

2006 Top 10 Vision Correction Advances

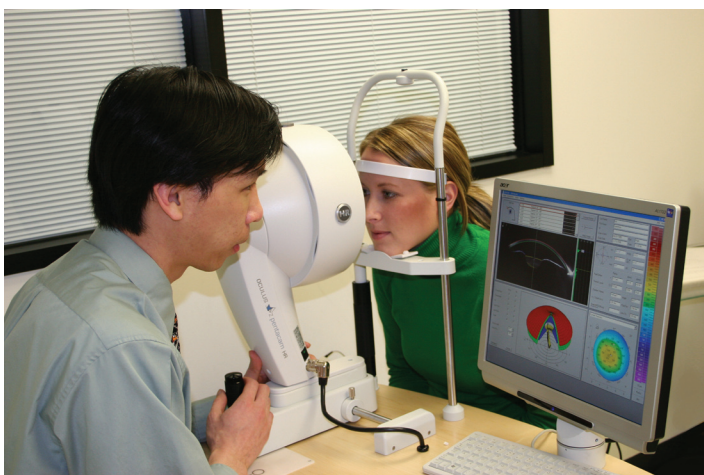
Welcome to our last issue of 2006 eFocus. As we look back, this has been a great year. We have seen significant advances in screening vision correction surgery candidates, in enhancing safety of vision correction procedures, and in expanding options for our presbyopic patients. Enjoy the year-end wrap up and have a happy new year!

10. Visante OCT

At Pacific Vision Institute, we now routinely use Anterior Segment Optical Coherence Tomography (OCT) to image the cornea and anterior segment prior to laser vision correction, phakic IOL implantation, and cataract and lens surgery. With OCT, we analyze non-contact 25 spot pachymetry maps in patients considering laser vision correction. We determine the thickness of the residual corneal bed in patients considering a post-LASIK enhancement. We measure the depth of the anterior chamber and the angle prior to phakic IOL placement and to follow glaucoma suspects. We measure the width of the anterior chamber and the sulcus prior to cataract and lens replacement surgery.

9. IntraLase 60KHz

With this 4th generation IntraLase femtosecond laser technology we have advanced the safety and efficacy of LASIK. Faster IntraLase allows for closer spot placement during flap creation. As a result, the laser energy is very low, allowing for a safe and predictable flap that is completely customized to each patient's unique corneal architecture. In addition, we have developed a system, Femtodynamics, that optimizes laser settings and techniques to facilitate excellent outcomes. Improved visual acuity and wavefront have been documented. One million procedures have been performed with IntraLase to date.



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8. New topical analgesic

7. Posterior chamber Phakic IOL

6. Presbyopic IOLs

5. NearVision CK

4. Oculus Pentacam

3. Hydroeyes

2. LADARVision 6000

1. "Sight Gags", by Dr. Scott Lee on Amazon.com

8. New topical analgesic

We have been analyzing the safety and efficacy of 0.5% dilute topical morphine drops for post-PRK analgesia. Published studies of intra-articular injection to control arthritis pain showed efficacy without systemic penetration. Our preliminary data, accepted for presentation at the 2007 American Society of Cataract and Refractive Surgery Meeting, demonstrates that the drops are effective in reducing post-PRK pain without inhibiting corneal re-epithelialization or causing other adverse reactions. This shows promise in managing ocular discomfort due to numerous causes, including corneal abrasions.

7. Posterior chamber Phakic IOLs

Visian posterior chamber Phakic IOL is an ultra-thin collagen layer (ICL) placed in front of the natural lens to correct large prescriptions or in patients whose corneas are too thin or too irregular for LASIK or PRK. In contrast to the anterior chamber Phakic IOL (Verisyse), Visian Phakic IOL is a posterior chamber lens and avoids possible contact with corneal endothelium. The workup for Phakic IOL procedure involves

anterior chamber depth calculation by various methods, including Oculus Pentacam, specular microscopy, and corneal keratometry, topography, and pachymetry. The phakic IOL can be followed by LASIK or PRK to correct residual astigmatism and/or spherical equivalent.

6. Presbyopic IOLs

We are using three different types of presbyopic IOLs, depending on the distance-near vision needs of our patients undergoing cataract surgery or refractive lens exchange. ReStor (Alcon) is best for near vision. ReZoom (AMO) and Crystalens (Ionics) are best for intermediate vision. In patients who are sensitive to dysphotopsias at night, such as night time drivers, for example, Crystalens is preferred. The workup for presbyopic IOL procedure involves extensive corneal analysis. The patients may elect additional corneal procedure to fine tune their result.

