

Just the Facts

on Toric Lenses



The objective of this series is to take a fact-based approach to assessing toric contact lens technologies and practice management factors – so that you can prescribe what’s best for you and each of your astigmatic patients. To do this, we present *Just the Facts* - technical product summaries, insights from practitioners who regularly fit astigmatic patients, and relevant toric lens case studies.

Today we'll address the first in a series of 5 facts:

1. Aspheric optics and the benefits in a toric lens.

2. Prism ballast and double slab off designs: different approaches to achieving stability and visual quality.
3. Satisfied patients appreciate advances in technology.
4. "Ease of fit" is delivered through multiple factors.
5. Vision is a key factor for astigmatic patients.

The fundamental challenge of toric lens correction has always been its ability to orient and stabilize on the eye, allowing it to provide crisp, clear vision. Today, this is less of an issue. Today there are toric lens designs that achieve excellent stability. Now, patients are looking for additional benefits, such as comfort, health, convenience or enhanced visual quality.

In fact, 97% of eye care professionals agree that spherical aberration impacts the quality of their patients' vision and should be corrected.¹ Spherical aberration occurs naturally in the eye and is exacerbated by the introduction of contact lenses. This "inherent" and "induced" spherical aberration can significantly interfere with how precisely light converges to a focal point on the retina. The average amount of spherical aberration in the population is approximately +0.15 microns for a 6mm pupil. The magnitude of the aberration will increase as the pupil diameter increases. That's why patients notice the effects of spherical aberration mostly in low-light situations as poor contrast, haze, ghosting, halos or glare.

With that basic discussion on aberrations, we can now begin to focus our attention on the design elements of a toric contact lens. Specifically we can look at the Bausch & Lomb PureVision® Toric lens which applies asphericity to the anterior surface of the lens, (see Figure 1). The front surface of the lens is an aspheric surface that reduces the

To see how the science of toric lenses is realized in real practice we're spotlighting a real case study from Thomas Hobbs, OD from Warrensburg, MO.

Case Study

Dr. Thomas Hobbs submitted a case study of a typical situation where upgrading to a toric lens with aspheric optics resulted in a highly satisfied astigmatic patient.

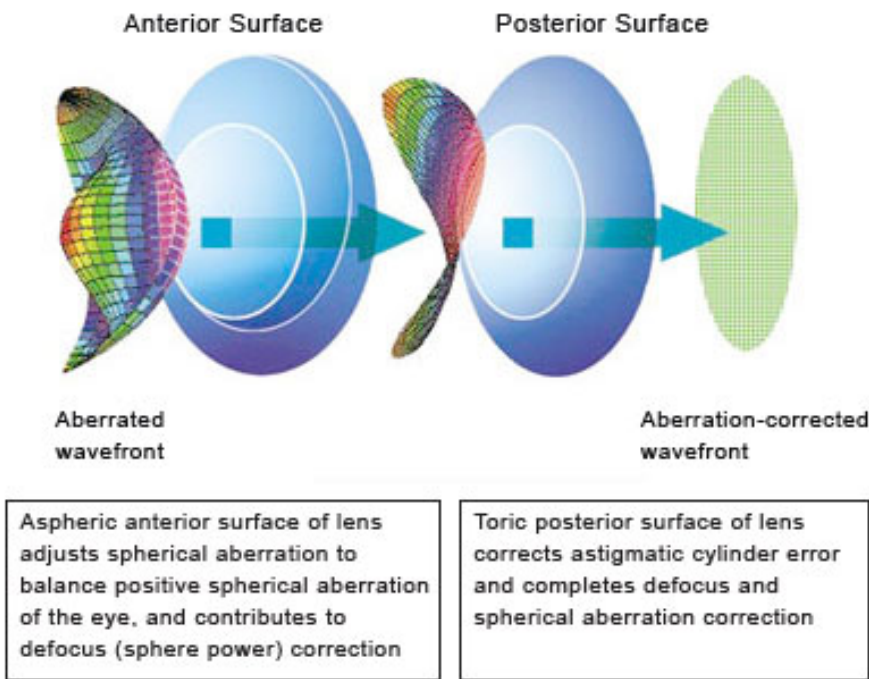
"Tammy was a 48-year-old female who came to me wearing SofLens66® Toric, not as a two week lens as prescribed by her previous doctor, but as a one month lens. She admitted she was supposed to discard her lenses after two weeks but 'just forgot'.

