RAINDROP® NEAR VISION INLAY
PROFESSIONAL USE INFORMATION

The Raindrop Near Vision Inlay is indicated for intrastromal implantation to improve near vision in the non-dominant eye of phakic, presbyopic patients, 41 to 65 years of age, who have manifest refractive spherical equivalent of +1.00 diopters (D) to -0.50 D with less than or equal to 0.75 D of refractive cylinder, who do not require correction for clear distance vision, but who do require near correction of +1.50 D to +2.50 D of reading add.

PRECAUTION**:** The safety and effectiveness of implantation of the Raindrop Near Vision Inlay before, during, or after LASIK or other procedures to change the power of the eye have not been evaluated.

CAUTION: Federal law restricts this device to sale by or on the order of a physician.

CAUTION: Federal law restricts this device to practitioners who have been trained and have experience in the surgical management and treatment of refractive errors.

This document provides information concerning the intended clinical use of the Raindrop Near Vision Inlay. Carefully read all instructions prior to use. Observe all contraindications, warnings, and precautions noted in these instructions. Failure to do so may result in patient and/or user complications.

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DEVICE DESCRIPTION

2.1. Raindrop Near Vision Inlay

The Raindrop Near Vision Inlay **(Figure 1)** is a biocompatible hydrogel corneal inlay designed to be implanted permanently under a femtosecond laser flap, onto the stromal bed of the cornea, centered over a light-constricted pupil.

The Raindrop Near Vision Inlay reshapes the central region of the cornea to provide a zone of increased power for focusing on near objects, resulting in improvement in near vision.

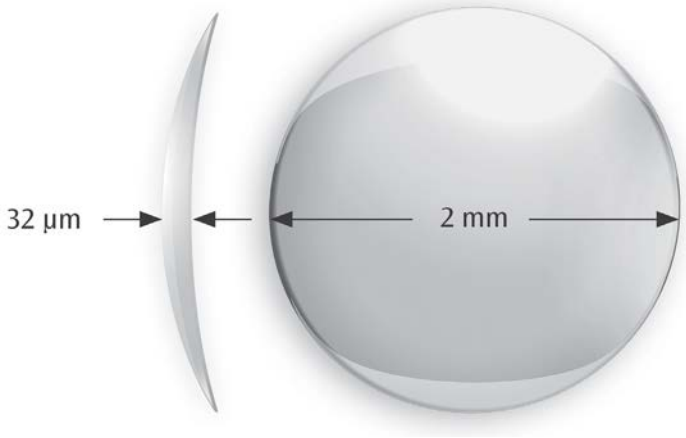


Figure 1: The Raindrop Near Vision Inlay

The properties of the Raindrop Near Vision Inlay are listed below.

1. Inlay Material: Optically clear hydrogel[1]
2. Refractive Power: None
3. Diameter: 2 mm[1]
4. Center Thickness: 32 µm[1]
5. Index of Refraction: 1.373[1]
6. Visible Light Transmittance: 99.7%[1]
7. Water Content: 77%[1]
8. Range of Percent Change in Concentration of Glucose in the Cornea Due to the Inlay (estimated by modeling): -2.5% in tissue anterior to the inlay to +0.6% in tissue just posterior to the inlay[2]
9. Range of Percent Change in Concentration of Oxygen in the Cornea Due to the Inlay (estimated by modeling): +3.3% in tissue just anterior to the inlay to -3.5% posterior to the inlay[2]

2.2. Principle of Operation and Potential Benefits of Raindrop Near Vision Inlay

When the Raindrop Near Vision Inlay is placed onto the stromal bed, the inlay volume bio-mechanically raises the stroma anterior to the device **(Figure 2)**. The slight rise in the corneal surface increases the central anterior corneal curvature, with the greatest effect at the very center of the cornea, tapering off in a transition zone past the edge of the inlay, with little effect on the periphery. Due to the difference in index of refraction between air and the corneal surface, this slight curvature change increases the central power by a few diopters, providing a central zone to enhance near vision in presbyopes.

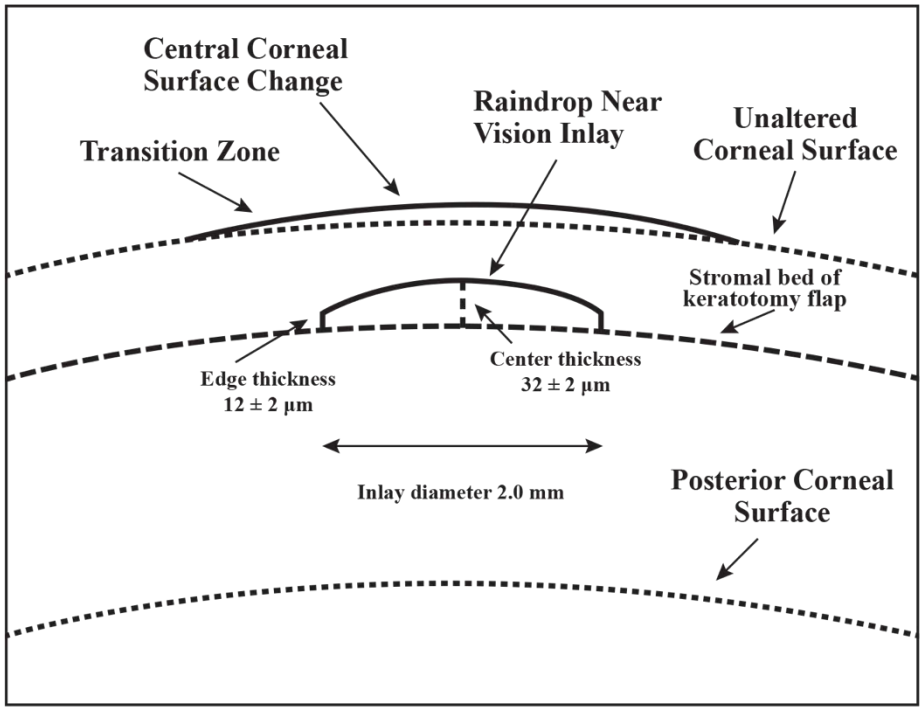


Figure 2: Illustration Of Principle Of Operation Of The Raindrop Near Vision Inlay

2.3. Potential Risks of Raindrop Near Vision Inlay

Implantation of the Raindrop Near Vision Inlay may make the patient's best-corrected distance vision and/or uncorrected distance vision worse than it was before surgery.

Caution: In some cases after implantation of the Raindrop Near Vision Inlay, patients may still require glasses or contact lenses for certain activities, such as reading small print.

Vision and Ocular Symptoms. Raindrop Near Vision Inlay implantation may cause or worsen problems with glare, halos, foreign body sensation, and pain. Some of these symptoms may be improved with additional treatment including artificial tears and punctal plugs. However, these symptoms may not resolve, even with treatment.

Contrast Sensitivity. Raindrop Near Vision Inlay implantation may cause decreased contrast sensitivity most noticeable in the inlay implanted eye and under certain lighting conditions, like when driving at night or in very bright light. There could be a further reduction in contrast if the inlay implanted eye were to develop corneal haze and/or either eye were to develop a cataract, glaucoma, macular degeneration, or were to be implanted with a multifocal intraocular lens.

Eye Infections. There is a risk of infection and/or inflammation to the anterior segment of the eye as a result of Raindrop Near Vision Inlay implantation.

Dry Eyes. There is a risk of developing a new dry eye condition or exacerbation of an existing dry eye condition after the implantation procedure. A patient experiencing dry eye symptoms may require treatment with artificial tears, punctal plugs, and/or other therapy depending on the severity of the dry eye condition.

Corneal Complications. Risk of complications to the cornea include, but are not limited to:

- corneal haze
    - in low light conditions greater losses of contrast sensitivity may be experienced
    - best-corrected distance visual acuity may decrease
    - additional steroid therapy may be needed to treat this condition, which may result in an increase in intraocular pressure and faster cataract development than with normal aging (see **Intraocular Pressure**)
- corneal ectasia
    - in a severe case, a corneal transplant might be necessary
- scarring
- epithelial ingrowth requiring a second surgery to remove them
- inlay extrusion, inlay shifts in position, or misaligned flap
- epithelial defects or recurrent corneal erosion
- inflammation, such as diffuse lamellar keratitis (DLK)
- corneal melting or corneal swelling resulting in corneal decompensation that can cause loss of vision and may require transplant of healthy tissue from a donor

Cataract Formation. There is a risk of developing a cataract in the implanted eye as a result of normal aging, which could impact vision in the eye sooner, and to a greater degree, with the inlay present.

Refractive Error Change. When the Raindrop Near Vision Inlay creates a smooth gradient of power, it is inducing a zone of increased negative spherical aberration in the center of the eye which could have the potential for a decrease in uncorrected distance vision. In some cases, removal of the inlay will improve the patient's vision but may take many months. In other cases, removal of the inlay will not improve his or her vision and the decreased vision could become permanent.

Intraocular Pressure. There is a potential risk for intraocular pressure to increase as a result of using ophthalmic medication drops needed to suppress inflammation from inlay implantation following the surgery.

Secondary Surgical Intervention. After Raindrop Near Vision Inlay implantation, a second surgical intervention may be needed to either remove the inlay permanently or to exchange the inlay, primarily due to misalignment over the light-constricted pupil. Other types of surgery may also be needed to treat complications, such as lifting the corneal flap under which the inlay is implanted. Each of these additional surgeries has its own risks, and may or may not completely resolve the problem.

Posterior Segment Complications. There is a potential risk for a retinal detachment or posterior segment vascular event due to the implantation of the Raindrop Near Vision Inlay.

Vision Loss. There is a potential risk for losing best-corrected distance visual acuity after the surgery. In some cases, removal of the inlay will improve the best-corrected distance vision but may take many months. In other cases, removal of the inlay will not improve the vision and the decreased vision could become permanent.

Managing Eye Problems. Cataract surgery may be possible with the inlay in place. However, you may choose to remove the inlay before such surgery. The presence of the inlay may affect eye pressure measurements, making it difficult to detect changes in eye pressure compared to before surgery. Even though the inlay is transparent, viewing, imaging, and treating other eye conditions or structures may be difficult due to the presence of the inlay.

2.4. Alternative Treatments for Presbyopia

The Raindrop Near Vision Inlay procedure is an elective procedure. Other possible alternative treatments for presbyopia include:

Glasses: Bifocal, trifocal, "reader", and/or progressives glasses have prescription for one, two, or more distances (a range from near to far) in the same lens. Glasses can be worn, removed, and replaced easily. If the power or the fitting of the glasses is incorrect, it can lead to inadequate vision correction, headaches, and eyestrain.

Contact Lenses (monovision, bifocal, trifocal, and multifocal): In monovision, one eye is corrected for distance vision (or no contact lens is used if the uncorrected distance vision is good) and the other eye is corrected for near vision. Often, patients do well with monovision, but in some cases patients may have difficulties adjusting to the eyes' inability to focus on the same visual distance. In addition, there are monofocal, bifocal, trifocal, or multifocal contact lenses that have powers to correct for one, two, or more distances (a range from near to far) in the same contact lens. Contact lenses offer cosmetic benefits, but they have to be cleaned and replaced frequently to avoid redness, irritation, and eye infections.

Laser Correction (monovision LASIK [Laser-Assisted in Situ Keratomileusis]): Monovision LASIK uses an excimer laser to correct one eye for near vision and the other eye for distance vision. Monovision LASIK treatment may help patients to see clearly both far away and close up without glasses or contact lenses. If a patient can see well for far distance without glasses or contact lenses, only one eye will be treated with LASIK to enable near vision. Patients may require another treatment if results are not satisfactory. Other potential complications involved with the LASIK procedure, include dry eyes and visual symptoms.

Conductive Keratoplasty: Conductive keratoplasty is a treatment to reshape the corneal curvature to improve near vision in one eye. Radio wave energy is used to heat and shrink small spots of tissue in a circle around the peripheral cornea tightening the tissue in a band like a belt and making the cornea steeper. However, this effect can decrease over time.

Corneal Inlays: Corneal inlays are designed to correct presbyopia by implanting a small device in the cornea of one eye. Inlays are only intended to be used with patients who have good distance vision. Another commercially marketed inlay has a different mechanism of action than the Raindrop Near Vison Inlay. It is a black film-like ring that increases the depth of focus by blocking peripheral light rays entering the pupil from reaching the sensory back of the eye (the retina). The following adverse events have been reported for this corneal inlay: inlay removal, a decrease in more than two lines of distance vision, and an increase in eye pressure.

