



# Fitting Guide

INTRODUCTION

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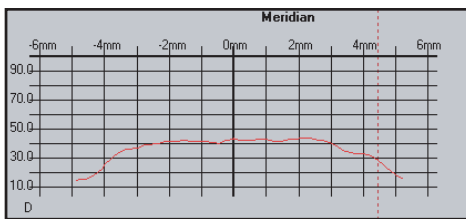


# Introduction to Fitting SoClear® Lenses

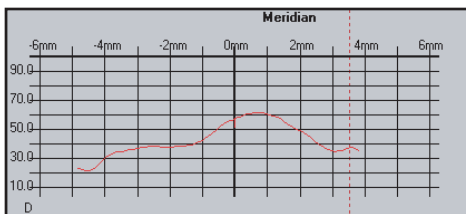
Congratulations on making the decision to fit SoClear corneal/scleral GP lenses. This introduction will help you establish the mindset required to fit this unique large diameter design, define the terminology used and increase your comfort level with corneal/scleral lenses before you attempt your first fit.

Before you begin, it is important to understand that corneal/scleral lenses should be fit from the sclera first rather than the central cornea. Because SoClear rests or aligns on the sclera it must also vault the limbus before it can properly align with the central cornea. If you always consider that the primary fit should first start with scleral alignment it will aid you in getting the proper limbal vault which will lead to better central corneal alignment.

Consider that the shape of the eye, including the sclera and the cornea, has combined size and shape that create elevation or sagittal height from the central cornea to the sclera. This can be observed by reviewing figures 1 and 2.



**Figure 1**, normal cornea



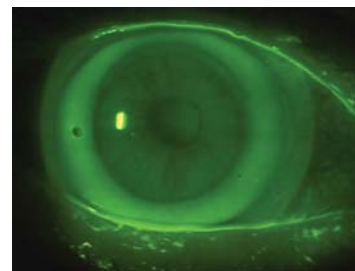
**Figure 2**, Keratoconus

These corneal cross-sections demonstrate this elevation or sagittal height. The red elevation line in figure 1 is an essentially normal cornea. The elevation line in figure 2 represents a cornea with keratoconus. You can see how the elevation changes differ between the two shapes. It is important to consider that when fitting a lens that extends beyond the limbus and aligns with the sclera you should

select a lens fitting system that has the elevation or sagittal height control which is appropriate for that eye. This is far more simple than you think.

Corneas and contact lenses each have elevation or sagittal height. Greater degrees of corneal elevation result require steeper contact lens fitting systems. Elevation is determined by the rate of curvature as well as the area of the curve. Large, steep corneas will have the greatest elevation or sagittal height as shown in figure 3. Corneas that are large and flat or small and steep will have medium elevation as shown in figures 4 and 5. Small, flat corneas will have the shallowest elevation as shown in figure 6.

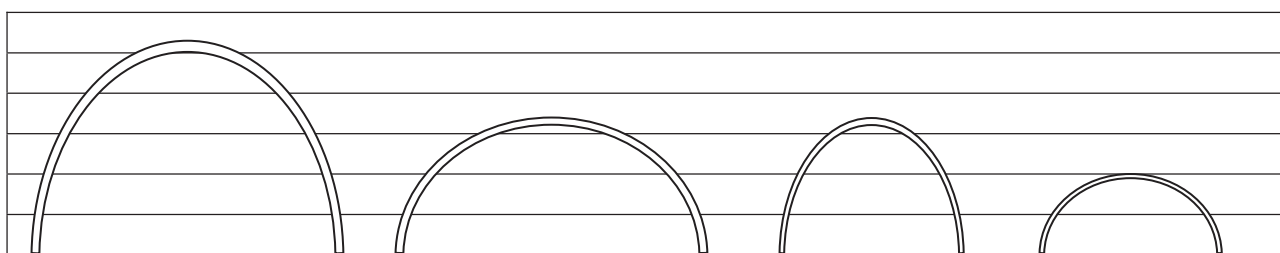
Our goal is to have a lens that has the proper elevation for each eye we fit. Once that is achieved, the mid-periphery of the lens can be adjusted to optimize the fit and allow for tear exchange and removal without binding as shown in Figure 7.



**Figure 7** - Good fit demonstrating 360 degrees of scleral alignment with 360 degrees of ideal mid-peripheral vault. Note fenestration at 9 o'clock in center of band of clearance.

Understanding the next section is vital to success with the SoClear design. The SoClear lens design has 4 curves. The base curve is only used to adjust the mid-peripheral vault. The other 3 curves are fitting curves designed to maintain proper elevation as the base curve is adjusted. The lenses in the SoClear fitting set are identified in Dioptic base curve value. Although it is identified as base curve, it is also tied to the other 3 curves that control lens elevation. As you select flatter or steeper base curves from the fitting set, the peripheral curve system changes to adapt for an increase or decrease in the lens elevation. If you change the base curve, but keep the peripheral curve system the same, you keep the elevation the same. If you alter the peripheral curve system of the lens, whether you change the base curve or not, you are changing elevation.

