



## Evolving view of toric IOL

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Cataract surgery had many advances over the past several decades. The goal of any cataract surgery is to provide the best possible vision. The expectation for good outcome in cataract surgery (for the patients and surgeons as well) is increasing. Many of the patients today demand spectacle free vision. High patient satisfaction is strongly correlated with residual astigmatism. Cataract surgery in patient with preexisting corneal astigmatism is challenging.

Toric IOLs are one of the best option for neutralizing astigmatism and offering the patient spectacle free after surgery. Successful toric IOL implantation requires identification of suitable candidate, accurate preoperative toric IOL calculation and proper intraoperative alignment to prevent postoperative rotation. Patients with keratoconus, corneal dystrophy, skewed central radial axes and high myopias are not suitable candidate for toric IOL. High myopic cases have more tendency to rotate postoperatively post implantation. Intraoperative aberrometry is an ideal tool for toric IOL selection. It helps in power calculation of toric IOL and alignment or adjustments in toric IOL placement.

Postoperative residual astigmatism is a big challenge in toric IOL practice, potential causes are poor axis, incorrect IOL placement, inaccurate power measurement and surgically induced astigmatism.<sup>1</sup> A 1-degree lens rotation results in 3.3% decrease in the toric effect. A 30 degree rotation leads to complete loss of toric effect and more than 30 degree rotation induces new astigmatism.<sup>2</sup> Dr Hovanesian recommended a toric result analyzer (website: [astigmatismfix.com](http://astigmatismfix.com)), tool used for management of post operative astigmatism.<sup>2</sup> Graham Barrett recently devised a calculator (Barrett toric calculator) for toric IOL calculation which uses Universal II formula. The formula considers thickness and shape of lens and posterior corneal curvature. Barrett toric calculator is more accurate and is available on website ([www.ascrs.org/barrett-toric-calculator](http://www.ascrs.org/barrett-toric-calculator)).

### References

1. Zhang L, Sy ME, Mai H, Yu F, Hamilton DR. Effect of posterior corneal astigmatism on refractive outcomes after toric intraocular lens implantation. *J Cataract Refract Surg* 2015 Jan; 41(1): 84-9.
2. Hovanesian J. Satisfaction and spectacle independence with accommodative IOLs versus multifocal IOLs 2 years after surgery. Presented at the 2016 ASCRS.ASOA Symposium & congress.