Two-year myopia management efficacy of an extended depth of focus soft contact lens

Sergio Díaz-Gómez[1], Mercedes Burgos-Martínez[2], Padmaja Sankaridurg[3], Amaia Urkia-Solorzano[1], Jesús Carballo-Álvarez[4]

1. Miranza COI, Bilbao, Spain, 2. mark´ennovy, Madrid, Spain, 3. School of Optometry and Vision, Sydney, Australia, 4. Complutense University, Madrid, Spain

Introduction

Myopia is the most common refractive error in the world, there are approximately 1.41 billion people with myopia worldwide, accounting for 22.9% of the total population. It is estimated that there will be 4.76 billion people with **myopia globally by 2050**, accounting for **49.8% of the total population[1,2]**.

The impact of myopia is substantial with risk of vision impairment, complications, reduced quality of life as well as costs to individuals and society. Therefor, in recent times has have been efforts directed to slowing myopia progression and involves contact lenses among other options[3].

Purpose

To evaluate the **progression of myopia** as assessed by change in axial length (AL) and spherical equivalent (SE) from baseline in Caucasian children wearing **extended depth of focus soft contact lenses** (CL) compared to single-vision distance spectacles.

Materials & Methods

Filcon 5B (60) [75%]

Base curves (mm)	7.10 to 9.80 (0.30)
Diameters (mm)	13.50 to 15.50 (0.50)
Spheres (D)	-0.25 to -15.00 (0.25)
Cylinders (D)	-0.75 to -8.00 (0.25)
Axes (°)	All (1°)

Longitudinal prospective non-randomized clinical trial.

90 Caucasian children with SE ranging from -0.75 to -10.00D were recruited. 45 were fitted with CL (MYLO®, mark'ennovy, Spain), whereas the other 45 wore single-vision distance spectacles.

Cycloplegic refraction was measured with an **auto-refractometer TRK-2P** (Topcon, Japan) and **AL** with an **IOLMaster-700** (Zeiss, Germany), considered the gold standard for AL, at 6 months intervals.

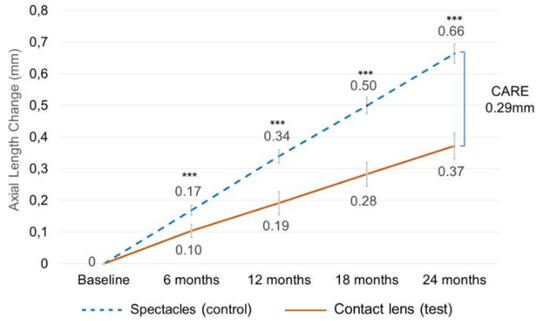
Subjective responses after 1-month of CL wear related to vision and comfort were determined using a questionnaire with a scale from 1 (very poor) to 10 (excellent). High contrast visual acuity (HCVA) and Contrast sensitivity (CS) were evaluated at baseline, 12 and 24 months.

Results

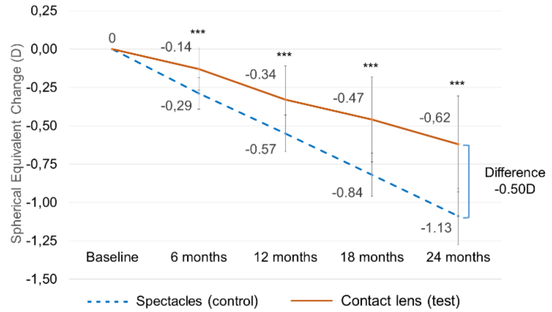
2-years, mean change in SE / AL in the CL group was -0.62±0.30D / 0.37±0.04mm and -1.13±0.20D / 0.66±0.03mm ($p<0.001$) in the spectacle group.

The resulting efficacy was 54%, 40%, 44% and 44% for 6 , 12 , 18 and 24 months, respectively.

Cumulative Absolute Reduction in axial elongation **(CARE) was 0.29 ± 0.06mm.**

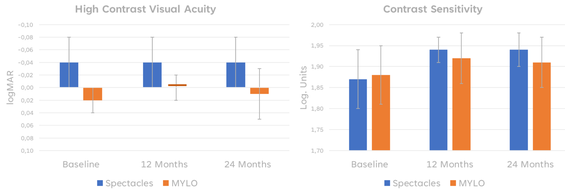


Average difference in **SE change was -0.50 ± 0.34D**.



All questionnaire items showed a mean rating value ≥ 9.

A statistically significant half-line HCVA reduction was found with CL compared to spectacles.



16 cases of mild corneal staining appeared with MYLO lenses that did not necessitate a discontinuation of lens wear.

2 subjects dropped out at the start due to handling.

Conclusions

Over a two year period, **EDOF** contact lens **(MYLO®) were found to significantly slow myopia** in children and teenagers as compared to single visión spectacles.

EDOF contact lens (MYLO®) **provides good VA** at all distances **and subjective satisfaction.**

References

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