Pacific Vision Institute: *In* Focus

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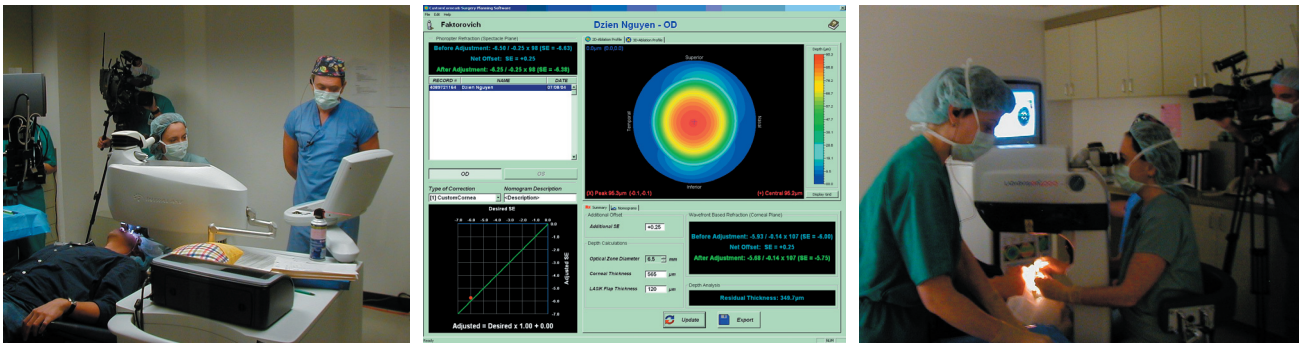
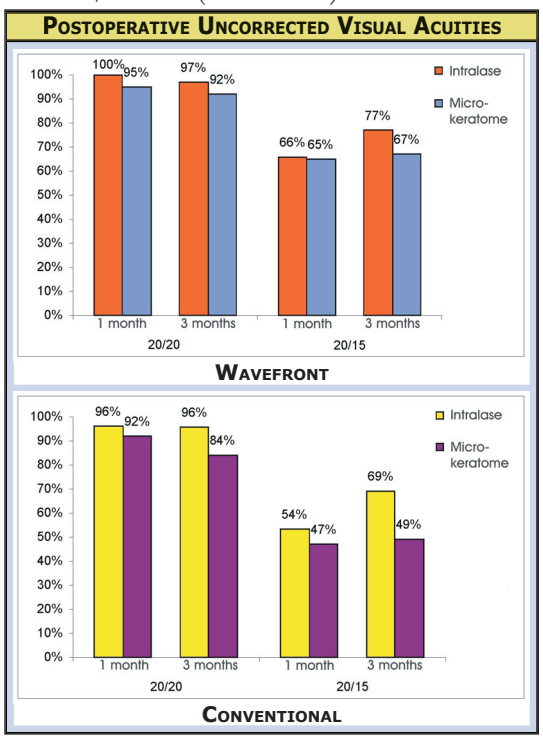


Dr. Keith Gualderama (Urban Eyes Optometry, San Francisco) undergoing LASIK with Intralase FS laser (left), advanced wavefront software (middle), and LADARVISION 4000. The procedure is being filmed for Dr. Dean Edel ABC Chanel 7 News segment.

Safety and Accuracy of IntraLASIK with Intralase FS laser at Pacific Vision Institute

One- and three-month postoperative results of wavefront-guided and conventional LASIK performed with Intralase FS laser and mechanical microkeratome (Hansatome) were retrospecitively analyzed using the Refractive Surgery Consultant statistical software. All eyes were targeted for plano postoperative refraction.

Preoperative parameters were age- and refraction-matched. Mean preoperative spherical equivalent (SE) in the eyes that underwent wavefront-guided LASIK with Intralase was -4.03 +/- 1.40 D (range -1.47 to -7.43D) and mean astigmatism was 0.33 +/- 0.19D (0.00 to 0.85). Mean SE in the eyes that underwent wavefront-guided LASIK with microkeratome was -3.78 +/- 1.30 D (range -0.94 to -6.46D) and mean astigmatism was 0.41 +/- 0.21D (0.07 to 0.97). Mean SE in Conventional LASIK with Intralase was -4.36 +/- 1.82 D (range -0.25 to -7.61D) and mean astigmatism was 0.94 +/- 0.66D (0.00 to 3.21). Mean SE in Conventional LASIK with microkeratome was -3.78 +/- 1.85 D (range -0.25 to -7.01D) and mean astigmatism was 0.88 +/- 0.79D (0.00 to 3.53).



