

# Perception of Military Readiness and Capabilities Following Refractive Surgery Among Active Duty U.S. Military Service Members

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The authors have no financial interests in the subject matter of this poster.

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\*Government Contractors

# Purpose

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- The U.S. military is considered one of the largest providers of refractive surgery in the U.S. performing almost one in five procedures in the U.S.<sup>1</sup>
- While outcomes of refractive surgery may be assessed through clinical tests, a patient's perspective is also recognized as an important measure of surgical success.

# Purpose

- In a military setting, where service members may be subjected to unique visual demands, an additional assessment tool may be necessary to determine the impact of refractive surgery on their performance after undergoing the procedure.

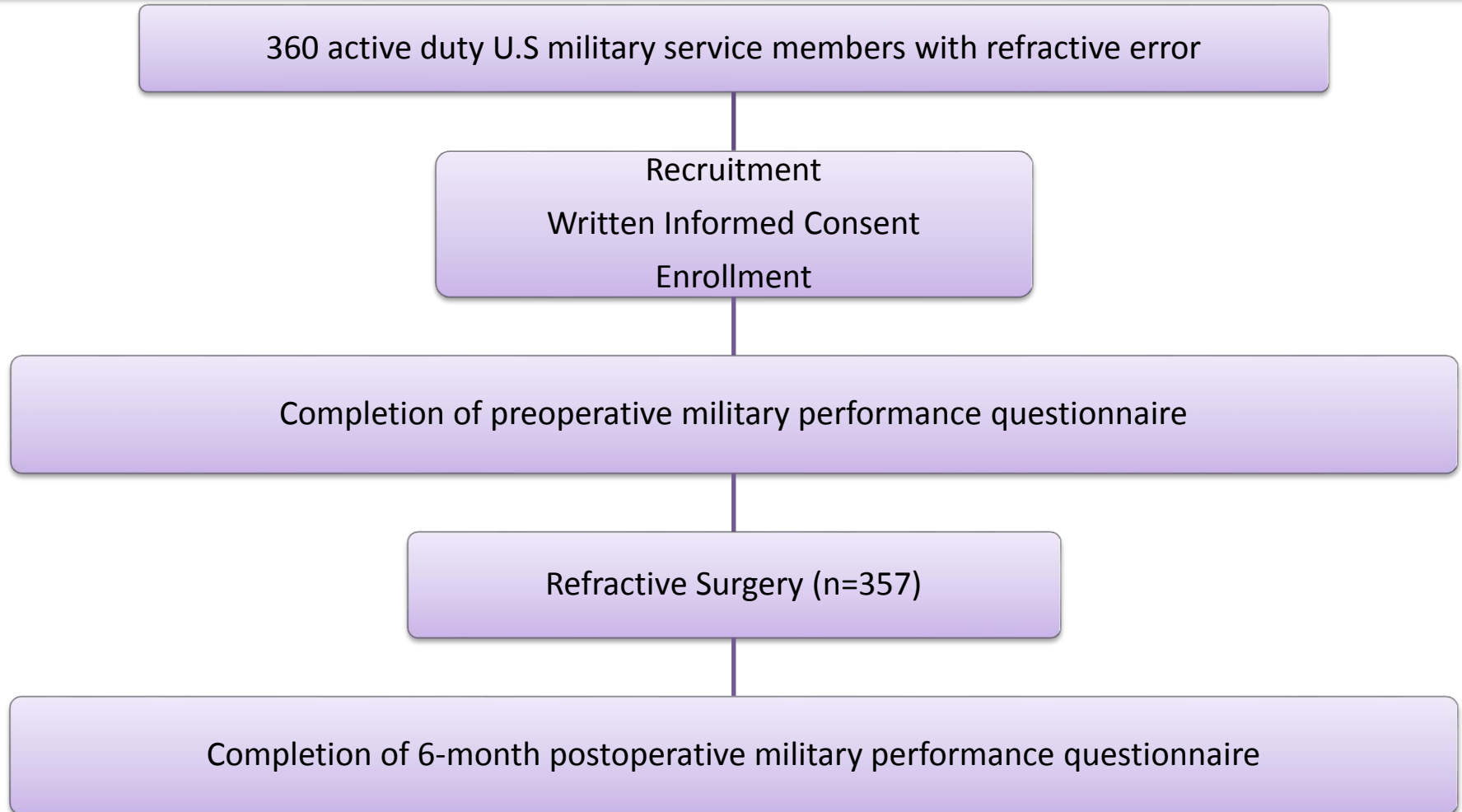


# Purpose

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The purpose of the study is to evaluate self-reported military readiness and capabilities of active duty U.S. military service members undergoing refractive surgery.

# Methods



# Methods

The military performance questionnaire assessed the following on a 5-point scale from very bad (1) to very good (5):

- Overall individual readiness
- Ability to contribute to the unit's mission
- Ability to utilize night vision goggles
- Ability to function at night
- Weapons sighting ability
- Ability to employ nuclear, biological and chemical equipment and personal mask
- Ability to weather extreme environmental conditions (dust storms, high heat, cold, etc.)
- Requirement for optical support in theater (replacement/repair of glasses, masks inserts)



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# Methods

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- Patient satisfaction was assessed at 6 months postoperatively.
- The Wilcoxon signed ranked test was performed to compare pre- and postoperative data.
- A p-value of  $<0.05$  was considered statistically significant.

# Results

**Table 1. Baseline characteristics of the study population**

<b>No. of participants</b>	360
<b>Mean Age (years)</b>	29.6 ±7.2
