**12.15 CORNEAL REFRACTIVE SURGERY (PRK/LASIK)**

**AEROMEDICAL CONCERNS:**

**Definitions:**

**Corneal Refractive Surgery (CRS):** A laser is used to reshape the anterior corneal surface reducing refractive error and reliance on spectacles or contact lenses. A “wavefront-guided” (WFG) or “custom” procedure uses wavefront analysis technology, and may improve the visual outcome of the procedure.

**Photorefractive Keratectomy (PRK) or Laser-Assisted Epithelial Keratectomy (LASEK) :** Laser energy is applied to the anterior corneal surface after the epithelium is temporarily displaced or removed. No corneal flap is created. PRK variants include LASEK (epithelium is preserved), and Epi-LASIK (epithelial flap is created). Pain can be moderate to severe, and visual recovery can take months.

**Laser in-situ keratomileusis (LASIK):** A cornea stromal flap is created with a surgical blade or infrared laser after which, an excimer laser is used to reshape the exposed corneal stroma. The corneal flap is then repositioned. Pain is minimal and vision recovery is much faster than PRK.

**All forms of refractive surgery are disqualifying for aviation duty, but waivers are readily granted if the member meets all waiver guide policy guidelines.** Designated members who undergo refractive surgery shall be grounded at the time of surgery, but a grounding physical is not required. Designated members shall not return to flight duty until a Local Board of Flight Surgeons (to include one eye provider) recommends a waiver via an Aeromedical Summary (AMS) and issues a ninety-day temporary aeromedical clearance notice.

**Both PRK and LASIK are waiverable at this time (see specific sections below).**

**All other forms of refractive surgery,** or any vision or corneal manipulation or surgery, including **RK** (radial keratotomy), **LTK** (laser thermal keratoplasty), **ICR** (intracorneal ring), **ICL** (intraocular corrective lens), and clear lens extraction, are **permanently disqualifying (CD/WNR)** for all aviation duty Class I, II and III personnel. The prior use of orthokeratology (rigid contact lens corneal reshaping) is NCD provided that it is permanently discontinued prior to obtaining flight status and all appropriate refractive standards are met with stable topography.

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**PRK AND LASIK GENERAL GUIDELINES (applicants and designated personnel)**

1. Post-operatively, the member must still pass all MANMED vision standards for their class or applicant status, and must wear corrective lenses while flying, if required, to achieve the vision standard.

2. Refractive stability and a satisfactory postoperative slit lamp exam is required. Trace, stable, peripheral haze that is not visually significant, is not a hindrance to waiver. Brightness acuity testing is required for any corneal haze.

3. There must be no symptoms that would be cause for concern during flight duties, including, but not limited to, severe dry eye, recurrent corneal erosions, visually significant glare, haloes, or central scarring.

4. A subsequent PRK or LASIK enhancement or “touch-up” must meet the same timeframe and clinical guidelines, and requires a second waiver submission package and AMS.

5. Wavefront-guided, or “custom”, PRK or LASIK is preferred, as custom treatment may increase visual acuity and final vision outcomes significantly but in no way is required for a waiver recommendation. Not all patients are candidates for custom treatments.

6. Copies of pre-operative, and post-operative examination paperwork, including the laser treatment reports, are required for waiver considerations. NAMI may request additional information as deemed medically necessary to make a waiver determination.

7. For PRK and LASIK waiver renewal, submission is as stated in the member’s BUMED waiver letter. In general, those enrolled in a LASIK study require annual submission. All others only require routine five-year submission.

**Applicants only:**

1. **All applicants** may not exceed 3.00 diopters of cylinder, with no more than 3.50D of anisometropia, must satisfy the general guidelines, and additionally satisfy the following: a. **SNA applicants** may not exceed pre-operative refractive limits of +3.00 to -8.00 (SE) for either PRK or LASIK, and must additionally have a post-operative cycloplegic refraction using cyclopentolate performed at a military installation.

b. **Class II & III applicants**: pre-operative refractive error must not exceed +6.00 to -8.00 (SE) for PRK, and +3.00 to -8.00 (SE) for LASIK. The minimum wait time before submitting LASIK or PRK waiver requests is six months from the date of surgery for civilians, with consideration for waivers at three months for active duty military applicants. All paperwork and operative reports must be available and submitted for waiver consideration. Civilian applicants must obtain PRK or LASIK at their own expense at a civilian refractive surgery center.

