

# OCULUS Myopia Master®

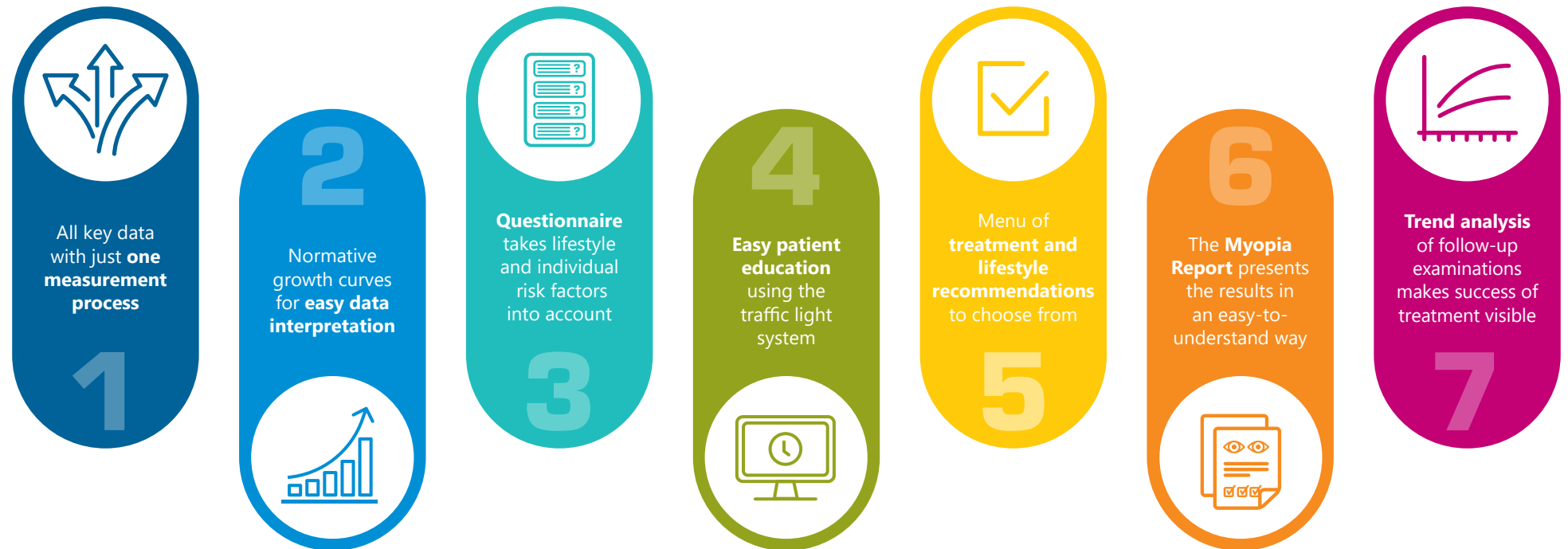
Refraction, Axial Length  
and Keratometry

**MYOPIA  
MANAGEMENT  
HAS NEVER BEEN  
SO EASY!**



# All You Need in 7 Steps

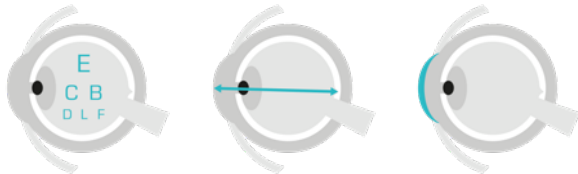
From the measurement process to follow-up



# MYOPIA MANAGEMENT

## The all-in-one device for myopia measurements

Refraction, axial length, and keratometry are the main measures required for professional myopia management, but only in combination do they allow for individualized treatment and counselling.



## Fast and contactless measurement

The Myopia Master® performs fast measurements of the most important parameters relating to myopia development. The measurement process usually takes less than 2 minutes. Absolutely contactless and therefore painless.



**STAND ALONE**



## Reliable and reproducible results

The standard deviation of repeated measurements of axial length is about 0.03 mm equivalent to a refractive error change of 0.08 D.

Assessment of hyperopia or myopia.



