.13)	Switched to MiSight lenses - patient preference

(This table only shows the last 6 exams)
1) AL = Axial Length, is the length of the eye
2) SE = Spherical Equivalent, is the refractive error of the measured eye

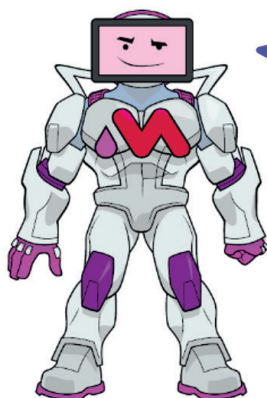
Notes:

Hi Jane,
It was nice to see you again! Look at the orange and green lines to see how your eyes are growing. Continue wearing your Ortho-K lenses as prescribed.

Example of the special report with clear and easy to understand data.

Customised message for the child

At the bottom of the report below the notes section, a personalised message is presented. The default message can also be extended with a choice of 4 options:



Hi **Jane**,

It was nice to see you again! Look at the orange and green lines to see how your eyes are growing. Continue wearing your Ortho-K lenses as prescribed.

Default text message:

Hi **[first name]**,

It was nice to see you again! Look at the orange and green lines to see how your eyes are growing.

The default message can be extended with one of the following options:

- **Option 1** Continue wearing your Ortho-K lenses every night.
- **Option 2** Continue wearing your special contact lenses every day.
- **Option 3** Continue with your special eye drops every day.
- **Option 4** Continue wearing your special glasses every day.

These options can be selected when printing the report(s).

Thank you for using MYAH!

These products are only available for sale to health professionals. Please refer to the instructions for use (IFU) for contraindications and precautions associated with the device.

1. Coordinates incorporated in this Myopia device are the most recent available data and originate from the Myopia Research Group of Erasmus MC, Rotterdam. Erasmus most recent data is exclusive for Topcon.

2. Tideman, JWL, Polling, JR, Vingerling, JR, Jaddoe, VWV, Williams, C, Guggenheim, JA, Klaver, CCW. Axial length growth and the risk of developing myopia in European children. *Acta Ophthalmol.* 2018; 96: 301-309. Available from <https://doi.org/10.1111/aos.13603>

For more information, please contact your Device Technologies representative.



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