



# When Lens Size Matters

Andrew J. Biondo, OD

We live in the “Dry Eye Age” of eye care which is why ECPs are better than ever at diagnosing and treating dry eye disease and lid disease for millions of Americans. For contact lens wearers, dry eye symptoms are often amplified - even the mildest of cases can show symptoms of variable vision and reduced wearing time. However, while dry eye is a common and important condition to diagnose and treat, it's important that we are aware of other conditions that cause soft contact lens issues.

One common, yet often overlooked cause of irritation and reduced wear time is an improper fit. Perhaps the

diameter, typically through the measurement of HVID, can give the fitter a reliable indication of corneal sag. This makes it easy to offer a proper fit. A large diameter contact lens will have a larger sag, better matching the sag of the larger cornea. This allows a proper seating and therefore proper centration and movement.

A large cornea fit with a ‘standard’ disposable soft lens will not seat properly due to the contact’s insufficient sagittal depth. This will cause a sort of ‘loose lens syndrome’ where the contact will show excessive movement with the blink. This can

A large cornea fit with an ‘average’ diameter will result in a “loose lens syndrome”

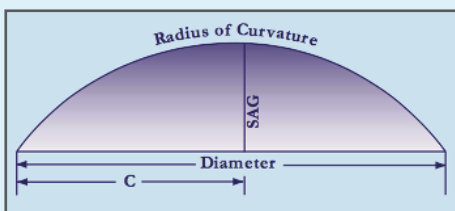


- Caused by insufficient sag not allowing lens to ‘seat properly’
- Causes awareness with blink and mechanical irritation to cornea and palpebral conjunctiva

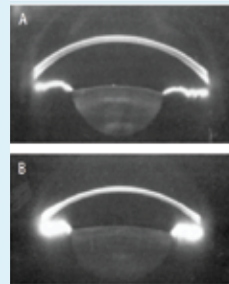
On the other hand, a small cornea fit with an average disposable lens can result in ‘tight lens syndrome.’ The contact will have excessive sag as compared to the smaller cornea and therefore form a tight fit that can reduce movement and inhibit tear exchange. This leads to hypoxia that results in reduced wear time, often mis-diagnosed as contact lens related dryness. Again, using an appropriate contact lens diameter, smaller in this case, would alleviate symptoms and increase comfortable wear time.

“The most significant element in determining soft lens design may well be the diameter of the cornea”

EYEWITNESS 2001 second quarter, Andre et al



To achieve the best alignment (centration and movement) we need to best replicate the sag of the cornea with the sag of the SCL



Cornea A  
K: 43.50D  
HVID 12.2

Cornea B  
K: 43.50D  
HVID 11.2

K SAG: A>B

These two patients have identical K readings at 43.50D. However, patient A has a much larger HVID than patient B, resulting in a much deeper anterior segment.

Larger HVD = increased corneal sag

reason this gets overlooked, is because until now, we haven't had the ability to do anything about it.

Proper fitting for a soft contact lens depends on matching the sagittal depth of the eye with the sagittal depth of the lens. Corneal diameter is the main factor that determines the sag of the corneas, with curvature being the other, less important factor. Large corneal diameters result in larger corneal sags, and vice versa. Measuring corneal

cause mechanical irritation of the cornea and palpebral conjunctiva and present with hyperemia and a papillary reaction of the palpebral conjunctiva. This is often diagnosed as a mild giant papillary conjunctivitis type reaction and improperly treated with alterations in care regimen and pharmaceuticals including topical antihistamines and corticosteroids. By simply increasing the diameter of the contact in these patients, one can achieve a more aligned fitting and resolution of symptoms.

A small cornea fit with an ‘average’ diameter will result in “tight lens syndrome”



- too much sag in the lens will fit tightly and reduce tear exchange
- Reduced wear time, fluctuating vision and increased risk of MK secondary to hypoxia

# When Lens Size Matters

CL manufacturers determine the base curve and diameter of their lenses based on the average HVID of 11.8. The unfortunate reality is that 27 percent of patients have an HVID that falls outside the normal range of 11.3 to 12.3 millimeters (Pacific University Study on Corneal Diameter). This is one out of every four patients we see – a quarter of the population. These patients are often treated for conditions they don't have, simply because all corneas aren't created equal. While a 'one size fits all' contact is convenient, it overlooks this large subset of our patients. It may also contribute to the steady dropout rate we have seen over the past 25 years, despite the huge strides in contact lens design, breathability and moisture retention.

To combat this issue, X-Cel Specialty Contacts released Extreme H2O Daily and Extreme H2O Weekly in three diameters: 13.6, 14.2 and 14.8. They also

provide a slide ruler that allows for quick and efficient HVID measurement to guide the fitter into the correct contact lens diameter for any given patient. This slide rule can be used by a technician and adds minimal time to the exam. Corneal topographers also give HVID measurements and can be used as an alternative. Anyone with an HVID larger than 12.3 mm is fit into their larger diameter lens (14.8mm) and those with a diameter smaller than 11.4 are fit into the smaller design (13.6mm). Those within the normal range are fit in the standard 14.2mm lens. This is of great benefit, especially because trials can be held on hand in a fit set, making it easily integrated into any practice. Price points for Extreme H2O lenses are comparable to other daily disposable and weekly disposable contacts.

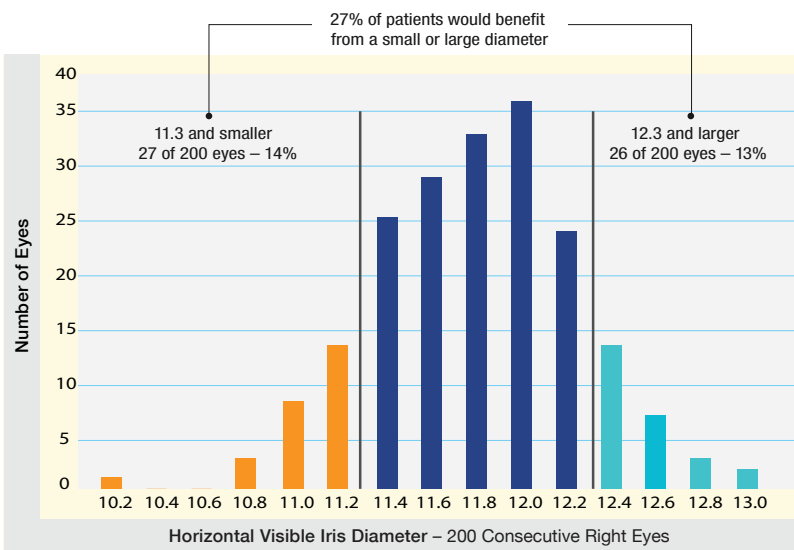


Extreme H2O in three sizes solves the comfort issue from day one.

13.6 14.2 14.8

Extreme H2O Daily and Extreme H2O Weekly are the ONLY disposables available in three diameters: 13.6, 14.2 and 14.8. This enables you to successfully fit your small, medium and large cornea patients with the right fit, the first time, to ensure comfort. Stop dropout rates at the initial fit and gain more referrals along the way.

Pacific University Study on HVID



Pacific University recently conducted a study on corneal diameter and findings indicate that 27% of contact lens fits fall outside the standard parameters and would benefit from a small or large diameter.

