



LADARWave Wavefront Analysis



Custom Cornea with LADARVision Treatment

PVI Custom Vision LASIK

PVI Custom Vision system incorporates LADARWave wavefront analysis, pupillometry, pachymetry, topography, contrast sensitivity measurement, refraction, and in-depth discussion of each patient's specific vision needs. The treatment plan is then generated tailored to the unique needs and measurements of each patient. Many patients will benefit from the wavefront-guided laser vision correction (WFL). When corneal thickness is not adequate for WFL, even with a thinner flap or LASEK, and the wavefront map does not show significant aberrations, non wavefront laser vision correction (NWFL) may be recommended to the patient. If a patient's pupil size extends beyond the optical zone of WFL, large pupil laser vision correction (LPL) may be recommended. LPL with LADARVision allows optical zone expansion up to 8.0 mm with a 1.0 mm blend zone to improve night-time vision. LADARVision allows optical zone adjustment in 0.1 mm increments. With PVI Custom Vision system, the optical zone typically overlaps the scotopic pupil size by at least 0.5 mm to improve night-time vision.

WFL correction is based on the refraction from the wavefront analyzer. If a patient desires monovision, for example, and the desired correction is outside the range allowed by the analyzer, NWFL may be recommended if the patient's wavefront map does not show significant aberrations. PVI Custom Vision system combines patient's unique wavefront map with other specific features of their visual system as well as their unique vision needs to create optimal day-time and night-time vision. ■

News At PVI

- 2nd Annual San Francisco Cornea Symposium was held on March 26th at the Four Seasons Hotel in San Francisco. Over 150 Bay Area optometrists and ophthalmologists attended
- Dr. Faktorovich guest lectured at the 18th Annual Meredith Morgan Symposium at UC Berkeley School of Optometry on May 18th. The lecture was "Postop Infections: Treatment and Prophylaxis."
- PVI becomes the first center in San Francisco with LADARVision Autonomous Excimer Laser Technology and LADARScan Wavefront Analyzer for PVI Custom Vision laser vision correction
- Optometric Staff and family who recently had LASIK at PVI with Dr. Faktorovich: Victoria Gomez & Mary Lou de Jesus (Drs. Bruce & David Stamper, San Francisco); Philip Longren (Drs. Albert Lee and Lawrence Tom, Urban Eyes Optometry, San Francisco); Mimi Yan (Dr. Richard Simsarian, San Francisco); Erica Warren (Dr. Thomas King, Novato); Milinda Lommer (Dr. Edward Haack, Larkspur Landing Optometry, Larkspur); Scott Lee, O.D. (San Mateo); Jason Martin (Dr. Therese Langille, Through the Hayes Optometry, San Francisco)
- World Wrestling Federation wrestler undergoes Intacs at PVI to treat his keratoconus
- PVI second practice location is now open in San Mateo. Call 650-548-0537 to schedule consultation

Clinical News & Views

LADARVision vs. VISX technology in Wavefront-guided laser vision corection. References are available via e-mail request at comanagement@pacificvision.org.

