CORNEAL REFRACTIVE SURGERY CHECKLIST FOR NROTC MIDSHIPMEN AND OFFICER CANDIDATES

____ 1. Read and understand the CO’s “ELECTIVE CORNEAL REFRACTIVE SURGERY POLICY” including enclosures (1) through (10).

____ 2. Read and understand the Pre-Op Counseling Form, enclosure (2).

____ 3. Read, discuss, and sign with your Class Advisor the Pre-op Counseling Form For NROTC Midshipmen and Officer Candidates Undergoing Corneal Refractive Surgery, enclosure (2).

____ 4. Review with the doctor performing your surgery and ensure that you meet the pre-operative requirements and the anticipated post-operative outcomes to meet specific Naval community expectations (e.g. enrollment into the Aviation LASIK study).

____ 5. Obtain from your doctor a written and signed acknowledgment that you meet pre-operative requirements. Ensure this acknowledgement lists the type of procedure to be performed (PRK/LASIK), and anticipated outcome.

____ 6. Request in writing from your NROTC Unit Commanding Officer, permission to have the surgery performed, enclosure (3). Include with this request all documentation acquired in step 5 and the signed Pre-op Counseling Form from step 3.

____ 7. With the Commanding Officer’s approval have the surgery performed.

____ 8. Have your doctor complete the Post-Op Medical Clearance Corneal Refractive Surgery form, enclosure (4), and return the completed form to the NROTC Unit.

If you intend to select Aviation:

____ 8a. PRK & LASIK aviation applicants, have your doctor complete the SNA-SNFO Accession CRS Worksheet, enclosure (6). Return this form to the Unit.

____ 8b. LASIK aviation applicants, schedule and complete additional ocular tests at one of the ten designated MTFs listed in enclosure (7). This is a requirement to be

Enclosure (1)
enrolled in the “LASIK in Naval Aviation Study.” Return any follow-up information to the Unit.

9. At least three months must elapse from date of surgery or re-treatment, during which you must have at least two post-operative eye examinations separated by at least one month to show evidence of stable refractive error. These examinations must include visual acuity and refraction.

10. Collect all CRS records, to include:

- detailed clinical records of the pre-operative refractive error
- operative report including type of procedure
- records of the two post-operative examinations
- PRK Accession Worksheet/LASIK follow-up records
- any other pertinent records.

Give these records to the Unit Midshipmen Medical Qualifications Coordinator. A waiver request to BUMED (M3F) will be submitted via your chain-of-command for “History of Laser Eye Surgery.”
PRE-OP COUNSELING FORM FOR NROTC MIDSHIPMEN AND OFFICER CANDIDATES CONSIDERING CORNEAL REFRACTIVE SURGERY

1. I, _____________________________________________ (Rank/Rate, First name, Middle Initial, Last name) am seeking health care outside a federal source for corneal refractive surgery. My initials next to each of the following paragraphs indicate I have read and understand each section.

2. I acknowledge I have read and understand the applicable references.

If I desire to serve in Naval Aviation:

___ I acknowledge that I have read and understand enclosure (8) U.S. Navy Aeromedical Reference and Wavier Guide sections 12.15 and 12.15B and enclosure (7) “Requirements and Information for Post-LASIK Naval Aviation Applicants.” (LASIK only).

If I desire to serve in Special Warfare / Special Operations:

___ I acknowledge that I have read and understand enclosure (9) MANMED 15-34 and enclosure (10) MANMED 15-102 regarding the post-operative requirements for entry into the Special Warfare / Special Operations communities.

The purpose of this counseling is to inform me of current guidance I need to be aware of prior to having elective non-Military Health Care system surgery performed at my own expense. The purpose of this counseling is not to determine my actual suitability for corneal refractive surgery, as that determination must be made by my eye care provider.

3. I understand there are different types of corneal refractive surgery, and that I may subsequently be found disqualified from entry into certain warfare communities, depending on the type of surgery that is performed on my eyes. It is my responsibility to know the current policy on refractive surgery in my desired warfare community.

4. I understand that I must obtain the prior approval of my command to have corneal refractive surgery. Any time away from work required as part of the pre-operative evaluation,
surgery and post-operative follow-up must be approved by my command.

5. I have been notified that I am responsible for all expenses associated with the pre-operative evaluation, surgical fees and post-operative care. The government is not responsible for out-of-pocket expenses that I may incur by an insurance carrier, or that I am unable to pay as part of the cost of the contemplated care.

6. I understand that after I have had my surgery in the civilian community, post-operative follow-up care will not be performed by a military treatment facility (MTF).

7. I understand that if I obtain LASIK surgery and wish to commission as a Naval Aviator I must have additional ocular tests performed at one of the ten designated military treatment facilities listed in enclosure (7). I am responsible for all travel expenses and scheduling of this appointment.

8. I have been provided with a copy of the Medical Clearance Form for Return to Full and Unrestricted Duty Following Corneal Refractive Surgery. I have been directed to have my eye care provider complete this form after my surgery. I will return it to the Uniform Services Medical Facility where my outpatient records are kept, at which time a determination for fitness and continued service may be made by a medical department representative.

