

# Correcting presbyopia with a new generation of IOLs for cataract surgery



**M**odern cataract surgery patients have high expectations for their postoperative vision, with many desiring spectacle freedom.

In the last decade, premium Intraocular Lenses (IOLs) that replace cataracts also allow correction of presbyopia, myopia, and astigmatism. Surgeons can now help patients achieve optimal vision with presbyopia-correcting IOLs by matching available technologies with patients' needs.

## Multifocal IOLs

When it comes to visual function, 3 key distances to take note of are: 35 cm for reading, 66 cm for intermediate vision, and 6 m for distance. To achieve them without glasses, multifocal IOLs or trifocal IOLs are often used.

However, they may cause night-time glare and halos in the first few months.

## Extended Depth of Focus (EDOF) IOLs

For people who do not want glare and halos, but desire good far and intermediate vision and are willing to wear reading glasses for prolonged reading, options include Extended Depth of Focus (EDOF) IOLs. These have an elongated focal area, providing extended depth of focus. EDOF multifocal IOLs provide clear far and intermediate vision with reasonably clear near vision, causing less glare and halos postoperatively compared to multifocal or trifocal IOLs, but the near vision is not as strong.

## Monofocal / Monofocal Plus IOLs

Can patients achieve spectacle independence with standard monofocal IOLs? Yes. Monovision provides spectacle freedom by correcting the dominant eye to zero dioptres(D) for distances whilst the non-dominant eye is made -1.75D for reading. Monovision provides good far and near vision, however, intermediate vision may not be as good as with multifocal, trifocal, or EDOF IOLs.

Monofocal Plus IOLs are monofocal IOLs that carry extra power to enhance the intermediate (66cm) zone of monovision. Mono Plus IOLs give better binocular intermediate vision than standard monofocal IOLs,

yet is without the glare and halos associated with multifocal IOLs.

Bladeless Femtosecond (FS) Laser Cataract surgery using FS laser replaces blades and manual cutting by hand. The biggest advantage is that it allows perfect centration of the IOL to the centre of visual axis. 3D optical coherence tomography scans and laser precision create perfectly sized and circular capsule openings for IOLs. FS laser capsulotomies attain reproducible, uniformly circular and precise diameter compared to manual capsulotomies, improving refractive outcomes of multifocal/EDOF IOLs and maximising patients' chances of achieving total spectacle independence.