	Significance to Patient	Custom Cornea LADARVision LADARWave	Custom Vue VISX StarS4 WaveScan
MAP			
► Range of data points mapped	<ul style="list-style-type: none"> ✓ Wide map detects aberrations when the pupil dilates in dim light ✓ Range of valid wavefront data points captured must be larger than ablation zone for true custom correction ✓ Inability to accurately measure, reconstruct and treat wavefront aberrations over the entire dilated pupil area can result in failure to identify and treat many aberrations affecting night vision quality 	Up to 10 mm pupil ¹	Only 6 mm pupil ²
► Range of Higher Order Aberrations mapped	<ul style="list-style-type: none"> ✓ Accurate detection of most aberrations is necessary for the most accurate vision correction 	Up to 8 th order over pupil up to 10mm	Up to 6 th order over 6 mm pupil only
► Reproducibility of wavefront map	<ul style="list-style-type: none"> ✓ Accurate reproducibility results in accurate mapping and accurate treatment 	Lowest standard deviation of 6 wavefront devices tested ³	
► Is the eye cyclopleged during mapping?	<ul style="list-style-type: none"> ✓ Cycloplegia removes variable and inconsistent aberrations induced by accommodation and allows for the most accurate vision correction 	Yes	No
MATCH			
► Is the wavefront map matched with the custom ablation treatment?	<ul style="list-style-type: none"> ✓ Matching the map to treatment allows accurate alignment of patient's wavefront with the laser beam placement for accurate custom ablation treatment. ✓ Perfect match is critical to perfect wavefront treatment⁴ ✓ 1/3 of patients cyclotort at least 6° during change from supine to reclined position⁵ ✓ 6° of misalignment results in 25% undercorrection of astigmatism,⁵ 38% undercorrection of 3rd order aberrations and 55% undercorrection of 4th order aberrations⁵ 	Yes	No
TREAT			
► Laser tracker sampling rate	<ul style="list-style-type: none"> ✓ To accurately follow and track saccadic eye movements during fixation, 100 Hz bandwidth tracker is required, i.e. sampling rate of at least 100 x 10 = 1000 times/sec⁶ 	4,000 times/sec	60 times/sec
► Laser tracker reaction time	<ul style="list-style-type: none"> ✓ Fast response time is necessary to accurately align laser beam with new eye position due to saccades⁶ 	1 millisecc	30 millisecc
► Laser beam shape and size	<ul style="list-style-type: none"> ✓ Non-sequential beam application allows cornea to relax between applications of laser energy. This prevents central island formation and results in smoother corneal surface.⁶ ✓ Small beam size for the entire ablation allows precise correction of higher order aberrations^{7,8} ✓ Larger ablation zone reduces night-time symptoms, especially in patients with larger pupils 	Non-sequential 0.75 mm flying spot	Sequential variable spot 0.65 mm to 6.5 mm. Broad beam of 6.5 mm is used for most of the ablation
► Custom ablation zone size		6.5 mm optical zone with 1.25 mm blend zone	6.0 mm optical zone with 1.0 mm blend zone

Clinical News & Views

Highlights of the 2nd Annual San Francisco Cornea Symposium

- **Intacs for Keratoconus**, *Brian Boxer Wachler, M.D., Director Boxer Wachler Vision Institute, Beverly Hills, CA.*

Up to 2 year follow up data was presented on patients with keratoconus who underwent Intacs procedure. Intacs was shown to be safe and effective in improving both uncorrected and best spectacle-corrected visual acuity in patients with keratoconus. The data presented at the 2nd Annual San Francisco Cornea Symposium is now published in the April issue of *Ophthalmology* 2003;110:1031-1040



2nd Annual Cornea Symposium at the Four Seasons Hotel in San Francisco

- **Wavefront Laser Vision Correction: Comparison of Results from Different Technology Platforms**, *Ella G. Faktorovich, M.D., Director Pacific Vision Institute, San Francisco, CA.*

Fundamentals of Wavefront-guided laser vision correction were reviewed. Technology specifications and laser vision correction results were compared for CustomCornea with LADARVision/LADARWave vs. CustomVue with VISX StarS4/ WaveScan vs. Bausch and Lomb Zywave/ Technolas 217Z. The units of wavefront measurements were analyzed to facilitate accurate comparison of results.

- **Current Concepts in Antibiotic Resistance**, *David G. Hwang, M.D., Co-Director of UCSF Vision Correction Center; Professor of Clinical Ophthalmology, UCSF School of Medicine, San Francisco, CA.*

The emerging patterns of antibiotic resistance were discussed as well as the appropriate use of fluoroquinolones, including the new 4th generation. Caution was urged in tapering the fluoroquinolones beyond qid dosage to minimize development of resistance.

- **The Role of Pupil Size in the 21st Century**, *Sam Omar, M.D., Director of Advanced Vision Institute, Orlando, FL.*

The importance of pupil size in predicting the risk of glare and haloes at night was discussed. The role of the amount of correction as well as the laser ablation zone size were evaluated with respect to incidence of night-time symptoms.