9. I understand that any form of corneal refractive surgery disqualifies me physically for a commission in the Navy or Marine Corps and that I must request a waiver for this disqualification prior to commissioning.

10. I understand that if I am to request aviation as my service assignment and I elect to undergo LASIK surgery, I must, in addition to my waiver request, be accepted in the Navy’s “LASIK in Naval Aviation” study.

11. In the event of an irreversible adverse outcome that affects the ability to perform the duties of a commissioned officer I understand that I may be physically disqualified for commissioning and may be responsible for recoupment of my college tuition costs to the Navy.
12. I understand that by having this surgery performed it in no way guarantees that I will be selected for aviation, special warfare, or any other warfare community. I must still meet all other requirements set by the respective communities.

13. I have had my questions answered and understand that this document will be placed in my outpatient medical record. I understand that my commissioning may be delayed for possibly one year after surgery.

__________________   _______________     __________________
Midshipman     Class Advisor   Commanding Officer
Signature    Signature   Signature

__________________   _______________     __________________
Date     Date    Date
POST-OP MEDICAL CLEARANCE AFTER CORNEAL REFRACTIVE SURGERY

From: ____________________________________ (Name of eye care provider)
______________________________ (Address)
______________________________ (Office phone number)

To: Service Member’s Primary Care Provider

Subj: MEDICAL CLEARANCE FOR ________________________ (Rank/Rate, First name, Last name) TO RETURN TO FULL AND UNRESTRICTED DUTY FOLLOWING CORNEAL REFRACTIVE SURGERY

1. The above named service member had ________________________ (type of corneal refractive surgery) performed in the right eye / left eye / both eyes on __________________ (date). As a military or civilian eye care provider (ophthalmologist or optometrist) that has evaluated the service member following his/her surgery, the purpose of this letter is to recommend when he or she may return to work on a full time basis without any further restrictions based on the guidelines provided in paragraphs (2) and (3). I understand this document will be placed in the service member’s outpatient military health record.

2. I understand that most service members are able to resume routine daily work activities within a few days after surgery. However, due to the need for follow-up care in the immediate post-operative time period, service members usually will not be returned to full and unrestricted duty until approximately 1 month following surgical correction of myopia, and possibly as long as 3 to 4 months after surgical correction of hyperopia. Full and unrestricted duty is defined as the ability to perform all job responsibilities of their rank/rate, as well as being suitable for deployment to isolated duty locations where routine eye care services are not readily available.

3. I certify that the following pre-requisites for full and unrestricted duty assignment have been met:

   a. All topical eye drops (including steroids or anti-inflammatory agents) have been discontinued. Artificial tears may be used as needed.

   b. Post-operative BEST CORRECTED visual acuity is greater than or equal to 20/20 in each eye that had surgery, OR is within one line of the BEST CORRECTED pre-operative visual acuity in each eye that had surgery:

      Best corrected visual acuity PRE-OP = 20/___ OD, 20/___ OS.
      Best corrected visual acuity POST-OP = 20/___ OD, 20/___ OS.
      Uncorrected visual acuity POST-OP = 20/___ OD, 20/___ OS.

   c. There are no visually debilitating symptoms related to surgery.

4. I recommend that the service member may return to full and unrestricted duty as of __________________________ (date).

   ________________________________________________ (Signature of eye care provider)  ______________________ (Date)

FOR OFFICIAL USE ONLY - PRIVACY SENSITIVE: ANY MISUSE OR UNAUTHORIZED DISCLOSURE MAY RESULT IN BOTH CIVIL AND CRIMINAL PENALTIES

Enclosure (4)
PRIMARY CARE PROVIDER ENDORSEMENT OF RETURN TO FULL AND UNRESTRICTED DUTY FOLLOWING CORNEAL REFRACTIVE SURGERY

1. I have reviewed the Medical Clearance Form for Return to Full and Unrestricted Duty Following Corneal Refractive Surgery ICO ______________________ (Rank/Rate, First name, Last name).

2. As part of the fitness for duty, I have determined if the service member’s job occupation requires a minimum specified visual acuity requirement in order to perform her or his duties (as listed in the Manual of Medical Department). The uncorrected visual results following surgery must meet those specified standards. If the service member’s uncorrected visual acuity following surgery does not meet the specified standards, then the member must have received additional vision correction in the form of glasses or contact lenses that enables him or her to fulfill the visual acuity requirements before returning to duty.

3. In accordance with current BUMED guidance, I have verified that the type of corneal refractive surgery the service member had performed does not disqualify her/him from retention on active duty in his or her current NEC or NOBC.

4a. The service member’s eye care provider (military or civilian) has verified that all of the prerequisites identified in paragraphs 3(a) – 3(c) of the Medical Clearance form have been satisfied. Effective ______________________ (date), the service member may return to full and unrestricted duty, which is defined as the ability to perform all job responsibilities of their rank/rate, as well as being suitable for deployment to isolated duty locations where routine eye care services are not readily available.