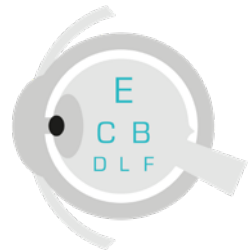
## Easy to incorporate

- Predefined software workflow
- Consideration of specific risks
- Take-home report for patient education



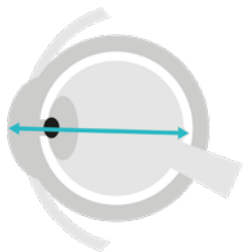
# 1

## MEASUREMENT



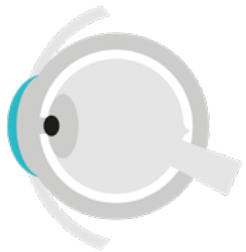
### Refraction

A commonly used method for measuring myopia is by refraction. However, day-to-day measurement variability and the need to be able to perform refractions in children with induced cycloplegia require additional parameters for professional myopia management.



### Axial length

This can be measured accurately and independently of accommodation. Progression in axial length is a reliable indicator of progression in myopia. Axial length measurement is the gold standard for myopia management.



### Keratometry

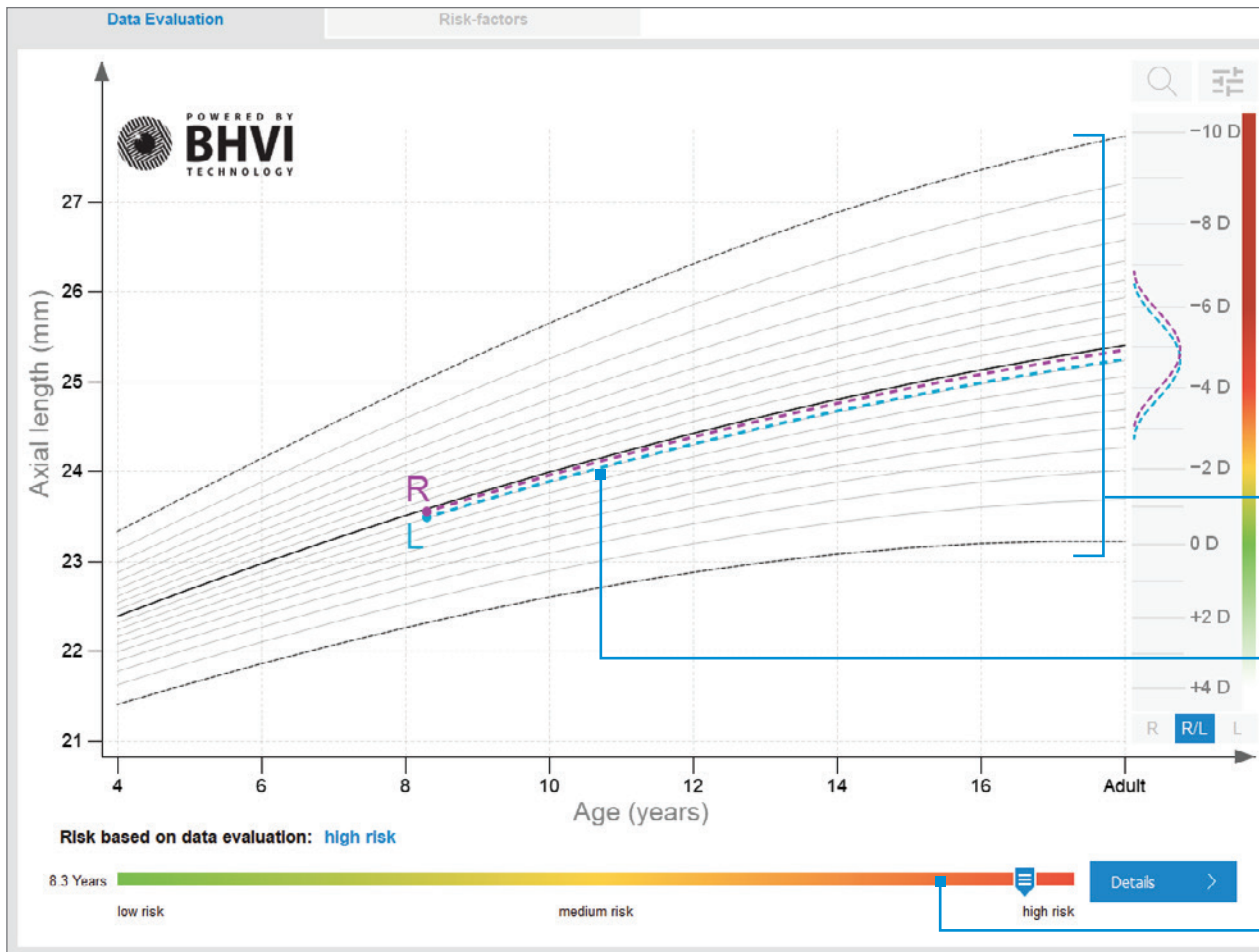
The central corneal radii, as the primary refractive component of the eye, can be automatically measured and clearly displayed. The reliability of each measurement is shown by the quality specification.