Results

Intralase enhanced uncorrected visual acuity of both Wavefront-guided and Conventional LASIK. More patients achieved 20/20 and 20/15 uncorrected vision at both one- and three-months following procedures performed with Intralase vs. mechanical microkeratome. The difference was especially significant at three-months postoperatively: – 77% of patients who underwent wavefront-guided LASIK with Intralase saw 20/15 or better vs. 67% of patients who underwent wavefront-guided LASIK with a mechanical microkeratome. Patients who were not candidates for wavefront-guided LASIK and underwent conventional procedure, also had better outcomes with Intralase vs. mechanical microkeratome – 69% of patients who underwent Conventional LASIK with Intralase saw 20/15 or better at three months postoperatively vs. 49% of patients who underwent Conventional

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In Focus

Clinical News & Views

Custom Cataract and Lens Surgery

Barry Seibel, M.D., Director of Cataract and Lens Surgery, Pacific Vision Institute.

Buying clothes "off the rack" often makes sense for most people, as the variations between these garments and custom tailored pieces are often subtle and virtually always inconsequential in terms of any safety issues. However, when it comes to surgery, it is imperative to stack the odds of success as much as possible in favor of the patient by customizing the surgery in order to provide the gentlest procedure with the least invasiveness and therefore the best likelihood for an uncomplicated surgery with a rapid recovery. It is ironic, to realize that up until relatively recently, most cataract and lens eye surgery was taught and performed in an "off the rack" method whereby a given technique was designed to fit every patient's eye, and in fact, this methodology is still quite common even today. Each patient's eye, however, has unique qualities, and the exact same implementation of a surgical method will have different outcomes, sometimes subtle and sometimes problematic. These different outcomes require more time and surgical maneuvers for compensation, and the greater invasiveness and manipulation cannot help but contribute to a potentially higher complication rate as well as a longer recovery period.

Out of my own dissatisfaction with the limitations of this older approach to cataract and lens surgery, I developed Phacodynamics, a field of study dedicated to understanding the machine technology and the fundamental principles upon which all cataract and lens surgery is based. Phacodynamics, a word that I invented over a decade ago, is also the title of my textbook on this subject, now in its 400 page 4th edition and considered to be an international reference on the subject; it is frequently quoted in the scientific literature. By applying Phacodynamic principles to an operation, the surgeon can define the surgical goal at any given moment and then determine the optimum instrument manipulation and machine parameter settings that will obtain that surgical goal with the minimum amount of force and manipulation to the eye. Rather than arbitrary application of a cookbook style surgical method, the Phacodynamic surgeon constantly adapts and adjusts surgical inputs according to direct visual feedback through the operating microscope.

For example, if the ultrasonic needle is noted to be pushing the nucleus and potentially breaking zonules rather than smoothly carving through the cataract, an incremental increase in ultrasound power is applied. If, on the other hand, smooth carving is noted, the Phacodynamic surgeon may attempt an incremental decrease in linear ultrasound power in order to limit the amount of energy delivered to the eye, thereby insuring the gentlest possible procedure. The older and more common method of machine adjustment is memorization of often large, somewhat arbitrary tables that list machine parameter settings cross-referenced with various types of cataracts and surgical methods. However, this approach is not only awkward to apply, but it is still a cookbook approach that simply has some more recipies. In contrast, Phacodynamics allows a

