Options for minimising the need for glasses

Cataract surgery with an intraocular lens implant can correct all degrees of long sight and short sight (with monofocal implants) and astigmatism (with toric implants) resulting in good vision for distance without glasses but reading glasses are still usually required.

Options for doing away with reading glasses as well are available but to date there is no "perfect solution" resulting in excellent vision at all distances without glasses.

The two current options are "monovision" and multifocal intraocular lens implants.

Monovision

If you have cataract in both eyes, one eye can have an implant set for good distance vision and one eye for near vision. The distance eye is usually your "dominant eye" which is the one you would use when looking down a telescope. The "non-dominant" eye is set for near vision.

The near vision eye can have a close focus for easy reading in bed without glasses but this means a large difference in the focus between the two eyes and some people have difficulty getting used to this difference in focus between the two eyes. This option works best in people who have already been happy with this when using contact lenses to produce the same effect.

Blended monovision (sometimes called mini or micro monovision) is a similar process but the "non-dominant" eye is set at an intermediate distance such as when looking at a computer. The advantage of this is that the difference between the two eyes is no so great and most people are comfortable with this option and can read without glasses in a good light. The disadvantage is that reading small print or in poor light may still require weak reading glasses and there does remain some imbalance in focus between the two eyes.

Multifocal intraocular lens implants

The multifocal intraocular lens implant is manufactured to produce multiple images that fall on the retina (the photographic film at the back of the eye) from different distances (far and near and sometimes an intermediate distance as well). The brain learns to ignore the image it does not want and concentrates on the image that is clear at the distance required. The optics of these lenses are quite complicated and not without some compromise in overall quality of vision.

Some people notice glare symptoms and haloes or starburst effects which can be troublesome when night driving. Usually these effects reduce as the brain adapts to your new vision over several months but it can sometimes take up to 6 months to resolve. A very small number of patients are still sufficiently troubled after 6 months to require lens removal.

As the light entering the eye is “divided up” into different focuses there is slightly less light available at each focus compared with the normal monofocal lens where all the light entering the eye has a single focus. This slightly reduces the quality of vision at all distances but this is not particularly noticeable in good light but can be more obvious in poor light situations such as dawn or dust or in a poorly lit restaurant. This is sometimes called loss of contrast sensitivity. This effect may be more noticeable as you age or if you develop macular degeneration.

If you need very high quality vision for distance and driving at night (such as HGV drivers) then multifocal lenses should be used with caution. If you need very high quality vision at near (such as model makers) then it is unlikely that a multifocal implant alone will produce this level of near vision and glasses may also be needed for detailed near visual tasks.

The two multifocal lenses which I feel are probably the best on the market to date are the Symphony lens from Abbott Medical Optics and the AT LISA trifocal lens from Zeiss.

The AT LISA provides a better quality of near vision and the Symphony reduces glare and haloes and provides a better quality of distance vision.

All intraocular lenses are designed to be easily inserted into the eye at the time of cataract surgery with minimal risk but removal of intraocular lenses is more technically challenging and whilst most of the time can be performed successfully there is a greater risk. It is therefore important to be comfortable with a decision to have either monovision or multifocal lenses and whilst these options are very successful for most people there are some who are not suited and as with all operations patient selection is very important.