## Just One Measurement Process



# 2

## DATA ANALYSIS



### Parameter interpretation supported by ethnicity and gender-dependent growth curves

The patient's data is compared with normative growth curves calculated from more than 20 000 eyes. Exclusive algorithms from the BHVI make data interpretation easier than ever before.

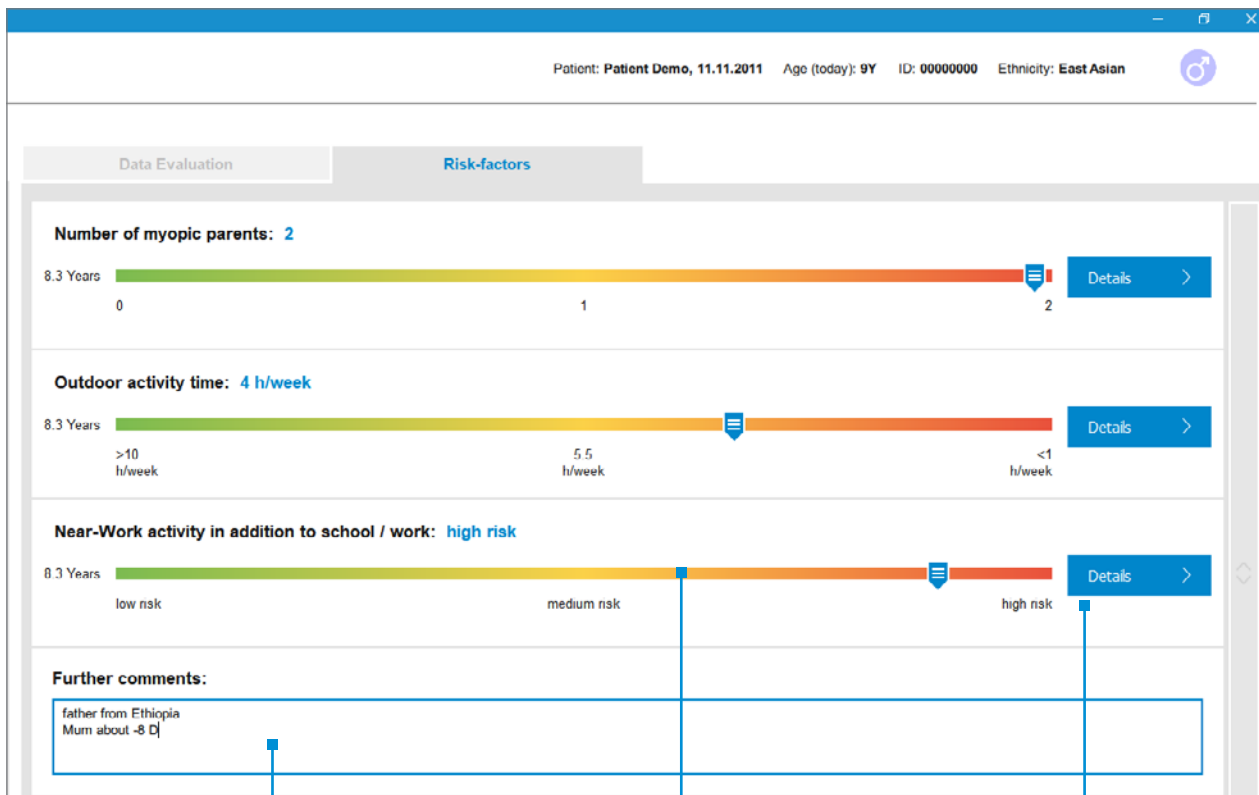
Normative growth curves by ethnicity and gender