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NEWS at PVI

- Dr. Dean Edell ABC Chanel 7 and KGO Newstalk Radio review IntraLASIK and sites Dr. Faktorovich as the first surgeon in San Francisco to perform this procedure.
- Dr. Dean Edell ABC Chanel 7 and KGO Newstalk Radio interview Dr. Faktorovich on the Advanced Wavefront-guided LASIK for patients with high myopic astigmatism.
- Dr.Faktorovich presents "Optimizing Outcomes with Custom Cornea" at the American Society of Cataract and Refractive Surgery
- Pacific Vision Institute becomes the first center in San Francisco to offer advanced wavefront-guided laser vision correction to patients with high myopic astigmatism using CustomCornea LADARVision.
- PVI practice expands to include Custom Cataract and Lens Surgery
- Dr. Faktorovich guest lectures at the Santa Clara Optometric Society and Asian Optometric Society on the topic of "Systemic Medications in the Eye Care Practice."
- Ophthalmologists/Optometrists/Family/Staff who recently had LASIK at PVI with Dr.Faktorovich: Dr. Gail Shimakaji (Mill Valley); Dr.Michelle Blas (San Francisco); Dr.Kim Lee (San Francisco), Dr. Aris Carcamo (San Francisco), Dr. Bradford Chang (San Francisco), Dr. Daniel Beltran (San Francisco), Dr. Keith Gualderama (Urban Eyes, San Francisco), Patrick Mebine (Dr. Bruce Mebine, San Francisco), Dingh Nguyen, Bien Nguyen and Dzien Nguyen (Dr.Manny Nguyen, South San Francisco), Joy Cabrera (Jennifer Quirante, O.D, Pacifica), Shayna Martinez (Dr.Lora Pond, Novato, CA), Joyce Lee (Dr.Darren Lee, Redwood City, CA), Steve Allenbach (Drs. Kyna Wong and Bernard Feldman, San Francisco), Joy Shervanek (Dr. Irene Koga, San Francisco), Carolyn Chu (Dr. Michael Chew, Daly City and San Rafael), Irina Volkova (Dr. Joanne Yee, San Francisco)
- PVI Top 5 dinners held on March 8th at Gary Danko's on June 28th, at Asia de Cuba, and on September 16th, at the Ritz-Carlton Dining Room.

In Focus

Clinical News & Views

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smooth continuous change in surgical input as needed based on the surgeon's visual feedback along with understanding the fundamental principles of the surgical machine and instrumentation.

The principles of Phacodynamics can also be applied to surgical instrument design, by first clearly defining the desired function of the instrument based on patient anatomy and then applying fundamental principles of physics and mechanical engineering to the instrument's construction. For example, I noted years ago that all lid speculums shared a fundamental design flaw in that the blades opened up in a single frontal plane, thereby distorting the lids and tarsal plates, which are supposed to open in a gentle arc over the spherical eye, like a visor opening over a helmet. The lid distortion was not noted by patients in the past whose lids were numbed by retrobulbar and periocular injections of anesthesia. However, with advanced methods of topical and intracameral anesthesia that avoid large, painful needles around the eye, the lids retain their sensation, and the application of a traditional lid speculum can be one of the most uncomfortable components of surgery for a patient. By using reverse engineering to have a linkage mechanism that allows the speculum blades to gently arc over the globe as they open, the patented Seibel 3-D Lid Speculum supports the lids through an anatomically correct movement that maximizes patient comfort as well as surgical exposure.

In general, cataract equipment and instrumentation are currently quite advanced relative to past decades, and results are generally good even with an "off-the-rack" approach. However, given the fact that our patients are trusting us with the only two eyes that they have, a customized Phacodynamic approach to surgery will stack the odds of success and comfort even more in their favor. We cannot offer our patients any less.

-Continued with **IntraLASIK from** page 1

LASIK with the mechanical microkeratome.

The refractive outcomes were also more stable following LASIK with Intralase vs. mechanical microkeratome, especially in patients who underwent Conventional LASIK. Percentage of eyes seeing 20/20 or better remained stable; at 96% from one- to three-months postoperatively in the Intralase group, but declined from 92% to 84% in the mechanical microkeratome group. Stable visual acuity in the Intralase group was consistent with the minimal change in postoperative spherical equivalent from -0.12D at one month to -0.14D at 3 months. Myopic regression was noted in the eyes undergoing Conventional LASIK with the mechanical microkeratome. Mean spherical equivalent decreased from -0.11D at one month to -0.20D at three months. Refractive stability is important because it reduces the need for enhancements.

