Multifocal Lens Implants: A New Era

By Donald Glaser, MD

Today, cataract patients have more choices when selecting an intraocular lens implant. One of their more intriguing options is a multifocal lens.

This advanced lens is designed to reduce dependence on glasses for both far and near vision. It can help a patient, regardless of their age, see both the speed-limit sign and the dashboard. And if they are headed to the grocery store, they won’t need their glasses to examine the nutritional details or pricing on their purchases.

History

In 1997, the first multifocal lens implant, the Array lens, was approved by the FDA for use in the United States. The Array had five concentric progressive zones. Zones 1, 3 and 5 were distance dominant zones, while zones 2 and 4 were near dominant.1

This lens enjoyed success as the only multifocal until the approval of the ReSTOR and ReZoom lenses in 2005.

While the ReZoom was a modification of the Array lens with its gradual transition between focuses, the ReSTOR lens introduced a new technology called “diffractive rings.”

The tradeoff of an improved range of vision through a multifocal lens was the side effects of glare or halos. Diffractive technology had the advantage of distinct focus points, which reduced the likelihood of glare and halos.

Nevertheless, while the benefits of reducing dependence on glasses were clear, the risk of these side effects deterred many patients and surgeons from choosing these lenses. In addition, the early multifocals had near-focus points as close as 12 inches, which is a good bit closer than the average person holds a book.

In 2008, the ReSTOR +3 was approved, adjusting the focusing point further out for better vision at computer and cooking distances, and further reducing glare.

Newest Generation

In 2015, the ReSTOR +2.5 and Tecnis +2.75 and +3.25 were approved. The trend toward decreased near magnification has created a new era of vision correction. These new lenses produce...
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a more continuous range of vision, with the tradeoff being patients may reach for reading glasses a little more often than with the higher magnification, earlier multifocal lens models.

The new lenses use diffractive technology for sharper focuses, and produce fewer side effects than ever. In fact, the newest ReSTOR and Tecnis multifocals had a lower percentage of patients with severe glare and night vision complaints than with these companies’ monofocal (i.e., single focus) lens models. When patients were asked whether they would choose the same multifocal lens again, they answered ‘Yes’ more than 95% of the time.2

There are differences in how much light is dedicated for near vision in the different multifocal lens models. Based on these differences, a surgeon can better customize a solution for patients with different kinds of hobbies and visual needs, and different lenses can even be blended to select the strengths of two different designs.

Alternatives
Monovision, where one eye’s intraocular lens is set for distance vision, and the other for near vision, can be used successfully. However, this is generally only offered to patients who have tried monovision in contact lenses previously and liked the effect.

Accommodative lenses (i.e., Crystalens in the U.S., Synchrony in Europe) can also be used to enhance range of vision. Accommodating lenses work by using the same natural ciliary body muscle that controls our focus in our youth. The lens has flexible hinges that allow the lens to shift forward with a near focus effort. The main downside of an accommodating lens is that near vision does not generally achieve the same level of detail as with a multifocal lens.

“The new multifocal lenses use diffractive technology for sharper focuses, and produce fewer side effects than ever.”

For cataract patients with generally healthy eyes and reasonable expectations, multifocal lenses can offer great visual rewards. The eye surgeons at Clemson Eye have been implanting multifocal lenses since 2006. For the thousands of our patients who opted for multifocal lenses, we’ve found they particularly enjoy the lifestyle improvements that come with a restored full range of vision and freedom from, or much less dependence, on eyeglasses. Donald Glaser, MD, is a Clemson Eye ophthalmologist specializing in comprehensive medical and surgical eye care.


What’s New
Kamra Continuing Education Event

Earlier this year, Clemson Eye hosted more than 40 local doctors for a Continuing Education session on the new Kamra™ Corneal Inlay. The Kamra is a revolutionary procedure that corrects presbyopia (near vision loss).

Clemson Eye is proud to be the first and only clinic in the Upstate to offer patients this reading vision correction solution. Our Medical Director and Chief Ophthalmologist, Dr. Joseph Parisi, was chosen to be among the first 50 surgeons nationwide to introduce the Kamra to patients after it received FDA last year.

The Kamra sits in the first few layers of the eye’s cornea. Smaller and thinner than a contact lens, it is a porous ring with an opening in the center. The inlay uses this pinhole opening to focus light coming into the eye. It restores near vision for the patient while maintaining their distance vision.

The inlay is ideal for active people in their 40s and 50s who no longer wish to depend on reading glasses for their everyday activities.

Consultations to determine candidacy for reading vision correction with the Kamra Corneal Inlay are free at Clemson Eye. The surgery is performed at our new state-of-the-art Greenville clinic on Pelham Road.

Local doctors learn about the Kamra Corneal Inlay at a seminar at Clemson Eye’s new Greenville clinic.