

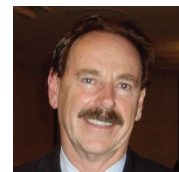


# horizons



## SPECIALTY LENS UPDATE

By Paul Rose, DipOpt, BSc, FNZSCLP



# What's New at Rose K?

Are you making the most of the innovative Rose K designs? Here is guidance from the lens designer.

The newest additions to the Rose K family of specialty contact lenses are the Rose K2 IC™ (Irregular Cornea) and the Rose K2 Post Graft™ lens designs. In addition, the Asymmetric Corneal Technology (ACT) option, where only one lens quadrant is steepened, is furthering the success of the Rose K2 design, allowing more custom options with irregular corneas. In this article, I describe the key features of the Rose K2 IC, the advantages of ACT and how these features translate into fitting ease and patient satisfaction.

### Success in multiple applications

The IC lens is the fastest growing Rose K2 lens and a welcome addition to the original Rose K designs. These are large-diameter, reverse geometry, intralimbal lenses, utilizing aberration-controlling optics. The IC lenses are ideal for treating pellucid marginal degeneration, decentered keratoconus, keratoglobus, post grafts, LASIK-induced ectasia, post PRK, large oval, sagging keratoconus and post-trauma cases.

The impetus behind the creation of this design was to incorporate specific features, primarily improved spherical aberration correction and increased optic zone size, to address troubling issues that often arise in these very large, irregular corneas.

- **Spherical aberration correction.** The aspheric large optic zone controls the

spherical aberration that invariably occurs in keratoconus lenses by maximizing light focused to a single point. Statistics show



▶ **Asymmetric Corneal Technology** improves lens performance for the irregular cornea patient.

that 70% of keratoconus Rose K2 GP lenses manufactured are over  $-10D$ , so spherical aberration becomes a major factor in reducing best vision in these patients. The incorporation of aspheric optics into the lens improves vision and enhances wearing time and comfort.

Clinical studies indicated a 96% patient preference in visual performance with the Rose K2 aspheric lenses when compared with the original Rose K spherical design. In addition, 91% of the patients reported improved comfort, which can be attributed to reduced lens thickness that aspheric surfaces allow. Incorporating aberration control into the original Rose K lens was so successful, it is now the standard in production for Rose K2 Post Graft and Rose K2 IC lenses.

- **Larger vs. smaller optic zones.** Traditionally, clinicians use smaller optic zones and overall diameters when fitting keratoconus to align the posterior surface of the lens with the steepened cone profile of the cornea. The obvious shortcomings of

this design are the narrower fields of view, ghosting and the change of vision as the lens moves over the pupil with the blink. K2 IC designs help eliminate these problems with their large diameter (11.2 mm standard) and large optic zones (7 mm to 8.2 mm BC dependent).

In addition, the reverse curves outside the optic zone allow the lens to align better with the entire cornea, accommodating the drastic changes in elevation/curvature over a broad area. This provides better vision and comfort, and drastically reduces lens rocking. Practitioners are reporting improvements in visual acuity, lens centration and comfort, as well as increased overall fitting success and reduced chair time leading to the successful fit.

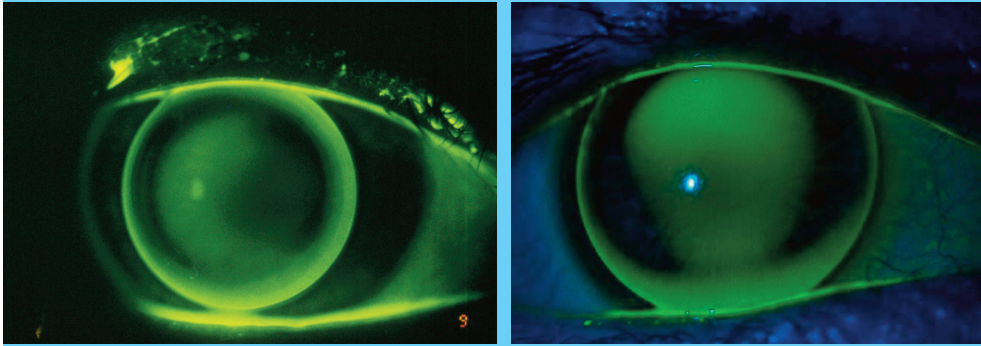
### Asymmetric Corneal Technology

Another key feature to the further success of the Rose K2 IC design is the availability of ACT customization. By nature, irregular and keratoconic corneas are asymmetric. Often, the inferior quadrant of the cornea is significantly steeper than the superior portion of the cornea, causing inferior edge lift-off.