Greatest elevation -----> Similar elevation-----> Least elevation



**Figure 3**

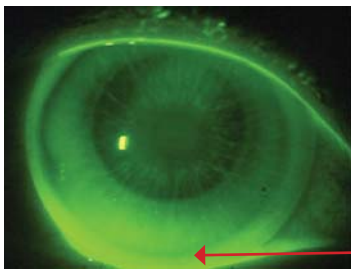
**Figure 4**

**Figure 5**

**Figure 6**

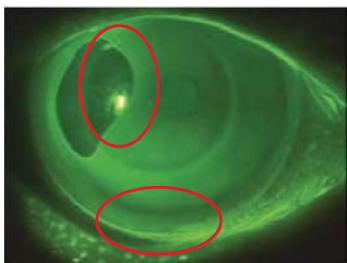
When you have a good fit in general, you will only adjust the central base curve to compensate for minor fitting change. Changing the peripheral curves, even slightly, will alter the lens fit significantly. This is the big difference between fitting SoClear and standard GP lenses.

When starting a new lens fit, first decide which type of SoClear will work best for the patient. SoClear is available in standard and aspheric keratoconus versions. The keratoconus set works best with moderate to advanced keratoconus. All other patients should be successful with the standard lens set. To start the fitting process, use the initial lens selection process from step 1 of the 3 step fitting guide. When evaluating the lens fit, the lens should be 360 degrees aligned with the sclera. If the lens lifts away from the sclera in any area, the fit is too shallow or it does not have enough total elevation to generate alignment as shown in Figure 8. Simply try on a steeper base curve system from the fitting set until full alignment is achieved.



**Figure 8, Shallow fit.**  
**Note inferior edge lift.**  
This requires moving to a lens with steeper base curve to generate greater elevation.

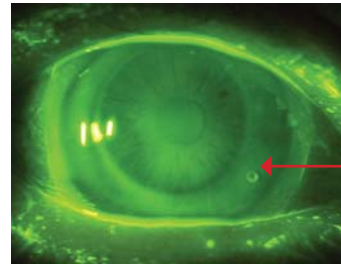
If the initial lens selection demonstrates full 360 degrees of scleral alignment but shows excessive clearance inside the limbal zone, the base curve system is too steep as indicated in figure 9. The next step is to move to a shallower less elevation base curve system.



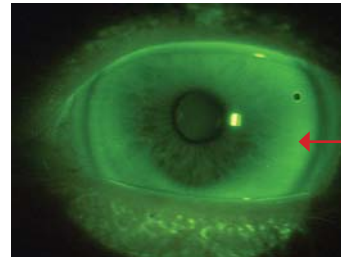
**Figure 9, Lens is excessively deep for eye profile.** **Note tight peripheral lens fit and air bubble under optic zone.** This requires moving to a lens with less elevation.

Once you have found the best lens fit for elevation and scleral alignment, assess the mid-peripheral area for clearance or vault. Inadequate mid-peripheral vault will cause lens adherence and inadequate tear exchange as shown in Figure 10. Excessive mid-peripheral vault will cause central corneal molding and epithelial compromise due to central bearing or touch as shown in Figure 11.

This bearing or touch is more critical when it is centrally located and 4 mm or less in area.

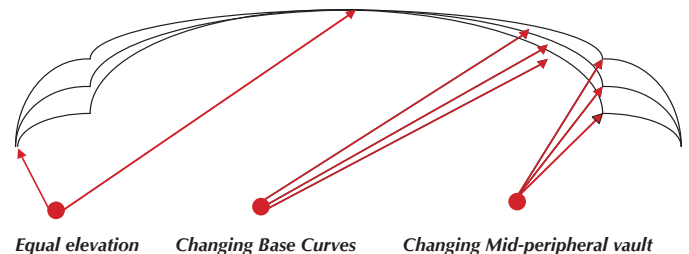


**Figure 10, Inadequate mid-peripheral vault**



**Figure 11, excessive mid-peripheral vault**

It is imperative to remember that changes to the base curve alone will not change the elevation or sagittal height of the lens. Only the mid-peripheral vault is controlled by adjustments to the lens base curve. To increase the mid-peripheral vault, simply flatten the base curve while maintaining the steeper peripheral curve system as shown in step 2 of the 3 step fitting guide. To decrease the mid-peripheral vault, steepen the base curve while keeping the flatter mid-peripheral curve system. The illustration below shows this effect.



Changing the base curve while keeping the elevation / peripheral curve system unchanged will allow increased or decreased mid-peripheral vault. Maintaining the same peripheral curve system will compensate for the base curve change and allow the elevation to stay the same.

This introduction to SoClear will help you achieve greater success for your patients. Its utilization of elevation or sagittal height to select the best overall lens fit while using base curve changes to only fine tune it, will make the fitting process easier. The 3 step fitting guide will work for either the standard or aspheric keratoconic version of SoClear. You are now ready to fit this exciting and versatile lens design.