SECTION 3
INDICATIONS, CONTRAINDICATIONS, WARNINGS, AND PRECAUTIONS

3.1. Indications for Use

The Raindrop Near Vision Inlay is indicated for intrastromal implantation to improve near vision in the non-dominant eye of phakic, presbyopic patients, 41 to 65 years of age, who have manifest refractive spherical equivalent of +1.00 diopters (D) to -0.50 D with less than or equal to 0.75 D of refractive cylinder, who do not require correction for clear distance vision, but who do require near correction of +1.50 D to +2.50 D of reading add.

3.2. Contraindications

The Raindrop Near Vision Inlay is contraindicated in patients who:

- have a corneal thickness that does not allow for a minimum of 300 microns of stromal bed thickness below the flap;
- have an abnormal corneal topographic map of the eye to be implanted;
- have an active eye infection or active inflammation;
- have active autoimmune or connective tissue diseases;
- have severe dry eye syndrome;
- have keratoconus or are a keratoconus suspect;
- have a recent herpes eye infection or problems resulting from a previous infection;
- have uncontrolled diabetes; or
- have uncontrolled glaucoma.

3.3. Warnings

The Raindrop Near Vision Inlay may not be suitable for patients who:

- have dry eye syndrome, which may worsen following Raindrop Near Vision Inlay implantation;
- have past herpetic corneal infection, which might increase the risk of corneal infections;
- have controlled glaucoma, including a history of a rise in eye pressure due to steroids, which may worsen with steroid use following Raindrop Near Vision Inlay implantation;
- have controlled connective tissue disease or autoimmune disease, which may affect the epithelial remodeling effect Raindrop Near Vision Inlay induces or wound healing;
- have controlled diabetes, which may affect wound healing following Raindrop Near Vision Inlay implantation;
- have a weakened immune system due to medications (e.g., steroids) or medical conditions (e.g., Acquired Immunodeficiency Syndrome), which may make a patient more prone to infection after surgery. Such medications and conditions may increase the risk for other complications, such as dry eye or abnormal wound healing;

- are taking isotretinoin which may cause changes to patients' vision following Raindrop Near Vision Inlay implantation;
- are taking chronic medications known to worsen or cause severe dry eye. These medications may include anti-histamines, beta-blockers, birth control pills, diuretics, drugs for the treatment of cardiac arrhythmia, or other medications which may worsen dryness symptoms and signs after implantation of the Raindrop Near Vision Inlay;
- have any corneal dystrophy or corneal degeneration that may worsen and decrease vision following Raindrop Near Vision Inlay implantation;
- have macular degeneration, retinal detachment, cataract, or any other disease that would compromise vision and prevent patients from experiencing an improvement in near vision following implantation of the Raindrop Near Vision Inlay;
- have an irreversible decrease in vision in either eye, e.g., resulting from amblyopia, injury, disease, or other abnormality which might prevent the patient from experiencing an improvement in near vision following implantation of the Raindrop Near Vision Inlay;
- have a significant change in distance manifest refraction, i.e., a change in distance vision or manifest refraction of more than 0.50 D in the previous 12 months;
- have uncorrected near visual acuity of 20/40 or better or 20/200 or worse in the non-dominant eye, uncorrected distance visual acuity worse than 20/25 in each eye, and distance and near visual acuities that do not correct to at least 20/20 in each eye;
- do not demonstrate monovision tolerance by contact lens trial in the non-dominant eye for at least five (5) days;
- have a cornea less than 500 μm thick that will not allow for a minimum femtosecond laser flap depth of 30% and a minimum of 300 μm of residual posterior stromal bed thickness to safely perform the procedure;
- have a manual microkeratome created flap, because the stromal bed may not be uniform in depth and smooth;
- have a photopic pupil size of ≤ 3.0 mm or a mesopic pupil size of ≥ 7.0 mm, as distance vision may be adversely compromised;
- participate in activities that could damage the flap or dislodge the inlay, such as contact sports, like football or martial arts;
- or have a habit of extreme and frequent eye rubbing which may cause the Raindrop Near Vision Inlay or flap to misalign.

3.4. Precautions

- If the Raindrop Near Vision Inlay becomes dislodged from the Inlay Inserter prior to placement on the stromal bed, return the vial to ReVision Optics, Inc., and prepare a new Raindrop Near Vision Inlay for implantation.
- Do not implant the Raindrop Near Vision Inlay under a femtosecond laser flap shallower than 30% of the central corneal thickness.
- Do not use the Raindrop Near Vision Inlay if primary package has been damaged or broken.

- Do not resterilize the Raindrop Near Vision Inlay, as it may become damaged.
- Do not reuse the Raindrop Near Vision Inlay, as it may cause infection or cross-contamination.
- If a patient is wearing contact lenses to correct near vision, then the use of the contact lens should be discontinued and topographic and refractive stability confirmed prior to determining whether the patient is an appropriate candidate for Raindrop Near Vision Inlay implantation prior to undergoing surgery. Hard or rigid gas-permeable contact lens wearers must not have worn their lenses for at least one (1) week prior to the preoperative evaluation in the eye to be implanted. Contact lens wearers should exhibit a stable refraction at two (2) examinations that are at least seven (7) days apart. A stable preoperative refraction is defined as when the manifest refractive spherical equivalent and topography measurements (i.e., average central keratometric measurements) obtained at the first visit does not differ by more than 0.50 D from the respective measurements taken at the second visit.
- Patients should be instructed not to rub their eyes, wear eye make-up, play contact sports, exercise, swim, garden, smoke, or sustain exposure to dusty environments for at least the first week following Raindrop Near Vision Inlay implantation.
- Some patients may experience a delayed recovery of best-corrected visual acuity during the postoperative period. This is usually mitigated through the use of aggressive dry eye treatment.
- The safety and effectiveness of Raindrop Near Vision Inlay implantation in conjunction or in sequence with LASIK or other refractive procedures is not known.
- The safety and effectiveness of cataract extraction with intraocular lens implantation after Raindrop Near Vision Inlay implantation is not known.
- Removal of the inlay may be necessary prior to any retinal or vitreal procedures or prior to laser procedures due to potential difficulty with viewing and/or delivering the appropriate laser energy or other treatment to the desired target tissue on through the Raindrop Inlay. In addition, with the exception of Nd-YAG bench testing on the inlay, the safety of laser procedures or other treatments involving delivery of energy through the inlay have not been investigated.

While the following are potential risks, it is not known whether the Raindrop Near Vision Inlay causes the following adverse events since they were not studied:

- it is unknown whether stereoacuity is affected by implantation of the device, since this was not investigated in the clinical trial.

The safety and effectiveness of the Raindrop Near Vision Inlay has NOT been established in:

- patients who are pregnant or currently nursing;
- patients with active/recurrent blepharitis;
- patients with anesthetized Schirmer's test results of less than 10 mm of wetting or tear break-up times of less than eight (8) seconds, or the presence of greater than mild symptoms of dryness or discomfort, and patients with slit lamp findings of corneal staining with sodium fluorescein or rose bengal;
- patients who have worn RGP or PMMA contact lenses in the last three (3) weeks or soft contact lenses within one (1) week prior to preoperative examination;
- patients with corneal endothelial cell counts of < 2000 cells/mm^2;

- patients with previous eye surgeries, including refractive surgery, such as PRK, RK, LASIK, LASEK, or another type of refractive procedure, and cataract surgery;
- patients requiring canthotomy to generate a flap in the non-dominant eye;
- patients with an average corneal power of less than 41.00 D or greater than 47.00 D in the non-dominant eye;
- patients who have a difference of 1.00 D or more between manifest and cycloplegic refraction;
- patients with ocular hypertension and/or glaucoma suspect;
- patients taking amiodarone hydrochloride;
- patients taking sumatriptan;
- patients who have a family history or signs of keratoconus, pellucid marginal degeneration, or any other condition that may cause thinning of the cornea;
- patients with a history of eye injury;
- patients with a past history of ocular infection or inflammation;
- patients not within the age group specified in the indications for use.

SECTION 4
SURGICAL PLANNING AND PROCEDURES

4.1 Preoperative Preparation

Patient Selection
Recommended Raindrop Near Vision Inlay patient profile:

- between the ages of 41 and 65 with a manifest spherical equivalent refraction between +1.00 D to -0.50 D;
- less than or equal to 0.75 D of cylinder;
- less than or equal to 0.50 D change in manifest refractive spherical equivalent in the last 12 months;
- requires at least +1.50 D add;
- uncorrected near visual acuity of worse than 20/40 and better than 20/200 in the non-dominant eye;
- uncorrected distance visual acuity of 20/25 or better in each eye;
- best-corrected visual acuity of 20/20 in each eye;
- central corneal thickness greater than or equal to 500 μm;
- photopic pupil size greater than 3 mm;
- mesopic pupil size less than 7 mm;
- healthy ocular surface.

Preoperative Assessment
A comprehensive eye examination should be performed preoperatively. During the comprehensive examination, the surgeon must evaluate the patient for conditions that could result in poor outcomes with the Raindrop Near Vision Inlay, as outlined in the Contraindications, Warnings, and Precautions, and for ocular dominance. Slit lamp examination must be performed to evaluate for eyelid diseases, ocular surface diseases, and cataracts. A dilated fundus examination should be performed to evaluate the patient for retinal and optic nerve diseases.

Patients should be evaluated for dry eye syndrome, for example, by Schirmer's testing, ocular surface staining, evaluation of symptoms, assessment of Tear Break-up Time, etc.

Patients should be evaluated for a history of steroid responsive rise in intraocular pressure (IOP), in addition to assessing the patient for ocular hypertension and glaucoma.

Monovision tolerance should be assessed through a five (5) day contact lens trial in the non-dominant eye.

Recommended Preoperative Care
Two (2) days prior to surgery patient should administer one (1) drop of difuprednate 0.05% (or equivalent) four (4) times a day.

4.2 Surgical Procedure for Implantation of Raindrop Near Vision Inlay

4.2.1. Administer topical analgesic and appropriate concomitant medications to the patient's non-dominant eye.

4.2.2. Prepare and drape the patient according to standard surgical technique.

4.2.3. Place lid speculum (aspirating style is preferred, but not required) into position.

4.3 Laser Flap Creation

4.3.1. Create corneal flap using a femtosecond laser keratome with a flap diameter of 8.0 mm or greater, and targeting 30% of the central corneal thickness. The corneal flap must be a minimum of 150 μm thick, and the residual stromal bed must be a minimum of 300 μm thick. Follow the laser keratome manufacturer's instructions when creating a corneal flap.

4.3.2. Using chilled BSS sterile irrigating solution, irrigate the cornea and remove excess fluid using an eye spear sponge from the canthus region if needed.

4.3.3. If the corneal flap is irregular in size or shape, or if any complication should occur during the creation or manipulation of the flap, DO NOT IMPLANT the Raindrop Near Vision Inlay.

4.4 Device Preparation

4.4.1. The surgical assistant should prepare the Raindrop Near Vision Inlay for implantation as follows using sterile, powder-free nitrile gloves.

4.4.2. Open the plastic cup containing the Raindrop Near Vision Inlay. Remove the inner cup, and identification labels from the outer plastic cup. Remove the seal of the inner cup and transfer the glass vial containing the inlay onto a sterile field.

4.4.3. Assemble sterile syringe and cannula. Hold the cannula package so the heat seal is facing away from you. Gently snap the heat seal by applying pressure with both thumbs on the package in a direction away from you. Partially remove the syringe from blister pack exposing the syringe luer fitting. While being careful not to directly come into contact with the syringe, remove the non-sterile cannula cover exposing the sterile cannula hub. Twist the cannula hub onto the end of the syringe luer until tightly connected. Remove the cover from cannula exposing the sterile cannula **(Figure 3)**. Place the sterile syringe cannula assembly onto the sterile field.

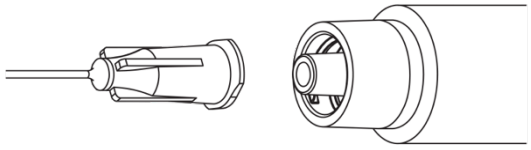


Figure 3: Cannula And Connection Hub Of Syringe

4.4.4. To remove the Inlay Inserter from the glass vial, snap off the plastic cover from the glass vial, carefully pull the tab off the aluminum cap and peel the cap away from the vial, remove the rubber stopper, then use forceps to remove the Inlay Inserter. Use caution to avoid contact between the inserter cap and the sides of the vial.

4.4.5. Attach the shaft of the Inlay Inserter to the round open end of the Inlay Inserter Chuck Handle. Refer to the Inlay Inserter Chuck Handle Instructions for Use (310-0007) for detailed instructions on preparing and assembling the Inlay Inserter Chuck Handle and attaching the Chuck Handle to the Inlay Inserter **(Figure 4)**.