No DLK greater than grade I was observed postoperatively in any of the study groups.

Importantly, the incidence of dry eyes was lower in the eyes following LASIK with Intralase than after LASIK with the mechanical microkeratome. Punctate keratopathy was detected at one-week postoperatively in only 5% of the Intralase eyes vs. 18% of the eyes following LASIK with the mechanical microkeratome.

LASEK for patients with thin corneas

Many patients who couldn't have LASIK with the mechanical microkeratome because their corneas were too thin, are now candidates for IntraLASIK where corneal flap can be as thin as 90 microns. Some patients' corneas, however, are still too thin for any type of lamellar corneal surgery. For these patients, laser vision correction on the surface of the cornea, i.e. LASEK, is an excellent option, providing corneal topography is symmetric and keratoconus has been ruled out.

In a recent study published in the Journal of Refractive Surgery (Kaya V, et al. Prospective, paired comparison of laser in situ keratomileusis and laser epithelial keratomileuesis for myopia less than -6.0 diopters. J Refract Surg 2004;20:223-228), six months postoperative results of LASEK vs. LASIK were compared. There was no statistically significant difference in uncorrected visual acuity, best-corrected visual acuity, spherical and cylindrical refractive error, Schirmer test, or tear break up time.

LASEK is an excellent option for patients who are not good candidates for lamellar corneal surgery.

In Focus

Clinical News & Views

4 T's to Custom LASIK Success

Technology	- Capture o Wide range of refractive error o Non-accommodating eye o Wide range of higher order aberrations o Wide area of higher order aberrations - Match o Supine wavefront map to the reclining patient's eye o Meticulous alignment - Treat o Fast tracker o Small beam o Wide treatment area
Technique	- Capture o Even pupillary dilation o No absent data points o Excellent correlation between wavefront and phoropter refraction - Match o Limbal marking to assure good match between supine map and reclining patient - Treat o Meticulous alignment
Technician	- Computer knowledgeble - Detail-oriented
Tear film	- One week out of contact lenses - Use lubricating drops QID while out of contact lenses - Stable, even tear film

Refractive Surgery Options in Presbyopic Patients

Contact lens wear declines dramatically as we get older. Among teens and young adults (ages 13 to 24), more than half of the people who need vision correction wear contact lenses at least part of the time. But in the 40 to 49 age group, contact lens wear is down to 21%. The number drops to 8% among 50 to 59 year-olds. Over 60, contact lenses are worn by a scant 2%. Yet, many baby boomers are physically active, enjoy traveling, and other activities where glasses may not be an ideal option. One of the reasons for the decline in contact lens wear with age is the decrease in contact lens tolerance due to dry eyes. Another reason is presbyopia. But the vision with the bifocal contact lenses often proves disappointing for the patients and fitting these lenses is often frustrating for the doctors. Fortunately, many surgical options are now available to improve our patients' distance and near vision while minimizing their dependence on glasses. The most common option is monovision.

With IntraLASIK, the corneal flap is generally thinner than with the mechanical microkeratome, preserving deeper corneal nerves. In fact, several studies concluded that the incidence of dry eyes is lower following IntraLASIK than LASIK with the mechanical microkeratome. In fact, at one week postoperative follow up visit, only 5% of patients following IntraLASIK had punctuate keratopathy vs. 18% of patients who had LASIK with the mechanical microkeratome.

CK is another monovision option. Very low incidence of dry eyes has been described with this procedure. There is no upper age limit on refractive surgery, providing that the ocular health is normal.

For patients undergoing cataract extraction, there are two options to improve distance and near vision – the accommodating Crystalens and the multifocal Array lens from Advanced Medical Optics.

Alcon LADARVision receives FDA approval for the broadest wavefront-guided LASIK correction of any refractive laser system in the U.S.

