



## Stuart R. Winthrop, M.D.

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### **What you should know about LASIK**

Thank you for choosing me to perform your LASIK procedure. The complexity of the LASIK procedure requires extensive surgeon skill and training. While the rate of complications is very low, this is where my training and experience will be most important. I want you to know that I specialized in cornea research, corneal surgery and disease at the Harvard University School of Medicine; I spent 15 years as an associate professor in the cornea department of UCLA's Jules Stein Eye Institute. Most importantly, I have been working with the excimer laser since 1992, and have performed thousands of LASIK procedures. I am completely prepared to ensure a successful outcome for you. Your success in meeting your pre-operative goals is of utmost importance to me. I want you to be able to say that having LASIK performed by Dr. Winthrop was one of the best decisions of your life.

As with all surgery, there is no guarantee of results with LASIK or any other type of refractive surgery. Although the success and satisfaction rate is extremely high, complications and/or side effects do occur in a small percentage of patients. You are considering this procedure because "nature" did not give you perfect vision. Similarly, surgeons, surgical equipment and procedures are not perfect. Thus, we cannot give you a "perfect eye". Our goal is to give you a much-improved eye, with better-uncorrected vision (without glasses or contacts) than you are presently experiencing. We do not promise results, but we can present statistics on your chances of improved vision, and promise to do the very best we possibly can with the most modern technology available today. Following surgery, you may need to wear glasses some of the time to fine tune your vision, such as for night driving or, in those over 40, for near vision due to the natural loss of accommodation (or "zoom").

#### ***FDA Approval***

The FDA has approved both the excimer laser and the microkeratome (the instrument that creates the flap). These are the two devices used to perform LASIK surgery. For many years the FDA has conducted clinical studies nationwide to investigate LASIK and to further expand the treatment parameters of the approved lasers. The current parameters are so wide that it is rare that a patient is not a candidate due to the prescription worn. Laser Vision Correction has been performed worldwide since 1989 and LASIK itself has been performed worldwide since 1991.



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### ***Post-operative Side Effects of LASIK***

**Pain.** During the procedure, LASIK is basically painless. Topical anesthetic drops provide excellent anesthesia. No injections are required. With LASIK, patients experience “pressure” when the suction ring is applied. This lasts for approximately 20 seconds. There is usually minimal pain following LASIK. The usual healing time for the corneal flap is 4 hours. During this 4-hour period, a few people will experience what I call a “bad contact day”: tears, burning or a foreign body sensation. You will be most comfortable during this period with your eyes closed.

**Light Sensitivity.** Your eyes may be somewhat light sensitive and you may experience a glare during the day and at night during the first few weeks after your procedure.

**Overcorrection.** You may experience a mild overcorrection initially after almost all refractive surgeries. This will usually diminish over the following weeks to months. A significant permanent overcorrection occurs in less than 1% of patients, and can be corrected with glasses, contact lenses, or retreatment with the excimer laser.

**Ghost Images and Double Vision for One Eye.** This may occur following LASIK. This is due to the surface of the cornea healing with a “wavy” configuration. This “wavy surface” can also give rise to distortion of images and a decrease in spectacle correctable vision. Most cases of surface waviness (irregular astigmatism) resolve within a year. However, if it does not, these symptoms can be diminished by the use of a gas permeable contact lens. While the lens is in place, the distortion and ghost image will not be noticeable. However, when the lens is removed, the distortion and ghost images will reappear. A very small number of patients may be required to wear gas permeable contact lenses full time following the performance of LASIK in order to achieve their very best vision. To date, after thousands of cases, we have not had one such case.

**Night Vision.** Halos around bright lights are very common initially following LASIK. Halos may last several weeks and generally diminish significantly by several months. A decrease in night vision quality (contrast) may be noticed.

**Dry Eye.** It is common for patients to experience dry eyes following LASIK. Generally dry eye symptoms clear up within the first few months following LASIK



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when appropriate measures are taken. Some patients experience a persistent dry eye that can be treated with a particular kind of artificial tear and punctal plugs.

**Subconjunctival Hemorrhages.** Small broken vessels on the white of the eye, due to the suction ring, are not uncommon. They do not cause a problem and clear within two weeks.

**Enhancement Procedures.** As with all refractive surgery, enhancements or touch-ups may be necessary following LASIK. An enhancement is required if the patient experiences undercorrection, regression, or induced astigmatism. The larger the prescription, the higher the enhancement rate. When astigmatism is combined with myopic correction, the need for enhancements is slightly increased. This is especially true with astigmatism corrections over 3.00 diopters. Occasionally, astigmatism will be created by the LASIK or laser procedure where none existed pre-operatively. In most (but not all) cases, this induced (regular) astigmatism can be reduced with a LASIK procedure. To date, my overall enhancement rate is 2%.

Generally, enhancements are considered when the spherical component and/or the astigmatic component of the refraction are greater than or equal to 0.75 diopter. For amounts less than that there can be too great a chance of overcorrection. Enhancements performed within 12 months of the original date of surgery are considered part of the original fee and there is no additional charge to the patient. Once again, you will undergo a cycloplegic exam to determine the degree of, and necessity for, an enhancement. Enhancements can be performed when 4-6 months have passed since the original LASIK.

**Infection.** This can be a serious complication, but fortunately is extremely rare in all refractive surgery. Bacteria and viruses can leave scars on the cornea. I will ask you to use antibiotic and anti-inflammatory eye drops after surgery. Following the specific directions, the incidence of infection will be less than 1 per 3,500 cases.

**Permanent Decrease in Vision.** The chance of reduced correctable (with glasses) vision (greater than 2 eye chart lines of vision) is 0.5-2.0%, with the risk being highest in the myopic corrections above -7.00 diopters. Corneal haze is very rare with LASIK. The chance of extreme or total loss of vision is exceedingly rare with LASIK. All refractive surgery involves some decrease in what is known as "contrast vision" – the ability to discern subtle shades of gray. Rarely is this a significant decrease. This is a qualitative measurement of vision. Clinically, some



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patients will notice a decrease in the quality of their night vision. Generally, this improves over a 2 year period.

**Complications During the Operation.** These are uncommon, and include the following: Inability to seat the suction ring and/or inadequate suction, incomplete microkeratome pass or irregular flap. Any one of these complications may prevent us from performing LASIK, or result in an inadequate flap. In those circumstances, the procedure would be rescheduled in 3 months. In the unusual case, this could result in astigmatism or inadequate correction. Even less common is creation of a “cap” (which requires suturing back in place), or loss of the cap (very rare). If the cap were lost, a partial or full-thickness corneal transplant would be required. Vision without glasses or contacts is generally poor following these procedures.

Possible laser-related complications include decentered ablation (the treatment area is decentered), or improper focus on the target device. These can cause undercorrection and astigmatism, which would require additional surgical correction, and quite possibly result in loss of best correctable visual acuity with the need to wear a gas permeable contact lens.

**Post-Operative Complications.** Post-operative complications are uncommon, and include: “Debris” under the flap, which usually is of no consequence, but in rare situations may have to be irrigated from underneath the flap; a dislocated flap or folds in the flap, which will need to be lifted and replaced; epithelial in-growth (growth of the corneal surface epithelium beneath the flap), which requires lifting the flap and removing the epithelium (note – it is usually quite easy for the surgeon to re-lift the flap for several months post-LASIK); “melting “ of the cornea from epithelial in-growth, which rarely occurs but can be a serious problem (the in-growth must be removed and may require suturing of the flap if it reoccurs); finally, corneal haze, significant overcorrection, and irregular astigmatism are possible but rare complications with LASIK.