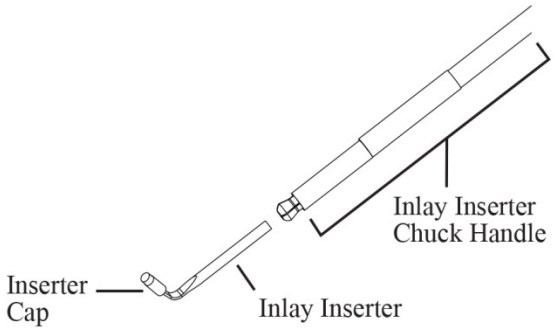


Figure 4: Orientation Of Chuck Handle And Inlay Inserter For Attachment

4.4.6. Hold the Inlay Inserter Chuck Handle so that the inserter cap is facing upward, and carefully slide the tip of cannula needle through the hole in the cap until it seats on the tip of Inlay Inserter **(Figure 5a)**. Using your thumb, retract the plunger of the syringe about 1.5 cc (approximately ½ inch) **(Figure 5b)** and then vertically withdraw the cannula–syringe assembly while maintaining alignment with the center axis of the hole in the cap **(Figure 5c)**.

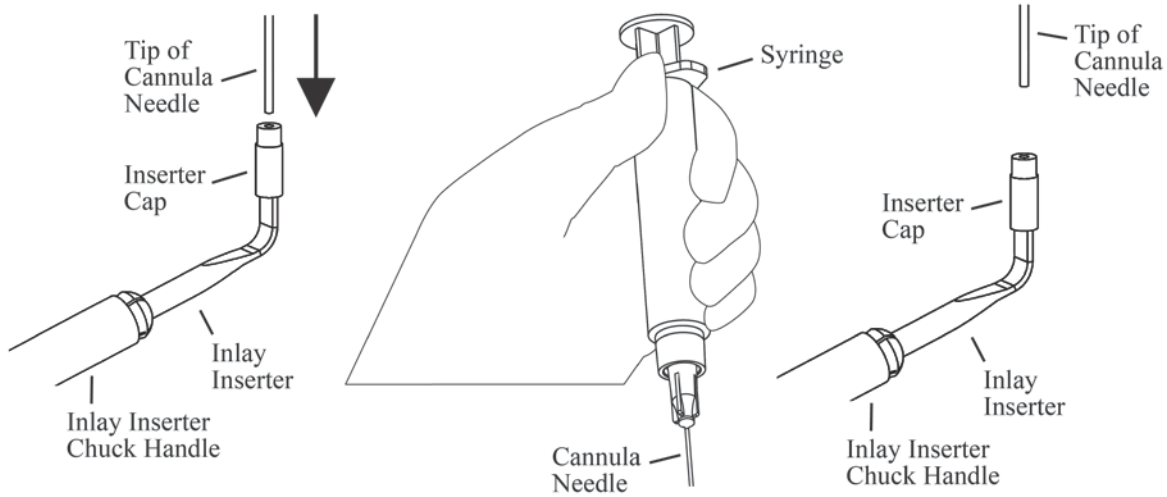


Figure 5: Removing Fluid From The Inserter Cap

4.4.7. While maintaining the cap in the upward facing direction, firmly grasp the main body of the cap using forceps and pull the cap vertically to remove the cap from the Inlay Inserter **(Figure 6)**.

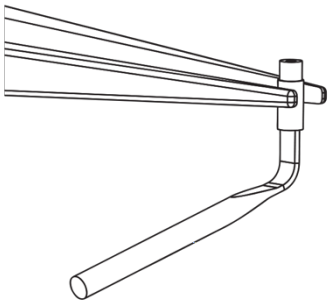


Figure 6: Removing Cap From Inlay Inserter

4.5 Device Delivery

4.5.1. The Raindrop Near Vision Inlay is now ready for surgical delivery. Verify the Raindrop Near Vision Inlay is in position by locating the edge within the Inlay Inserter slot **(Figure 7)**. The Raindrop Near Vision Inlay should be delivered immediately to avoid dehydration of the inlay.

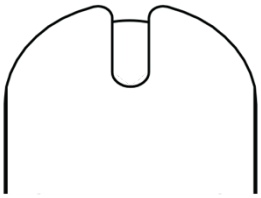


Figure 7: Raindrop Near Vision Inlay In The Inlay Inserter

4.5.2. Align patient in proper position with the operative eye centered under the microscope and fixated on the light. Increase light brightness so that the pupil is approximately 3.0 mm or smaller in diameter.

4.5.3. Position the tip of the Inlay Inserter above the stromal bed and centered over the light-constricted pupil. Gently lower the Inlay Inserter on to the stromal bed and transfer the Raindrop Near Vision Inlay from the Inlay Inserter to the stromal surface using a disposable 30 gauge cannula or spatula and pull the Inlay Inserter away from the Raindrop Near Vision Inlay.

4.5.4. Utilizing the elbow of the cannula or spatula, manipulate the Raindrop Near Vision Inlay into position centered on the light-constricted pupil. The microscope reticule mires will aid in ensuring its proper positioning on the light constricted pupil.

4.5.5. Visually inspect the Raindrop Near Vision Inlay for damage.

4.5.6. Allow the Raindrop Near Vision Inlay to adhere to the stromal bed by letting it rest for approximately one (1) minute without manipulation.

4.5.7. Reposition the flap by placing a small amount of BSS at the hinge and stromal surface of the flap. Avoid any irrigation under the flap, as this may cause the Raindrop Near Vision Inlay to become misaligned, damaged, or lost.

4.6 Postoperative Procedures

4.6.1. Administer postoperative benzalkonium chloride-free drops, including a strong steroid and antibiotic.

4.6.2. Check the eye at a slitlamp to ensure that the Raindrop Near Vision Inlay is centered over the light-constricted pupil, and that the flap is properly repositioned. The microscope reticule mires will aid in the observation and assessment of the Raindrop Near Vision Inlay centration.

4.6.2.1. Methodology for assessing centration of the inlay at slit lamp. Conduct the slit lamp examination by retroillumination; to assess centration of the Raindrop Near Vision Inlay, ask the patient to look straight at the light while covering the dominant eye. Once the Raindrop Near Vision Inlay is located, direct the beam of light to the side of the Raindrop Near Vision Inlay to assess its centration in relationship with the center of the light-constricted pupil.

4.6.2.2. If the corneal flap is not properly positioned, re-lift the flap carefully using forceps, hydrate it and close it again, making sure it is centered and smooth. If flap remains misaligned, then discomfort, epithelial ingrowth, flap wrinkling, or dislodgment may occur.[3]

4.6.2.3. If the Raindrop Near Vision Inlay appears to be misaligned and the near vision does not improve by one week postoperative from preoperative levels, lift the flap and recenter the Raindrop Near Vision Inlay using a drop of sterile BSS. Let the Raindrop Near Vision Inlay dry completely before closing the flap.

4.6.3. Instruct the patient on the proper use and duration of postoperative medications.

4.6.3.1. Use topical ophthalmic antibiotic, such as moxifloxacin hydrochloride ophthalmic solution 0.5% (or equivalent), four (4) times a day for a minimum of one (1) week;

4.6.3.2. Use ophthalmic steroid suspension, such as difuprednate 0.05% (or equivalent), tapered for a month (four [4] times a day for the first week; three [3] times a day for the second week; two [2] times a day for the third week; one [1] time a day for the fourth week);

4.6.3.3. Switch to a weaker ophthalmic steroid, such as loteprednol etabonate ophthalmic 0.5% (or equivalent), tapered for two (2) months (two [2] times a day for the second month, then one [1] drop a day for the third month postoperatively).

4.6.4. Shield the eye prior to discharging the patient. Instruct the patient to continue to wear the protective shield during sleep for up to four (4) weeks and avoid eye rubbing.

Frequent postoperative follow-up examinations must be performed for at least the first year following implantation to look for postoperative complications and adverse events. We recommend the following postoperative follow-up schedule, at minimum, during the first year following implantation of the inlay: 1 day, 1 week, 1 month, 6 months, and 12 months. An eye care professional must monitor the patient's vision, refraction, and ocular health regularly thereafter, as long as the inlay is implanted.

4.7. Considerations For Inlay Removal

It is recommended that the surgeon consider removing the Raindrop Near Vision Inlay under the following circumstances:

- diagnosed diffuse lamellar keratitis (DLK) or any inflammatory process not resolved within one (1) week or if no improvement in condition is noted;
- epithelial defect with no sign of healing within one week of presentation;
- recurrent corneal haze that will not resolve with treatment;
- epithelial ingrowth not resolved after three scrapings; or
- if the patient has not successfully adapted to the expected changes in vision from the Raindrop Near Vision Inlay within a period of 12 months.

4.8. Surgical Procedure for Inlay Removal

The following is the recommended procedure for removal of the inlay:

- prepare the eye as per sterile technique with anesthetic;
- locate the flap side cut, and open the flap using a femtosecond laser incision opening spatula or forceps;
- locate the inlay (it could be in the stromal bed or on the undersurface of the flap);
- using a spatula, gently remove the inlay from the stroma;
- irrigate the stromal bed with BSS;
- replace the flap with proper alignment;
- perform postoperative evaluation of the cornea verifying safe removal and proper flap positioning.

4.9. Postoperative Care Following Inlay Removal

The following are the recommended postoperative care instructions following the removal of the inlay:

- a topical ophthalmic antibiotic four (4) times a day for a minimum of one (1) week;
- ophthalmic steroid, such as loteprednol etabonate 0.5% (or equivalent), four (4) times a day for the first week and taper as needed;
- monitor patient recovery with regular follow up exams. The surgeon should monitor the recovery of the patient's best-corrected visual acuity

The patient may experience delayed recovery of best-corrected distance visual acuity following removal, and there is a potential for loss of uncorrected and best-corrected visual acuity. This should be described to all patients in the informed consent document.

SECTION 5
CLINICAL RESULTS

A prospective, multicenter clinical trial was conducted using the Raindrop Near Vision Inlay. The study had a total of 373 Raindrop Near Vision Inlay subjects across 11 study sites with a manifest refraction spherical equivalent (MRSE) from +1.00 D to -0.50 D without prior refractive or cataract surgery who required +1.50 to +2.50 D reading add. Subjects were implanted in the non-dominant eye under a femtosecond laser flap. Three hundred forty-four (344) subjects completed the 24 month postoperative visit and are reported for effectiveness and the entire cohort of subjects is reported for safety. Subjects continue to be followed in the study at the time of reporting these study results. Two hundred nine (209) subjects still have not been seen for the 36 month visit after surgery.

The subject population (N=373) across the study consisted of 55% females and 45% males. The mean age was 51.3 years (ranging from 41 to 65 years). The majority of subjects were Caucasian (78%) and the remainder of subjects were Hispanic (14%), African American (3%), Asian (2%), and "Other" (4%). The mean preoperative central corneal thickness was 556 µm (ranging from 499 to 658 µm). The mean mesopic pupil size was 5.41 mm (range 3.6 to 6.9 mm), and the mean photopic pupil size was 4.04 mm (range 3.0 to 6.9 mm).