OR

4b. One or more of the prerequisites identified in paragraph (3) of the Medical Clearance form were not satisfied, but the service member has been evaluated by a military ophthalmologist or optometrist and has been recommended for return to full and unrestricted duty effective ______________________ (date).

____________________ ____________ _____________________ _______
Provider’s signature Rank/Rate Printed name or stamp Date
SNA/SNFO Accession CRS Worksheet

Ref: (1) BUMED 051824Z DEC 01 LASER EYE SURGERY PRK IN NEW ACCESSIONS TO NAVY AND MARINE CORPS/AVIATION CLINICAL STUDY CHANGE IN STUDY ENROLLMENT CRITERIA.  
(2) BUMED WASHINGTON DC 261240Z FEB 02 AVIATION CLINICAL STUDY CHANGES IN STUDY ENROLLMENT CRITERIA.  
(3) ALNAV 047/01 112050Z MAY 01 AVIATION VISION STANDARDS CHANGE.  

1. History of corneal refractive surgery (CRS) is disqualifying. Waiver may be recommended if member meets requirements in references, although Study enrollment is no longer required.

2. Caution should be used in selecting surgeons and surgical methods for CRS. Brand names, marketing strategies and technological advances often cause confusion regarding CRS terminology. Photorefractive Keratectomy (PRK) and Laser in-situ keratomileusis (LASIK) are the ONLY Navy approved CRSs. All other forms of CRS including Radial Keratotomy (RK), Laser Thermal Keratoplasty, and Intracorneal Ring (ICR) are PERMANENTLY DISQUALIFYING.

3. Member must have completed all eye medication and be without visual complaints prior to submission.

4. Post-operative refractive stability is demonstrated by comparing two consecutive manifest refractions which must not differ by more than 0.50 D in either sphere or cylinder or both in either eye, and which must be separated by at least one month.

5. The interval after surgery prior to performing final manifest refraction and then submitting this worksheet depends on the preoperative refractive error, as follows:

6. Plano to -5.50 total diopter sphere: three months;

7. -5.75 to -8.00 or +0.25 to +6.00 total diopter sphere: six months.

8. If the initial pair of post-operative manifest refractions does not demonstrate stability, repeat a manifest refraction at one month intervals until they are stable and report only the final two.

9. Note: all SNA candidates require a post-operative cycloplegic refraction recorded on the SF-88.

10. SNA/SNFO accessions must meet all other aviation vision standards; history of CRS does not guarantee selection for nor completion of flight training.

SUBMIT to NAMI Code 42/MED-236 Aeromedical Physical Qualifications all of the following:

- This worksheet, completed per the references.
- Copy of pre-operative evaluation at treating Laser Center.
- Copy of operative note for each eye treated (computer printout from laser).
- Copies of all post-operative eye notes, including manifest refractions at required intervals.
- Candidate SNA/SNFO SF-88 with required attachments, requesting waiver for history of PRK. (Do not submit an aeromedical summary–AMS—which is not appropriate for a candidate for air warfare duty.)

Last name:__________________ First:_________________ Middle:__________
DOB:____________________
Military status (civ; OC; Midn; or rank/rate & service):________________
Date of surgery: OD _____ OS______ Location of surgery:________________
OD OS
sph cyl axis sph cyl axis
Pre-operative manifest refraction:
Post-operative manifest refraction #1: date________ _______ _______ _______ _______ _______
Post-operative manifest refraction #2: date________ _______ _______ _______ _______ _______
Above data has been carefully reviewed and is compliant with standards in paragraphs 4 - 9

Post-operative cycloplegic refraction (SNA only)  

Final uncorrected Goodlite/AFVT distant visual acuity: 20/______ 20/______

Final best corrected Goodlite/AFVT distant visual acuity: 20/______ 20/______

Submitter: ______________________________ Date: __________

Refer questions to NAMI Code 323, Captain W. Anderson, 850 452-2257 ext 1020, 
wanderson@nomi.med.navy.mil 28 Sep 04
REQUIREMENTS AND INFORMATION FOR POST-LASIK NAVAL AVIATION APPLICANTS

ELIGIBILITY CRITERIA

1. Wavefront-guided (e.g., VISX CustomVue, or equivalent) or wavefront-optimized and femtosecond keratome (e.g., IntraLase, or equivalent) LASIK procedure is STRONGLY ENCOURAGED as the LASIK treatment of choice in Naval Aviation. Applicant cannot have post-operative higher-order ocular aberrations in excess of 0.7 microns as measured by a Hartmann-Shack aberrometer AND best corrected low contrast visual acuity better than or equal to 0.50logMAR using a specified 25 percent contrast chart.

2. Accepted into a U.S. Navy-approved “LASIK in Naval Aviation” study protocol for long-term follow-up.

3. Pre-LASIK refractive error (measured after dilation) must not exceed -8.00 to +3.00 diopters (spherical equivalent) and 3.00 diopters of cylinder. Pre-LASIK anisometropia should not exceed 3.50 diopters (using spherical equivalent for each eye).

