

Military Members Turn to Refractive Surgery to Improve Readiness

Civilians choose refractive surgery for reasons as varied as the lifestyles they lead, but in the military, the goals of refractive surgery are more focused—often with crucial consequences.

“For us, refractive surgery is not a casual procedure, not a cosmetic procedure. It is critical to our operational safety and all the work that we do to try to improve the readiness of our service members,” said Capt. Elizabeth Hofmeister, MD, MC, USN, Cornea, External Diseases, and Refractive Surgery Naval Medical Center, and San Diego Refractive Surgery Advisor for Navy Ophthalmology.

Corrective lenses. Glasses can interfere with military equipment in various branches of the military—such as night vision goggles, protective eyewear, self-contained breathing apparatus, and specialized helmets. “You would be hard pressed to find somebody who doesn’t need some kind of gear that requires them to put it over their faces,” Dr. Hofmeister said.

Contact lenses also fall short, posing a risk of serious infection to members serving in the field or on a ship. Astronauts, too, experience their own refraction challenges, struggling to insert or clean contact lenses in zero-gravity environments.

Acceptance of surgery. As a result, military interest in refractive surgery

has expanded globally during the last decade. In 2007, military refractive surgeons held the first International Military Refractive Surgery Symposium. “There are refractive surgery programs in the United Kingdom, France, Germany, Turkey, Israel, Japan, and Singapore,” Dr. Hofmeister said.

Although not all branches of the service perform or pay for refractive surgery, the military authorizes and recognizes its significance in operational readiness, Dr. Hofmeister explained.

A French Perspective

In France, refractive surgery is not financially supported by the Ministry of Defense, and there is only one military refractive surgery center in the country, yet demand remains steady.

PRK. The most common procedure is PRK, as it stands up better against potential traumatic stress on the battlefield, according to Dr. Françoise Froussart-Maille, MD, MSc, who leads the Department of Ophthalmology at Percy Army Training Hospital (Hôpital d’instruction des armées Percy), located in Clamart near Paris.

More than 550 military personnel elected to have refractive surgery in her hospital alone last year (60% PRK, 40% LASIK). Numbers for the military across France are unknown because members can have the surgery in civilian hospitals too. She said the ReLEx



PRK. A U.S. Navy ophthalmologist performs photorefractive keratectomy at a naval training center.

SMILE procedure will soon be investigated for its potential advantages.

“During fighting, vision is life,” said Dr. Froussart-Maille. “The visual requirements of military personnel are special and should be optimal.”

Benefits Across the Board

In addition to offering safety advantages, refractive surgery delivers the exceptionally sharp vision that is critical to land a helicopter in a dark environment, pinpoint a target, or drive at night.

Even office personnel can benefit from refractive surgery, Dr. Hofmeister said. If a chemical attack occurs aboard

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ship, for example, yeomen must wear firefighting gear. Personnel who cannot see through their gas masks jeopardize the entire unit.

“The only person who doesn’t need it is that person who is at a shore job, is never leaving that shore job, and is never going to need to wear any protective equipment,” Dr. Hofmeister said. “There are not many who fit that description in the military.”

PRK vs. LASIK

Last year, the U.S. military collectively performed more than 37,000 refractive surgery procedures, according to Dr. Hofmeister.

Military branch. PRK accounted for approximately 80% of refractive procedures in the Army, whereas 55% of refractive surgery patients had PRK and 44% LASIK in the Navy. Statistics for the Air Force fell in between.

Naval surgeons use advanced excimer ablation technology such as wavefront-guided or wavefront-optimized ablations for most of their procedures, Dr. Hofmeister explained. Unless they have scarring or other ocular conditions, naval personnel can choose between LASIK and PRK.

West vs. East Coast. Reasons vary for why certain procedures are chosen. Many of the LASIK procedures in the LASIK in Naval Aviators study were successfully performed at the Refractive Surgery Center in San Diego, making pilots on the U.S. West Coast more comfortable with LASIK. However, on the East Coast, more military personnel select PRK.

“They tend to choose the procedure their friends had,” Dr. Hofmeister said.

Downtime. Other factors include the time off required post-surgery. Naval personnel who have LASIK can deploy one month after surgery, but PRK recipients must wait three months to be sure their vision has recovered.

“A lot of SEALs have LASIK. Pilots have LASIK,” she said. “They want to return to duty as quickly as possible.”

If pilots have PRK, for instance, they will be in a down status for three months, during which their time-critical qualifications would expire, requiring them to requalify.

Inside Refractive Surgery Outlook

EyeNet is pleased to bring its readers this sample article from the June 2016 *Refractive Surgery Outlook*. This is the online monthly member publication of the International Society of Refractive Surgery (ISRS), a partner



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Femtosecond Laser Proves Popular

Naval surgeons perform LASIK with the femtosecond laser, finding that it improves flap stability and recovery. Surgeons can create a flap with a reverse bevel so it fits well into the cornea. According to Dr. Hofmeister, such flaps have remained in place after a pilot’s ejection from aircraft or blast injuries to the eye.

“It’s very difficult actually to dislocate the flap,” Dr. Hofmeister said. “We have had only two or three that have been dislocated out of the tens of thousands that we have done in the Navy with the femtosecond laser.”

The few dislocations usually resulted from noncombat accidents, as when patients tripped and poked themselves in the eye.

Reaching Higher

Although military refractive surgeons have achieved excellent outcomes, they continually pursue superior results.

Refraction. “Before, we would talk about our rates of 20/20, and now we are looking at our rates of 20/16 or 20/12,” Dr. Hofmeister said. “We’re trying to tighten up our correction of astigmatism, making sure we get the axis of the astigmatism correct, which can be a challenge, just doing the manifest refraction and trying to pin that down.”

Safety. Her primary goal, however, is improving patient safety by eliminating transcription errors from their

systems. “Our rates are already extremely, extremely low for that kind of thing. We’re always looking to improve patient safety,” she said.

Although she plans to analyze global outcomes for the entire Navy, this analysis will require additional advances in electronic medical records. She anticipates that future technology will enable ophthalmologists to capture data and generate statistics automatically to ultimately enhance outcomes.

Meanwhile, she continues to emphasize the importance of refractive surgery to the military. “We actually are enhancing their ability to perform their job,” Dr. Hofmeister said. “I feel really privileged to be able to help service members in this way.”

Dr. Hofmeister is a specialist at the Cornea, External Diseases, and Refractive Surgery Naval Medical Center, and San Diego Refractive Surgery Advisor for Navy Ophthalmology. *Relevant financial disclosures: None.*

Dr. Froussart-Maille leads the Department of Ophthalmology at Percy Army Training Hospital in Clamart, France. *Relevant financial disclosures: None.*

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Attend “Resident Training Programs in VA and DOD” (Spe22), Monday Oct. 17, 12:45-1:45 p.m., Room N427a.