



Opening our eyes up to new toric insights*

by Ian L Pyzer

Confidence in prescribing toric soft contact lenses has grown significantly, and as such is no longer considered a speciality by many. This is thanks to the introduction of innovative designs and materials, which provide eye care practitioners with reproducible lenses that are predictable to fit and offer visual stability and comfort for their patients.

However, there still remains an opportunity to increase the number of toric fits, which only account for 28% of the total soft disposable market,¹ in a population where 45% of patients who would consider contact lenses have 0.75D of astigmatism or more.² Offering toric lenses to spherical contact lens wearers with uncorrected astigmatism is very worthwhile. One in four such patients are unaware that toric contact lenses even exist as an option to correct their vision.³

This article aims to reveal some insights regarding both the opportunity for increasing toric contact lens prescribing and additionally driving increased patient satisfaction by offering existing wearers the opportunity to benefit from the latest innovations in design and materials.

Astigmats are in the dark

Practitioners have the opportunity to improve awareness of toric lenses primarily through how they explain astigmatism to patients; according to research findings, consumers are only provided with very basic information about astigmatism, with

only about 40% of patients reporting that it was explained how it would impact their vision.³ With the vast majority of consumers interested in learning more about astigmatism, the expectation amongst them is that their practitioner should be the main source for this information, followed by the Internet and information booklets. They also expect to hear about what options exist for correcting their vision at their eye examination. However, three quarters of neophyte astigmats said they were not offered toric soft contact lenses, and just over 50% are unaware that toric contact lenses exist as an option to correct their vision.³ Practitioners should therefore capitalise on the opportunity to educate astigmatic patients about modern toric soft contact lenses, which, thanks to improvements in design, are as quick and easy to fit as spherical lenses, to allow them to consider all available options.

* First published in Optometry Today, 2009; 49 (20): 40-43

+ Summary by Ioannis G. Tranoudis, PhD, Senior Manager, Professional Affairs, Central and Southeastern Europe, Johnson & Johnson Vision Care.

Toric contact lens wearers have green eyes

Not literally! But practitioners do need to consider why, when compared to spherical contact lens wearers, astigmats are less satisfied with their lenses. Seven times more toric contact lens wearers stated that they were extremely dissatisfied with their lenses compared to those with spherical lenses.³ If we are to be able to address the problems, we firstly need to appreciate that their foremost reason for dissatisfaction is poor vision, and then better understand what it is that they experience and why.

First let us consider what they experience. Commonly cited reasons for visual dissatisfaction with toric soft contact lenses include poor night vision, inconsistent vision, and having to adjust the lens.³ Unlike spherical lens wearers, this inconsistent vision means astigmats find their lenses do not always perform well enough to use during all daily activities.³ How often a contact lens wearer chooses to wear their spectacles could be a reasonable way of deducing their overall level of satisfaction with their lenses. Toric lens wearers have been shown to be significantly more likely to choose to wear spectacles when compared to those wearing spherical contact lenses.³ Whether due to discomfort or visual dissatisfaction, this demonstrates that although they are just as likely to want to wear contact lenses, the toric wearer needs to revert to spectacles more often than they would otherwise wish.

While deeper questioning will better reveal their true level of satisfaction, practitioners who do not 'dig deeper' may fail to hear how their patient feels about their toric contact lenses. Despite being dissatisfied, wearers report that they do not feel comfortable asking questions during a routine examination, do not want to appear self-diagnosing and do not want to interrupt!³ Practitioners may in the past have been reluctant to ask more searching questions to their astigmatic patients, but with developments to toric designs and lens materials which can significantly improve comfort and vision performance, it is important to establish their overall satisfaction to be able to offer improvements, keeping them loyal to you and to the practice.

No spin - instability is the problem

While the insight above could infer that dissatisfaction with vision may be associated with poor rotational stability, should we consider how this affects our astigmatic patients? Any practitioner who has tried to provide better visual satisfaction to a patient in unstable toric contact lenses will conclude that the only thing worse than blur, is blur that is constantly changing. Such inconsistent vision results from unwanted lens/lid interaction during eye movement and/or blinking, and so eliminating this is crucial if we are to resolve this issue.

Whilst we endeavour to establish how stable the lenses are, within a consulting room it is very difficult to recreate the continuous eye movements that occur during everyday activities, especially while the patient's chin is fixed on the chin rest of the slit lamp. Recent research has helped practitioners understand how real world eye movement may affect lens stability, and demonstrated differences in performance between toric soft designs, which may otherwise be difficult to establish during the more cursory and traditional in-practice assessment.⁴

Recent studies have clearly demonstrated how toric soft lens design can influence lid/lens interaction and visual performance during eye movements.^{5,6} So although we may not always assess or easily observe instability routinely in practice, for example during large versional or diagonal eye movements, simply asking the patient whether they experience fluctuating or blurred vision during specific activities will help us gauge their level of satisfaction. If this ascertains that a patient is less than satisfied with their vision stability, an alternative, more stable toric soft lens design should be assessed.

In addition to the importance of rotational stability during eye movement, it has also been demonstrated that head movements can lead to gravity playing a part, and that the base of some prism-ballast design lenses can swing as much as 30° away from its desired position, whereas ASD lenses have been shown to have little or no rotations.⁷ Again, assessing this in the consulting room may not be practical, but

considering the toric soft design best able to resist gravity is appropriate, especially where an individual's lifestyle involves such movements, as with for example dancing, home improvement work or sport.