**Active duty designated aviation personnel only:**

Designated aviation personnel must satisfy all the above general guidelines and the following guidelines:

1. A PRK waiver request may be submitted after the following wait periods:

a. myopia -6.00 diopters or less spherical equivalent (SE): 3 months

b. myopia greater than -6.00 diopters SE: 6 months

c. hyperopia SE: 6 months

2. A LASIK waiver request may be submitted after the following wait periods: a. myopia: 2 weeks

b. hyperopia and mixed astigmatism: 4 weeks

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3. If still requiring prescription topical medication (Restasis or cyclosporine drops excluded) then restriction of flight activities to the local area is recommended.

4. Class I aviators, specifically, must undergo PRK or LASIK treatment at one of the USN designated refractive surgery centers (includes Tripler AMC and Keesler AFB, which have Navy ophthalmology staffing).

5. Class II, III, and other active duty flight personnel (e.g. select passengers) may undergo PRK or LASIK at any DoD refractive surgery center.

6. For PRK, there are no pre-operative refractive limits for already designated personnel within their aviation class. For LASIK, waivers may be granted for myopia up to -11.5D spherical equivalent (SE) with no more than 3.5D of astigmatism, and hyperopia up to +3.75D (SE) with no more than 2.75D of astigmatism.

7. Regardless of prior designated aviation class, any personnel applying for SNA status must abide by all MANMED and waiver policy guidelines and refractive limits for SNA applicants. Considerations for early waiver may be made by NAMI after three months for active duty applicants, and only for those applicants with a normal post-operative course.

8. The PRK AMS template (available on the NAMI waiver guide website) may serve as a Local Board of Flight Surgeons, requiring review and endorsement by two flight surgeons, plus an eye care provider (military optometrist or ophthalmologist), and commanding officer approval. A ninety-day aeromedical clearance notice may be issued at that time, pending BUPERS waiver approval. Submit the AMS and waiver package immediately to NAMI to avoid unnecessary delays in obtaining BUPERS final approval.

9. No deployment for at least three months following PRK and one month following LASIK surgery (per BUMED policy).

**Select Reserve designated aviators:**

Reservists must satisfy all the above general guidelines and the following guidelines:

1. May obtain PRK or LASIK at their expense from civilian sources of care.

2. A pre-operative evaluation is strongly encouraged to be submitted to NAMI Ophthalmology before corneal refractive surgery is performed. Contact NAMI Ophthalmology at 850-452-2933 or NOMI-EyeDept@med.navy.mil.

3. Final approval to proceed with PRK or LASIK requires written permission from the unit commander and unit flight surgeon.

**REFRACTIVE SURGERY DISCUSSION:**

The goal of corneal refractive surgery is to reduce or eliminate dependence on spectacles or contact lenses, which can be bothersome at times while flying. Refractive surgery has been studied extensively in the aviation environment and has yielded highly satisfying results. More than 95% of Naval Aviators reported “increased effectiveness” after undergoing refractive surgery.

Wavefront guided (WFG), or “custom” refractive surgery has been evaluated by the Naval Refractive Surgery Center and yielded results that are superior compared to conventional treatment. Based on this analysis, aviation personnel should undergo a wavefront-guided or custom procedure, if at all possible. Some patients are not candidates for a wavefront-guided treatment or LASIK for various reasons, and conventional or PRK treatment remain viable options.

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As with any surgical procedure, there are inherent risks, such as quality of vision deficits (e.g. halos and glare at night), haze, flap complications and persistent eye discomfort (e.g. dry eye or recurrent erosions). A detailed description of the risks, benefits, and alternatives should be discussed and consented between the patient and their refractive surgeon.

Undergoing PRK or LASIK does not guarantee qualification for aviation. The member must meet pre-operative standards in MANMED and this waiver policy guide. Post-operatively the applicant must meet all MANMED vision standards appropriate to their aviation class.

When obtaining corneal refractive surgery it is incumbent upon the member and the member’s commanding officer and flight surgeon to be aware of corneal refractive surgery waiver recommendations at the time of the surgery and subsequent submission. Rapidly evolving technology results in changes to waiver guidelines when appropriate. Every effort will be made to publish new regulations widely, but the only valid source of current recommendations shall remain the Manual of the Medical Department. When in doubt, NAMI ophthalmology remains available for consultation through phone or email: 850-452-2933; NOMI-EyeDept@med.navy.mil

**Medical Codes:**

**P1177/H1177 PRK**

**P1171/H1171 LASIK**

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