



Refractive Lens Exchange and Cataract Removal

There is a lens inside the human eye, and it is responsible for proper focusing of light rays. It is very common for the lens to do this imperfectly, and this is why so many of us need to wear glasses or contact lenses.

Lens implants are tiny artificial lenses, made of a plastic material that essentially lasts forever. In order to improve the vision of those who would otherwise need glasses, the faulty human lens can be easily removed and replaced with a lens implant. This brief procedure usually requires only five or ten minutes to complete, and is capable of permanently correcting vision for the remainder of the patient's life. This procedure is called Refractive Lens Exchange (RLE). RLE has been performed for many years, and is in fact identical to cataract removal; during the latter procedure a cloudy human lens is removed and replaced with a lens implant.

Because the lens is removed with RLE, the patient will never develop a cataract later in life. Also, because changes in the human lens are the cause of changing vision as we age, a person who has RLE will have stable vision that does not change significantly throughout life (please note, however, that RLE does not prevent the development of unrelated diseases such as glaucoma or macular degeneration).

There are approximately three million cataract operations performed in the United States every year. Because the RLE procedure is so successful and the results are permanent, it is very likely that the number of RLE procedures performed will become increasingly more common.

When one considers the time and expense that those who wear spectacles experience when they lose, misplace or forget their glasses, the attractiveness of the RLE procedure is obvious.



Information About ReSTOR and Other "Multifocal" Lens Implants

The ReSTOR lens implants are FDA approved lenses that offer patients the opportunity to improve their vision for both distance and near without glasses. Because these lenses provide improved vision for distance and near, they are called "multifocal" implants. Their ability to do this was proven in large studies in which more than 80% of the patients who received these implants no longer needed to use glasses.*

It is important for you to know the following before deciding if you wish to undergo surgery with implantation of the ReSTOR lens.

1. The procedure is performed on one eye at a time, with the second eye normally undergoing the identical procedure in 2 weeks or later.
2. Health insurances will not pay for the ReSTOR lens implant. If you have RLE or cataract surgery with insertion of the ReSTOR lens, you would therefore be responsible for an additional charge.
3. In the FDA study, approximately 5% of the patients with this implant reported troublesome halos around lights at night. Ninety-five percent of patients did not experience this to any significant degree. However, if you are one of the patients who develops this problem, it may eventually be necessary to change the implant to a standard (not multifocal) implant. Doing so would be likely to give you excellent vision for distance (assuming that this is the goal agreed upon), but would require you to use glasses for reading and other near tasks. Other options also exist: see page 3 (What to Expect After ReSTOR Lens Implantation) for additional information.

Please note that if it is necessary to change your implant, there would be no charge to you for this beyond any payment that your health insurance plan might provide (although insurance companies will not pay for the ReSTOR lens, they often pay for surgery to change a lens implant). Payments made for the ReSTOR lens and associated services are not refundable.

4. The selection of the appropriate strength lens implant is obviously of great importance to the success of ReSTOR lens implantation.
5. If you have astigmatism, a procedure (Astigmatic keratotomy or AK) to reduce this condition will be needed for you to achieve the maximum benefit from the ReSTOR lens. Approximately 50% of patients receiving the ReSTOR lens require simultaneous AK, the cost of which is included in the fee for ReSTOR lens implantation.



6. In 2009, another multifocal implant (Tecnis) received FDA approval. Although this lens provides similar results with regard to freedom from spectacle use as the ReSTOR lens, the FDA study demonstrated superior intermediate vision for the ReSTOR lens. In addition, the study also revealed a greater incidence of glare and halo with the Tecnis than with the ReSTOR lens.

For the above reasons, we prefer the ReSTOR lens for the vast majority of our patients receiving a multifocal lens.

** There are now 2 types of ReSTOR lenses; the ReSTOR 3.0 and the ReSTOR 2.5. They differ in subtle ways that will be discussed with you.*

What To Expect After ReSTOR Lens Implantation

- Only a small percentage of patients experience severe glare and halos at night after ReSTOR lens implantation. After your first eye is done, it is important to determine if this is a problem for you. Therefore, you should intentionally test the operated eye by looking at objects such as street lights or headlights to see if you do have a severe glare and halo problem. If you find that this is the case, please inform our office of this at any time before the date scheduled for the second eye so that we may discuss options with you. Briefly, however, these include delaying the procedure on the second eye so that we can determine whether or not the halos improve (as they often do) over the next several months, performing ReSTOR implantation on the second eye if you feel that the glare and halo problem is not important to you, or performing surgery on the second eye and using a standard implant to provide you with good distance vision (but poor reading vision).
- It is often difficult for you to evaluate your vision until you have had the procedure done in both eyes. This is because the difference in the vision in your two eyes may not permit them to work together.
- Distance vision is a bit sharper with the ReSTOR 2.5 implant, whereas reading vision is a bit better with the ReSTOR 3.0. Because of this, the ReSTOR 2.5 is sometimes placed in one eye and the ReSTOR 3.0 in the other eye to accomplish a greater range of near and intermediate vision.
- Patients receiving the ReSTOR 2.5 generally have superb distance and intermediate (computer) vision, but require glasses to read small print more frequently than ReSTOR 3.0 patients. See chart on page 4.
- If you have astigmatism, we will attempt to reduce or eliminate it during the ReSTOR implantation procedure. In approximately 15% of patients an additional procedure is necessary to treat this condition at a later date. Please note that it is not possible to predict whether or not any patient will have astigmatism after any type of eye surgery. However, it is very likely that such astigmatism can be eliminated at a later date.



- You may experience difficulty reading in dim light e.g. candlelit restaurants. Some patients carry a small penlight or use the backlight on their cell phone that they occasionally use in such situations.
- Your near vision is usually best at approximately 15 inches with the ReSTOR 3.0 implant, and at 22 inches with the ReSTOR 2.5 model. If you are relying on reading glasses prior to surgery, you may be tempted to return to glasses after surgery. However, if it is at all possible and practical try to avoid using glasses, thereby allowing your brain to adapt more quickly.
- In most cases, vision in the intermediate range (18 inches to 7 feet with the ReSTOR 3.0, and 24 inches to 7 feet with the ReSTOR 2.5) is very good, especially with the ReSTOR 2.5 lens, but it is usually not quite as clear as your distance or reading vision. Vision at all distances often improves after the second eye is done. You may need to make adjustments, such as moving closer to the computer if you receive the ReSTOR 3.0 lens, or until adjustment to your new vision occurs.
- The vast majority (approximately 95%) of our patients achieve distance and near vision of 20/25 or better without glasses after both eyes are done.
- Some patients may still use glasses at times, but even these individuals will have much better near and intermediate vision without glasses than they would have obtained with a standard lens implant that provides good distance vision.
- Please note that you are not expected to be able to read well during the first week after surgery. This is because a dilating drop (Cyclogyl) was prescribed for use during surgery, but also blurs near vision as the effects wear off. Therefore, you should not be alarmed because of this. Your reading vision will improve when the effect of the dilating drop has completely worn off after about one week.

Comparison of ReSTOR 3.0 and ReSTOR 2.5 Implants

	Better Distance Vision (Beyond 6 feet)	Better Intermediate Vision (20-24 inches)	Better Near Vision (13-18 inches)
ReSTOR 2.5	✓	✓	
ReSTOR 3.0			✓