5.1. Effectiveness

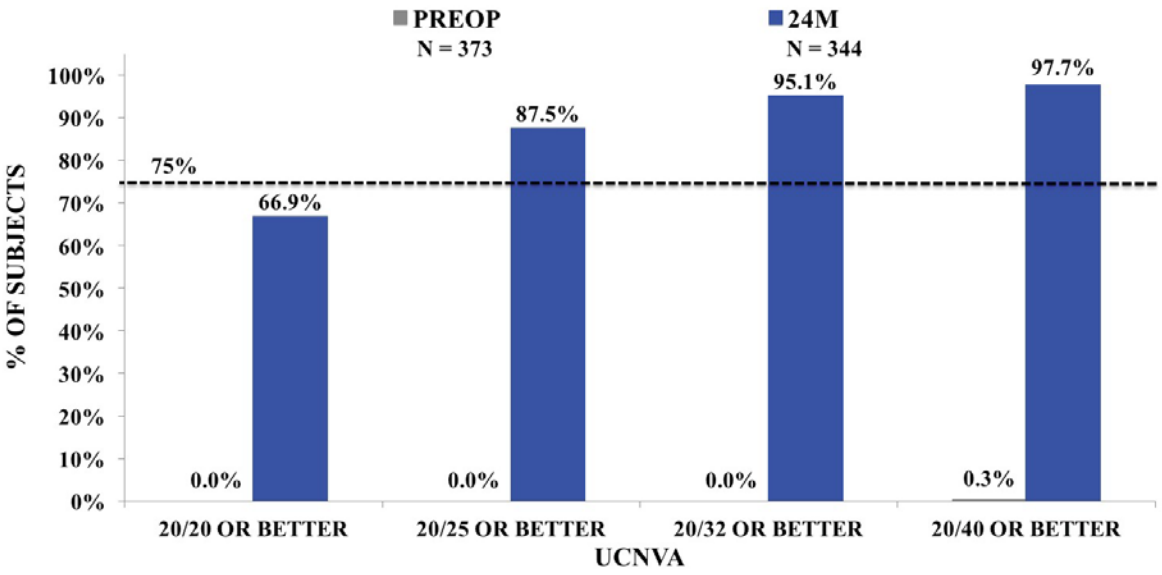
Monocular Visual Acuities

The effectiveness of the Raindrop Near Vision Inlay for improving near visual acuity was assessed in the emmetropic presbyopic subject population. The primary effectiveness endpoint was defined as follows:

- Primary Effectiveness Endpoint: Improvement in uncorrected near visual acuity (UCNVA) (40 cm/16 in) at 24 months postoperatively. *75% of eyes should achieve UCNVA of 20/40 or better.*

For the primary analysis of this effectiveness endpoint, all subjects whose inlays were explanted at or before 24M were imputed as effectiveness failures, and the 24M outcomes after inlay exchange were used for subjects who received an inlay exchange at or before 24M. Ninety-two percent (92%, 336/364) of subjects at the 24-month postoperative visit achieved 20/40 or better UCNVA, and the lower bound of the 95% confidence interval (CI) was 89.1%. Therefore, the primary effectiveness endpoint was met. Over 75% of subjects achieved 20/25 or better at the 24M visit for near distance. Refer to **Figure 8** for the distribution of monocular uncorrected near visual acuities.

Figure 8: Monocular UCNVA At Preop And 24 Months Postop Visit



Visual Acuity At Near, Intermediate, and Distance

Additional observations from the study include intermediate vision at 80 cm. Although intermediate vision was not a pre-specified endpoint, over 76% of subjects were 20/25 or better at the 24M visit. **Figure 9** refers to the distribution of monocular uncorrected intermediate visual acuities (UCIVA) preoperatively and at 24M.

Figure 9: Monocular UCIVA At Preop And 24 Months Postop Visit

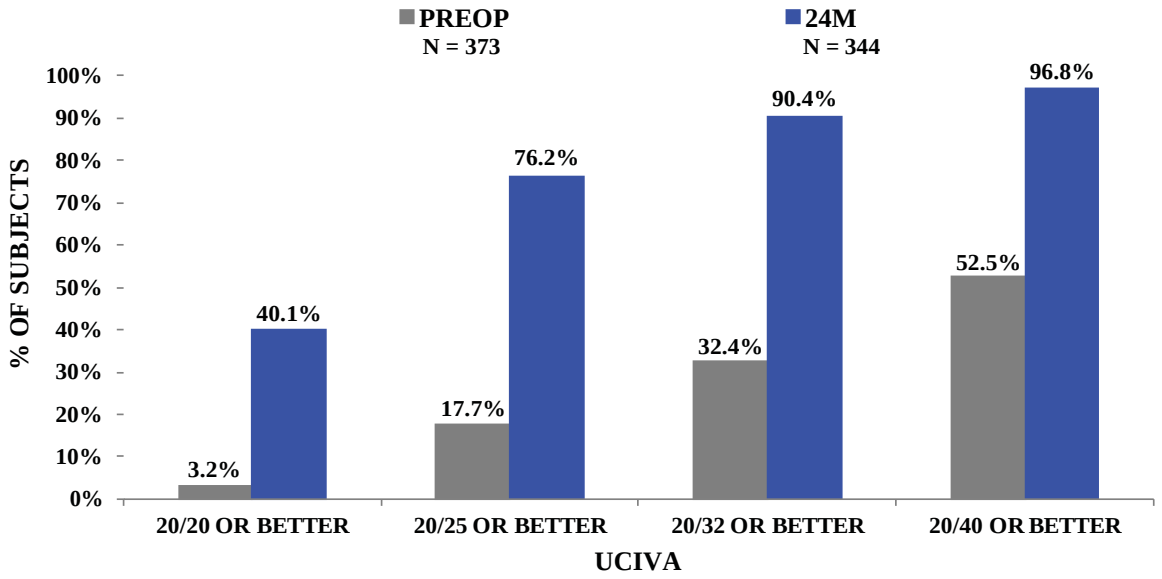
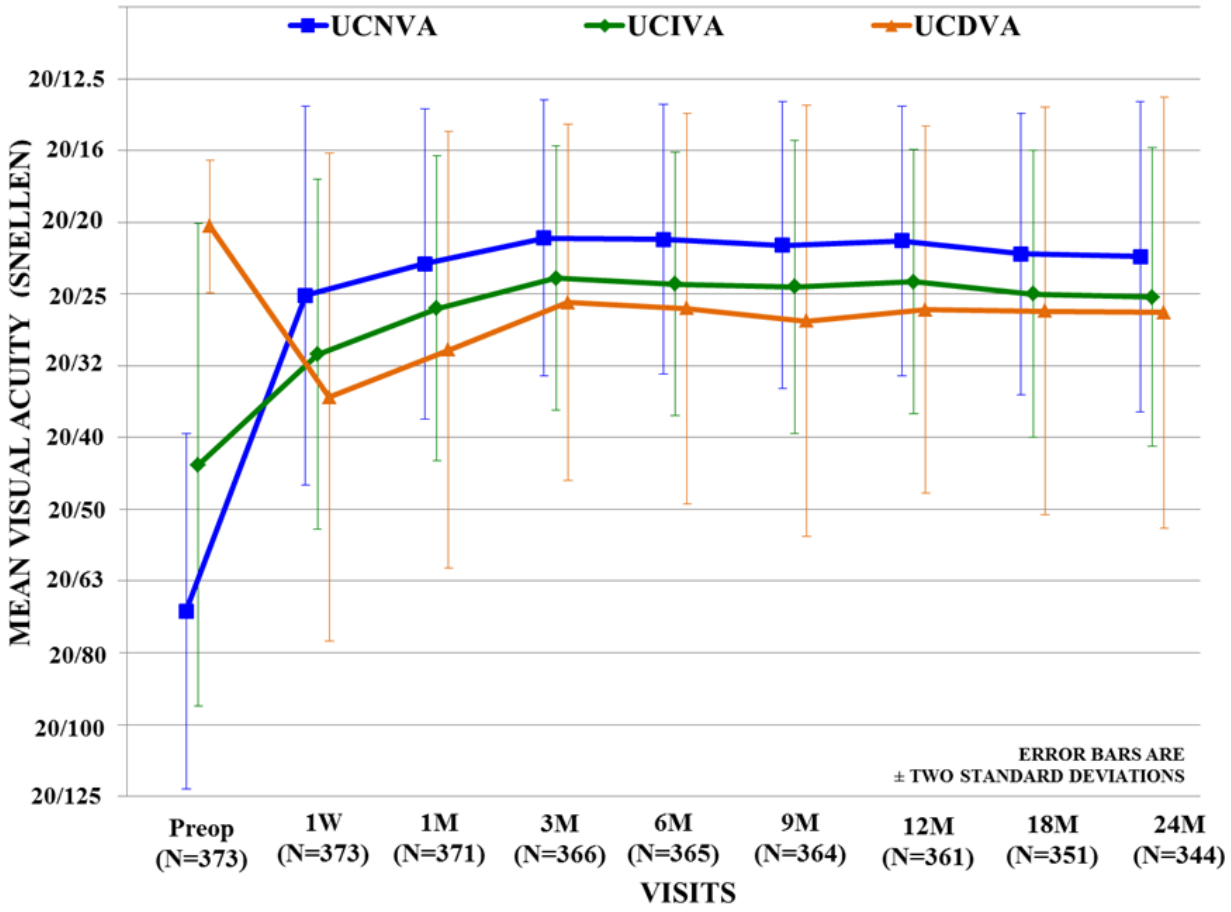


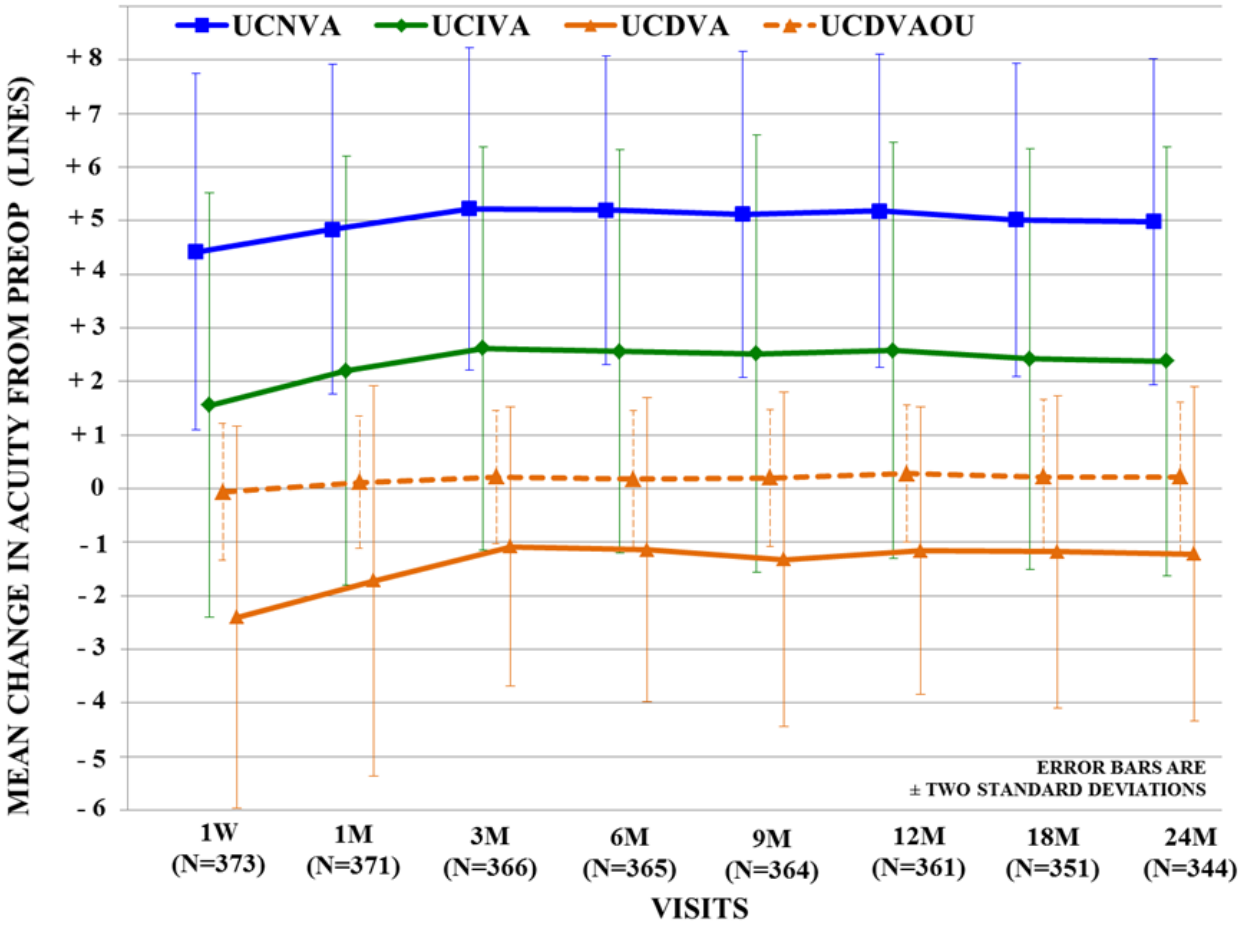
Figure 10 shows the mean monocular uncorrected visual acuities at distance (UCDVA), intermediate (UCIVA), and near (UCNVA) with error bars of two standard deviations. Subjects experienced an early improvement in UCNVA at the 1W postoperative visit, and UCNVA continually improved through the 3M postoperative visit, with a mean UCNVA between 20/20 and 20/25. UCIVA mirrored UCNVA from 3M postoperatively and later, where the mean UCIVA was approximately 20/25. Mean UCDVA improved after the 1 week visit and stabilized at 3M at which time UCDVA averaged between 20/25 and 20/32.