- **The Role of Cornea in Glaucoma Management**, *Andrew Iwade, M.D., Chairman of Department of Ophthalmology, St. Mary's Hospital, San Francisco, CA.*

New evidence on the importance of corneal thickness in accurate intraocular pressure measurements was presented. Recommendations were made on IOP adjustment based on pachymetry readings in untreated corneas and after laser vision correction.

In the comments following the Symposium, many doctors remarked that the quality of speakers was outstanding and that they have learned useful information with practical application to their practices. The 3rd Annual San Francisco Cornea Symposium will be held on March 25th, 2004. An exciting program is planned. The invitations will be sent out in January 2004. ■

Clinical News & Views

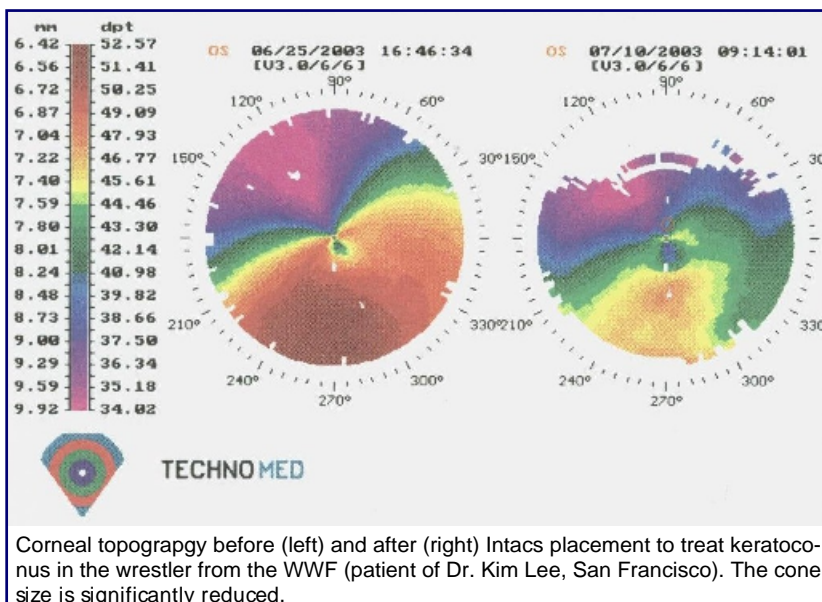
RESULTS OF INTACS FOR KERATOCONUS TREATMENT AT PVI

The safety and efficacy of Intacs in the treatment of keratoconus at PVI were analyzed. Five-month follow up data was examined.

- ▶ Mean Uncorrected Visual Acuity (UCVA) improved 5 lines
- ▶ Mean Best Spectacle Corrected Visual Acuity (BSCVA) improved 3 lines
- ▶ Mean Spherical Equivalent (SE) improved 5.02 diopters
- ▶ Mean Cylinder improved 1.76 diopters

Functionally, some patients could see well enough to function normally without glasses after Intacs placement.

Some patients, who were contact lens intolerant, could see well enough with glasses after Intacs placement. Patients who had apical nodules were not candidates for Intacs. These patients were treated with phototherapeutic keratectomy and could wear contact lenses comfortably after the procedure. Intacs is planned in the future for these patients. Patients with severe corneal steepening underwent penetrating keratoplasty. Each patient is evaluated on case-by-case basis to determine what treatment option best fits his or her individual characteristics. ■