Alcon (Fort Worth, Texas) has received Food and Drug Administration approval for the expansion of the treatment range of its customized wavefront-guided LASIK procedure, CustomCornea. Performed with the LADARVision System, CustomCornea is now approved for treatment of myopia up to 8.00 D and astigmatism up to 4.00 D. The approval gives Alcon the broadest wavefront-guided treatment range of any refractive laser system in the U.S., enabling surgeons to offer the benefits of wavefront-guided treatments to over 90% of patients with myopic astigmatism.

FDA studies show that FIVE times as many patients experience reduction of their higher order aberrations following the advanced CustomCornea LASIK vs. Conventional LASIK, leading to the improved quality of vision postoperatively. Significantly more patients experienced reduction in higher order aberrations after CustomCornea LASIK with LADARVision than after LASIK with any other technology currently approved for wavefront-guided laser vision correction.

Pacific Vision Institute is the first laser vision correction in San Francisco, and one of only a few centers in Northern California, offering patients the expanded range of wavefront-guided treatments with CustomCornea.

Practice Development

PVI top comanaging doctors share pearls to practice success

PVI Top 5 dinner at the Ritz Carlton Dining Room. Left to Right: Dr.Stephen Woo (San Francisco), Dr.Manny Nguyen (South San Francisco), Cathy Soper (PVI), Dr. Lawrence Tom (San Francisco), Dr. Keith Gualderama (San Francisco), Gillian Scurich (PVI), Dr. Ella Faktorovich (PVI), Dr. Kim Lee (San Francisco), Dr. Maria Ha (San Francisco).

We have interviewed top co-managing doctors and asked them to share their strategies to building and maintaining busy, successful practices.

Where do most of your new patients come from?

Overwhelmingly, the doctors responded that most of their new patients come in as referrals from other patients, usually coworkers. This suggests that first of all, patient satisfaction is critical to word-of-mouth referrals. Timely services, interaction with the doctor and rapport with the staff, all play significant roles in patient satisfaction. Secondly, patients are likely to see their eye doctor close to where they work, rather than where they live. They will typically see the doctor either before or after work or during lunch hour. Successful practices build this patient preference into their practice's schedule. Some start seeing patients early, many stay open late, and most take lunch at a different hour than their patients do.

How does laser vision correction fit into your practice?

All the doctors see laser vision correction as an important part of their practice. They feel that by discussing all the options with the patient, including glasses, contact lenses, and vision correction surgery, they show the patient that they are open minded, keep on top of the latest developments in health care, and act as a patient advocate by educating them. Some doctors were skeptical about laser vision correction in the past. Unsure about the outcomes with the older technologies, they encouraged their patients to wait until the field of vision correction matured. Once the field matured and the patients were exposed to friends, relatives, and coworkers who had it done, they started asking their eye doctors about refractive surgery. The demand for this service rose exponentially. The doctors realized that if they don't meet the demand, they will lose patients. The doctors attended courses, reviewed studies, and trained with surgeons, educating themselves about the results and clinical care of the refractive surgery patients. Once the doctors became comfortable with recommending the procedure, and especially the appropriate surgeon to do the procedure, laser vision correction became an integral part of their primary eye care practice. Many had the procedure done themselves. Yet, they still present all the eye care options to their patients without a bias.

How do you encourage patients' interest in laser vision correction?

"It starts with the questionnaire the patients fill out at the office," says one optometrist. "If the patient indicates they are interested in discussing laser vision correction, we tell them the pros and cons, the facts, the results and then set up a consultation with a surgeon to determine if they are a candidate for vision correction surgery and what procedure is best for them." Another busy optometrist brings up laser vision correction as an option during the initial visit or an annual exam to all of his patients. "The patient probably knows at least one person who had it done and probably has some questions about it. So, I take a proactive approach and bring it up to them first. I want to help the patient make the right decision as far as the surgery and the surgeon." Another optometrist simply tells his patients that he had LASIK done and tells them about his experience with procedure and the effect it had on his life. If they are interested in finding out more, he sets up the consultation with the surgeon. All the doctors we have interviewed said

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that they want to be a part of the patient's decision making process. They therefore, let the patients know that they are involved in many steps of laser vision correction. Their practices have laser vision correction brochures, posters, educational materials displayed prominently in the patient areas so that the patients know that laser vision correction is an important part of their doctor's practice.