Figure 10. Mean Monocular Uncorrected Visual Acuity At Near, Intermediate, And Distance Across Study Visits



Mean changes in lines of uncorrected near, intermediate, and distance visual acuity from pre-operative values across all visits in the implanted eye were +5.0 lines, +2.5 lines, and -1.2 lines, respectively. Binocularly, subjects did not experience a decrease in uncorrected distance vision **(Figure 11)**.

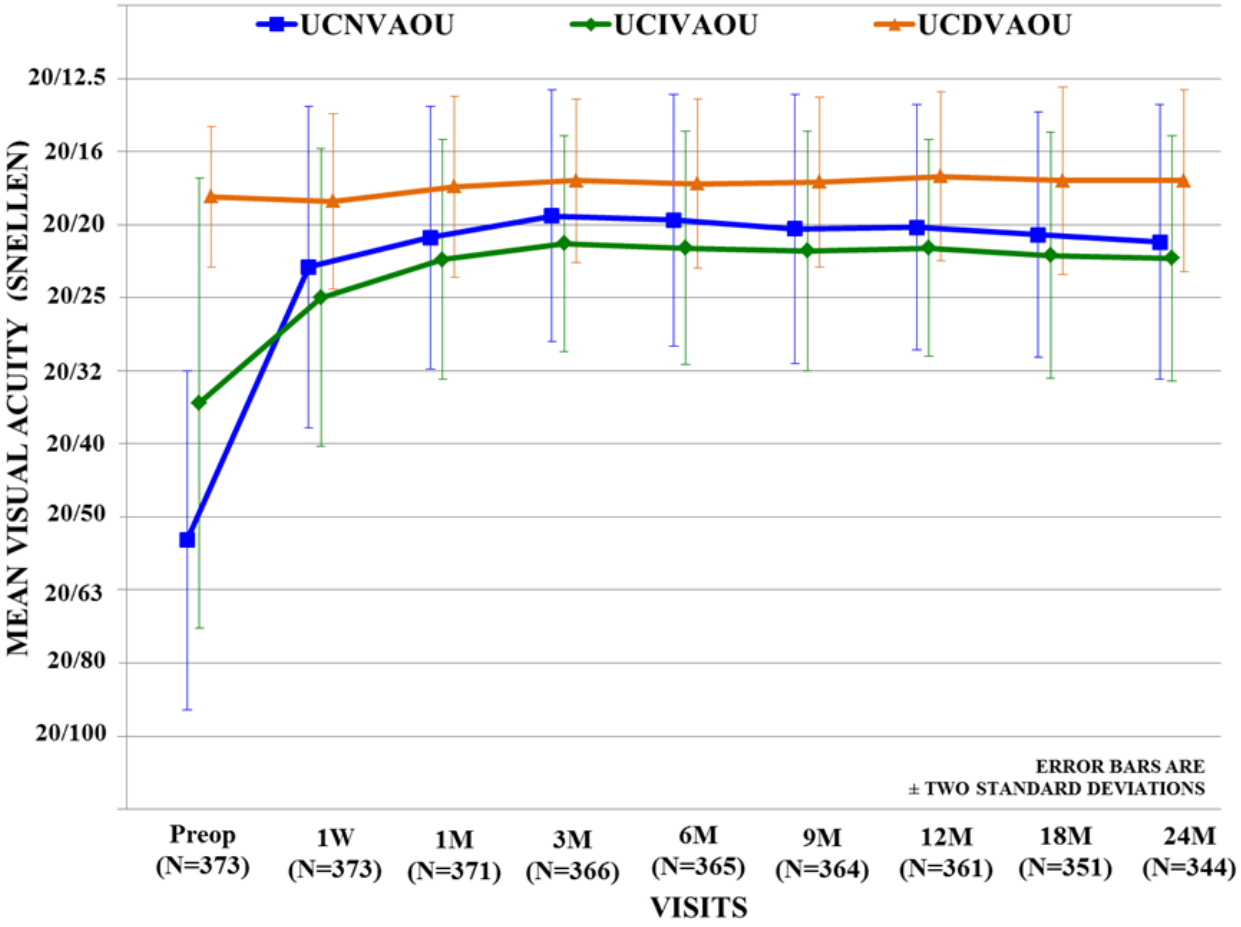
Figure 11: Mean Change In Lines From Preop Across Study Visits



Binocular Visual Acuity

Binocular mean uncorrected near visual acuity (UCNVAOU) showed improvement from preoperatively by the one (1) week visit, which stabilized by six (6) months. On average, subjects at the 24M visit had uncorrected near and intermediate visual acuities (UCIVAOU) between 20/25 and 20/20 and uncorrected distance visual acuity (UCDVAOU) between 20/20 and 20/16 **(Figure 12)**.

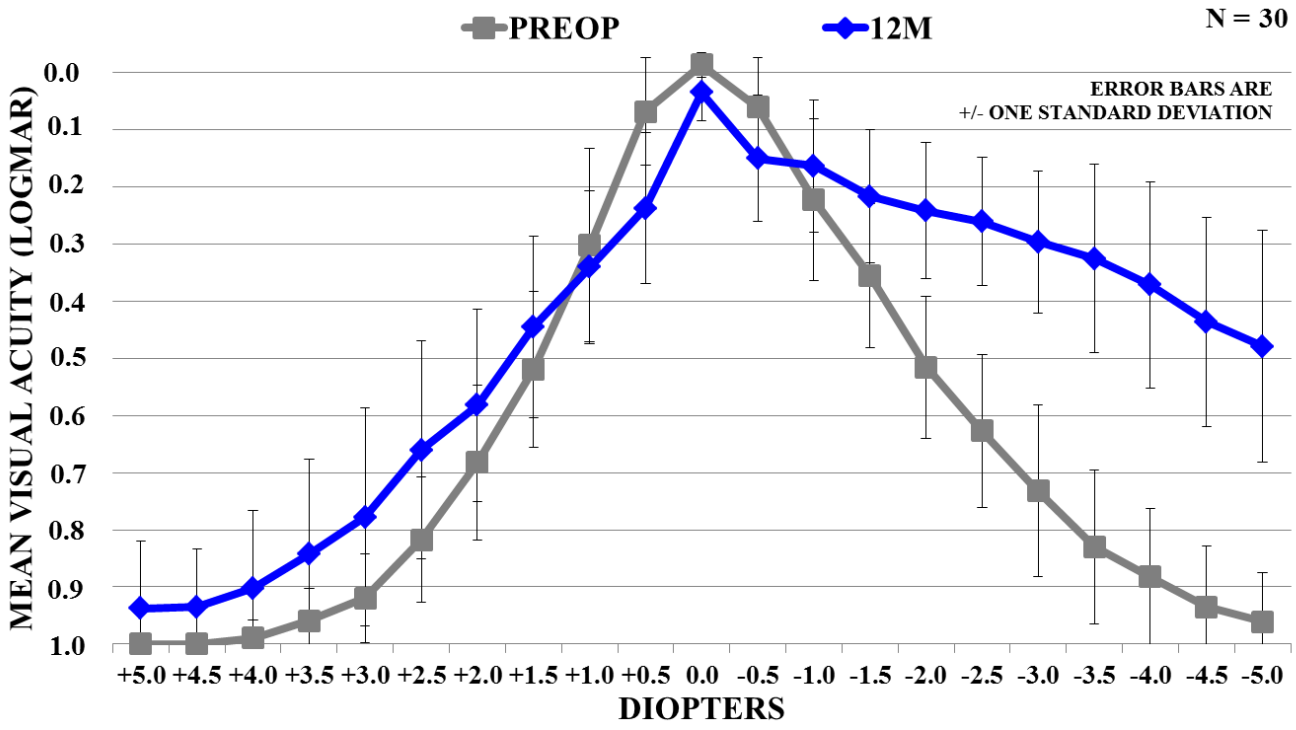
Figure 12: Mean Binocular Uncorrected Visual Acuity At Near, Intermediate, And Distance Across Study Visits



Defocus Curve

In a subset of subjects (n=30), defocus curves in the implanted eye were tested preoperatively and at the 12-month follow-up visit. In **Figure 13**, the flatter postoperative defocus curve with negative defocus compared to the preoperative one supports the mechanism of action of the Raindrop Near Vision Inlay – increasing the power of the cornea centrally to improve near vision.

Figure 13: Preoperative and Postoperative Monocular Defocus Curves



5.2 SAFETY

The safety of the Raindrop Near Vision Inlay was assessed through evaluation of changes in best corrected visual acuity (BCVA), refractive stability, induced astigmatism, and adverse events. The safety endpoints were assessed as follows:

- Preservation of best-corrected visual acuity (primary safety endpoint): less than 5% of eyes should have a loss of two (2) or more lines of best-corrected distance visual acuity (BCDVA) and best-corrected near visual acuity (BCNVA) at six (6) months and all subsequent visits. Less than 1% of eyes with preoperative BCDVA and BCNVA of 20/20 should have BCDVA and BCNVA worse than 20/40 at six (6) months and all subsequent visits.
- Refractive Stability: the change in MRSE between two (2) time points performed at least three (3) months apart, should be no more than 0.50 D in 50% of eyes and no more than 1.00 D in 95% of eyes. The mean rate of change in MRSE, as determined by a paired analysis is $\leq$ 0.5 D per year (0.04 D /month) over the same time period. The mean difference in MRSE should have 95% CI that include zero, or a rate of change attributed to normal aging. The mean rate of change of MRSE decreases monotonically over time, with a projected asymptote of zero, or a rate of change attributed to normal aging. Stability is confirmed at least three (3) months after the stability time point.

- Induced astigmatism: less than 5% of eyes should have postoperative manifest refractive astigmatism at six (6) months and all subsequent visits that increases from preoperative baseline by greater than 2.00 D.
- Adverse events and complications: adverse events should occur in no more than 5% of eyes. Any single adverse event should occur in no more than 1% of eyes.

Additional assessments for safety covered in this section include intraocular pressure, contrast sensitivity, and endothelial cell density. Visual and ocular symptoms results are also summarized.

Preservation of Best-Corrected Visual Acuity (Primary Safety Endpoint)

BCDVA is presented in **Table 1**. No subjects after the one (1) month visit had BCDVA worse than 20/40 at any scheduled postoperative visit. Change in BCDVA from preoperative to each postoperative visit is presented in **Table 2**. After the one (1) month postoperative visit, 0% to 2% of subjects experienced a BCDVA loss of ≥ 2 lines at each postoperative visit, which supports an observation that fewer than 5% of eyes should lose ≥ 2 lines of BCDVA at the six (6) month postoperative visit and all subsequent visits. Four (4) subjects experienced a loss of ≥ 2 lines of BCDVA at the 24 month visit.

Table 1: Monocular Best-Corrected Distance Visual Acuity Across Study Visits

	Preop N=373	Month 6 N=365	Month 9 N=364	Month 12 N=361	Month 18 N=351	Month 24 N=344	Month 30 N=175	Month 36 N=129
20/20 or Better	373 (100%)	327 (90%)	309 (85%)	316 (88%)	310 (88%)	297 (86%)	151 (86%)	111 (86%)
20/25 or Better	373 (100%)	359 (98%)	359 (99%)	357 (99%)	346 (99%)	340 (99%)	171 (98%)	128 (99%)
20/32 or Better	373 (100%)	365 (100%)	362 (99%)	361 (100%)	351 (100%)	343 (100%)	175 (100%)	129 (100%)
20/40 or Better	373 (100%)	365 (100%)	364 (100%)	361 (100%)	351 (100%)	344 (100%)	175 (100%)	129 (100%)
Worse than 20/40	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
95% CI*	0.0%, 1.0%	0.0%, 1.0%	0.0%, 1.0%	0.0%, 1.0%	0.0%, 1.0%	0.0%, 1.1%	0.0%, 2.1%	0.0%, 2.8%
Not Reported	0	0	0	0	0	0	0	0

* Exact binomial 95% confidence interval for worse than 20/40

Table 2: Change From Preoperative Visit In Lines Of Monocular Best-Corrected Distance Visual Acuity Across Study Visits

	Month 6 N=365	Month 9 N=364	Month 12 N=361	Month 18 N=351	Month 24 N=344	Month 30 N=175	Month 36 N=129
Gain of ≥ 2 lines (≥ 10 letters)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Gain of > 1 lines (> 5 letters)	3 (1%)	4 (1%)	0 (0%)	3 (1%)	2 (1%)	1 (1%)	2 (2%)
Within 1 line (± 5 letters)	332 (91%)	321 (88%)	324 (90%)	314 (89%)	309 (90%)	155 (89%)	110 (85%)
Loss of > 1 lines (> 5 letters)	30 (8%)	39 (11%)	37 (10%)	34 (10%)	33 (10%)	19 (11%)	17 (13%)
Loss of ≥ 2 lines (≥ 10 letters)	5 (1%)	7 (2%)	2 (1%)	4 (1%)	4 (1%)	4 (2%)	0 (0%)
95% CI*	0.4%, 3.2%	0.8%, 3.9%	0.1%, 2.0%	0.3%, 2.9%	0.3%, 3.0%	0.6%, 5.7%	0.0%, 2.8%
Not Reported	0	0	0	0	0	0	0