Measured individual data compared to normative data provides you with insight to the potential refractive outcome. The points marked R and L represent the axial length of an individual patient's right and left eye at the time of the examination

Individual risk evaluation based on data analysis

Binocular axial length measurements, plotted in normative growth curves, generated from BHVI

# 3 QUESTIONNAIRE



Comment box for adding anything of note

Colour scale for fast risk identification

Details button for accessing risk gadgets

In addition to taking measurements of the eye, lifestyle and genetic factors must be taken into account

The Myopia Master® software provides a default questionnaire addressing the most important risk factors. Further risk factors can be added and customized using the Question Kit.

All information is based on peer-reviewed papers.



Heredity



Frequent near-vision activities



Lack of outdoor activity

# 4 PATIENT EDUCATION



Data Evaluation Risk-factors

### Near-Work activity in addition to school / work

**Explanation:**  
Myopia progression and myopia onset is associated with near work time and -distance. The odds of myopia increase by 2% for every one diopter hour (DH) of near work per week. DH is defined as:

$$DH[D-h] = \text{near-work time [h]} \cdot \frac{1}{\text{near-work distance [m]}}$$

The more time spent on near-work, the higher the myopia progression and myopia onset. And the shorter the near-work distance, the higher the myopia progression and myopia onset [3, 8, 9]

Ø Distance	28 cm	4.5 h/day
Computer	40 cm	1.0 h/day
Book/Magazine	33 cm	0.0 h/day
Smartphone/Tablet	25 cm	3.5 h/day

Hide details

**Near-Work activity in addition to school / work: high risk**

8.3 Years

low risk medium risk high risk

< BACK

## Easy patient education using the traffic light system

The Myopia Master® software assists the practitioner in educating children and their parents. The near-work calculator is a very helpful gadget for computing the near-work risk factor.

Near-work duration alone already provides a good estimate, which can then be narrowed down with further input.



Near-work distance and time can be entered as an average or individually for 3 different activities: computer, book and smartphone

Detailed explanation of risk factor

Literature sources pop up on hovering

Colour scale for fast risk identification

# 5 TREATMENT OPTIONS



MYOPIA MASTER

Patient: Finn Mothes, 7/17/2014 Age (today): 9Y ID:

**Evaluation**

**Data Evaluation**

5.1  
low risk medium risk high risk

**Myopic Parents**

5.1  
0 1 2

**Outdoor activity time**

5.1  
>10 h/week 5.5 h/week <1 h/week

**Near-Work activity**

5.1  
low risk medium risk high risk

**Treatment Recommendations**

**Drugs**

atropine 0.5% daily

**Contact Lenses**

soft multifocal contact lenses

rigid multifocal contact lenses

ortho keratology contact lenses

[ ]

**Spectacle Lenses**

executive lenses

progressive lenses

bifocal lenses

myopia lenses

[ ]

**Lifestyle Recommendations**

minimum outdoor activity 2 h

reduce reading time

reduce time & increase distance when using a smartphone

reduce time & increase distance when using a tablet

reduce time & increase distance when using a computer

do breaks and relax vision in far distance regularly when reading

remove glasses when reading or studying

use proper illumination when reading

[ ]

next examination: 4/17/2020 e-mail: [ ]

## Practitioners' recommendations at a glance

The eye care practitioner selects the treatment recommendations based on the output of the data evaluation and questionnaire. The clinician can customize the recommended treatment regime by simply checking the boxes. The "next examination" and "email" boxes are for sending the Myopia Report to the patient directly from the software.

