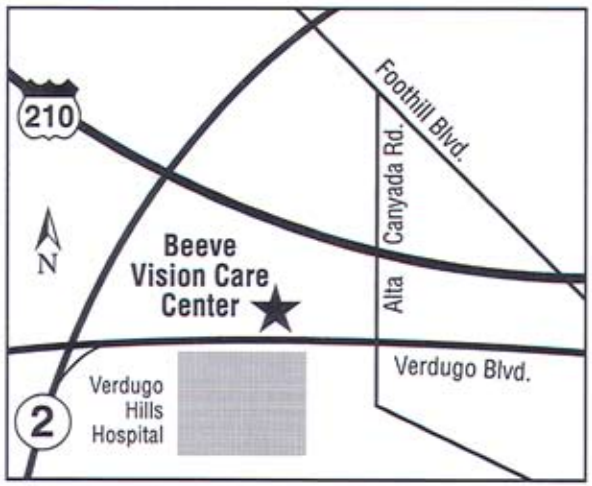
Scott W. Beeve, M.D.
Board Certified Ophthalmologist



Across from Verdugo Hills Hospital

BEEVE VISION CARE CENTER

1809 Verdugo Blvd., Suite 150
Glendale, CA 91208

818-790-8001

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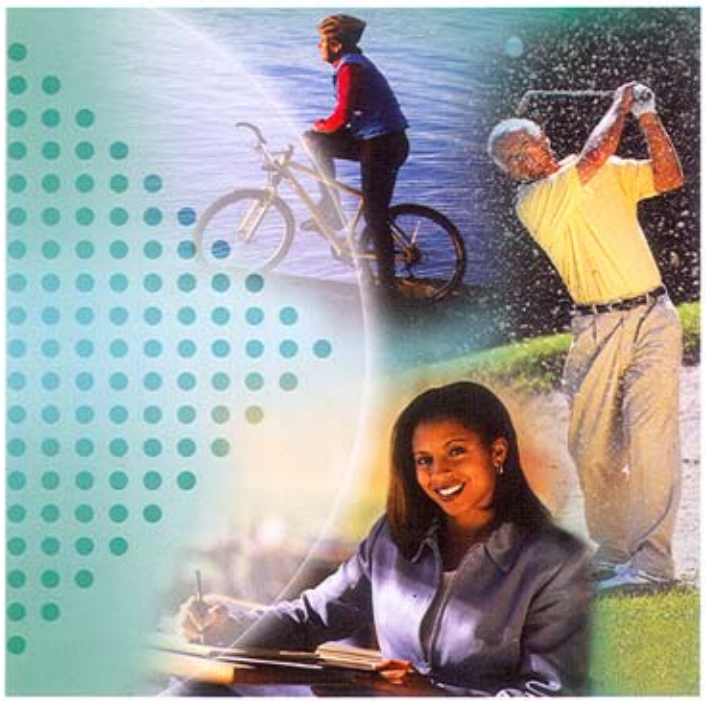
INTRALASE®
And
CUSTOM LASIK



All Laser, No Blade, Uniquely Safe and Precise, Predictably Better Vision

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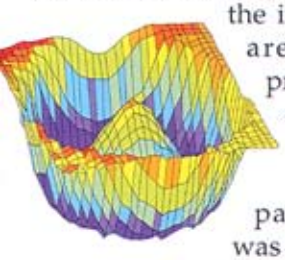
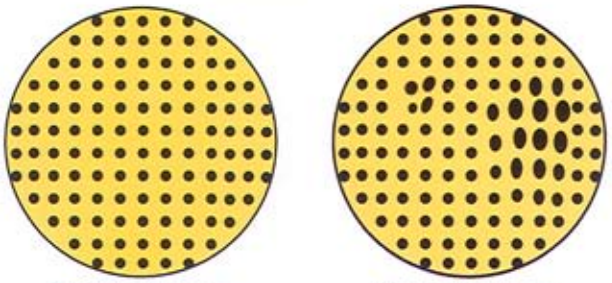
Wavefront Analysis

Using a sophisticated computer and mapping software, wavefront analysis essentially involves projecting a grid pattern into the eye and analyzing the integrity of its returned image for areas of displacement. As the projected image moves through the eye, it must pass through the cornea, the lens of the eye and be reflected back off the retina. If the pattern is returned exactly as it was sent, and in the predicted position, all aspects of the eye's refractive apparatus are functioning perfectly. However, if there is an aberration affecting refraction anywhere in the eye's visual system, it will show up in the returned image.



Simplified Simulated Analysis

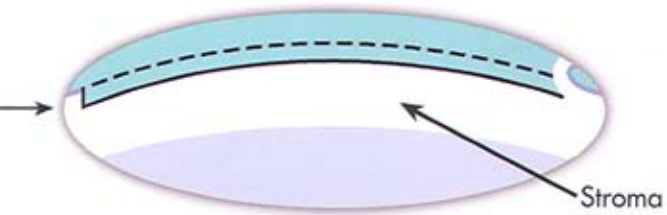


Projected Image

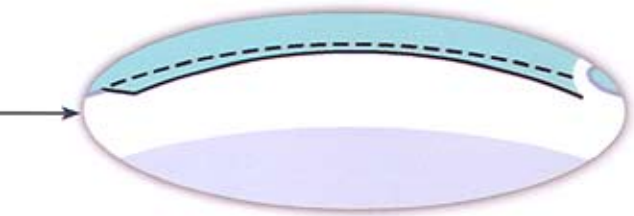
Reflected Image Showing Defects

Hundreds of points within the central visual zone are analyzed. If areas are found where the pattern is out of position, distorted, incomplete or fuzzy, specific correction can be targeted to that corresponding location on the surface of the cornea.