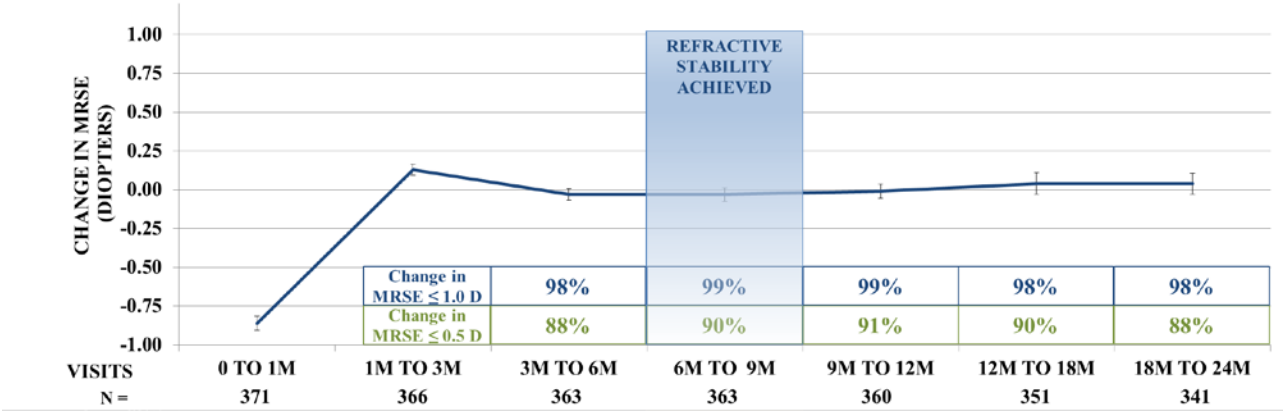
1 line = 5 letters * Exact binomial 95% confidence interval

BCNVA is similar to the results of the BCDVA. One (1) subject reported BCNVA worse than 20/40 (i.e., 20/50) at any scheduled postoperative visit after 1 month (i.e., 9 months). This resolved at an interim visit five (5) days later, where the subject had 20/20 BCNVA. A total of 0% to 3% of subjects experienced a BCNVA loss of ≥ 2 lines at each postoperative visit from one (1) month and later. One percent (3/344) of subjects experienced a loss of ≥ 2 lines of BCNVA at the 24 month postoperative visit.

Refractive Stability

Reported in **Figure 14**, stable refraction was demonstrated with at least 98% of subjects experiencing a change in MRSE within 1.0 D between all consecutive postoperative time points and at least 88% of subjects had a change in MRSE within 0.5 D between all consecutive postoperative time points. An annualized mean rate of change in MRSE, as determined by a paired analysis, was less than 0.5 D. Outcomes demonstrate that stability of MRSE following Raindrop Near Vision Inlay implantation is achieved within six (6) months. The 95% CI for the mean rate of MRSE change includes zero at three (3) months and later.

Figure 14: Stability of Manifest Refraction Spherical Equivalent Over Time



Adverse Events And Complications

Some subjects from the clinical study experienced ocular adverse events and complications that may be related to the inlay implantation procedure or to the inlay in the eye **(Tables 3** and **4)**.

Table 3: Incidence Of Ocular Adverse Events For Study Cohort

	Through 12 Months N = 373		Through 24 Months N = 373		Through 36 Months N = 373	
	# of Events	# (%) of Subjects	# of Events	# (%) of Subjects	# of Events	# (%) of Subjects
Corneal Epithelial Defect Involving the Keratectomy	2	2 (0.5%)	2	2 (0.5%)	2	2 (0.5%)
Melting of the Flap	0	0 (0.0%)	1	1 (0.3%)	1	1 (0.3%)
Ocular Infection	5	4 (1.1%)	6	5 (1.3%)	8	7 (1.9%)
Epithelial Ingrowth	11	10 (2.7%)	11	10 (2.7%)	11	10 (2.7%)
Lost, Misaligned, or Misplaced Flap	1	1 (0.3%)	1	1 (0.3%)	1	1 (0.3%)
Loss in BCDVA of > 2 Lines (>= 11 Letters) at 3 Months or Later	10	8 (2.1%)	13	10 (2.7%)	14	11 (2.9%)
Late Onset of Haze Beyond 6 Months with Loss of 2 Lines (10 Letters) or More BCVA	4	4 (1.1%)	4	4 (1.1%)	4	4 (1.1%)
Hospitalization	1	1 (0.3%)	1	1 (0.3%)	1	1 (0.3%)
Cataract (with Loss in BCDVA >= 2 Lines at Any Time	0	0 (0.0%)	1	1 (0.3%)	1	1 (0.3%)
Increase in IOP of > 10 mmHg Above Baseline	8	5 (1.3%)	9	6 (1.6%)	9	6 (1.6%)
Diffuse Lamellar Keratitis (DLK)	6	6 (1.6%)	6	6 (1.6%)	6	6 (1.6%)
Secondary Surgical Intervention	35	32 (8.6%)	45	41 (11.0%)	48	44 (11.8%)
Inlay Exchange	19	18 (4.8%)	19	18 (4.8%)	19	18 (4.8%)
Inlay Explant	14	14 (3.8%)	24	24 (6.4%)	27	27 (7.2%)
Flap Lift	2	2 (0.5%)	2	2 (0.5%)	2	2 (0.5%)
Posterior Vitreous Detachment	0	0 (0.0%)	0	0 (0.0%)	1	1 (0.3%)
Broken Orbital Bone	1	1 (0.3%)	1	1 (0.3%)	1	1 (0.3%)
Iritis	1	1 (0.3%)	1	1 (0.3%)	1	1 (0.3%)
Transient Visual Disturbance	1	1 (0.3%)	1	1 (0.3%)	1	1 (0.3%)

All data assigned to a visit, regardless of whether scheduled or not, were used in determining the presence of an adverse event at that visit.
n = number of subjects with the adverse event

Table 4: Incidence Of Complications For Study Cohort

	All Eyes N=373 n (%)
Peripheral corneal epithelial defect at 1 month or later	2 (0.5%)
Corneal edema between 1 week and 1 month after the procedure	13 (3.4%)
Central corneal haze	62 (16.6%)
Foreign body sensation at 1 month or later	33 (8.8%)
Pain at 1 month or later	9 (2.4%)
Severe ghost or double images	1 (0.2%)
Severe glare or halos	3 (0.8%)
Severe dry eye beyond 6 months after procedure	1 (0.2%)
Other*	7 (1.8%)
All data assigned to a visit, regardless of whether it was scheduled or not, were used in deter mining complication presence at that visit. n = number of subjects with the complication	

*Other: mild epithelial defect at the flap hinge (n=2), epithelial sloughing causing an abrasion, allergic conjunctivitis, herpes zoster, meibomitis, and viral conjunctivitis.

Haze

Sixty-two (62) subjects were noted to have central corneal haze at some point during the three (3) year study. The haze resolved in 55 (89%) of these subjects. Forty (64%) of the subjects had a single incidence of haze with 22 (36%) experiencing recurrent haze.

Removals

The Raindrop Near Vision Inlay can be removed. Twenty-seven (7.2%; 27/373) subjects during the clinical study had their inlays removed. The reasons for removal were as follows:

- Subject Dissatisfaction With Visual Outcome After Three (3) Months Postoperative: 10 Subjects (37%)
- Decentration: 2 Subjects (7%)
- Epithelial Ingrowth: 2 Subjects (7%)
- Haze: 10 Subjects (37%)
- Patient's Request: 3 Subjects (11%)

Post Removal Recovery

Visual acuity results for the removal cohort (N=27) at the preoperative visit, the last available visit before inlay removal, one (1) month post removal, three (3) months post removal, six (6) months post removal, and at the last available visit post removal are summarized in **Table 5**.

One (1) subject with epithelial ingrowth was worse than 20/40 (i.e., 20/63) at the last available visit before removal and BCDVA resolved to 20/16 within one week of removal. At six (6) months post removal, BCDVA was 20/12.5 and the epithelial ingrowth had resolved for this subject. At the last available post removal visit, all subjects had 20/25 or better BCDVA.

Table 5: Monocular Best-Corrected Distance Visual Acuity For Removal Cohort

	Preop N=27	Last Available Before Removal N=27	1 Month Post Removal N=23	3 Month Post Removal N=19	6 Month Post Removal N=18	Last Available Post Removal N=27
20/20 or Better	27 (100%)	10 (37%)	15 (65%)	16 (84%)	14 (78%)	20 (80%)
20/25 or Better	27 (100%)	20 (74%)	21 (91%)	18 (95%)	18 (100%)	25 (100%)
20/32 or Better	27 (100%)	25 (93%)	23 (100%)	19 (100%)	18 (100%)	25 (100%)
20/40 or Better	27 (100%)	26 (96%)	23 (100%)	19 (100%)	18 (100%)	25 (100%)
Worse than 20/40	0 (0%)	1 (4%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Not Reported	0	0	0	0	0	2

Table 6 summarizes the change in lines of monocular UCDVA after inlay removal compared to baseline. At one (1) month post removal, five (5) subjects had a loss of ≥ 3 lines. At the subsequent post removal visits and the last available visit post removal, three (3) subjects had a loss of ≥ 2 lines. Twenty-three (23) subjects in the explant cohort had a loss or gain of < 2 lines at the last available visit post removal.

Table 6: Change in Lines of Monocular Uncorrected Distance Visual Acuity After Inlay Removal From Baseline For Removal Cohort

	Last Available Before Removal N=27	1 Week Post Removal N=24	1 Month Post Removal N=23	3 Month Post Removal N=19	6 Month Post Removal N=18	Last Available Post Removal N=27
Gain of ≥ 3 lines (≥ 15 letters)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Gain of ≥ 2 lines (≥ 10 letters)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Gain of > 1 line (> 5 letters)	0 (0%)	0 (0%)	1 (4%)	1 (5%)	0 (0%)	1 (4%)
Within 1 line (± 5 letters)	7 (26%)	10 (43%)	14 (61%)	13 (68%)	13 (72%)	18 (69%)
Loss of > 1 line (> 5 letters)	20 (74%)	13 (57%)	8 (35%)	5 (26%)	5 (28%)	7 (27%)
Loss of ≥ 2 lines (≥ 10 letters)	16 (59%)	6 (26%)	5 (22%)	3 (16%)	3 (17%)	3 (12%)
Loss of ≥ 3 lines (≥ 15 letters)	11 (41%)	4 (17%)	5 (22%)	0 (0%)	0 (0%)	0 (0%)
Not Reported	0	1	0	0	0	1

Only two adverse events occurred post-removal and these were observed in a single subject. This subject developed epithelial ingrowth at 1 week post removal. To treat the epithelial ingrowth, the investigator lifted the flap (secondary surgical intervention) at the three (3) month post removal visit. Complications (i.e., central corneal haze) were reported in ten (10) subjects post removal. These complications resolved in 90% of the subjects. Central corneal haze was unresolved in one (1) subject at the last post removal visit (6 months post removal).

Exchanges

Of the 373 subjects, 18 subjects had their inlays exchanged during the study. The post-exchange safety and effectiveness data is included in the analyses with the data from the rest of the cohort. The reasons for the exchanges were as follows:

- Inlay Misalignment: 12 subjects (67%)
- Epithelial Ingrowth: 1 subject (6%)
- Other*: 5 subjects (28%)

*Other includes epithelial nest, inlay not present at postoperative visit, interface debris, striae, and wrinkled inlay.

Induced Astigmatism

There were no eyes with manifest refractive astigmatism that increased by greater than 2.00 D at one (1) month and later.