Individual treatment recommendations, made by the clinician, on medication, contact lenses, spectacle lenses or lifestyle changes

Evaluation outcome from data analysis and questionnaire

The digital Myopia Report can be sent by email along with the next appointment

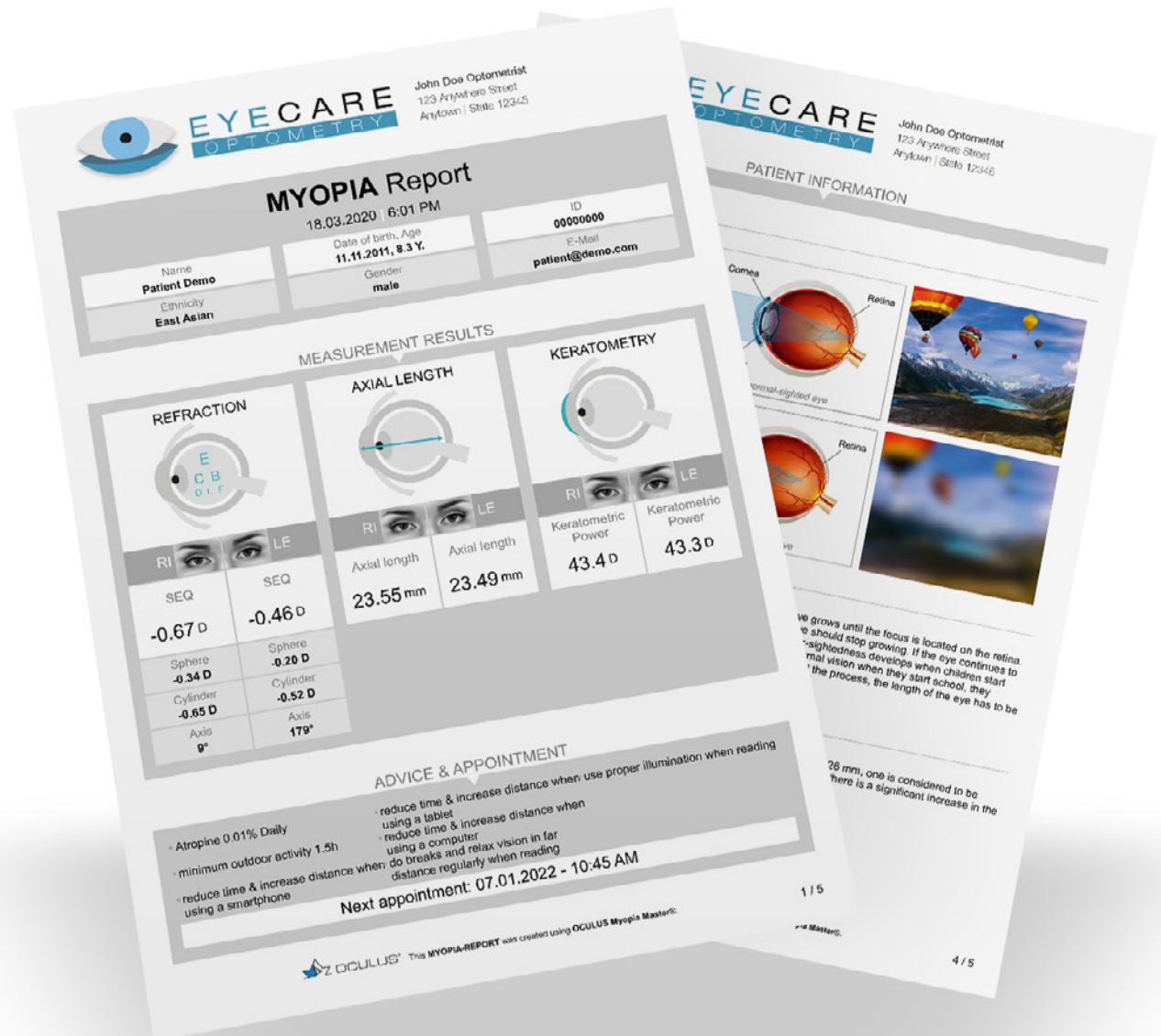


# 6 TAKE-HOME REPORT



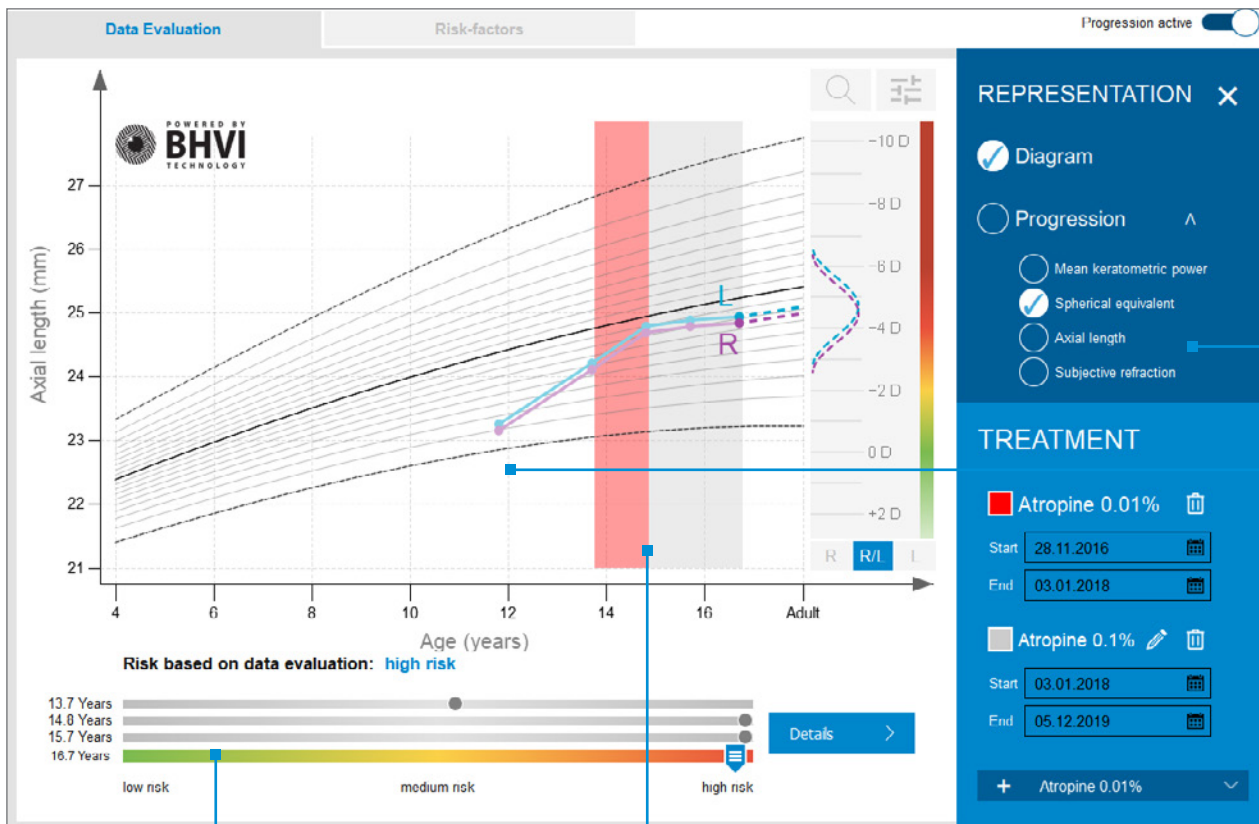
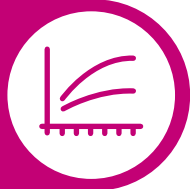
## A Report That Leaves No Questions Unanswered

The Myopia Report for parents includes all results and the clinician's recommendations. It also helps with reading and understanding the scientific background of myopia management. The report can be printed or sent by email directly from the Myopia Master® software.



# 7

## FOLLOW-UP



### Treatment strategy and success made visible

Regular follow-up examinations are crucial to monitor the patient's myopic status. The Myopia Master® Software enables you to monitor axial length over time thus performing a trend analysis and determining the most effective treatment for the patient.