Astigmats also deserve lenses with improved health benefits

With increased lens thickness profiles found inferiorly in ballast lenses and horizontally in dynamic stabilised lenses, the likelihood of observing neovascularisation in these areas of the cornea with hydrogel materials is greater, due to chronic hypoxia. This makes the transfer of such patients to materials that allow oxygen availability to the cornea, namely silicone hydrogels (SiHs) even more important than for patients who wear spherical lenses.

Brennan⁸ has demonstrated evidence of the ability of these materials to allow the cornea to maintain a normal metabolic rate. Using in excess of 100,000 data points across a range of toric soft lens designs and powers, manufacturer oxygen permeability figures were used to calculate corneal oxygenation profiles during both open- and closed-eye wear. The subsequent colour maps

(Figure 1) show where the cornea is able to oxygenate at the estimated normal level, as would be achieved were no lens worn (represented in blue), compared to areas of the cornea that are unable to do so (represented in yellow, orange or red). Even at higher powers, the SiH toric lenses perform well, allowing between 90% and 100% of normal corneal oxygenation across the entire surface to occur. Conversely, none of the corneal surface under the hydrogel toric lens is able to consume oxygen at the normal rate; only 53% of the surface manages to oxygenate at 80% of the normal rate.

Aside from oxygen, another important aspect of ocular health is additional protection from ultraviolet (UV) radiation. With UV exposure being one of the significant modifiable risk factors in the development of UV-related cataracts,⁹ and some studies relating the premature development of age-related macular degeneration (AMD) with higher UV exposure when spending more time outside,¹⁰ patients will be keen to hear about the opportunity to protect their eyes from UV-radiation. The two toric SiH lenses from Johnson & Johnson Vision Care are currently the only toric soft lenses to offer Class I UV protection.*

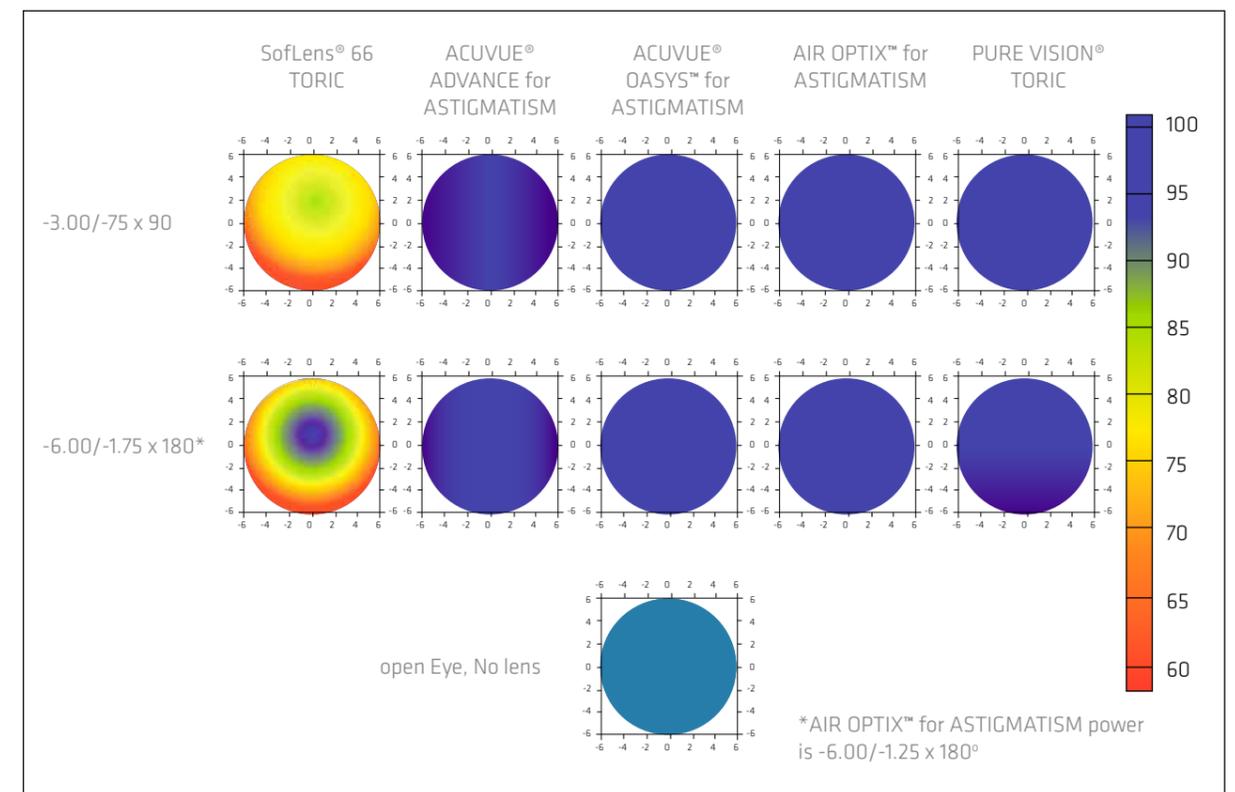


Figure 1: Percentage corneal oxygenation for one hydrogel and four silicone hydrogel toric lenses compared to no lens for daily wear⁸ (Figure courtesy of Noel Brennan)



THE VISION CARE
INSTITUTE®
of
Johnson & Johnson Medical Ltd