<b>No. of male/female</b>	328 (91.1%) / 32 (8.9%)
<b>Mean Manifest sphere (diopters)</b>	-2.60 ±1.92
<b>Mean Manifest cylinder (diopters)</b>	-0.74 ±0.66
<b>Mean Manifest spherical equivalent (diopters)</b>	-2.97 ±1.86
<b>CDVA ≥20/20 in at least one eye</b>	99.7%
<b>PRK/LASIK/ICL/not treated (%)</b>	66.9/31.9/0.3/0.8

CDVA, corrected distance visual acuity; PRK, photorefractive keratectomy; ICL, implantable collamer lens



# Results

**Table 2. Assessment of military readiness and capabilities before and after refractive surgery**

	<b>Subjects with improved scores at 6 months postoperatively*</b>	<b>P-value<sup>†</sup></b>
Overall individual readiness	96/169 responses (57%)	<0.001
Ability to contribute to the unit's mission	69/168 responses (41%)	<0.001
Ability to utilize night vision goggles	73 /85 responses (86%)	<0.001
Ability to function at night	109/167 responses (65%)	<0.001
Weapons sighting ability	95/131 responses (73%)	<0.001
Ability to employ nuclear, biological and chemical equipment and personal mask	102/113 responses (90%)	<0.001
Ability to weather extreme environmental conditions (dust storms, high heat, cold, etc.)	120/152 responses (79%)	<0.001
Requirement for optical support in theater (replacement/repair of glasses, masks inserts)	48/64 responses (75%)	<0.001

\*The total number of responses was varied as some respondents felt the questions were not applicable to them at the time. <sup>†</sup>As measured by Wilcoxon signed rank test;  $p < 0.05$ , statistically significant.

# Results

- Of the 27 service members who deployed before and after refractive surgery, 21 of them (77.8%) felt improvement in their visual capabilities and readiness ( $p < 0.001$ ).
- Given the opportunity to do the procedure over, 167 out of 169 service members (98.8%) would have surgery.



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# Conclusions

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- Active duty U.S. military felt their vision, after undergoing refractive surgery, significantly improved their military readiness and capabilities.
- The majority of them were satisfied with the surgery they underwent.

# References

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<http://www.eyeworld.org/article-improving-the-safety-and-efficacy-of-military-personnel-and-first-responders>. Accessed November 28, 2016.