4. Post-LASIK SNA/SNFO/aircrew applicants must meet refractive, cycloplegic, and vision standards as defined by the Manual of Medicine, Chapter 15.

5. Applicants must provide detailed pre-LASIK, operative, and post-LASIK records prior to acceptance into a Navy-approved LASIK study.

6. At least three months have elapsed since LASIK surgery or re-treatment and evidence of stable refractive error is demonstrated by two separate examinations performed at least one month apart.

7. Meet all other applicant entrance criteria as delineated in the Manual of the Medical Department (NAVMED P117) and BUMED/30MAR2000/SER 25/NOTAL (refractive surgery policy in the Navy and Marine corps for new accessions) and as specified by approved aviation LASIK study protocols.
ACCESSION GROUP PROCEDURES

CIVILIAN ACCESSION: All of the necessary paperwork regarding LASIK (i.e., preoperative exam(s), operative report, and post-operative follow up) shall be assembled by the applicant. Information will be reviewed and additional ocular tests performed during the preflight physical exam at Officer Candidate School (OCS) in Newport, RI. If within waiver criteria for LASIK and meeting all other physical exam requirements, candidates will begin training at OCS. They will be offered enrollment into the “LASIK in Naval Aviation” study at the beginning of flight training in Pensacola, FL (during their Naval Aerospace Medicine Institute (NAMI) examination).

NROTC ACCESSION: Potential NROTC applicants shall obtain approval from their Commanding Officer to undergo LASIK at their own expense at a civilian institution. All of the necessary paperwork regarding LASIK (i.e., preoperative exam(s), operative report, and post-operative follow up) shall be assembled by the applicant. In conjunction with the standard preflight physical, a designated Navy Medical Treatment Facility (see below for listing) will perform additional ocular tests and review gathered information. If within waiver criteria for LASIK and meeting all other physical exam requirements, candidates will be offered enrollment into the “LASIK in Naval Aviation” study at the beginning of flight training in Pensacola, FL (during their NAMI examination).

USNA ACCESSION: Potential midshipmen applicants shall obtain approval from the Commandant to undergo LASIK either (1) at a Navy Refractive Surgery Center or (2) at their own expense at a civilian institution. All of the necessary paperwork regarding LASIK (i.e., preoperative exam(s), operative report, and post-operative follow up) shall be assembled by the applicant. In conjunction with the standard preflight physical, the USNA Optometry Clinic will perform additional ocular tests and review gathered information. If within waiver criteria for LASIK and meeting all other physical exam requirements, candidates will be offered enrollment into the “LASIK in Naval Aviation” study at the beginning of flight training in Pensacola, FL (during their NAMI examination).

ACTIVE DUTY ACCESSION: Potential active duty applicants shall obtain approval from their commanding officer to undergo LASIK via established guidelines. Applicants will then apply for aviation training and/or re-designation in accordance with Navy regulations. All of the necessary paperwork regarding LASIK (i.e., preoperative exam(s), operative report, and post-operative follow up) shall be assembled by the applicant. If selected for further processing, applicants will have a screening ophthalmic examination conducted at a designated Navy Medical Treatment Facility (see below for listing). If within waiver criteria for LASIK and meeting all other physical exam requirements, candidates will be offered enrollment into the “LASIK in Naval Aviation” study at the beginning of flight training in Pensacola, FL (during their NAMI examination).
## DESIGNATED MEDICAL TREATMENT FACILITIES

The following U.S. Navy Medical Treatment Facilities are properly equipped and qualified to perform the additional ocular measurements required for Naval Aviation applicants with a history of LASIK surgery:

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<thead>
<tr>
<th></th>
<th>Facility Name</th>
<th>Address</th>
<th>Phone Number</th>
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<tbody>
<tr>
<td>1.</td>
<td>National Naval Medical Center Laser Vision Center</td>
<td>8901 Wisconsin Ave, Bethesda, MD 20889</td>
<td>301-295-1200</td>
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<td>2.</td>
<td>Naval Medical Center Portsmouth</td>
<td>620 John Paul Jones Circle Refractive Surgery Center Portsmouth, VA 23708</td>
<td>757-953-7575</td>
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<td>3.</td>
<td>Naval Hospital Camp Lejeune Refractive Surgery Center</td>
<td>100 Brewster Boulevard, Jacksonville, NC 28547</td>
<td>910-450-3353</td>
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<td>4.</td>
<td>Naval Hospital Jacksonville Department of Ophthalmology</td>
<td>2080 Child Street, Jacksonville, FL 32214</td>
<td>904-542-7680</td>
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<td>5.</td>
<td>Naval Aerospace Medicine Institute Eye Department</td>
<td>340 Hulse Road, Pensacola, FL 32508</td>
<td>850-452-2257</td>
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<td>7.</td>
<td>Naval Hospital Camp Pendleton Department of Ophthalmology, SC-MSI</td>
<td>Camp Pendleton, CA 92055-5191</td>
<td>760-725-6641</td>
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<td>8.</td>
<td>Navy Refractive Surgery Center Naval Medical Center San Diego</td>
<td>2051 Cushing, San Diego, CA 92106</td>
<td>619-524-5511</td>
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<td>9.</td>
<td>Naval Health Clinic Annapolis Optometry Department</td>
<td>250 Wood Road, Annapolis, MD 21402-5050</td>
<td>410-293-1790</td>
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<tr>
<td>10.</td>
<td>NHCNE Newport Optometry Department</td>
<td>43 Smith Road, Newport, RI 02841-1102</td>
<td>401-841-3666</td>
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*Enclosure (7)*

