



Modern Technology Allows Correction of Cataract and Astigmatism Simultaneously!

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In the 20 years I have been practicing ophthalmology, I realized medicine is an ongoing educational continuum which requires a physician to keep up with changing medical technology. One of the most exciting advances in recent years is the advent of the Alcon Toric intraocular lens implant. This lens implant allows more accurate and predictable correction of astigmatism at the time of cataract surgery.

What is astigmatism? Astigmatism usually refers to an irregularly shaped cornea (the clear window in front of the eye). This is caused by the cornea being more curved in one direction than the other, much like a football. This causes light to focus at several different points on the back of the eye, rather than ideally coming into sharp focus at just one point. Thus, even without a cataract, depending on the direction of astigmatism, vision will be affected in various ways.

What causes astigmatism? Usually astigmatism is heredity – many people are born with an oblong cornea, and the resulting vision problem may get worse over time. Astigmatism may also result from an eye injury that caused scarring on the cornea, from certain types of eye surgery (especially cataract surgery done with large incision years ago), or from diseases that cause corneal thinning.

Astigmatism treatment. Astigmatism can be compensated for satisfactorily with eye glasses and contact lenses (both rigid and frequently soft) in the absence of visually significant cataracts. Astigmatism in the presence of visually significant cataracts can be corrected with a technique known as limbal relaxing incision at the time of cataract surgery. This involves man-made incisions in the peripheral steep cornea to try to make it more rounded. Although the technique is successful, it can be imprecise, unpredictable, result in a cornea perforation, infection and the treatment range is limited. Toric intraocular lens implants are specially shaped to offset the imbalance created by the irregular shape of the cornea. Once implanted and aligned inside the eye after cataract extraction, they stay fixed in place thereby eliminating pre-existing astigmatism. Thus Toric intraocular lenses cannot only improve vision by replacing a visually significant cataract, but they also correct for preexisting nearsightedness or farsightedness and astigmatism. The ideal treatment for astigmatism would be precise and accurate, yield predictable outcomes, and be permanent, safe and convenient to use. The new Alcon Toric Acrysof™ intraocular lens implant comes very close. It was FDA approved in September of 2005. Prior to this, Staar Surgical introduced a Toric intraocular lens in 1998. However, due to its shape and slippery silicone lens material, it does not seem to be as stable in regards to not rotating once it is planted in the eye. A Toric lens must be aligned accurately with the patient's steep corneal curvature at the time of surgery and remain stable without rotation to correct preexisting astigmatism.

ADVANTAGES OF THE ALCON TORIC INTRAOCULAR LENS

- Designed to correct nearsightedness or farsightedness and several different amounts of corneal astigmatism.
- Rotational stability and excellent centration due to its tacky acrylic material that adheres to the lens capsule which “shrink wraps” around it.
- Decreased incidence of “secondary cataract” due to its adherence to the lens capsule.
- Patented yellow color (which approximates the healthy adult natural lens color) that block blue light and may help protect the retina from macular degeneration.
- Significantly improved distance vision spectacle freedom (one study indicated that 97% of patients with bilateral Toric intraocular lenses were eye glass free for all distance related tasks.)
- More biocompatible than other lens implant materials.
- Easy to use and does not require new surgical skills.

The Alcon Toric lens has specific marks on the surface this enables the surgeon to align the lens precisely with the patient's steep axis of astigmatism. Alcon provides an excellent web-site for the surgeon (www.AcrysofToriccalculator.com) to input specific data for each patient. The print out provides that surgeon with a picture demonstrating exactly where to align the Toric lens in the patient's eye.

ASTIGMATISM TREATMENT AFTER CATARACT SURGERY

It may not be possible to fully correct patients with a large amount of preexisting astigmatism. In these cases supplemental limbal relaxing incision or lasik may be helpful. The down side of this includes a second procedure which may be cost prohibitive (lasik). I have found that even if all the astigmatism cannot be corrected with the Alcon Toric lens, patients are still thrilled with their improved vision and decreased dependence on glasses. In the near future Alcon plans to produce Toric lenses with higher amounts of astigmatism correction.

OTHER LENS IMPLANT TECHNOLOGY

Most of you have read about multifocal or presbyopia correcting lens implants such as Restor™, Rezoom™ or Crystlans™. All of these lenses are supposed to provide reasonably good distance and near vision in an effort to decrease spectacle dependence. They all have advantages and disadvantages. Some disadvantages include glare, halos, difficulty with intermediate or near vision, and significant out-of-pocket cost. To date *none* of them correct for astigmatism. Although the Alcon Toric lens does not correct both distance and near vision simultaneously, it does not cause increased glare or halos and is not as expensive as the multifocal lenses. My Toric lens patients are thrilled with their vision and don't mind wearing reading glasses when necessary. Although all of the new technologies offer tremendous breakthroughs, [I am most excited](#) about the Alcon Toric lens technology. It is most important for the ophthalmic surgeon to speak with the patient preoperatively regarding his or her needs and expectations in order to select the most appropriate lens implant for that individual. I am honored to have the Charlotte Sun Newspaper interview some of my patients who chose the Alcon Toric lens implant for their cataract surgery.

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Since 1988, Dr. Zusman, Board Certified in Ophthalmology, provides a range of services from routine eye exams to medical and surgical treatment of eye diseases. [Zusman Eye Care Center in Port Charlotte, FL](#) prides itself on offering state of the art equipment in a modern, comfortable office setting. Dr. Zusman has been named a "Top Florida Doctor" (Florida Monthly) and a "Most Recommended Physician" by National Consumers Survey for Florida.