Contrast Sensitivity (Monocular and Binocular)

Contrast sensitivity with best correction was analyzed in the inlay eye and binocularly in mesopic with and without glare and in photopic without glare conditions. At 24 months, on average, subjects experienced a decrease in contrast sensitivity monocularly in each of the different lighting conditions compared to preoperative measurements, while binocularly subjects experienced less of a decrease in contrast sensitivity from preoperative measurements, and mainly under photopic conditions **(Figure 15, 16,** and **17)**. For each lighting condition, there were subjects who had clinically significant losses of contrast sensitivity from preoperative measurements defined as a loss of more than 0.3 log units at two or more spatial frequencies or a change from seeing to not seeing the highest contrast test target available at any spatial frequency. The greatest proportions of subjects with clinically significant decreases in contrast sensitivity from preoperative measurement were in mesopic with glare conditions with 37% of subjects having clinically significant monocular contrast sensitivity losses and 9% having clinically significant binocular contrast sensitivity losses. Subjects that experienced central corneal haze postoperatively generally had greater losses of contrast sensitivity under mesopic with glare conditions than subjects who did not develop haze.

Figure 15: Contrast Sensitivity Mesopic Without Glare Monocular And Binocular Preop And At 24M At Different Spatial Frequencies

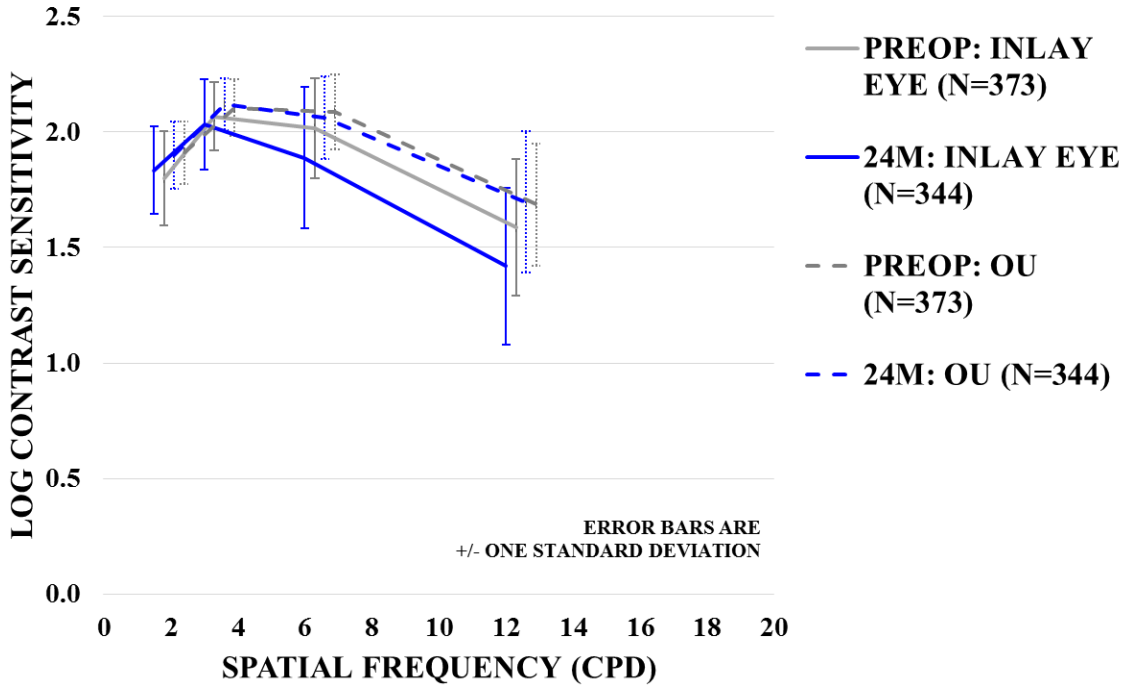


Figure 16: Contrast Sensitivity Mesopic With Glare Monocular And Binocular Preop And At 24M At Different Spatial Frequencies

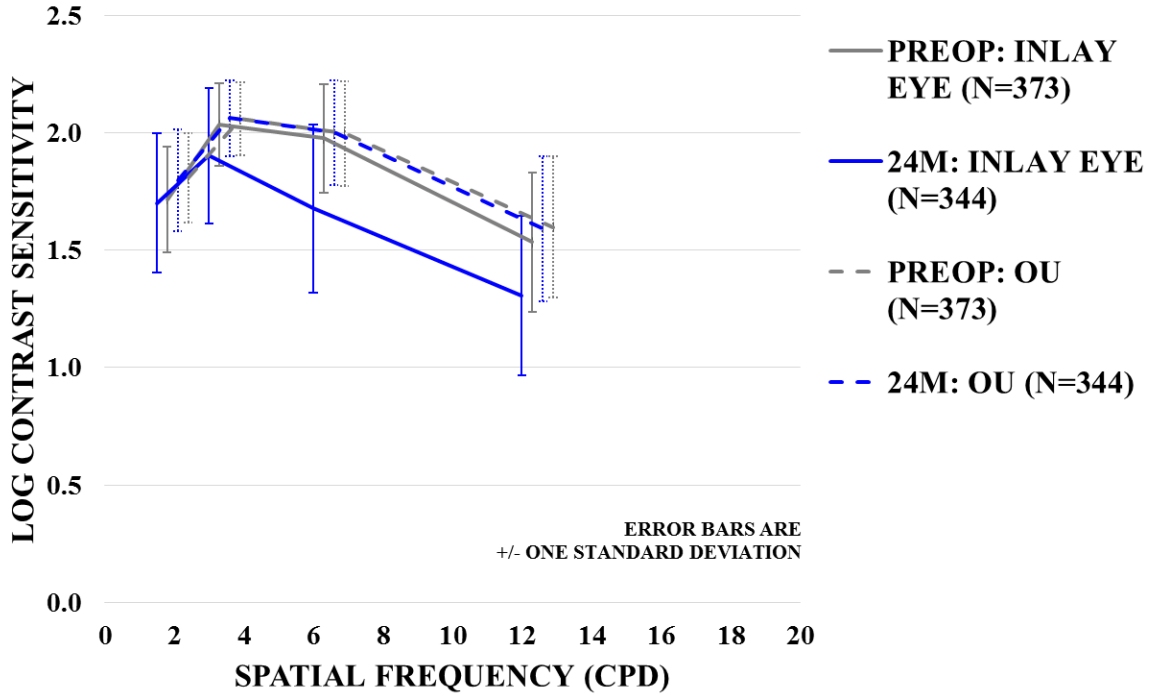
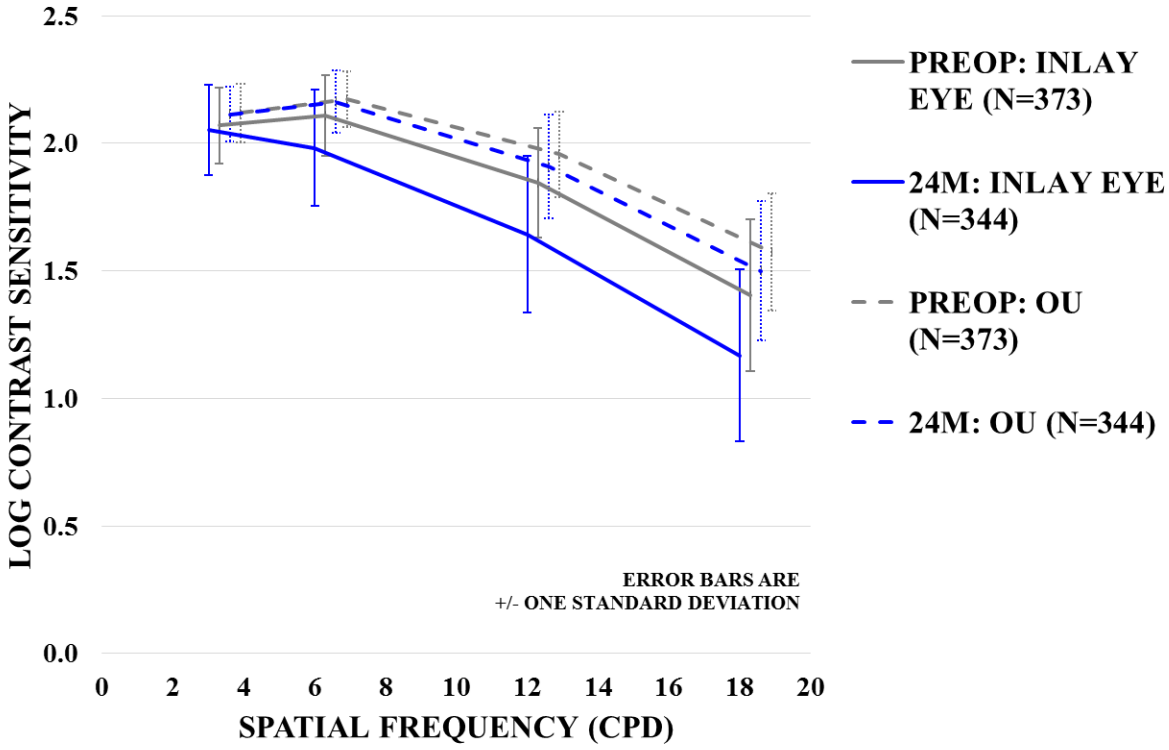


Figure 17: Contrast Sensitivity Photopic Without Glare Monocular And Binocular Preop And At 24M At Different Spatial Frequencies



Endothelial Cell Counts

Age-related endothelial cell density (ECD) loss rate is estimated to be 0.6% annually.[4] In the clinical trial, the ECD measurements were performed prior to surgery and subsequently at each scheduled follow up visit (3M, 6M, 9M, 12M, 18M, 24M, 30M, and 36M) on both eyes. The mean change from preoperative to any visit up to 24 months was no greater than -17.4 cells/mm^2 ECD loss. Percent change from preoperative mean ECD was also minimal, with no absolute mean change greater than 0.6% through 24 months postoperatively. At 24 months, no subjects lost more than 10% ECD from preoperative measurements and only 4% (14/344) lost between 5% and 10% ECD.

Intraocular Pressure (IOP)

IOP was measured by two instruments at each time point, and Goldmann and Tono-Pen tonometer measurements were compared at each visit. During the study, at each visit, the mean of the differences was < 0.5 mmHg and was not considered clinically relevant. Furthermore, the mean of the differences varied in sign indicating that the Goldmann and the Tono-Pen techniques measured relatively higher or lower at different visits, although on average, the Goldmann measurements tended to be slightly higher that the Tono-Pen measurements within subjects at most postoperative time points.

Using Goldmann, the preoperative mean IOP was 14.9 (SD 2.7) mmHg. The mean IOP postoperative ranged from 16.2 (SD 3.9) mmHg at one (1) month to 13.8 (SD 2.5) mmHg at 24 months.

The mean change in IOP was greatest at month one (1) (1.3 mmHg, SD 3.5) and was approximately -1.0 mmHg at every time point from three (3) months through 24 months postoperative. Similar trends were seen with the Tono-Pen measurements, although the mean changes from the preoperative visit were slightly less with the Tono-Pen at every time point at 3 months and later.
Six (6) subjects experienced an IOP increase > 10 mmHg from the preoperative visit during the early postoperative period. All resolved.

Within-Subject Change in Uncorrected Near and Uncorrected Distance Visual Acuity
After surgery, the average improvement in monocular UCNVA was 5 lines from baseline. At 24M, 97.6% (336/344) of subjects gained 2 or more lines of UCNVA in the inlay eye. The average change in monocular UCDVA after surgery was a decrease of 1.2 lines from baseline. At 24M, 43% (148/344) of subjects had a decrease of 1 or more lines of UCDVA in the inlay eye.

When the change in monocular UCNVA and monocular UCDVA are examined in combination, the proportion of subjects who did not gain 2 or more lines of UCNVA and who lost more than 1 line of UCDVA was 1.4% (5/344) at 24 months.

The ratio of the number of subjects with significant gain in UCNVA (i.e., ≥ 2 lines) with minimal loss of UCDVA (i.e., ≤ 1 line loss) over the subjects without significant gain in UCNVA with minimal loss of UCDVA was 39 (193/5), and 56.1% (193/344) of subjects gained 2 or more lines of UCNVA with a minimal loss of UCDVA (i.e., ≤ 1 line loss).

Ocular and Visual Symptoms
Ocular and visual symptoms were self-reported and rated by the following five categories: Absent, Mild, Moderate, Marked, and Severe. Because the questionnaire used was not developed with patient input, the true symptoms rates and their severity may be different than the study rate. However, the estimates observed in the study are shown in **Tables 7** and **8** for all subjects by category preoperatively and postoperatively at 24 months.