Change view of diagram

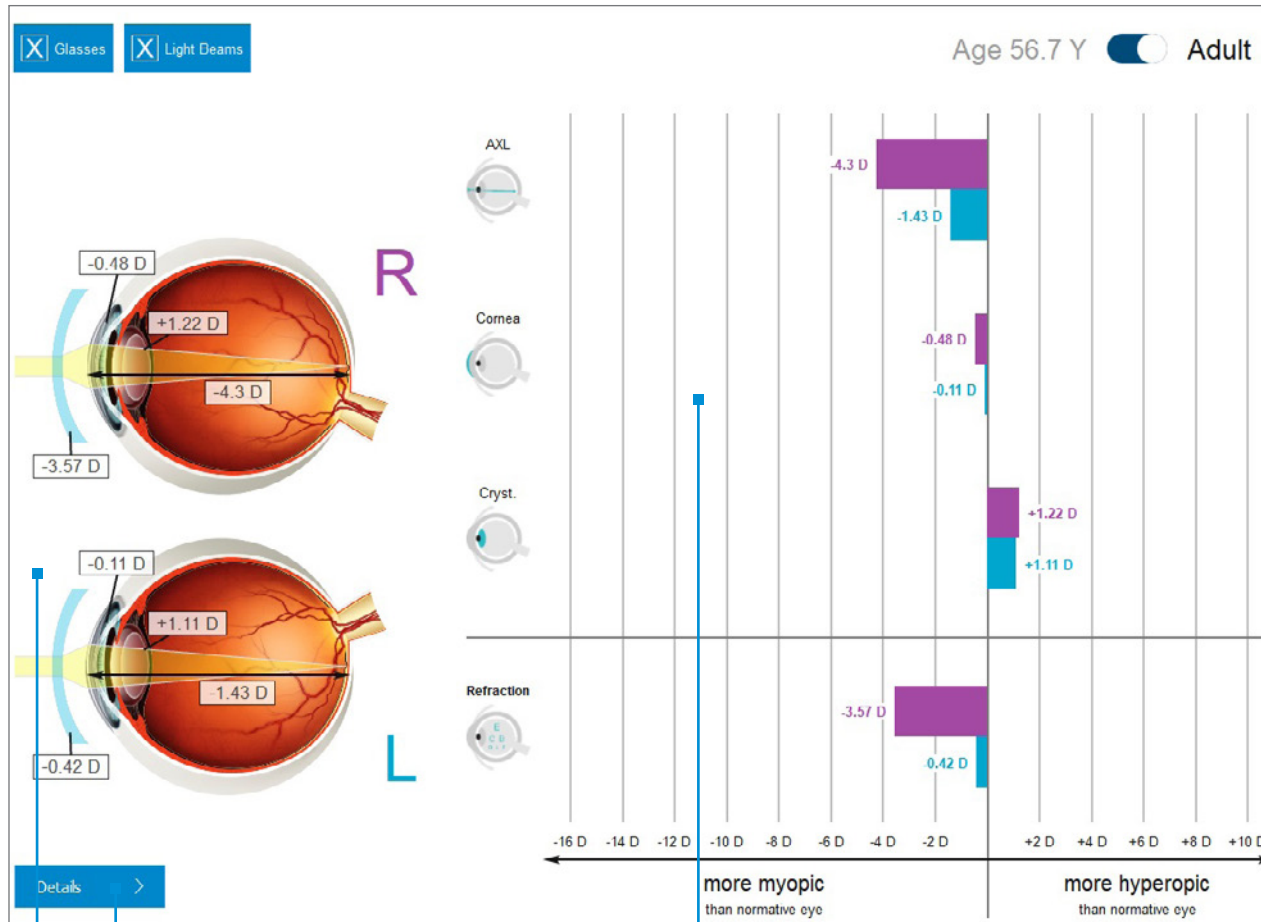
Follow-up measurements show fast progression in axial length, slowed by a successful treatment initiated after the third measurement

Current colour scaled risk evaluation with progression view (grey scales)

Treatment between second and third visit with atropine 0.01 % (red area) was not successful, but atropine 0.1 % (grey area) was successful

# New GRAS Module

Comparison with the Gullstrand eye



Never has the interpretation of measurement results been as easy and reliable as with the new Myopia Master®. All individually measured refractive components of the eye are automatically matched with the Gullstrand standard eye model. This way you can always take your bearings by the gold standard. Not only does this save you time, it also provides an ideal basis for explaining the results to your patients.