How do you discuss surgical fees with your patients?

All the doctors say they quote a range of fees rather than a specific fee to their patients. They don't discuss fees on the phone, preferring to include that discussion as part of the in-office consultation when they have their patient's latest exam information available. "The field of surgical vision correction has expanded so rapidly and so many different options are available now to patients with different needs that I feel the patients are better served if they know what procedure is best for them first," reports one optometrist. "In fact, they may need to have any one of the following procedures: wavefront LASIK or PRK, conventional LASIK or PRK, Intacs, CK, phakic IOL, etc. So their fee will be different based on what's best for them." Another optometrist says she always mentions VSP discount to her VSP patients. Yet another one says that financing and flex spending options may be helpful for some patients and given their complexities, she simply doesn't have time to discuss these options in detail with the patients, but would rather the surgical facility address the specifics.

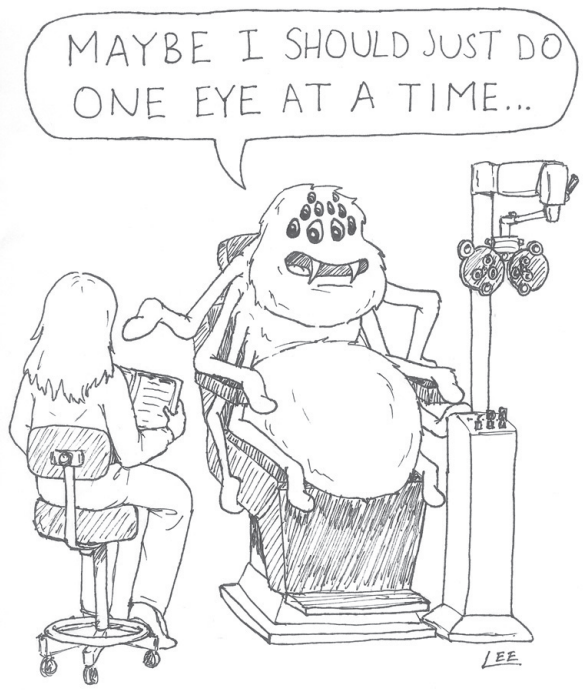
What system do you have to insure patients keep their follow up appointments with you?

"I set up all their follow up appointments at their preop visit," says one doctor. "The appointments are filled in on the template printed on the back of my business cards. The office staff calls them before each follow up appointment to remind them." Another doctor sets up one-week follow up appointment at the preop visit. Subsequent appointments are scheduled at the follow up visits. Some doctors call patients personally the night of the procedure or several days after to find out how they are doing and to remind the patient of their follow up appointment.

How do you encourage secondary referrals?

Most doctors interviewed said that they don't do anything special to encourage secondary referrals and that good patient care and genuine concern for the patient's well-being brings the referrals. "I let the results and the experience speak for themselves," mentions one doctor. "We have been referred lots of friends and partners this way." All the doctors agree that the doctor-patient bond must be strong for the referrals to come in and that the patient must see the primary eye care doctor as an important part of the vision correction process. Some tips on achieving that are: bringing up surgical vision correction proactively to the patients even before they ask, having information in the office about vision correction, setting up all appointments proactively, calling the patients personally after surgery, and finally asking them to refer their friends and partners.

Sight Gags by Scott Lee, O.D.



Cecil the Spider gets nervous about having LASIK

In Focus

Spotlight on OD

Spotlight on Bay Area Optometrist: Dr. Manny Nguyen

Efficiency, Technology, Patient Care

The Nguyen Brothers at a family dinner. Left to right: Dzien Nguyen, Dr. Manny Nguyen, and Bien Nguyen at a family dinner

Dr. Manny Nguyen knows about efficiency. Growing up with eight brothers and sisters, he learned all about efficiency at an early age. The experience has served him well as he developed one of the busiest optometric practices in the Bay Area.

