

LASIK vs. Clear Lens Exchange (CLE) Comparison Chart ©

	LASIK	Clear Lens Exchange (CLE)
Name Detail	Laser-Assisted In Situ Keratomileusis	Clear Lens Exchange (CLE); Also known as: <ul style="list-style-type: none"> • Refractive Lens Exchange (RLE) • Clear Lens Extraction (CLE) • Refractive Lens Replacement (RLR) • Refractive Lensectomy
Corrective Uses	Refractive error correction for nearsightedness, farsightedness, astigmatism and presbyopia.	Nearsightedness, farsightedness, astigmatism when combined with other procedures, and cataracts.
Procedure Length	Outpatient procedure. Laser treatment requires less than one minute for each eye; total procedure lasts about 15 minutes per eye.	About 20-30 minutes per eye. Each eye is done separately, about a week apart.
Procedural Notes	Uses a microkeratome knife and excimer laser in procedure. The epithelium and stroma are cut to a thickness of 100-180 microns, then an excimer laser ablates corneal tissue under the epithelial/corneal tissue flap. An alcohol solution helps lift the epithelium.	Removes and replaces natural lens with artificial lens (IOL). The procedure is the same as it is for cataract removal and lens replacement. Multifocal lenses can be implanted.
Healing & Recovery	2 days – 1 week; faster than LASEK. Allowed to drive 1-3 days after surgery.	Healing time depends on the type of lens implanted, but general healing time is 1-7 days for normal activities and 6-12 weeks for complete recovery and adjustment.
Benefits	Appropriate for people who have more corneal tissue, less discomfort than LASEK, almost no pain, 20/20 vision or better is typically achieved, corneal haze very rare, immediate clear vision, follow-up enhancements are easier if needed.	Corrects most nearsightedness and farsightedness, reducing the need for corrective lenses, minimal corneal disturbance, long history of success, lens (IOL) can be changed if different power is needed, can be done along with LASIK, PRK, LASEK, CK or Epi-LASIK, suitable for correcting monovision, better choice than Implantable Contact Lenses for people over 60 or those with any degree of cataract, removal of lens prevents future cataracts.

LASIK

Clear Lens Exchange (CLE)

Potential Drawbacks

Those with thinner corneas may suffer less than ideal results, flap may dislodge with trauma, increases higher order aberrations (HOA)** , uneven flap edges may lead to astigmatism, flap may result in scars, post-operational treatment is needed in approximately 5% of patients.

** Higher order aberrations (HOA) affect the contrast sensitivity and fine detail of vision, such as night vision, glare, contrast.

Only indirectly useful in correcting astigmatism, loss of ability to adjust focus (accommodation), each eye performed on one week apart.

Indications for Procedure

Required thickness of corneal tissue achieved, requirement for painless procedure and/or extremely fast recovery, probably best for correcting over 6.00 diopters of refractive error. For both of these procedures, extensive screening is required for qualification. Participants must be between the ages of 18 and 40, vision must be less than -14.00 diopters of nearsightedness, less than +6.00 diopters of farsightedness, and less than 6.00 diopters of astigmatism, a stable prescription must be in place, must not have a history of eye disease or abnormality, the corneas must be within a treatable shape range, the pupils must be of approximately normal size (with slightly larger pupils deferring patient to PRK instead of LASIK), and there must be adequate tearing in both eyes (eye moisture must be healthy).

Thin cornea, correction of more than 3.00 diopters of farsightedness or 12.00 diopters of nearsightedness, dry eyes, minor corneal problems, presbyopia, cataracts, low accommodation, over age of 60, large pupils, reduce need for corrective lenses, not a candidate for laser surgeries.

Contraindications to Procedure

Thin cornea, not within age limit***, uncorrectable range of vision, unstable prescription, eye disease or abnormality, diabetic retinopathy, cataracts, glaucoma, ocular hypertension, autoimmune disorders, contradictory medication, pregnancy, nursing, large pupils, dry eye, prior eye surgery, naturally elevated HOA.

Retinal damage, diseases of illnesses of the eyes and/or body that could effect eye surgery, under the age of 18.

RISKS

The Eye Surgery Education Council (ESEC) reports less than 1% experience serious problems if proper screening is done and an experienced surgeon performs the procedure, and 3-5% experience less serious problems that are correctable. There are NO reports of blindness resulting from LASIK or LASEK surgery. Possibility of complications if the flap (created by surgical cutting) is not thick enough or of proper diameter. Diffuse Lamellar Keratitis (DLK), (infiltrates beneath the LASIK flap) can cause inflammation and scarring. This must be treated with antibiotics and steroids, of possibly scraped for removal. Infection - can lead to loss of vision Irregular astigmatism, double vision, ghosting, can result from not centering the laser correction properly (decentered ablation), halos or starbursts when looking at lights, incomplete corrections, over - or under-correction. Undercorrections can be retreated. Over corrections may require using glasses or contact lenses. Erosion of the epithelium, dry eye, infection, keratectasia, weakened, bulging cornea, the alcohol used in this procedure can kill epithelial cells, loss of visual acuity or best corrected vision (BCV) after the procedure, corneal scarring, eyelid droop, chronic discomfort, inability to tolerate contact lenses.

Increased chance of retinal detachment, loss of epithelial cells, inflammation, infection, rejection of the lens, glaucoma, retinal damage, corneal decomposition, more invasive surgery than P-IOL or laser refractive surgery (corneal ablation as in LASIK).

HOW TO AVOID PROBLEMS

Find a surgeon with thousands of procedures of experience. Exams to include routine eye exam, slit-lamp, fundus, corneal thickness, topography and pupillometry, and a Shirmer test. Follow instructions carefully after surgery. Request wavefront diagnostics or a reason why this is not recommended. Replace old makeup and don't use for several days after surgery. Avoid strenuous exercise for 1 week. Avoid contaminated water for at least 1 week, including seawater, lakes, swimming pools, spas, etc. Avoid rubbing eyes for 2 weeks.

According to studies, surgeons with experience of 700-1,000 or more cases have significantly lower intra-operative complications than surgeons with fewer than 700 cases.

Acronyms not clarified in the chart include:

- BCV = Best Corrected Vision
- BCVA = Best Corrected Visual Acuity (same as BCV)
- DLK = Diffuse Lamellar Keratitis
- HOA = Higher Order Aberrations
- LOA = Lower Order Aberrations
- ASA =Advanced Surface Ablation (Used in PRK and LASEK)
- ICL = Implantable Contact Len
- IOL = Intra-Ocular Lens.

Per the Council for Refractive Surgery Quality Assurance (CRSQA) Standards for refractive surgery:

- Minimum of 90% of patients achieve at least 20/40 uncorrected vision.
- Minimum of 50% of patients achieve at least 20/20 uncorrected vision.
- Minimum of 85% of patients achieve within 1± diopter of target.
- Minimum of 50% of patients achieve within 0.5± diopter of target.
- Maximum of 3% of patients experience complications unresolved by 6 months postop.
- Maximum of 0.5% of patients experience serious (vision-threatening) complications at 6 months post op requiring extensive maintenance or invasive intervention.