4th Generation Fluoroquinolones

1 st Generation	2 nd Generation	3 rd Generation	4 th Generation
<ul style="list-style-type: none"> • Nalidixic Acid 	<ul style="list-style-type: none"> • Oxolinic Acid • Pipemidic Acid • Cinoxacin 	<ul style="list-style-type: none"> • Norfloxacin • Ciprofloxacin (Ciloxan) • Ofloxacin (Ocuflox) • Levofloxacin (Quixin) 	<ul style="list-style-type: none"> • Gatifloxacin (Zymar) • Moxifloxacin (Vigamox)
<ul style="list-style-type: none"> • Gram (-) coverage • Not indicated for Pseudomonas 	<ul style="list-style-type: none"> • Increased antimicrobial activity but toxic • Not soluble in ophthalmic formulations 	<ul style="list-style-type: none"> • Excellent Gram (-) coverage • Growing resistance of Staph Epi, Staph Aureus, and Strep 	<ul style="list-style-type: none"> • Improved Gram (+) coverage • Some coverage of atypical mycobacteria
<p>Possible treatment guidelines:</p> <ul style="list-style-type: none"> ✓ Corneal ulcer in a contact lens wearer – 3rd Generation FQ ✓ Corneal ulcer in a non-contact lens wearer – 4th Generation FQ ✓ Corneal ulcer in a contact lens wearer with significant lid disease – 3rd + 4th Generation FQ ✓ Severe corneal ulcer – fortified antibiotics 			

Counselor's Corner



Director of Professional Services, Courtney Glew discusses laser vision correction with a patient as part of the initial consultation at PVI. Patient meets with Dr. Faktorovich as well to discuss any additional questions.

With the new, exciting information on Wavefront technology in the papers, on the news, and on the internet, it is no wonder that many patients have questions regarding the role that Wavefront may play in their vision correction procedure. This complicated technology can be very confusing for patients as they begin their education process. At PVI, we help patients continue their LASIK education process and recommend a procedure that best fits their specific needs.

Q: I have read in the papers that Wavefront is the best form of vision correction and this is what I want. Does Dr. Faktorovich perform Wavefront LASIK?

A: PVI is the only practice with the LADARWave Ladarvision Wavefront technology in San Francisco. While it is a wonderful option for some patients, it is not suitable for everyone. During your initial consultation, we will do a series of tests to determine if wavefront-guided laser vision correction is the best option for you. Dr. Faktorovich will then design PVI Custom Vision refractive correction that best fits your needs. Your primary eye care doctor will be consulted as to your

specific vision needs, such as monovision, for example.

Q: I heard that my risk for seeing halos and glare at night will go down with Wavefront. Is this correct?

A: Wavefront LASIK can help diminish night-time glare and halos if you are a suitable candidate for the Wavefront procedure. Some patients, however, are better candidates for Large-Pupil LASIK with LADARVision. Even patients with very large pupils can have good vision both during the day-time and at night. During your initial consultation, Dr. Faktorovich will help you determine which LASIK procedure will produce the best results for your daytime and nighttime vision.

Q: How much is LASIK at Pacific Vision Institute? Is Wavefront more? Do I have to pay to find out if I am a good candidate for Wavefront?

A: Depending upon which technology you will need to achieve the best vision, PVI Custom LASIK ranges between \$1800 - \$3000 per eye. We do not charge for enhancements or the subsequent drops or followup visits. All of this, along with the surgeon's skill, the right technology and proper post-op care, will all be provided to you. Your unique vision will determine which technology you need and what your exact cost will be. The only way to determine your LASIK procedure fee is to have a consultation at PVI. Your initial consultation is free, including the sophisticated LADARWave wavefront scan to determine which PVI Custom LASIK Procedure is best for you.

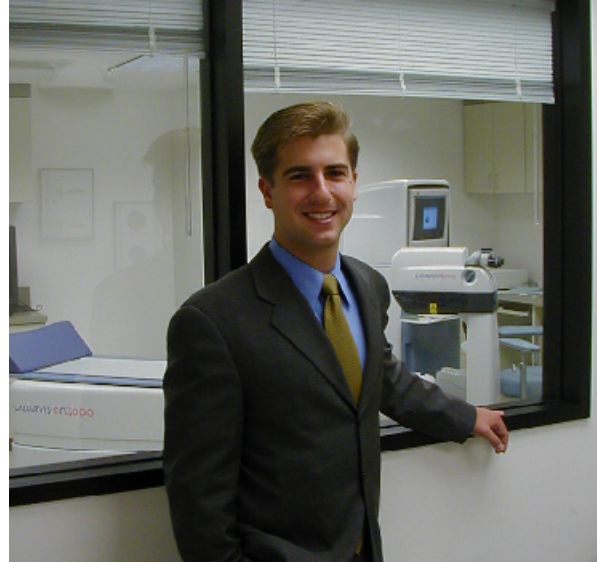
Q: Do you have any financing options?