Dr. Nguyen is the 4th of eight children, all born in Vietnam who immigrated with their parents to the Bay Area in 1975. They were transported on C130, an American military plane, at the end of the Vietnam War, and came to live with their uncle in San Francisco. The father of the Nguyen family worked different jobs:

- driving a beer cart, selling insurance, owning a restaurant. He finally invested in commercial real estate and retired. The mother of the Nguyen family took care of the family. The Nguyens have been married for 50 years, all their children pursued professional careers, from an electrical engineer to a chiropractor to an architect to an M.D. and of course, Dr Manny Nguyen who became an optometrist. But not after first trying a hand at environmental chemistry. He graduated from San Jose State University with a degree in Chemistry, but after working as a chemist for 5 years, he realized that something was missing; he missed contact with people. So he changed his career course and became an eye doctor. But not just an eye doctor, a doctor who went on to build one of the largest practices in the Bay Area. Dr. Manny Nguyen set up his practice in Costco, South San Francisco.

He developed his practice from scratch, after being selected from many doctor applicants. He was given only a month to fully set up, hire staff, print prescription pads, develop all the forms. Dr. Nguyen acted with his usual efficiency. In a month's time, all was set. It was three and a half years ago. He is now working 6 days a week and can see patients every 15 minutes.

How does he achieve such efficiency while preserving superb patient care and customer service? First of all, Dr. Nguyen has reduced his time in writing, printing, and faxing exams and prescriptions. He has two technicians who scribe exams and write prescriptions for him. The second key to achieving efficient is computerizing patient records. Patient data is entered as he examines the patient. Computerized records allow Dr. Nguyen to bring up patient's record in seconds and no time is spent looking for the patient's chart.

Computerized records allow for automatic patient recall with automatic generation of recall cards once a month. The third key to achieving practice efficiency is investing time to train good staff. Once trained, the staff can be delegated many tasks, allowing the doctor more time to care of patients.

What does the future hold for Dr. Nguyen's practice? He is always looking for ways to expand his practice, offering the most up-to-date services to his patients. He has done so several years ago when he converted his practice from only 25% contact lens wearers to 60% now. The demand was there, the technology was excellent, and he advanced his practice to meet his patients' expectations. He feels the same way about LASIK now as he did about contact lenses several years ago. The demand is there and so is technology. So much so that he and all his brothers had LASIK over the past year. Sure, it's helping him grow his already busy practice, but the bottom line is that he feels good about taking care of all his patients' vision needs.

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Refractive Advisor

Q: My patient wants to do conventional LASIK instead of wavefront-guided LASIK due to financial considerations. How should I counsel the patient?

A: The studies, both FDA and individual ones show that wavefront-guided LASIK results in better vision for most patients. For example, the FDA trials of wavefront-guided vs. conventional LASIK with Alcon's expanded ranges CustomCornea software, show that the chance of reducing higher order aberrations (i.e. imperfections in the vision system) after surgery is five times better with wavefront-guided LASIK than with conventional LASIK. This means better vision at night, possibly even better than what the patient had with contact lenses and glasses. Considering better results with wavefront-guided LASIK, I encourage patients to wait until they can afford it, rather than get an inferior procedure, especially since they can't "exchange" it for a "better model" in the future.

I always let the patients know that the vision correction procedure itself is elective. Once they elected to go ahead, they have to let their surgeon decide what procedure is best for them.

Q: My patient is a high myope who is a candidate for phakic IOL. Should she have it now or wait until other designs become available?

A: Currently FDA-approved phakic IOL model is an anterior chamber non-foldable PMMA IOL inserted into the eye through a 5 to 6 mm incision. This induces astigmatism in many patients and makes the recovery time somewhat prolonged. Better designs will be available soon. Specifically, these IOL's will be foldable and will be inserted into the celiary sulcus through a small 2 mm incision, allowing for minimally induced astigmatism and fast recovery times.

Pupil size will have to be taken into account in all the patients considering phakic IOL's. The optic diameters in the phakic IOLs range from 5 mm to 6 mm. Patients with pupil size significantly larger that the optic in the phakic IOL, may be at a high risk for glare and haloes.

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