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Modern Laser Eye Surgery: Safe and On-Target

Police officers have benefited from laser eye surgery for over a decade. Many report improved peripheral vision, better depth perception, and a piece of mind that comes from not having to worry about breaking glasses or losing a contact lens in a critical situation.

In fact, as technology advanced, laser vision correction became safer than contact lenses for most people. Army, navy, and air force recommend laser vision correction to the enlisted personnel. Air Force Warfighter Vision Correction Program went into effect in 2001 to get the servicemen off corrective lenses, to increase their readiness in the field and in the cockpit, to improve functioning in night vision goggles and chemical gear, and to minimize their risk under adverse conditions, such as direct combat for example.

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“With modern laser vision correction we can help our patient see better than ever, with unprecedented safety and precision,” says Dr. Ella Faktorovich, the leading vision correction surgeon in San

Francisco and the medical director of the Pacific Vision Institute. “This is important to all patients, but is especially critical to those in high risk occupations who need great vision to make split-second decisions and function at the top of their game.”

Dr. Faktorovich attributes the outstanding outcomes to three main advances in laser vision correction: improved screening, all-laser LASIK, and individualized wavefront vision map to guide the corneal reshaping for better day- and night-time vision.

Accurate Screening

If you need to wear glasses or contacts to see clearly, your cornea is either too curved (nearsightedness, or myopia), too flat (farsightedness, or hyperopia), or you may have astigmatism (cornea is oval). Often, you may have both – myopia and astigmatism or hyperopia and astigmatism. With laser vision correction, the surgeon will reshape your cornea so that it can focus the images normally, eliminating the need for glasses or contacts. To achieve an excellent result, your cornea has to be smooth, symmetric and thick enough to accommodate the correction.

Several innovative technologies evolved over the years to detect subtle abnormalities in the cornea and help the surgeon determine if you are a candidate for laser vision correction.

The first is Optical Coherence Tomography (OCT). OCT is a miniature CT scan of your cornea that allows an extremely detailed view of your corneal layers – to make sure they are adequate for laser vision correction. Corneal thickness is measured in 25 different spots simultaneously, as opposed to just one with the older, ultrasound technology. With OCT, the doctor and you can be assured that the cornea looks normal. In fact, OCT was named one of the top medical innovations expected to improve healthcare in 2007.

The second screening technology is Oculus Pentacam. Pentacam is the only instrument that allows the surgeon to measure and analyze the shape of the very center of the cornea – where most of the laser vision correction is performed. None of the other imaging technologies can directly measure the center of the cornea. They measure around the center and then extrapolate or guess what the measurements in the center should be. Pentacam measures the center directly. Imaging with Pentacam lasts two seconds and it analyzes over 25,000 different points on the cornea! It's truly incredible, considering that the entire cornea itself is the size of a dime.

The result? Incredibly accurate maps of the cornea, telling the surgeon if you are a candidate for laser vision correction and giving you a great opportunity for a fantastic outcome.

All-Laser LASIK

The LASIK procedure consists of two steps. During the first step, superficial corneal layer is raised to reveal the inner cornea. The inner cornea is then reshaped with a laser to remove nearsightedness, farsightedness, and astigmatism. Most people don't realize that in the original LASIK procedure, a surgical blade was used to raise the superficial corneal layers. Although the risk of complications with this method was low, it was not zero.

In 2004, Dr. Dean Edell reported on the more advanced and safer method of laser vision correction – All-Laser LASIK or IntraLASIK. With IntraLASIK, a surgeon uses a laser (IntraLase), instead of a blade, to raise the superficial corneal layers, thereby eliminating complications that were associated with the original LASIK. The laser is incredibly precise and predictable, with speed and accuracy unparalleled by any other device in vision correction. In fact, it is so safe, that IntraLASIK, rather than traditional LASIK is preferred in the active duty military personnel. More than a million procedures have been performed with IntraLase. Not only is the IntraLASIK safer than traditional LASIK, the correction is more precise, with better vision both day and night. The results comparing the traditional LASIK with the All-Laser LASIK have been published in major scientific eye journals and they, undeniably, support the safety and precision of IntraLASIK.