After discussing what she was looking for in a contact lens it became obvious that she would appreciate all the benefits the PureVision Toric had to offer – the increased oxygen permeability, the incredible stability of the lens on the eye, and the enhanced night vision that many of my patients report when wearing this lens. All of this in a lens built to last a full month. PureVision Toric lenses were perfect for Tammy.

Since the stability of this lens is

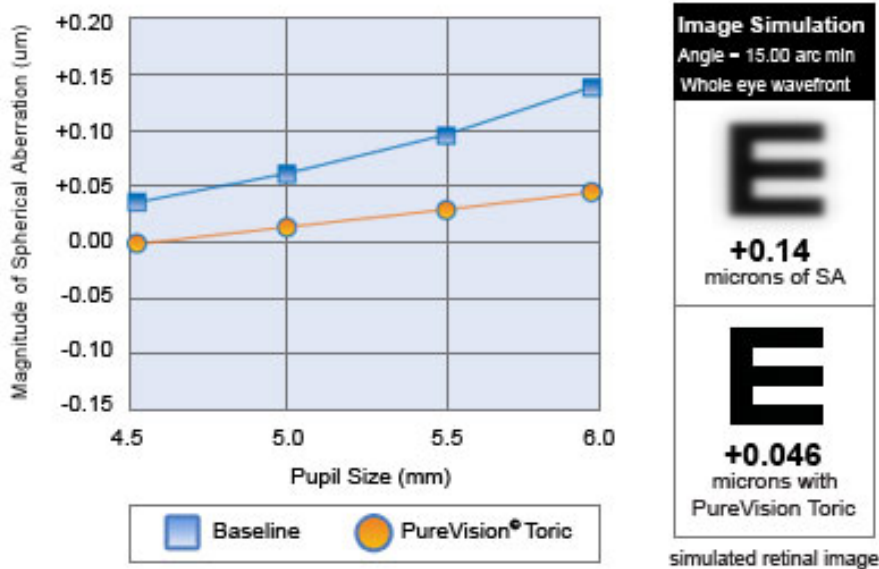
spherical aberration (and is adjusted for each dioptric power). The back surface optic zone—the central optical portion—is the toric surface optimized for balafilcon A material.

Figure 1. Lo-Torque® design of Bausch & Lomb PureVision Toric



The combination of these two surfaces offer an effective combination designed to minimize the astigmatic (sphere and cylinder refractive error) portion and the spherical aberration portions of the visual system (see Figure 2). The result²:

Figure 2. Significant reduction in spherical aberration compared to equivalent spectacle correction



so close to that of the SofLens66 Toric, I moved her over using the exact powers she had been using previously. In my experience I have found that in over 90% of the refits from SofLens to PureVision there is no need to change the prescription.

Tammy returned after three weeks for her progress evaluation. She seemed comfortable with the new lenses, so I talked to her about making the switch. When she found out the price of the PureVision Toric lenses she hesitated and told me she wanted to stay with the SofLens66 Toric. Since she had been wearing it as a one-month lens instead of a two-week lens it seemed much less expensive. However, she did say she wanted to get her old lens in the "new" power that I had given her because it gave her much better vision.

Of course I had not given her a different prescription and after educating her to the reason PureVision lenses had improved her night vision – the spherical aberration correction – she elected to purchase a year's supply of the PureVision Toric lenses.

I recently had the opportunity to see Tammy for her six-month progress check. She reported that she was doing well and that the monthly format was much easier to remember. I asked her if she was still glad she chose the PureVision Toric. Her response? 'They are definitely worth the money'."

- **Significant reduction in positive spherical aberration compared to equivalent spectacle correction**
- **Positive spherical aberration reduced an average of .094 microns.**

As these data suggest, your astigmatic patients can indeed enjoy the benefits of aspheric optics in a toric lens. However, it is critical that you select a manufacturer with proven experience in aspheric optics, as its application to a toric lens is a subtle, sophisticated science.

If you miss any editions of this Just-The-Facts series you can go to our news archives at www.bausch.com/enewsarchives.

¹ 2005 results from an independent survey of eye care professionals by Image Engineering, Inc.

² Adapted soft contact lens wearers were fitted with PureVision Toric lenses. Spherical aberration was measured through dilated pupil. For the 20 patients that completed the study, a comparison of spherical aberration of PureVision Toric lens corrected eye to baseline (spectacle Rx equivalent) was conducted.

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Live Poll - No. 1

Do you have contact lens patients who have complained about the quality of their low-light or nighttime vision?

Yes

No

Live Poll - No. 2

Do you think a lens with aspheric optics would reduce halos and glare associated with low-light?

Yes

No



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