

## **First Comprehensive LASIK Treatment of Astigmatism Approved by the FDA**

25 Centers across the US are the First to Adopt the Latest FDA Approved Technology for Laser Vision Correction

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ST. LOUIS, MO — In 1985 a haunting close up photo of an Afghan refugee girl appeared on the cover of National Geographic Magazine. Seventeen years later the magazine set out to try and locate her. The search was successful, but only after the woman was positively identified using iris recognition technology. According to National Geographic, “Iris patterns are even more individual than fingerprints. So the Geographic turned to the inventor of automatic iris recognition, John Daugman, a professor of computer science at England’s University of Cambridge. His biometric technique uses mathematical calculations, and the numbers Daugman got left no question in his mind that the haunted eyes of the young Afghan refugee and the eyes of the adult Sharbat Gula belong to the same person.” (1)

With FDA’s recent approval of the most comprehensive iris recognition [eye tracking](#) system available in the US this technology has now advanced the science of laser vision correction. Known as Advanced Control Eyetracking (ACE<sup>™</sup>), this technology is only available on the TECHNOLAS Excimer Workstation, produced by the eye laser manufacturer, [Technolas Perfect Vision](#), GmbH, Munich, Germany. Active iris recognition tracking applied to laser vision correction allows the system to positively identify the exact orientation of the eye throughout the entire procedure. Since subtle eye movements are common during the [LASIK](#) treatment this unique tracking technology ensures that the intended treatment precisely matches the eye’s prescription. This is especially important for patients who have astigmatism in addition to their nearsightedness or farsightedness, which represent the majority of contact lens and spectacle wearers in the US.

“Perhaps the best analogy of the impact of ACE technology is to patients wearing toric contact lenses for astigmatism. One limitation of toric contact lenses is that they can move on the eye thereby creating blurry vision. That’s analogous to laser vision correction WITHOUT ACE tracking. If there were a toric contact lens that held its intended position on the eye and maintained clear vision at all times then that would be analogous to laser vision correction WITH ACE tracking”, according to N. Timothy Peters, M.D. of Portsmouth, NH, one of the first eye surgeons in the US to adopt this new technology.

“Many patients with astigmatism believe that they are not suitable candidates for laser vision correction. With the advent of ACE this is no longer true. We finally have a laser vision correction procedure that is ideally suited for the treatment of astigmatism,” said Dr. Peters. Twenty five leading centers across the US have already adopted this technology since the recent FDA approval. Visit [www.ready4lasik.com](http://www.ready4lasik.com) and check the map to find a Specialized Astigmatism Treatment Center near you.

### **Review of Laser Vision Correction Technology Available Today**

No other laser vision correction system available in the US can compensate for eye rotation during the treatment. Both the TECHNOLAS ACE and VISX S4 IR (Abbott Medical Optics, Santa Ana, CA) trackers compensate for the cyclorotation of the eye that can occur between the sitting position during critical diagnostic measurements and lying down on the LASIK bed. However, only the TECHNOLAS ACE technology can adjust the delivery of laser pulses in response to eye rotation *during* the treatment. Further, the Technolas ACE system is enabled for both conventional and customized wavefront-guided

treatments, while the VISX S4 IR tracker cannot adjust for cyclotorsion associated with conventional treatments.

The eyetrackers of the Wavelight Allegretto and Eye Q lasers and Ladarvision brand lasers (Alcon Laboratories, Fort Worth, TX) cannot compensate for eye rotation at all. In fact, a recent large study by Emory University using the Wavelight laser demonstrated that astigmatic eyes were nearly twice as likely as non-astigmatic eyes to require a touch up or enhancement procedure following LASIK. Increased enhancement rates among astigmatic eyes could be indicative of eye rotation during the treatment that goes unchecked. (2)

This new eyetracker also doubles the speed of tracking so as to allow the laser to rapidly adjust to the eye's movements; response time with ACE is now under 7 milliseconds, or 0.007 seconds. ACE also adjusts for the pupil center shifting that can occur between light and dark settings, critical to the proper centering of customized LASIK treatments over the pupil.

### **About Technolas Perfect Vision**

Technolas Perfect Vision GmbH is a joint venture between Bausch & Lomb, the global eye health company, and 20/10 Perfect Vision AG, a German femtosecond laser developer. The new company combines the laser vision correction assets of both businesses, and will utilize its global service and support infrastructure to introduce new, laser-based vision correction procedures, especially focusing on treatments for presbyopia. FDA approval of its ACE eye tracker comes on the heels of receiving CE Mark to commercialize the company's [INTRACOR™](#) procedure in Europe and elsewhere. INTRACOR represents a new femtosecond laser treatment for hyperopic (farsighted) presbyopes. Technolas Perfect Vision now markets product brands such as the [TECHNOLAS Femtosecond Workstation](#) with the CUSTOMFLAP™, CUSTOMSHAPE™ and INTRACOR™ procedures, the TECHNOLAS™ 217z100 excimer laser system, which includes the ZYWAVE™ and ORBSCAN™ diagnostic devices, and the [ZYOPTIX](#) brand of laser vision correction treatments, as well as the HANSATOME™ and ZYOPTIX™ XP microkeratomes. For more information visit the company's website at [www.technolaspv.com](http://www.technolaspv.com).

1. <http://ngm.nationalgeographic.com/2002/04/afghan-girl/mccurry-photography>
2. Randleman JB, White AJ, Lynn M, et. al.: Incidence, Outcomes, and Risk Factors for Retreatment After Wavefront-optimized Ablations with PRK and LASIK. J Refract Surg. 2009; 25:273-276.

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