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Types of Intraocular Lenses

During cataract surgery, a number of intraocular lenses may be inserted to help with the visual demands of the patient. Intraocular lenses have the ability to adjust the focus of an eye, and therefore are able to correct conditions such as shortsightness (myopia), long sight (hypermetropia) and astigmatism. Some lenses have a ability to allow vision at far and near distances (Presbyopic correction lenses), but these lenses have pros and cons, and a detailed examination and consultation is required before choosing your intraocular lens to ensure that it is bespoke for your visual requirements.

Monofocal intraocular lenses

This is the most commonly implanted lens during cataract surgery. Intraocular lenses are well tolerated within the eye, and advances in lens material have allowed the lens to fold and unfold in the eye, allowing a much smaller cataract surgery incision. Monofocal intraocular lenses provide high quality optics and have a single fixed focus. This focus is usually set for distance, allowing excellent unaided visual acuity for common tasks such as driving, playing sports and watching television. Excellent quality reading vision can be achieved with a simple pair of reading spectacles.

Toric intraocular lenses

Patients with astigmatism can benefit from an intraocular lens which has an astigmatic correction built in. The amount of astigmatism to be corrected is measured accurately by calculating the power of the cornea of the eye. A bespoke intraocular lens, with the correct astigmatic correction is then implanted during cataract surgery. Patients with a significant amount of astigmatism require glasses for all tasks. A toric intraocular lens can ensure excellent unaided vision in the distance. Toric intraocular lenses can also have a multifocal correction.

Presbyopic correction intraocular lenses

In a non-myopic person, presbyopia is the normal age-related reduction in the ability to focus the eyes for close distance. This process usually starts after the age of 40, and there becomes a requirement for spectacle correction for near vision tasks. By the age of 60, much of the ability to focus the eyes for close tasks has been lost. During cataract surgery, an ideal lens implant would be one which behaves like the young natural lens in your eye. This would have the ability to focus on distant and near tasks, negating the requirement for glasses. This type of lens implant is called an Accomodating lens implant.

Accomodating lens implants are available, although current technology does not have a solution which provides enough focusing power to allow absolutely sharp focus for distance and near. Accomodating lenses do provide some degree of spectacle independence, but it is safest to assume that spectacles will be required for small print.

Another Presbyopic correction intraocular lens implant is the Multifocal lens. When implanted in the eye, a multifocal lens do not provide a single point of focus, but points for focus for both distance and

near at the same time. This means that the brain needs to learn to automatically select the focus that is appropriate for the visual task required. As a result the brain also needs to ignore the other background image which is also present. Patients achieving success with multifocal lenses go through a learning period to become accustomed to this process. Since the image through a multifocal lens is split into distance and near sections, the quality of the image is not as high as a simple monofocal lens. There is also the possibility of fine haloes around lights, as a result of the optics of the system.

Patients who are happy with multifocal lenses, understand these mild shortcomings in the optics using this technology, and accept them when considering the advantages and convenience of spectacle independence.

Private appointments and enquiries

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