Traditionally, the only way to deal with inferior corneal steepening was to decrease the overall lens diameter to fit above or inside the steeper inferior quadrant. Unfortunately, this approach yields smaller optic zone diameters and associated halos, glare, ghosting and unstable

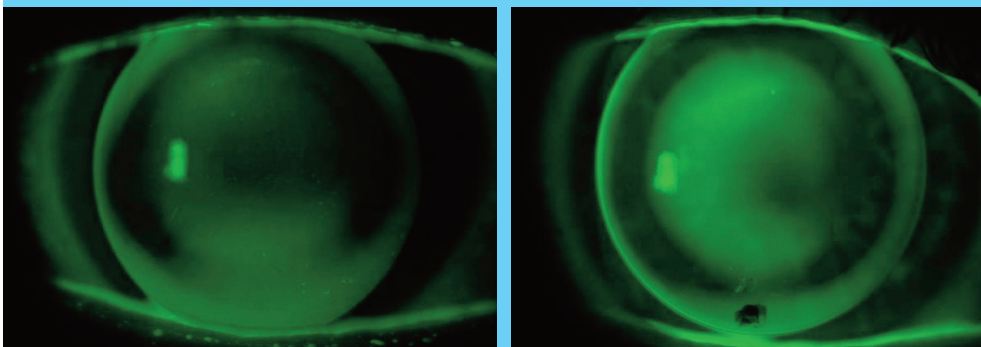
## Dr. Rose's Clinical Pearls for Fitting Irregular Corneas

**1. Diameter.** Choosing the correct lens diameter is extremely important to maximize first-fit success (Figure 1). A change of just 0.3 mm can make a significant difference in how a lens moves and positions. Typically, the larger the area of corneal distortion, the larger the overall lens diameter should be.



**Figure 1.** Left: a good fitting, small-diameter Rose K lens on a central nipple cone. Right: a well fitted Rose K2 IC lens on a slightly inferior cone.

**2. Edge lift.** The single most important factor for comfort and movement is edge lift, yet incorrect edge lift selection is the most common fitting problem I see. A slightly flat or steep central fit is unlikely to affect lens performance because the central cornea can be molded. However, the peripheral cornea will not mold and, therefore, correct edge lift selection is imperative for comfortable lens wear (Figure 2).



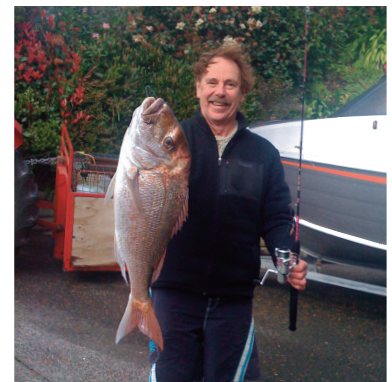
**Figure 2.** At left, note the inferior edge lift-off with a standard spherical IC lens. By ordering the ACT option, the inferior lift and lens rocking is reduced. Comfort and vision also improve.

lens positioning. Utilizing the ACT option can resolve these fitting and design complications.

Asymmetric Corneal Technology is applied to the posterior surface of the lens at the 6 o'clock position to more closely fit a steeper inferior zone. The result is enhanced lens fit, comfort and stability, which helps resolve inferior edge lift-off and lower lid interaction. With intralimbal lenses and the ACT design, we can increase the overall lens diameter to vault over and below the inferior quadrant but still maintain good lens alignment inferiorly. In some cases, because of the improved lens stability and better cornea-to-lens alignment, superior vision also can be achieved.

Asymmetric Corneal Technology can be applied to any Rose K2 lens design (Figure 2). It simplifies fitting, is easy to use and will optimize final lens performance by improving the cornea-to-lens fitting relationship. This will improve comfort, lens positioning and corneal health, while reducing the number of office visits (chair time) needed to arrive at the final lens fit. The Rose K2 design offers three standard grades of ACT, or the fitter can stipulate the degree of tightening required at 6 o'clock in 0.1 mm steps from 0.4 mm to 1.7 mm. ■

*Dr. Rose has practiced optometry in Hamilton, NZ, for 39 years. He is the designer of the Rose K family of lenses, the most prescribed lens for keratoconus in the world.*



*Dr. Rose unwinds by reeling in the big ones at his home in New Zealand.*