Wavefront Custom Vision Map

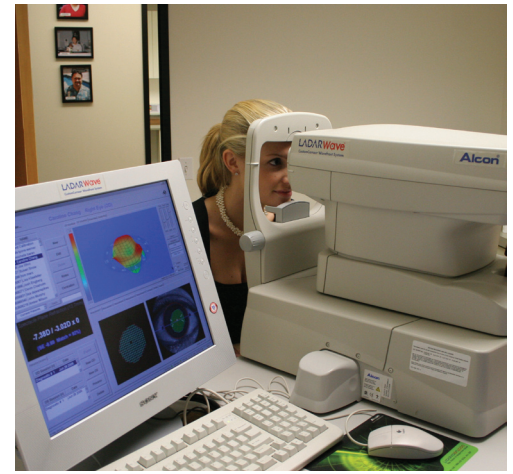
We all have unique imperfections in our vision that may prevent us from seeing great at dusk or at night. Laser vision correction took a giant leap forward when scientists joined your unique vision map to the laser beam that reshapes your cornea. The map guides the beam to erase your specific imperfections and improve your vision, especially at night. Glare and haloes, reported with older technology, have been reduced. Contrast sensitivity has been improved.

Military studies of snipers demonstrate improved target recognition, with and without the infrared devices. “With wavefront-guided procedures we’re getting better quality of vision, better clarity, better night vision, and better contrast sensitivity than we did with previous laser eye surgeries,” said Captain Steve Schallhorn, MD, director of refractive surgery at the Naval Medical Center, San Diego reporting on his findings at the 31st Annual American Society of Cataract and Refractive Surgery. His findings are confirmed by Marine Col. Mike Schupp, leader of Regimental Combat Team 1. “It’s helping bring our men home because of the advantages it gives us to operate quickly and more effectively in a combat environment,” said Col. Schupp. “It makes us better marksman and better day and night fighters.”

With such scientific advances to improve safety and accuracy, no wonder our SFPD officers have been taking advantage of the opportunity to see better. Over 50 officers had their vision corrected. “I have been thinking about getting laser for a while,” says officer Ha Dien who recently had LASIK at Pacific Vision Institute. “Finally, I decided to just do it. I am able to wear regular sunglasses, without prescription and without clip ons. I was working in the rain a few days ago, and did not have to wipe my glasses of the rain drops blocking my vision. That was nice.”

Officer Richard Ernst had his vision corrected at Pacific Vision Institute over two years ago. He recalls his reasons for getting LASIK. “It was obvious,” Richard says, “that bad vision was an officer safety issue if I was at work. Not being able to see clearly, especially when working in the Potrero was not only dangerous, it was stupid. The possibility of waking up and being able to see across the room for the first time was very appealing, but was not worth the price of the surgery. However, my safety, my life, my partner’s safety was definitely worth the price.”

He waited, however, until the proce-



Wavefront Custom Vision Map is used to guide the laser for better day- and night-time vision.

dures improved. “I was concerned about having anyone take a knife to my eyes, which is how the standard procedure works. When I found out that there was a new procedure where a knife was no longer used to make the initial flap, I felt it was time to proceed.”

“Within a couple of months of the surgery,” Richard recalls, “I had to qualify at the range. Although I could see as well or better than I could with contacts, I was concerned how well I would shoot. In the end, I did as well, or perhaps better as I did with contacts. The big difference was that at no time when I was on the line, did my eye water from a dirty contact or did my vision blur because the contact moved off the centre of my eye (both of which had happened in the past at the range).”

Obviously if that could happen at the range, it could also happen in the streets. I really don't have to think about my vision being a problem now whether at work or at home. Although you only devote a small amount of time each day to putting in and taking out contacts or finding your glasses, it is just one less thing that I have to be concerned with. And with life becoming more complicated each day, every little bit helps.”

For more information, please contact Pacific Vision Institute at (415) 922-9500 or info@pacificvision.org.