

## Custom Soft Multifocal Lenses in Myopic Adolescents

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### Introduction

In recent years the management of myopia in children has become increasingly complex due to the numerous studies conducted around the world related to optical intervention strategies demonstrating success in slowing the progression of myopia in children. These studies have shown the benefits of both orthokeratology and soft multifocal contact lenses in slowing the progression of myopia in children. Explored here are cases related to the utilization of custom soft center distance multifocal contact lenses in children.

### Case Report

Case 1: EI is a 12-year-old Caucasian female who on initial presentation presented with her mother referred in by an outside practitioner specifically for potential optical strategies of controlling myopia as she had been increasing in myopia approximately 1.00D per year for the immediate 3 years prior. After discussion with the patient and parent of the optical options in an effort to control future myopia progression custom soft multifocal lenses were selected and ordered. Year one with the custom soft lenses the patients refractive error remained unchanged, year two an increase of 0.25D was noted, year three 0.50D was noted.

#### Initial Visit

K's	HVID
OD 43.23@001 / 44.72@091	OD 11.9mm
OS 43.37@172 / 44.95@082	OS 11.9mm
Manifest Rx	Pupil Size
OD -4.50-1.00x180 20/20	OD 4.2mm
OS -2.75-1.25x170 20/20	OS 4.3mm

### Contact Lens Design

All contact lenses were designed using the patient's central K's, visible iris diameter, manifest refraction, pupil size using the companies online calculators and add power chosen to be as high as the child could tolerate yet provide adequate distance vision.

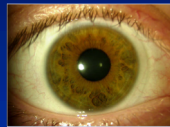


Figure 1. Right eye

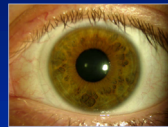


Figure 2. Left eye

#### 3 Year Follow-Up

Manifest Rx  
OD -5.25-1.00x180 20/20  
OS -3.50-1.25x170 20/20

#### Contact Lens Parameters

OD SpecialEyes 54 Multifocal / 8.2 / -5.00-0.75x170 / 14.2 / +2.50 center distance / 2.0mm center zone / 3.5mm peripheral zone  
OS SpecialEyes 54 Multifocal / 8.2 / -3.50-1.25x170 / 14.2 / +2.50 center distance / 2.0mm center zone / 3.5mm peripheral zone

### Case Report

Case 2: EY is an 18-year-old Asian female who presented 3 years prior after failing in orthokeratology and presented wearing center distance multifocal soft lenses however was noted to have a recent mild increase in myopia and also presented with a mild amount of astigmatism. Due to the increase in myopia it was decided to increase the add present in the custom soft multifocal lenses beyond what she had prior and additionally the lenses were ordered to incorporate toricity to address the patient's astigmatism. After 3 years on the lenses the patients refractive error increased 0.50D in one eye.

#### Initial Visit

K's	HVID
OD 45.33@024 / 46.19@114	OD 11.4mm
OS 44.89@006 / 45.95@096	OS 11.4mm
Manifest Rx	Pupil Size
OD -4.25-0.50x003 20/20	OD 4.4mm
OS -2.75-0.50x174 20/20	OS 4.3mm

#### 3 Year Follow-Up

Manifest Rx  
OD -4.25-0.75x172 20/20  
OS -3.25-1.00x171 20/20

#### Contact Lens Parameters

OD SpecialEyes 54 Multifocal / 8.1 / -4.25-0.50x006 / 14.0 / +3.25 center distance / 2.2mm center zone / 5.0mm peripheral zone  
OS SpecialEyes 54 Multifocal / 8.1 / -3.25-0.50x171 / 14.0 / +3.25 center distance / 2.2mm center zone / 5.0mm peripheral zone

### Topography and Topography Over Soft Multifocal

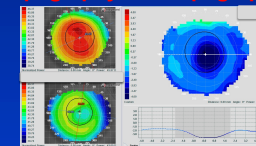


Figure 3. Right eye

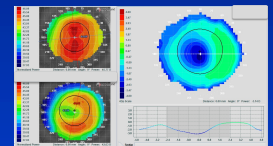


Figure 4. Left eye

### Conclusion

These cases highlight the usefulness of custom soft multifocal lenses in children with advancing myopia. These lenses provide adequate distance vision, good comfort, visual stability, the ability to customize the optical zones based off of the patient's unique pupil size and noted here to be successful in decreasing the rate of progression of myopia versus strategies trialed in their individual cases prior.