S a Microkeratome Blade



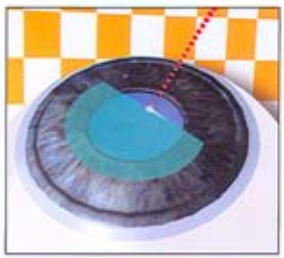
IntraLase® – *Flap thickness is uniform and the precision of the laser allows surgeons to accurately adjust the depth of cut. Patient to patient variations can be taken into account and matched to a more accurate Custom LASIK solution. Safety is improved and flap complications are minimized.*

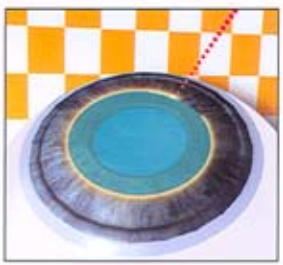


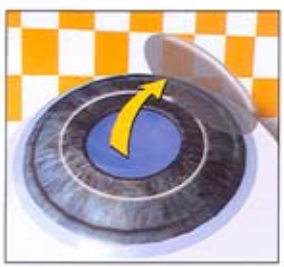
Microkeratome – *Flap thickness varies from edge to edge. Lack of consistency and precision increase the chance of flap complications and allows minimal adjustment for variations from one eye to another.*

The IntraLase® Custom Flap Creation Procedure

The First Step – The eye is numbed using eye drop anesthesia for painless surgery. Then, using an inside-out process, the IntraLase® laser beam passes through the cornea at 60,000 pulses per second and focuses inside the corneal stroma in an exact programmed location. There is no impact to the surrounding tissue. A tiny bubble of gas and water (2-3 microns) is created with each pulse.Thousands of these bubbles are created in precise locations within the cornea to create a raster pattern that defines the diameter, depth, hinge location and the side cut architecture of the flap. By stacking the bubbles at the edge, the flap is separated from the cornea and folded back out of the way.







Custom IntraLase® LASIK

Matching your Visual Fingerprint

Leading ophthalmic surgeons have combined two new technologies, IntraLase® flap creation and Custom LASIK, to create a vision correction procedure that is very safe, more precise and predictable. The new procedure combines the excellent vision correction characteristics of Custom LASIK with the added safety and predictability of the No Blade, IntraLase® technique. Advancing the first step in LASIK (flap creation) with IntraLase® dramatically improves predictability, reduces the risk of complication and makes LASIK available to an even wider range of patients.

Since the late 1970's when eye doctors first began to routinely treat nearsightedness, farsightedness and astigmatism with refractive surgery, the State-Of-The-Art has constantly improved. Now, as shown in one clinical study, 98% of those treated could see 20/20 **or better**. 100% of the patients were able to pass a driver's license test without corrective lenses and a full **70% were able to see better than 20/20**. Many patients report that both day and night vision improved compared to wearing glasses or contacts before their surgery.

Wavefront Technology

Until recently, laser vision correction was "one-size-fits-all." Using measurements developed for glasses or contacts, surgeons could only identify and correct "lower order aberrations" such as nearsightedness, farsightedness, and astigmatism. But just as no two people are the same, no two people share the same eye irregularities.

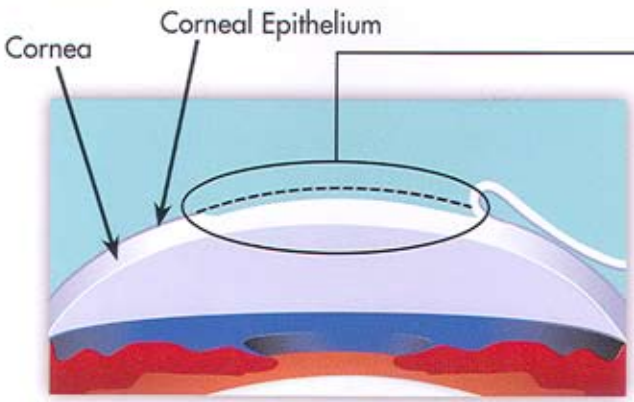
Human eyes have the potential of seeing 20/10 or better. However, most people can not see any better than 20/20 with or without corrective lenses due to subtle imperfections (higher order aberrations). Wavefront technology evolved from research by NASA to fix the imperfections of the Hubble Space Telescope, which was launched with faulty optics. NASA scientists spent millions of dollars to develop a way to measure and correct all of these imperfections—resulting in an image sharp enough to focus on galaxies light-years away!

Custom LASIK

Custom LASIK, using Wavefront technology, measures and then treats your eye's individual imperfections, including "higher order aberrations." The Wavefront information is a fingerprint of your eye, including each tiny imperfection, captured and used by the computer to guide the laser, precisely applying greater treatment where your eye needs more, and less where it needs less. Eyeglasses or contact lenses are only made to +/- 0.25 D of prescription and only correct for "lower order aberrations". Custom LASIK is more precise (25 times more accurate, within +/- 0.01 D) and corrects for both higher and lower order aberrations. As a result, many people after Custom LASIK (without glasses) have better vision than they had with their glasses before surgery.

IntraLase® All Laser Flap V

Creating the corneal flap is the first step in all LASIK surgery. Traditionally the microkeratome has been used by surgeons. This hand-held device with oscillating blades has created LASIK flaps with outcomes that have been considered good. It is now understood that LASIK surgery is safer by creating a more accurate flap.



IntraLase® has brought ultra-fast laser technology to the field of ophthalmology with the use of the femtosecond laser. It generates light pulses as short as one-quadrillionth of a second. This infrared laser creates today's most accurate corneal flaps.