

Residual Rx

Clinical studies show only epithelial changes occur during ortho-k. Corneal astigmatism comes from the corneal curves and is the result of the stromal shape of the cornea. Epithelial changes tend to be equal in both meridians of the cornea meaning residual astigmatism should be expected similar to found in the spec Rx.

Anticipated Refractive Outcome

As a general guide anticipate the same refractive outcome as you would get with spherical soft contact lenses.

Astigmatism can be corrected more fully when-

- Pupil and treatment zone limit effect of peripheral corneal toricity. More common when topography shows astigmatism centrally rather than limbal to limbal.
- Induced astigmatism cancels baseline astigmatism.
- Accommodation can neutralise some

These are not predictable to anticipate with patients. Discuss outcome based on binocular vision with spherical soft lenses or residual astigmatism from spectacles.

Glare

Ortho-k wear corrects myopia by inducing a central treatment zone with the myopia being moved peripherally, think distance centre multifocal. The typical 'ADD' effect will be twice the initial myopia. Higher Rx results in smaller treatment zone and higher 'ADD' so glare is more anticipated with higher Rxs.

Causes for subjective glare are-

- 1) New wearer. Patients experience glare more commonly during initial adaption even with an optimum correction. It will become less apparent after 6-8 weeks wear.
- 2) Higher Rx. Over the general accepted correction limit of -5.00 residual Rx and glare can be anticipated.
- 3) Residual Rx. Any residual spherical Rx should be incorporated into ortho-k correction if possible to minimise glare. Correct residual astigmatism with over-specs if needed to reduce glare.
- 4) Treatment zone decentration. This can emphasise glare from the Rx correction. TZ centration can be anticipated from the baseline corneal apex. Decentration up to 0.75mm may be insignificant -2.50D correction but induce glare with a -5.00.
- 5) Subjective sensitivity. Some patient will be aware of glare even with a Bullseye topography and no residual Rx. This can be regardless of pupil size.

Managing Subjective Glare

- 1) Allow longer adaption period if optimum correction.
- 2) Correct spherical residual Rx.
- 3) If the TZ is unexpectedly decentred adjust lens fit to rectify.
- 4) If a smaller OZ has been specified increase to standard. TZ diameters are typically $\approx 3.0\text{mm}$, OZ diameter are 6.5mm a standard, increasing the OZ above standard will generally increase glare as it reduces central correction and results in a smaller alignment zone and impacts on lens centration.



ORTHO-K NIGHT LENS
overnight vision correction