18 Nov 2008
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 to perform the procedure.

Photorefractive Keratectomy (PRK) or Surface Ablation or Advanced Surface Ablation (ASA): 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).

Laser in-situ keratomileusis (LASIK): A corneal flap is created with a surgical blade or laser after which additional laser energy is applied to the exposed corneal tissue underneath the flap. The flap is then repositioned.

CAUTION:
Brand names, marketing strategies and technological advances often cause confusion regarding CRS terminology.

ALL FORMS OF CRS ARE DISQUALIFYING FOR AVIATION DUTY AT THE TIME OF THE SURGICAL PROCEDURE. Designated members who undergo CRS shall be grounded at the time of surgery, but do not require submission of a grounding physical to NAMI Code 342. Designated members shall not return to duty involving flight until a LBFS recommends a waiver and issues an aeromedical clearance notice. Waiver standards and request procedures are given below. Initial waiver requests for history of CRS are single submission as long as the required visual standards for aviation duty continue to be met.

LASIK: Waiver shall not be recommended (WNR) for any applicant or designated Class I or II personnel. Waiver may be recommended (WR) for CLASS III (Air traffic controllers and other personnel who do not fly). The LASIK retention studies in aviators are in progress. For designated aviators, please see section 12.15A. For applicant/student aviators, please see section 12.15B. NO WAIVERS FOR LASIK in students, CLASS I, or CLASS II ARE GRANTED OUTSIDE OF THIS STUDY.

ALL OTHER FORMS OF CRS or manipulation including RK (radial keratotomy), LTK (laser thermal keratoplasty), ICR (intracorneal ring) are PERMANENTLY DISQUALIFYING (CD, WNR) for all air warfare duty Classes I, II and III. Orthokeratology is NCD provided that it is discontinued and all appropriate refractive standards are met with stable topography.
WAIVER:

**PRK General Guidelines:**

1. A waiver may be submitted no earlier than:
   a. 3 months for myopia less than -6.00 diopters spherical equivalent (SE)
   b. 6 months for myopia greater than or equal to -6.00 diopters SE
   c. 6 months for hyperopia (SE) measured under cycloplegia

2. Visual Acuity - each eye with or without corrective lenses must be:
   a. Class I - 20/20-0/10 letters
   b. Class II and III - 20/20-3/10 letters or better
   c. Corrective lenses must be worn while flying if needed to achieve the VA standard

3. A normal postoperative slit lamp exam

4. There must be no symptoms that would be cause for concern when considering the performance of the member’s usual flight duties

5. If topical medication is still required (other than artificial tears), then restriction of flight activities to the local area would be prudent.

6. An enhancement or “touch-up” must meet the same guidelines.

**Additional guidelines:**

**Applicants:**

1. May obtain PRK at their expense from civilian sources of care.
2. Pre-operative refractive error measured under cycloplegia must not exceed - 8.00 to + 3.00 (SE) and 3.00 diopters of cylinder.
3. Anisometropia should not exceed 3.50 diopters (using SE for each eye).
4. SNA applicants must meet refractive, cycloplegic, and vision standards postoperatively.

**Active duty designated aviation personnel:**

1. Shall be treated at a DOD refractive surgery center.
2. Following review and endorsement by two local flight surgeons, and an optometrist or ophthalmologist and concurrence of the commanding officer, the CRS/PRK AMS template may serve as a LBFS and a 90-day aeromedical clearance notice may be issued.
3. The flight surgeon shall submit the completed CRS AMS in accordance with the instructions located on the top of the form.

**Selected Reserve designated aviators**

1. May obtain PRK at their expense from civilian sources of care.
2. An Aviation CRS (PRK) Request and the pre-operative evaluation shall be submitted to NAMI Ophthalmology before CRS surgery.
3. Approval to proceed requires written permission from the unit commander, unit flight surgeon, and NAMI Ophthalmology.

**LASIK: CLASS I and II Personnel**

**Designated:** See Section 12.15A

U.S. Navy Aeromedical Reference and Waiver Guide Ophthalmology - 21
CL\[ex 12.15A\]

1. A waiver may be submitted no earlier than:
   a. 3 months for myopia less than -6.00 diopters SE
   b. 6 months for myopia greater than or equal to -6.00 diopters SE
   c. 6 months for hyperopia (SE) measured under cycloplegia
   d. Designated Class III Personnel that have LASIK with a femtosecond laser flap and a wavefront guided ablation may be eligible for a waiver in the timeframe of the designated aviator study - See section 12.15A.

