Contact Lenses: Rigid corneal lens (RCL)

RCL fitting and problem solving tips

Lens Fit

The table below outlines any modifications to consider if VA or comfort is affected. Whilst many RC lenses are stock lenses with limited parameters many manufacturers will tailor-make lenses if required.

Lens Position	Possible causes	Action
Low riding, dropping rapidly after blink	• Lens too small • High power positive lens • Lens too thick	• Increase diameter • Use peripheral negative carrier • Reduce centre thickness
Riding high, not dropping after blink	• Flat peripheral zone • Lens too large • Peripheral zone too wide • Thick edges/lens • High power negative lens • With-the-rule astigmatism	• Steepen BOZR or peripheral curve • Decrease diameter • Narrow peripheral curve • Reduce edge/lens thickness • Lenticulate edge • Toric periphery
Lens rides to side	• Small lens • Flat lens • Against-the-rule astigmatism • Displaced corneal apex	• Increase diameter • Steepen lens (reduce BZOR/increase TD) • Use toric design (periphery/back surface) • Increase diameter • Consider soft lens
No/limited movement	• Lens too steep • Lens too large	• Flatten lens (increase BOZR/reduce TD) • Reduce diameter
Excessive movement and beyond limbus	• Lens too flat • Spherical lens on toric cornea	• Steepen lens (reduce BOZR/increase TD) • Use toric design (periphery/back surface)
Lens falls out	• Lens too small • Lens too flat • Excess edge clearance	• Increase diameter • Steepen lens (reduce BZOR/increase TD) • Reduce edge clearance

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Patient symptoms

Issue	Possible causes	Action
Poor comfort	• Excess movement • Excess edge clearance • Edge too thick • Damaged lens • Sensitive patient • Toric cornea • Foreign body • Poor wetting/deposition	• Tighten fit (reduce BZOR/increase TD) • Reduce edge clearance • Reduce edge thickness • Replace lens • Thinner/different lens design • Increase diameter • Soft lens • Toric design • Aspheric lens • Remove and replace lens • Clean lens • Change material • Improve cleaning regime • Increase replacement frequency
Poor vision	• Prescription change • Residual astigmatism • Change of corneal shape • Scratched lens • Poorly wetting/deposited lens • Warped lens • Switched lenses (wrong eyes)	• Over-refraction & alter power • Over-refraction & toric lens • Review and modify fit • Replace lens • Change cleaning regime • Change material • Check/change lens • Swap lenses
Flare/haloes at night	• Lens too small with increased pupil size • Lens dropping low	• Increase lens total diameter (flatten BOZR to compensate) Increase BOZD • Change to aspheric design Refit in larger diameter or different design
3 and 9 o'clock staining	• Edge profile and lens fit • Dry eye • VDU use	• Increase or decrease edge clearance • Increase or decrease diameter • Lubricants & lid management • Blinking & breaks