



Author: Jaume Pauné, PhD, Optometrist,
Orthokeratology Specialist, Centro
Médico Teknon, Barcelona, Spain

Myopia Management with Orthokeratology

In myopia had been stated that avoid overcoming 26 mm of axial length or less of -6.00 D is of importance. Even more, if we know that every additional diopter increases myopic maculopathy by 67 %. Today, orthokeratology (OK) is a gold standard for optical devices. Between them, Double Reservoir Lenses (DRL) easily allow customization, as changes in back optic zone diameter, for better myopia control in children.

Initial situation

A 10-year-old girl with myopia in progression came to our clinic after one of our patients gave to the parents the suggestion to visit us as a myopia specialist. She presented a history of myopia increase of -1.00 D/y and showed myopia of -6.25 -0.50@90° and -6.50-0.75@80° and an axial length (AL) of 24.68 and 24.89 mm in OD and OS respectively. After providing the parents with the options, we decided to proceed with orthokeratology (OK).

We fitted OK DRL lenses with a custom back optic zone diameter to improve the myopia control effect. (Figure 1 and 2).

Progression

We monitored axial length every 6 months. The first year showed an increase in AL of 0.07 and 0.17 mm in OD and OS respectively. Even in OS it was slightly higher than physiological, orthokeratology seemed to have a good outcome.

After 8 years, her AL was 25.81 and 25.71 mm meaning a total 1.13 and 0.82 mm increase in OD and OS respectively. (Around 0.12 mm/y.). Current myopia after a wash-out period showed an increase for all the period of -1.50 and -1.25 D. Parents were very satisfied.

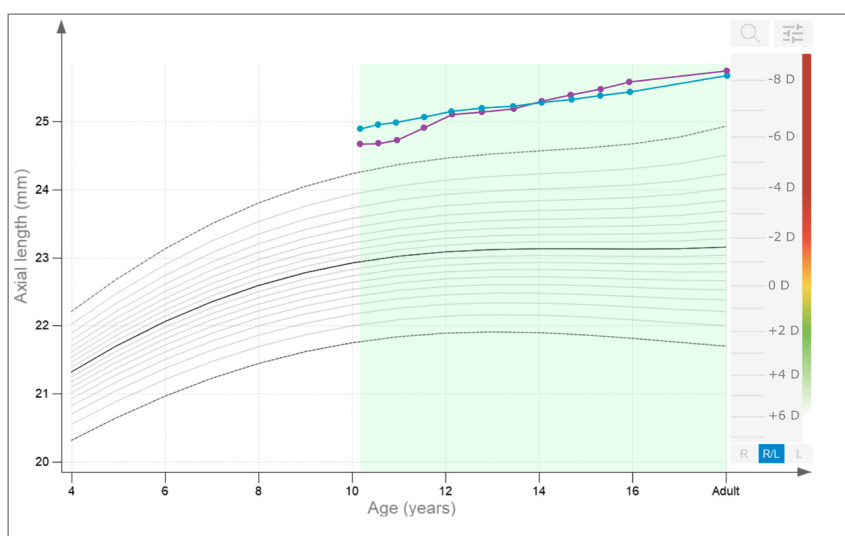


Figure 3: Axial length growth visualized with the Myopia Master software.
The green background highlights the treatment period.

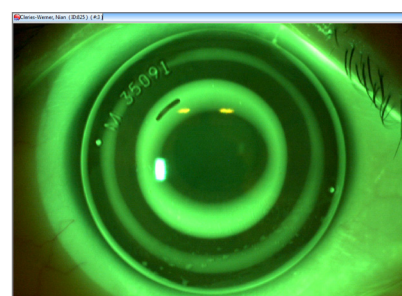


Figure 1: Fluorescein pattern of the DRL lens. It is seen the double tear reservoir placed in the middle of the alignment curves.

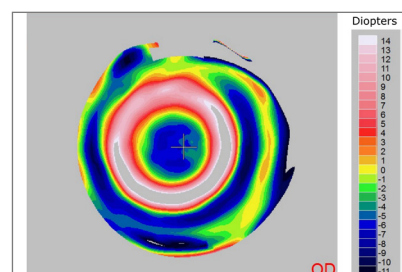


Figure 2: Differential topography maps showing a small treatment area and a strong plus power annular ring placed on a similar diameter of the pupil size.

Conclusion

Monitor axial length was indispensable to follow progression along the time that treatment was in place and helped to decide to continue with the treatment. She continues wearing her orthokeratology lenses for lifestyle convenience.