A: For a limited time, we secured the lowest fixed interest rate on the market. Starting at only 5.9% interest, the Vision Fee Plan will help you experience your new vision through a very low monthly payment plan with no pre-payment penalties. We also offer PVI in-house payment plan in select instances. During your free consultation, I will go over our financing options with you and provide you with all of the information you will need to make this confidential, personal decision. ■

Practice Development



Amie Ahlers is a PVI Professional Services Coordinator for San Francisco and Marin.



Matt Watts is a PVI Professional Services Coordinator for the Peninsula and South Bay.

Increasing Custom Vision Lasik Awareness In Your Practice

A primary eye care practice provides many services to patients ranging from contact lenses and glasses, laser vision correction, external and corneal evaluations, glaucoma screening and treatment, retinal and optic nerve testing and insuring overall ocular health and optimal vision. A large percentage of patients in an average optometric practice are excellent candidates for laser vision correction. Many patients may not be aware that the practice offers such a service. PVI patient referrals for laser vision correction have increased dramatically. Most patients have a regular eye care provider. Many have been seeing their optometrist at least once a year, some as recently as several weeks prior to coming to PVI for consultation referred by a friend, a co-worker, or a family member. We encourage continuity of care by co-managing these patients with their primary eye care provider. However, patients often comment that they were not aware that their optometrist is involved in laser vision correction. Here are some suggestions that may be helpful in increas-

ing patient awareness that your practice offers laser vision correction services. They may seem obvious, but when all of them are utilized, the patients will learn that you are involved in laser vision correction and will ask you more about it.

- “Ask us about Laser Vision Correction” sign at the front desk
- “Are you interested in discussing Laser Vision Correction?” question on the new patient information form
- “Are you interested in discussing Laser Vision correction?” form for return patients. The receptionist will place this on the patient’s chart
- Give Laser Vision Correction packet to the patient at the end of examination
- Offer to schedule Custom Vision LASIK consultation at PVI which will include wavefront analysis ■

Spotlight on OD

A Family Mission

Spotlight on San Francisco Optometrist: Drs. Bruce and David Stamper

Dr. Stamper Optometry is one of the oldest and largest optometric practices in San Francisco. Established in 1913 by Dr. Lawrence "Jack" Stamper, the tradition is carried on by his grandson, Dr. Bruce Stamper and his great-grandson, Dr. David Stamper. The practice sees over 30 patients a day, six days a week. It employs 16 staff and 4 full-time optometrists. The patients come from all walks of life and represent a wide sector of the American culture. Blue-collar and white-collar, new immigrants and established San Francisco families, stockbrokers from Montgomery street and artists from the Mission, singles from Castro and Noe Valley and families from the East Bay v Stamper optometry sees a true melting pot of patients. They remain loyal to the doctors, bringing in children and grandchildren, even when the families move away from the city into the suburbs. What accounts for this patient loyalty? In our constantly shifting world of changing jobs, changing residencies, changing insurance plans, how does a practice maintain the loyalty of patients and their families?

It could be by example v the Stamper practice, in its fourth generation, includes four Stamper family members currently working in the practice, and many staff members have a long-standing history with the practice. The typical patient visit to the Stamper Family practice is 50% doctor visit and 50% chatting with friends and catching up. Another reason for patient loyalty could be the consistently high quality of eye care. From corneal topography to diagnose early keratoconus to HRT to detect early glaucomatous optic nerve changes, the Stamper practice provides a full scope eye care to diagnose both chronic and acute conditions. It is not uncommon, for example, for Dr. David Stamper to be the first doctor to diagnose the patient with diabetes, based on the eye exam. The patients with diabetes are strongly urged to maintain regular follow up. Many come in during National Diabetes Month. Staff members emphasize the importance of follow up to each patient. HRT testing has also proved to be exceedingly helpful in diagnosing and following patients with glaucoma.

