

# Discontinuation of Long Term Orthokeratology Wear in Two Sisters

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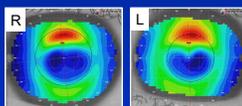
## Introduction

Orthokeratology has become a well established modality to temporarily reduce the dependency on glasses or conventional contact lenses.<sup>1</sup> The lenses are worn overnight to re-shape the epithelium and reduce moderate degrees of myopia and astigmatism.<sup>2</sup> Orthok lenses reach full effect within 7-10 days and then provide good retention of visual acuity from AM to PM.<sup>2</sup> These shape changes happen relatively quickly but what can be expected following the cessation of effect? Previous research has suggested the cornea normalizes within as little as days or as long as a year.<sup>3-6</sup> When discontinuing orthokeratology treatment after long term wear, what duration in time is expected as an appropriate wash out period?

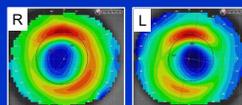
## Case Description

Two sisters, ages 29 and 24 respectively, presented to the clinic with complaints of reduced quality of vision as well as flare and glare noticeable especially at night. Both were wearing orthokeratology lenses of unknown parameters that had been fit 16 years previously in another clinic. The slit lamp exam was unremarkable and the fitting of the lenses satisfactory in open eye wear. Both sisters manifest little if any over-refraction, however, the topographies exhibited some decentration of the treatment. It was decided that orthokeratology would be discontinued in order to normalize the cornea and determine new parameters that may improve the overall visual outcome and reduce aberrations.

Patient 1 (Age 29): Final full effect visit December 6, 2017

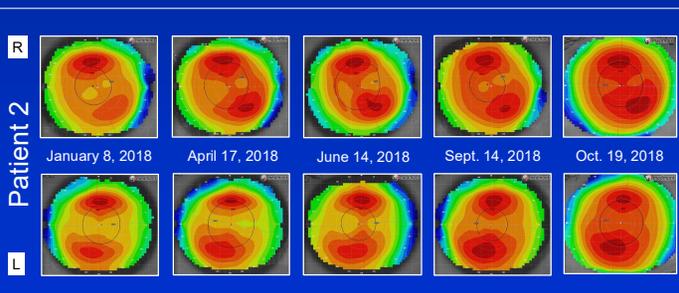
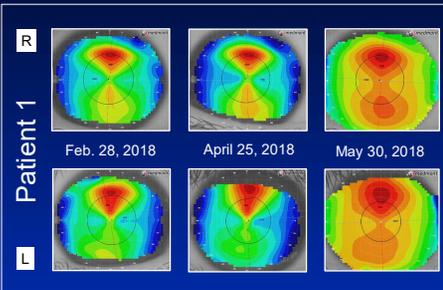


Patient 2 (Age 24): Final full effect visit November 8, 2017



## Case Description (continued)

Patient 1 (right) required almost 6 months to normalize the corneal shape. Patient 2 (below), was the younger sibling and had also worn orthok lenses for 16 years. Over 11 months was required to achieve normalization of corneal shape.



## Discussion

It is a reality of practice that patients move from one clinic to another. Eye care practitioners may not have all the patient history and lens data required to replace or modify a wearer's contact lenses. In orthokeratology patients this presents as a significant challenge because the eye shape has been altered making it difficult to immediately re-construct new lenses. A washout period is required to enable the cornea to take on its true shape. For orthok patients interested in refractive surgery, it is critically important to allow the cornea to fully recover prior to undergoing the ablation.

In this case presentation, the two sisters had been wearing orthokeratology lenses for over 16 years. Both required months of wash out before their eyes began to show the appearance of a normal topographic shape. For each patient and each eye, subtle changes continued to be seen right up to the final visit. This might suggest that additional changes were possible and the wash out period was not as long as it needed to be to observe normalization of eye shape.

## Conclusion

When discontinuing orthokeratology wear in the hopes of arriving at the true eye shape, practitioners should expect that months and not weeks may be required. Additionally, topography changes should be monitored from month to month to determine when the cornea appears to have stabilized.

## References

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