5. NearVision CK

Patients with mild hyperopia and plano presbyopes, now have an excellent option - NearVision CK. Unlike laser vision correction, with NearVision CK, we utilize radiofrequency energy to constrict the peripheral collagen, steepening the central cornea. The very center of the cornea, however, does not steepen as much as with the classic monovision. PVI data supports published studies – significant near vision gain can be achieved while maintaining good distance vision.

4. Oculus Pentacam

At Pacific Vision Institute, we are utilizing the high resolution Oculus Pentacam to screen refractive surgery candidates. Pentacam is the only corneal imaging device with the camera placed in the periphery, not in the center of the cornea. Therefore, we can accurately measure the cornea in the center of the visual axis, rather than estimate its curvature and thickness values as do other devices. We analyze the anterior curvature, the posterior curvature, the corneal wavefront, as well as the progression of the corneal thickness from the center to the periphery. We evaluate corneal curvature with 8 different indices to rule out aberrant patterns. The detailed and accurate analysis gives us confidence in recommending corneal refractive surgery to patients. We also utilize the Pentacam in measuring anterior chamber depth for phakic IOL and cataract / refractive lens exchange surgery. We measure the corneal power after corneal surgery to optimize accuracy in IOL power calculation.

3. Hydroeyes

To optimize healing and tear film after laser vision correction, we have incorporated Hydroeyes supplements into pre- and post-procedural care of every patients undergoing laser vision correction at Pacific Vision Institute. Clinical studies found that oral tear film supplement, Hydroeyes, can promote normal tear production, tear clearance, and eye surface after laser vision correction. Its key ingredients are: Omega-3 Fatty Acids (EPA, DHA, and Alpha Linoleic Acid support superficial layer

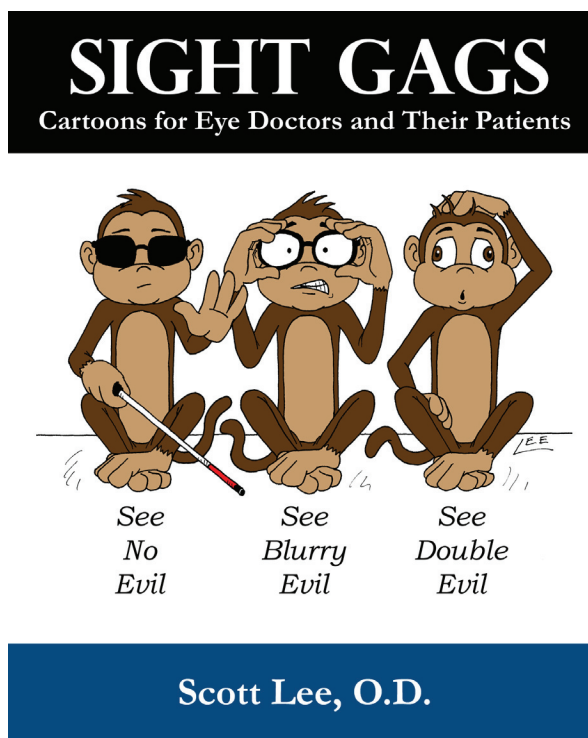
of the tear film), Omega-6 Fatty Acid (GLA, reduces inflammation), Vitamin C (neutralizes free radicals), and Vitamin A (enhances production of inner most layer of tear film). Omega-6 Fatty Acid (GLA), in particular, is not easily obtained from the diet. It has been shown to support production of normal tear film and speed up healing after LASIK and PRK by blocking pro-inflammatory compounds. We start every patient on Hydroeyes for one week prior to their laser vision correction procedure and continue for a month after. Additional tear film management techniques are utilized depending on patient's ocular health.

2. LADARVision 6000

With LADARVision 6000 excimer, the speed of the ablation has been significantly increased. Faster ablation significantly reduces procedure time for the patient. The accuracy of wavefront-guided treatments has also been advanced by utilizing infrared illumination and automating the registration process. Infrared illumination provides greater contrast during the registration. Accurate registration results in accurate treatment of both lower and higher aberrations, improving day- and night-time vision.

1. "Sight Gags", by Dr. Scott F. Lee

And, finally, ... "Sight Gags" the book, which features 92 eye cartoons, is now available on Amazon.com, Borders.com, and Target.com! Check it out and pass the word on to your colleagues. Thank you for your support and enjoy! ■



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