2. Visual Acuity - each eye with or without corrective lenses must be:
   a. 20/20 - 3/10 letters or better
   b. Corrective lenses must be worn during duties if needed to achieve the VA standard.

3. A normal postoperative slit lamp exam.

4. There must be no symptoms that would be cause for concern when considering the performance of the member's usual aviation duties.

5. If topical medication is still required (other than artificial tears) then restriction of aviation activities to the local area would be prudent.

6. An enhancement or “touch-up” must meet the same guidelines.

7. Waiver submission must be completed using the CRS (PRK) Aeromedical Summary Template.

INFORMATION REQUIRED:

1. Complete and submit the CRS (PRK) Aeromedical Summary Template
2. Submit the operative report(s)
3. Submit the member’s current physical exam
4. NAMI may request additional information as deemed necessary on a case-by-case basis

DISCUSSION:

The goal of corneal refractive surgery is to reduce or eliminate dependence on spectacles or contact lenses. It has been studied extensively in the aviation environment (The Navy PRK Aviator Retention Study) and has yielded promising results. More than 85% of aviators studied no longer require corrective lenses while flying. More than 95% report “increased effectiveness” as Naval Aviators.

Wavefront guided (WFG) PRK surgery has been evaluated by the Naval Refractive Surgery Center and yielded results that are superior compared to conventional ablation. Based on this analysis, an aviator should undergo a WFG PRK procedure and not a conventional treatment. If an aviator is not a candidate for WFG, a conventional treatment remains a waiverable procedure in accordance with the guidelines printed above. As with any surgical procedure, there are inherent risks, such as quality of vision deficits (e.g. halos and glare at night) and persistent eye discomfort (e.g. dry eye). A detailed description of the risks, benefits and alternatives is beyond
the scope of this regulatory guide. The potential candidate is referred to his/her surgeon for further information.

History of PRK does not guarantee qualification for aviation duties. Pre-operatively the applicant must meet all other vision standards appropriate to his or her class of duty. Post-operatively, the applicant must continue to meet these standards.

When obtaining CRS it is incumbent upon the member and the member’s commanding officer and flight surgeon to be aware of CRS 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.

ICD-9 CODES:
P11.99 PRK or LASIK
**AEROMEDICAL CONCERNS:** The goals of this study are to evaluate safety, efficacy and visual performance of LASIK in student naval aviators, flight officers and aircrew.

**WAIVER:** At this time, no waivers are being considered for LASIK in Class I or II aviation applicant personnel outside of the LASIK in student aviators study. For more information on study enrollment and inclusion criteria contact NMCSD Refractive Surgery Center.

**GENERAL GUIDELINES:**
1. Pre-LASIK refractive error measured under cycloplegia must not exceed -8.00 to +3.00 (MSE) and 3.00 diopters of cylinder. Anisometropia should not exceed 3.50 diopters (using MSE for each eye).
2. At least three months have elapsed since surgery or re-treatment and evidence of stable refractive error.
3. Applicant must have screening vision exam performed at one of 10 participating screening sites:
   - NH Bremerton
   - NH Camp Pendleton
   - NMC San Diego
   - NNMC (Bethesda)
   - NMC Portsmouth
   - NH Camp Lejeune,
   - NH Jacksonville
   - BMC Newport
   - BMC Annapolis
   - NAMI

   At screening exam, Applicant must:
   a. Have total post-operative higher order RMS aberrations less than or equal to 0.70 microns as measured by a Hartmann-Shack aberrometer
   b. Demonstrate best-corrected mesopic low contrast visual acuity better than or equal to 0.50 logMAR as measured on a Precision Vision 25% low contrast visual acuity chart.
   c. Submit detailed pre-operative, operative, and post-operative LASIK follow-up records.
   d. Be free of subjective visual complaints (glare, halo, starbursts, ghosting, dryness, etc) that may be deemed to be a safety-of-flight risk.
   e. Not require topical ophthalmic medication aside from occasional artificial tear use.
   f. Have normal postoperative slit lamp exam
   g. Meet refractive, cycloplegic, and vision standards post-operatively as defined by MANMED for aviation applicants (SNA/SNFO/Aircrrew/etc.)

**INFORMATION REQUIRED:**
1. Results of screening exam.
2. Detailed pre/post op and laser generated operative reports
3. Aviation physical exam. (form 2808 and 507)
NOTE: Wavefront-guided (eg, VISX CustomVue, or equivalent) or wavefront-optimized LASIK procedure utilizing a femtosecond keratome (eg, IntraLase, or equivalent) LASIK procedure is STRONGLY ENCOURAGED, as it is the LASIK treatment of choice in Naval aviators, based on numerous studies.