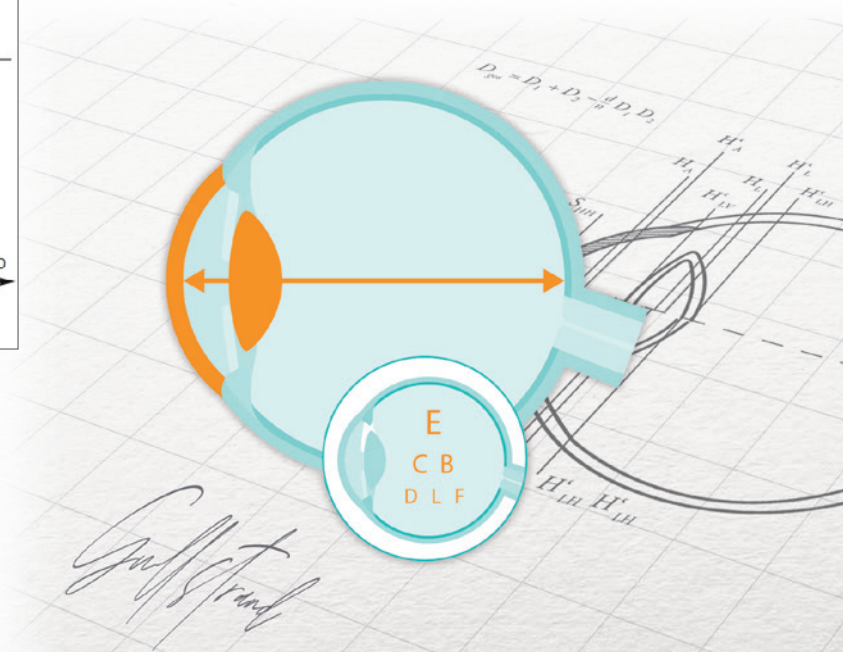
Best of all, OCULUS has introduced patient age as an additional variable, further improving reliability.

The **Gullstrand Refractive Analysis System** or **GRAS** for short, is a refraction-analysis module that is optionally available with the Myopia Master®.

Button for useful additional information when educating your patients

Simulation of the optical beam path with and without glasses

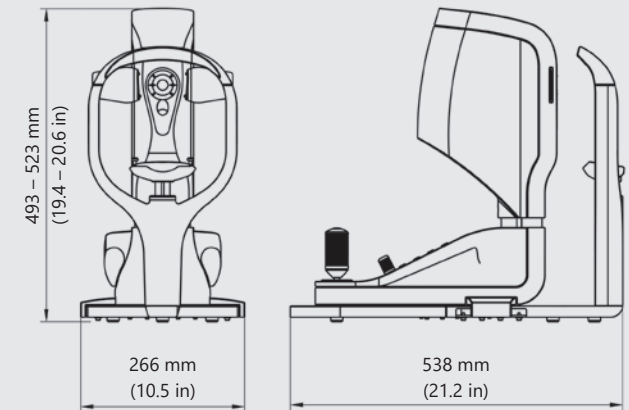
Comparison of individual optical components with the age-adjusted Gullstrand eye



# OCULUS Myopia Master®

## Technical Data

Axial length	
Measuring range	14 - 40 mm
Autorefractor	
Corneal vertex distance (CVD)	0; 10.5; 12; 13.75; 15; 16.5 mm
Sphere	-20 - +22 D (CVD = 12 mm)
Cylinder	10 D (CDV = 12 mm)
Axis	0° to 180° (in 1° increments)
Minimum measurable pupil diameter	2.5 mm
Fixation target	hot air balloon over a landscape
Technical specifications	
Dimensions (W x D x H)	266 x 538 x 493 – 523 mm (10.5 x 21.2 x 19.4 - 20.6 in)
Weight	approx. 12 kg (26.5 lbs)
Voltage	80 - 264 V AC
Frequency	47 - 63 Hz
Interface	USB
Recommended computer specifications	Intel® Core™ i5, 500 GB HDD, 8 GB RAM, Windows® 10, Intel® HD Graphics



[WWW.OCULUS.DE](http://WWW.OCULUS.DE)



The OCULUS QM system is certified in accordance with ISO 13485 (MDSAP) and (EU) 2017/745 (MDR)

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OC/1895/WZ/EN  
 P/68100/EN