

## ***LASIK vs. PRK Comparison Chart ©***

	<b>LASIK</b>	<b>PRK</b>
<b>Name Detail</b>	Laser-Assisted In Situ Keratomileusis	Photo Refractive Keratectomy
<b>Corrective Uses</b>	Refractive error correction for nearsightedness, farsightedness, astigmatism and presbyopia.	Refractive error correction for nearsightedness, farsightedness, astigmatism and presbyopia.
<b>Procedure Length</b>	Outpatient procedure. Laser treatment requires less than one minute for each eye; total procedure lasts about 15 minutes per eye.	Outpatient procedure. Laser treatment requires less than one minute for each eye; total procedure lasts about 15 minutes per eye.
<b>Procedural Notes</b>	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.	Uses a sterile brush to scrape away epithelial cells (instead of creating the epithelial flap used in LASIK), then an excimer laser ablates and reshapes corneal tissue. Anesthetic drops are used to reduce pain.
<b>Healing &amp; Recovery</b>	2 days – 1 week; faster than LASEK. Allowed to drive 1-3 days after surgery.	2 days – 1 week; some people return to work more quickly. Allowed to drive in approximately one week's time from surgery. Vision is sharp in about 6-8 weeks. Immediate recovery slower than LASIK or LASEK; eventual recovery and acclimation to new condition remains the same.
<b>Benefits</b>	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.	Excellent alternative when LASIK is not an option, suitable for those with less corneal tissue, fewer haze outcomes than LASIK, preserves more corneal tissue, no complications of stromal flap possible, less risk of dry eye, effective with pupils large enough to make LASIK difficult, extremely mild pain ("scratchy sensation"), long-term outcome same or better than with LASIK, wavefront technologies may be applied which ensure excellent results, 20/20 vision or better typically achieved.

## LASIK

## PRK

### 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.

More discomfort than LASIK or LASEK in the first 24 hours, requires more healing time than LASIK, trauma may cause complications after surgery, long-term outcomes not as well established as older corrective procedures such as LASIK, increases HOA, results in surgery may lead to astigmatism.

### 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.

Serves as an excellent secondary option for corrective laser eye surgery when LASIK or LASEK are not available for any of the following reasons: thin corneas, flat corneas or especially large pupils.

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).

### 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.

Possible inability to maintain thin flap (resulting in removal of epithelium), 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.

### 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.

### 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. For PRK take 500 mg Vit.C two times daily for 1 week before and 2 weeks after PRK to reduce corneal haze risk for up to 6.00 diopters of c orrection.

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.