ICD-9 CODES:
P11.99 PRK or LASIK
keratectomy (commonly known as PRK), laser epithelial keratomileusis (commonly known as LASEK) and laser-assisted in-situ keratomileusis (commonly known as LASIK) is disqualifying if *any* of the following conditions are met:

1. Pre-surgical refractive error in either eye exceeds the standards for the program sought (i.e., +/- 8.00 diopters for enlistment and commission, +/- 6.00 diopters for program leading to a commission).

2. Less than 6 months has passed since the last refractive or augmenting procedure and the time of the evaluation.

3. There is currently a continuing need to ophthalmic medications or treatment.

4. Post-surgical refraction in each eye is not considered stable as demonstrated by two separate refractions obtained at least 1 month apart differing by more than +/- 0.50 diopters for spherical correction and/or more than +/- 0.25 diopters for cylinder correction.

5. Post-surgical refraction in each eye has not been measured at least one time 3 months or longer after the most recent refractive or augmenting procedure.

- (c) Current keratitis (370) (acute or chronic), including but not limited to recurrent corneal ulcers, erosions (abrasions), or herpetic ulcers (054.42) is disqualifying.

- (d) Current corneal vascularization (370.6) or corneal opacification (371) from any cause that is progressive or reduces vision below the standards prescribed in article 15-34 is disqualifying.

- (e) Current or history of uveitis or iridocyclitis (364.3) is disqualifying.

6. Retina

- (a) Current or history of retinal defects and dystrophies, angiomatices (759.6), retinoschisis and retinal cysts (361.1), phakomas (362.89), and other congenito-retinal hereditary conditions (362.7) that impair visual function, or are progressive is disqualifying.

- (b) Current or history of any chorioretinal or retinal inflammatory conditions, including but not limited to conditions leading to neovascularization, chorioretinitis, histoplasmosis, toxoplasmosis, or vascular conditions of the eye (to include Coats’ Disease and Eales’ Disease) (363) is disqualifying.

- (c) Current or history of degenerative changes of any part of the retina (362) is disqualifying.

- (d) Current or history of detachment of the retina (361), history of surgery for same, or peripheral retinal injury, defect (361.3) or degeneration that may cause retinal detachment is disqualifying.

7. Optic Nerve

- (a) Current or history of optic neuritis (377.3) is disqualifying, including but not limited to neuroretinitis, secondary optic atrophy, or documented history of retrobulbar neuritis.

- (b) Current or history of optic atrophy (377.1) or cortical blindness (377.75) is disqualifying.

- (c) Current or history of papilledema (377.0) is disqualifying.

8. Lens

- (a) Current aphakia (379.31), history of lens implant, or current or history of dislocation of a lens is disqualifying.

- (b) Current or history of opacities of the lens (366) that interfere with vision or that are considered to be progressive, including cataract (366.9) are disqualifying.

9. Ocular Mobility and Motility

- (a) Current diplopia (368.2) is disqualifying.

- (b) Current nystagmus (379.50) other than physiologic "end-point nystagmus" is disqualifying.

- (c) Esotropia (378.0) and hypertropia (378.31): For entrance into Service academies and officer programs, additional requirements may be set by the individual Military Services. Special administrative criteria for assignment to certain specialties shall be determined by the Military Services.
(8) **Miscellaneous Defects and Diseases**

(a) Current or history of abnormal visual fields due to diseases of the eye or central nervous system (368.4), or trauma (368.9) is disqualifying.

(b) Absence of an eye, clinical anophthalmos, (unspecified congenital (743.00) or acquired) or current or history of other disorders of globe (360.8) is disqualifying.

(c) Current asthenopia (368.13) is disqualifying.

(d) Current unilateral or bilateral non-familial exophthalmos (376) is disqualifying.

(e) Current or history of glaucoma (365), including but not limited to primary, secondary, pre-glaucoma as evidenced by intraocular pressure above 21 mmHg, or changes in the optic disc or visual field loss associated with glaucoma is disqualifying.

(f) Current loss of normal pupillary reflex, reactions to accommodation (367.5) or light (379.4), including Adie’s Syndrome is disqualifying.

(g) Current night blindness (368.60) is disqualifying.

(h) Current or history of retained intraocular foreign body (360) is disqualifying.

(i) Current or history of any organic disease of the eye (360) or adnexa (376), not specified in article 15-31(1) through 15-31(8)(a) through 15-31 (8)(h) above, which threatens vision or visual function is disqualifying.

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**15-36 Vision-Commission and Programs Leading to a Commission**

The standards for enlistment, commission, and entry into a program leading to a commission are different; refer to the appropriate section.

(1) **For commission in the Navy Unrestricted Line** and/or commission of officers with intended designators of 611x, 612x, 616x, 621x, 622x, 626x, 648x, 711x, 712x, 717x, 721x, 722x, 727x, 748x:

(a) Current distant or near visual acuity of any degree that does not correct with spectacle lenses to 20/20 in each eye is disqualifying.

