

When and How to Treat Low Levels of Astigmatism

Synopsis: There are very few innovations that have had as significant an impact as the introduction of toric intraocular lenses. The ability to accurately predict astigmatic outcomes has improved and the threshold for considering a toric intraocular lens has reduced. As a result, toric intraocular lenses are required in approximately 80% of cases undergoing cataract surgery if the desired outcome is less than a 0.5 D of residual astigmatism in all patients. A target of less than 0.5 D residual astigmatism in all patients requires accurate biometry, prediction and alignment as well as an understanding of the impact of surgically induced astigmatism. The concept of combining multiple instruments to derive an integrated K value simplifies the interpretation of utilising multiple instruments.

Astigmatic outcome prediction has improved with the availability of toric calculators that consider the impact of the posterior cornea.

Accurate alignment is facilitated by image-guided systems but similar accuracy can be achieved with inexpensive smart phone apps and associated markers.

The centroid value which encompasses both the magnitude and direction of the vector of surgically induced astigmatism is typically in the range of 0.12 D and should be utilised in toric calculators for optimum prediction.

Leaving a patient with significant astigmatism may have been acceptable in an era when extracapsular cataract surgery was widely practised but today, with small incision cataract surgery and phacoemulsification, an attempt to achieve a target of less than 0.5 D in all patients is preferable and could be considered a standard of care.