Intraocular Lens Choices following Cataract Extraction

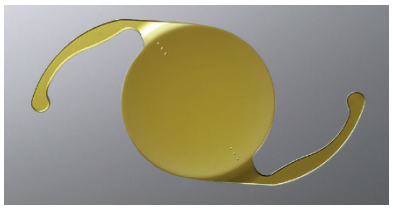
An eye list will typically have a range of different intraocular lens (IOL) types and powers reflecting individualised plans made earlier based on biometric measurement and a careful discussion between doctor and patient regarding each patient's needs and expectations. The plan usually involves achieving good unaided distance vision, often with some near correction, using multifocal intraocular lenses or monovision.

As cataract surgery becomes more refractive, it is crucial to understand where a patient is coming from pre-op before deciding on where they should end up post-op. Emmetropia is the refractive state of an eye naturally focused on the horizon. These patients only need readers when their accommodation fades. Myopia is known as short sightedness because the resting focus is closer to the eye. Very careful consent must be obtained not to disappoint a myopic patient by rendering them perfectly emmetropic post-op, but also taking away their pre-op ability to read glasses-free. Hypermetropes are the easiest to please, as they need glasses for everything pre-op, any freedom from spectacles post-op is very much appreciated.

Most of the pre-op IOL discussion focuses on what else the patient wants in addition to good unaided distance vision. Some may want the best possible distance vision above all else (bilateral emmetropia). In others, additional near vision may be attractive. The patient opting for a monofocal IOL in the first eye can still achieve some reading vision unaided in the second eye. It can be set for reading (mono-vision). They may be happy with readers and want maximum visual comfort for distance (bilateral emmetropia). It is a delicate balance: maybe they won't be happy when their friends don't need readers to read a menu but they do!

Most multifocal IOLs have a secondary focal point achieved with a circular diffraction grating. This leads to a secondary peak in focus for near. That could mean reading or perhaps to mark their card playing golf. The main draw backs of multifocality are glare and haloes with night driving, and a very slight compromise in distance vision for the sake of a secondary near focus. These side effects are reducing significantly with lens design.

Toric intraocular lenses fortunately provide an opportunity to correct astigmatis m by neutralizing any difference in power at opposite meridians. Toric powers are available within the range of monofocal and multifocal lenses. Refinement of toric formulae and increased accuracy of alignment have improved refractive results dramatically.



Modern cataract surgery has become even more refined and safe. One may assume it is thanks to laser assisted cataract surgery. That is simply not the case. It is important to be aware that many studies have been conducted and have failed to show any difference in complications or any difference in visual outcomes when compared to traditional cataract surgery.

The improvements that have been demonstrated have come from better utilization of toric lenses and an expanding range of multifocal lenses to meet higher refractive expectations. Like a lot of medicine, taking a good history is essential in understanding what is the best option for each patient.

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