Yet another reason for patient loyalty could be the advanced, up-to-date diagnostic and therapeutic options offered to patients. For example, Dr. Bruce Stamper was one of the first doctors in the Bay Area to fit patients with RGPs. Twenty-five years later, Dr. David Stamper is seeing these patients. The Stamper Optometry was also one of the first practices in the Bay Area to offer laser vision correction to patients. "Our patients put their trust in us," says Dr. David Stamper. "It is up to us to recommend procedures and treatment options that are best for them." "With laser vision correction, we are retaining patients in our practice. They trust us, they come in for follow up care, for sun glasses and reading glasses, they bring other family members for exams and treatment."

Maintaining patient loyalty is a family mission. The family of staff and doctors at Stamper Family Optometry has been on a mission for nearly a century. The result? A bustling practice, happy patients, dedicated staff. ■



Dr. David Stamper (right) with staff Victoria Gomez (middle) who recently underwent LASIK by Dr. Faktorovich (left) at PVI

Stamper Family Optometry, 2508 Mission Street, San Francisco, CA 94110, (415) 824-2374

Refractive Advisor



► **Q: My patient says he is interested in LASIK but thinks he is not a good candidate because he read that patients can get dry eyes after LASIK and his eyes feel dry already with contact lenses. How do I counsel the patient?**

A: Most contact lens wearers who come in for laser vision correction, have some discomfort on occasion with contact lenses. The dryness is rarely due to a significant decrease in tear production or a significant tear film instability. The tear film may be normal or slightly abnormal, but the dryness may be exacerbated by poor tear film circulation due to contact lenses. You can advise the patient to remove contact lens for one to two weeks and recheck the tear film with Schirmer test and Tear Break Up Time. Often those are normal. In this case, the patient does not have significant risk of dry eyes after LASIK. If the tear break up time is low, Doxycycline can be started. If the tear volume is low, punctal occlusion can be performed prior to LASIK. Before the treatment is initiated, however, the patient should have a LASIK consultation to determine if they are a good candidate for LASIK otherwise.

► **Q: My patient has inferior punctate keratopathy in one eye only after LASIK. What can I do to treat it?**

A: Unilateral inferior superficial punctate keratopathy (SPK) often indicates incomplete lid closure at night. Unilateral SPK or asymmetric SPK is more common than bilateral symmetric SPK even in patients with normal lid closure at night. The usual dry eye treatment should be initiated, such as hourly preservative-free lubricating drops with carboxymethylcellulose (Refresh Plus, Theratears, for example), punctal occlusion, and sometimes Cyclosporine A 0.02%. Even if no lagophthalmos is detected on the examination, I still recommend either Theratears Gel or Tears Again Gel or even Refresh PM ointment at night. If dryness doesn't improve, I recommend taping the lid at night for several weeks and then reevaluate the patient. The improvement may take anywhere from a few days to a few months. Also, make sure that the corneal changes are indeed SPK and not microcysts. If they are microcysts, this indicates Epithelial Basement Membrane Dystrophy and needs to be treated with Muro ointment at night rather than lubricating gel.

Upcoming Events

***Ongoing:** Wavefront Workshops v limited to 4 doctors per workshop. Include hands-on training in wavefront analysis and live PVI Custom Vision LASIK observation. Please contact Amie Ahlers, Matt Watts, or Courtney Glew to reserve your time.

***Ongoing:** Optometric Staff Training Seminars include live surgery observation— contact Courtney Glew, Amie Ahlers, or Matt Watts for times and dates.

* These workshops are limited to PVI Affiliated doctors only. Please contact Amie Ahlers for information on becoming a PVI affiliate.

Special Services for PVI affiliated doctors

- Refractive surgery patient management workgroups*
- Punctal occlusion workshops*
- Phone consultations and emergency help by corneal specialist
- Patient education CD's customized to your practice.
- TPA Hours
- Optometric office staff training program.
- Patient Seminars at your office.

* CE provided

In Focus

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