Table 7: Ocular Symptoms Preop And At Month 24

	Pain		Foreign Body Sensation		Light Sensitivity	
	Preop N=373	Month 24 N=344	Preop N=373	Month 24 N=344	Preop N=373	Month 24 N=344
Absent	371 (99%)	342 (99%)	366 (98%)	343 (100%)	349 (94%)	313 (91%)
Mild	2 (1%)	2 (1%)	7 (2%)	1 (<1%)	22 (6%)	29 (8%)
Moderate	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (1%)	2 (1%)
Marked	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Severe	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Not Reported	0	0	0	0	0	0

	Tired Eyes		Dryness		Discomfort	
	Preop N=373	Month 24 N=344	Preop N=373	Month 24 N=344	Preop N=373	Month 24 N=344
Absent	293 (79%)	302 (88%)	321 (86%)	201 (59%)	327 (88%)	315 (92%)
Mild	75 (20%)	37 (11%)	51 (14%)	119 (35%)	43 (12%)	28 (8%)
Moderate	5 (1%)	5 (1%)	1 (<1%)	23 (7%)	3 (1%)	1 (<1%)
Marked	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Severe	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Not Reported	0	0	0	1	0	0

Table 8: Visual Symptoms Preop And At Month 24

	Glare		Halos	
	Preop N=373	Month 24 N=344	Preop N=373	Month 24 N=344
Absent	351 (94%)	235 (68%)	356 (95%)	234 (68%)
Mild	19 (5%)	101 (29%)	17 (5%)	99 (29%)
Moderate	3 (1%)	6 (2%)	0 (0%)	10 (3%)
Marked	0 (0%)	2 (1%)	0 (0%)	1 (<1%)
Severe	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Not Reported	0	0	0	0

	Blurred Vision		Double Vision		Fluctuation of Vision	
	Preop N=373	Month 24 N=344	Preop N=373	Month 24 N=344	Preop N=373	Month 24 N=344
Absent	361 (97%)	253 (74%)	373 (100%)	310 (90%)	360 (97%)	253 (74%)
Mild	9 (2%)	80 (23%)	0 (0%)	28 (8%)	12 (3%)	85 (25%)
Moderate	3 (1%)	7 (2%)	0 (0%)	5 (1%)	1 (<1%)	5 (1%)
Marked	0 (0%)	3 (1%)	0 (0%)	1 (<1%)	0 (0%)	1 (<1%)
Severe	0 (0%)	1 (<1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Not Reported	0	0	0	0	0	0

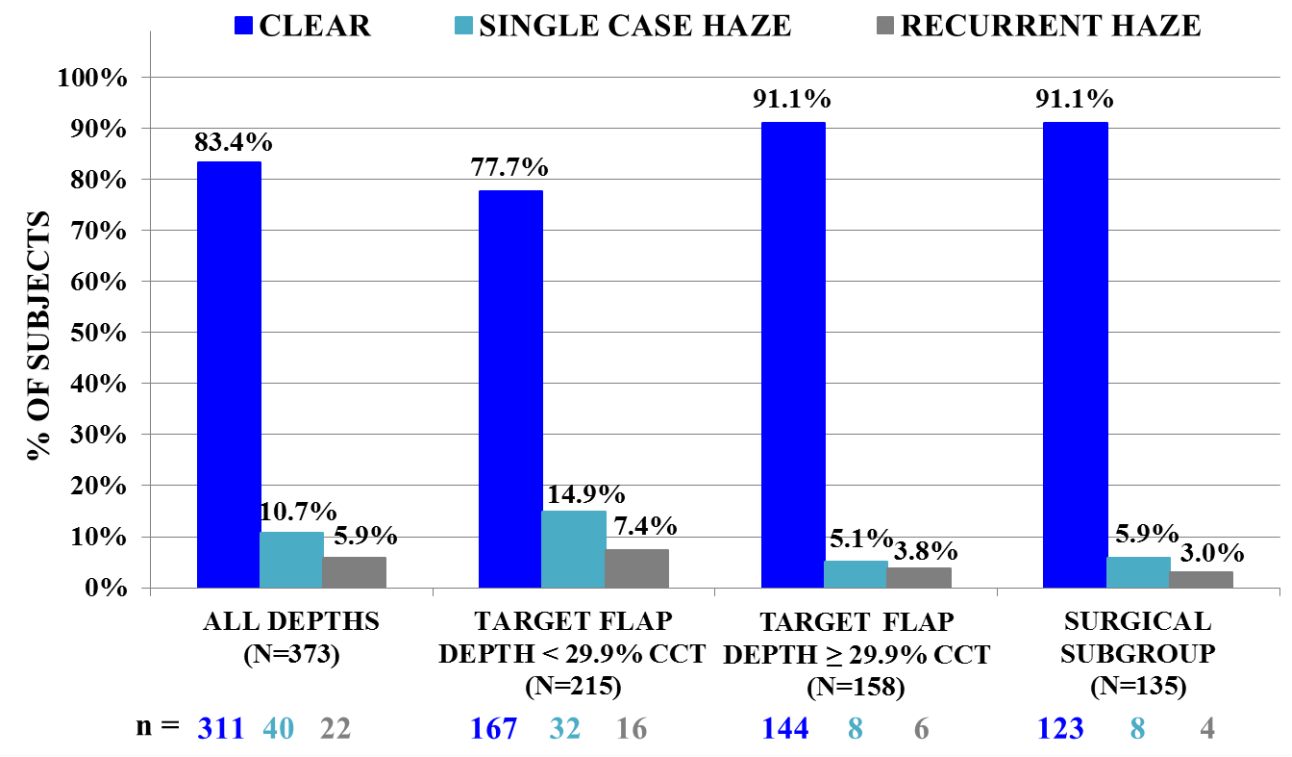
5.3 SURGICAL PARAMETERS

Results for Clinical Study Surgical Parameters Subgroup: Recommended Perioperative Treatment Parameters and Surgical Technique

Comparison of results with the Raindrop Near Vision Inlay among different manners in which surgery was performed and the way postoperative topical steroids were prescribed (tapered off within one [1] month vs. tapered off within three [3] months) during the clinical study suggest that certain outcomes may be somewhat better using particular surgical parameters than others and tapering steroids more slowly, although the study was not designed for such comparisons. These comparisons are the basis for recommendations for the parameters in the instructions for use, i.e., targeting the flap depth to 30% of the central corneal thickness (CCT) with a minimum target depth of 150 µm and minimum residual stromal bed thickness of 300 µm, and a flap diameter of 8.0 mm or greater, and the recommendation for the steroid regimen.

There were 135 out of 373 subjects that had surgery performed in this manner using the single bend inserter, referred to as the Surgical Parameters Subgroup or Surgical Subgroup. **Figure 19** illustrates the difference in incidence of corneal haze among the full cohort, the cohort that had a target flap depth of less than 29.9% of CCT, the cohort that had a target flap depth of greater than or equal to 29.9% of CCT, and the Surgical Subgroup. Out of the 135 Surgical Subgroup subjects, 12 (8.9%) developed central corneal haze postoperatively. Of these 12 subjects, 8 (75%) had single incidents of haze and 4 (25%) had recurrent episodes of haze.

Figure 19: Incidence Of Haze At Any Time By Targeted Corneal Flap Thickness



There were 133/133 (100%) Surgical Subgroup subjects with UCNVA of 20/40 or better at 12 months and 128/128 (100%) with this level of vision at 24 months.

No subjects in the Surgical Parameters Subgroup had postoperative BCDVA worse than 20/40 at one (1) month postoperatively and at all follow-up visits. After the one (1) month postoperative visit, 0% to 2% of subjects experienced a BCDVA loss of ≥ 2 lines at each postoperative visit, which supports an observation that fewer than 5% of eyes should lose ≥ 2 lines of BCDVA at the six (6) month postoperative visit and all subsequent visits. No subject experienced a loss of ≥ 2 lines of BCDVA at the 24 month visit.

In this subgroup, no subject had BCNVA worse than 20/40 at 1 month postoperatively and at all follow-up visits. After the one (1) month postoperative visit, no subject experienced a BCNVA loss of ≥ 2 lines, which supports an observation that fewer than 5% of eyes should lose ≥ 2 lines of BCNVA at the six (6) month postoperative visit and all subsequent visits.

Refractive stability was demonstrated from 12 months through 24 months. At 3 months and later, at least 97% of subjects experienced a change in MRSE within 1.0 D between consecutive postoperative time points and at least 84% of subjects had a change in MRSE within 0.5 D between all consecutive postoperative time points. An annualized mean rate of change in MRSE, as determined by a paired analysis, was less than 0.5 D from 3 months through 24 months. The 95% CI for the mean rate of MRSE change included zero between the 3-month and 6-month visits and later. Outcomes demonstrate that stability of MRSE following Raindrop Near Vision Inlay implantation is achieved within six (6) months.

The cumulative rates of ocular adverse events that occurred through 36 months are (N=135):

- Ocular Infection: 1 subject (0.7%)
- Lost, Misaligned, or Misplaced Flap: 1 subject (0.7%)
- Increase in IOP of >10 mmHg Above Baseline: 2 subjects (1.5%)
- Diffuse Lamellar Keratitis: 1 subject (0.7%)
- Inlay Exchange: 5 subjects (3.7%)
- Inlay Removal: 5 subjects (3.7%)
- Iritis: 1 subject (0.7%)

The cumulative rates of complications that occurred through 36 months are (N=135):

- Peripheral Corneal Defect at 1 Month or Later: 1 subject (0.7%)
- Corneal Edema Between 1 Week and 1 Month After Procedure : 3 subjects (2.2%)
- Central Corneal Haze: 12 subjects (8.9%)
- Foreign Body Sensation at 1 Month or Later: 5 subjects (3.7%)
- Pain at 1 Month or Later: 1 subject (0.7%)
- Severe Dry Eye Beyond 6 Months After Procedure: 1 subject (0.7%)
- Herpes Zoster: 1 subject (0.7%)

The Surgical Parameters Subgroup had fewer subjects who eventually had inlays removed. There were 3.7% (5/135) removals in this subgroup. The reasons for removals (number of subjects = 5) were:

- Subject Dissatisfaction With Visual Outcome After 3 Months Postoperative: 2 subjects (40%, 2/5)
- Epithelial Ingrowth: 1 subject (20%, 1/5)
- Haze: 1 subject (20%, 1/5)
- Subject’s Request: 1 subject (20%, 1/5)

All subjects in this subgroup had BCDVA of 20/20 or better after inlay removal.

Lastly, a summary of ocular and visual symptoms reported preoperatively and postoperatively at 24 months for this surgical parameter subgroup are presented in **Tables 9** and **10**.

Table 9: Ocular Symptoms Before Surgery And At The 24 Month Visit For Surgical Parameter Subgroup

	Pain		Foreign Body Sensation		Light Sensitivity	
	Preop N=135	Month 24 N=128	Preop N=135	Month 24 N=128	Preop N=135	Month 24 N=128
Absent	135 (100%)	128 (100%)	135 (100%)	128 (100%)	131 (97%)	122 (95%)
Mild	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (3%)	6 (5%)
Moderate	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Marked	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Severe	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Not Reported	0	0	0	0	0	0

	Tired Eyes		Dryness		Discomfort	
	Preop N=135	Month 24 N=128	Preop N=135	Month 24 N=128	Preop N=135	Month 24 N=128
Absent	111 (82%)	115 (90%)	117 (87%)	78 (61%)	122 (90%)	122 (95%)
Mild	24 (18%)	12 (9%)	18 (13%)	44 (35%)	13 (10%)	5 (4%)
Moderate	0 (0%)	1 (1%)	0 (0%)	5 (4%)	0 (0%)	1 (1%)
Marked	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Severe	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Not Reported	0	0	0	1	0	0

Table 10: Visual Symptoms Before Surgery And At The 24 Month Visit For Surgical Parameter Subgroup

	Glare		Halos	
	Preop N=135	Month 24 N=128	Preop N=135	Month 24 N=128
Absent	127 (94%)	90 (70%)	131 (97%)	89 (70%)
Mild	8 (6%)	38 (30%)	4 (3%)	38 (30%)
Moderate	0 (0%)	0 (0%)	0 (0%)	1 (1%)
Marked	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Severe	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Not Reported	0	0	0	0

	Blurred Vision		Double Vision		Fluctuation of Vision	
	Preop N=135	Month 24 N=128	Preop N=135	Month 24 N=128	Preop N=135	Month 24 N=128
Absent	134 (99%)	95 (74%)	135 (100%)	120 (94%)	133 (99%)	91 (71%)
Mild	1 (1%)	30 (23%)	0 (0%)	6 (5%)	2 (1%)	36 (28%)
Moderate	0 (0%)	3 (2%)	0 (0%)	2 (2%)	0 (0%)	1 (1%)
Marked	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Severe	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Not Reported	0	0	0	0	0	0

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