(b) Current refractive error [hyperopia (367.0), myopia (367.1), astigmatism (367.2)] or history of refractive error prior to any refractive surgery manifest by any refractive error in spherical equivalent of worse than -8.00 or +8.00 diopters is disqualifying.
(c) Current complicated cases requiring contact lenses for adequate correction of vision, such as corneal scars (371) and irregular astigmatism (367.2) are disqualifying.

(d) Lack of adequate Color Vision is disqualifying. Adequate color vision is demonstrated by:

(1) Correctly identifying 12, 13, or 14 out of 14 PIP. Applicants failing the PIP should be tested via the Farnsworth Lantern (FALANT) as described below.

(2) Passing the FALANT test. A passing FALANT score is obtained by correctly identifying 9 out of 9 presentations on the first test series. If any incorrect identifications are made, a second consecutive series of 18 presentations is administered. On the second series a passing score is obtained by correctly identifying 16, 17, or 18 presentations.

(2) For Commission in the Navy Unrestricted Line, Staff Corps, and designators not included in article 15-37(3) above.

(a) Current distant or near visual acuity of any degree that does not correct with spectacle lenses to 20/20 in each eye is disqualifying.

(b) Current refractive error [hyperopia (367.0), myopia (367.1), astigmatism (367.2)], or history of refractive error prior to any refractive surgery manifest by any refractive error in spherical equivalent of worse than -8.00 or +8.00 diopters is disqualifying.

(c) Current complicated cases requiring contact lenses for adequate correction of vision, such as corneal scars (371) and irregular astigmatism (367.2) are disqualifying.

(4) For Commission in the United States Marine Corps

(a) Current distant and near visual acuity of any degree that does not correct with spectacle lenses to 20/20 in each eye is disqualifying.

(b) Current refractive error [hyperopia (367.0), myopia (367.1), astigmatism (367.2)], or history of refractive error prior to any refractive surgery manifest by any refractive error in spherical equivalent of worse than -8.00 or +8.00 diopters is disqualifying.

(c) Current complicated cases requiring contact lenses for adequate correction of vision, such as corneal scars (371) and irregular astigmatism (367.2) are disqualifying.
(3) Maxillofacial or craniofacial abnormalities precluding the comfortable use of diving headgear including headgear, mouthpiece, or regulator is disqualifying.

(4) Hearing in the better ear must meet standards for initial acceptance for active duty. While not disqualifying for diving duty, unilateral high-frequency hearing loss should receive appropriate otology evaluation and surveillance monitoring.

(5) Designated divers with full recovery from either tympanic membrane perforation or acute sinusitis may be reinstated at the discretion of the UMO.

(e) **Eyes and Vision**

(1) All Divers must have a minimum corrected visual acuity of 20/25 in one eye.

(2) Minimum uncorrected visual acuity:

(a) DMO, basic diving officer, self contained underwater breathing apparatus (SCUBA) divers, hyperbaric exposure non-diver qualified: +/- 8.00 diopters.

(b) Second Class diver, Navy Hospital Corpsman (NEC 8403-8427) assigned to diving duty, Army 21 series, Army or Air Force special operations: 20/20 in each eye.

(3) History of refractive corneal surgery is not considered disqualifying. However, candidates must wait 3 months following their most recent surgery (PRK or LASIK), have satisfactory improvement in visual acuity, and be fully recovered from any surgical procedure. A designated diver must wait 1 month post-LASIK/PRK and be fully recovered from any surgical procedure with satisfactory improvement in their visual acuity prior to resumption of diving.

(4) Orthokeratology lasting 6 months after cessation of hard contact lens wear is disqualifying.

(5) Lack of adequate color vision is disqualifying. See article 15-36(1)(d). Waivers will be considered on a case-by-case basis.

(d) **Pulmonary**

(1) Spontaneous pneumothorax is disqualifying.

(2) Traumatic pneumothorax (other than that caused by a diving-related pulmonary baro-trauma) is disqualifying. A waiver request will be considered for a candidate or designated diver after a period of at least 6 months and must include:

(a) Normal pulmonary function testing.

(b) Standard, non-contrast chest CT.

(c) Favorable recommendation from a pulmonologist.

(d) Final evaluation and approval by attending UMO.

(3) Chronic obstructive or restrictive pulmonary disease is disqualifying.

(4) Candidates and designated divers undergoing drug therapy for a positive purified protein derivative (PPD) must complete a full course of INH therapy prior to the start of diver training or reinstatement to diving duty.

(5) Diving-related pulmonary baro-trauma:

(a) Designated divers who experience mediastinal or subcutaneous emphysema following a violation of procedure are NPQ for diving duty for 1 month. They may be returned to diving duty following completion of the waiver process via BUMED to NAVPERS, if the diver is asymptomatic and is determined to have a normal, standard, non-contrast chest CT.

(b) A history of pulmonary baro-trauma in a diver candidate is disqualifying. Designated divers who experience a pulmonary baro-trauma following a dive with no procedural violations or a second episode of pulmonary baro-trauma, are considered disqualified for diving duty. A waiver request will be considered if the diver is asymptomatic after 1 month and must include: