

Climbing

No 213, June 15, 2002

Vision quest

Is LASIK eye surgery for climbers

— Mike Papciak
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What if you never had to hassle with your glasses or contact lenses again? No more worry about dropping your only pair of specs two days into a four-day wall. No more frames under your goggles, no more schlepping contact-cleaning solutions into the backcountry, no worries about a little sandstone grit in your contacts. Nothing to remove as you drift off to sleep staring at the stars. Perfect vision is the lure of LASIK.

What is LASIK?

LASIK (Laser In-Situ Keratomileusis) is a refractive (vision-correcting) surgical procedure. Using a device called a microkeratome, a surgeon cuts a very thin C-shaped flap on the outermost surface of the cornea. This flap is carefully held aside, and the surgeon uses an excimer laser (which reshapes tissue without burning or altering adjacent cells) to reform the inner layers of the cornea so that images can focus directly on the eye's retina. After the laser has done its work, the flap is smoothed back in place. The business with the flap of the cornea - while unsettling to think about - is LASIK's great advantage. When the flap is replaced, it bonds immediately with the underlying tissue and the healing process begins. Healing at a microscopic level occurs faster and more thoroughly than with some other types of refractive surgery, and recovery from the procedure is quicker because the outermost corneal tissue is unchanged. LASIK can correct most levels of nearsightedness (myopia) as well as farsightedness (hyperopia) and astigmatism (corneal ir-

regularity). FDA-approved in 1995, LASIK is now the most common refractive procedure in the world, though it's only one of several methods available. Radial Keratotomy (RK), in which blades are used to make tiny incisions in the cornea to correct its curvature, was widespread before laser technology emerged in the early 1990s, but is now rarely practiced. Other procedures that may offer advantages specific to your situation and are worth asking your eye doctor about include PRK, LASEK, LTK, and Intacs(tm). However, LASIK's large and growing record of successes continues to make it the most popular.

How risky is it?

I can hear you now: "Dude, that's, my vision. Don't want somebody cuttin' up my eyes." Like all surgical procedures, LASIK is not without risk. However, the numbers are overwhelmingly in your favor. Approximately 2 million laser vision-correction procedures have been performed in the United States alone. There are no reported cases of blindness - total loss of sight - as a result of the operation. Other serious, uncorrectable problems like corneal infection or permanently blurred vision are statistically rare. The percentage of patients who have problems or achieve 20/20 vision depend on the level of correction and the surgeon's experience. A surgeon who keeps careful track of patients' preconditions and outcomes can best inform a prospective patient about the probability of achieving a satisfactory result. Of a range of side effects that may affect a patient, the two most common are night-vision problems and dryness of the eyes. Type "LASIK" in any internet search engine and you'll find dozens of agenda-ridden home-made web sites from people who have had problems after refractive surgery with halos, starbursts, or other glare seen around strong light sources (like headlights or street lamps) at night. In many cases, these problems clear up as the eyes heal, disappearing completely after a month or two. Not always, though. Russ McBride, a rock climber and alpinist from Berkeley, California, had LASIK five years ago and enjoys

20/15 vision, but sees “annoying” starbursts at night. However McBride says if he could do it all over and knew he’d get the same result, he’d have LASIK again. “The benefits for me just far outweigh the disadvantages,” he says. “Skiing, climbing in snow, messing with your goggles - for me there’s just no comparison to dealing with glasses or contacts”. Three factors can be evaluated before surgery to estimate one’s chances of problems at night: the amount of correction (how bad your vision is), the width of your pupils (if your pupils dilate beyond the diameter of the zone of correction, you may see halos), and the thickness of your cornea. Your surgeon should be able to discuss each of these predictors with you and estimate your chances of night-vision problems. Another good index: Do you see halos or starbursts with contacts? If so, your chances of seeing them after LASIK may be higher. Dry eyes are another common side effect. Almost everyone’s eyes are dry to some degree following the procedure - usually for a few weeks but sometimes for as long as six months. Most patients find the relief offered by over-the-counter lubricating eyedrops sufficient, but if you have chronically dry eyes, discuss the likelihood of dryness being a longterm nuisance with your surgeon. Also worth considering is presbyopia, the condition for which people need reading glasses. Presbyopia is caused by the stiffening of the internal focusing structures of the eye (including the lens) and affects most people as they age. LASIK has no effect on these focusing structures, and therefore has no effect on presbyopia. Most people treated with LASIK will need reading glasses eventually, so it’s important to realize that the hype that sometimes accompanies LASIK - “no glasses for life” - isn’t quite accurate, unless you’re one of the few who never develop presbyopia. If the thought of reading glasses burns you out, consider monovision, where the surgeon deliberately leaves one of your eyes a little nearsighted, which helps that eye retain near-focusing ability as you age. The idea is that the brain can mesh the different inputs from your “distance” and “close-up” eyes, and deliver crisp vision up close and far away. However, monovision may not be effective for you. In some cases it may inhibit depth perception, or cause other brief moments of visual disruption, so you should discuss it with your surgeon carefully. Of special concern for climbers is the behavior of the corrected eye at altitude due to the decrease in atmospheric pressure. Most problems associated with altitude and refractive surgery concern climbers who had RK, not LASIK - including the infamous case of Beck Weathers, whose temporary blindness on Everest in 1996 nearly cost him his life. RK’s tiny, perpendicular incisions in the cornea don’t heal as well on a cellular level

Shopping FOR LASIK

- A LASIK candidate must be 18 years or older and have had prescription stability for at least one year.
- See a surgeon who gives a thorough exam, checking prescription stability, corneal thickness, pupil width with an infrared pupillometer, and corneal topography. Ideally, all your pre-operative measurements and follow-up will be with the surgeon, not with an assistant.
- Find a surgeon who keeps careful data on each patient and can analyze your preconditions and predict your outcome.
- Two thousand procedures is a good benchmark. If the surgeon has performed fewer than 2000, he or she is still on the learning curve for the tools. However, this learning curve levels off, meaning that a veteran of 10,000 procedures isn’t necessarily a better bet than someone who’s performed 3000.
- Some quick questions to ask when touring the facilities: Is the procedure room a sterile environment? Is the laser calibrated before each procedure? Are different keratome blades and gloves used for each eye?
- The best LASIK website, according to Dr. Faktorovich: The Council for Refractive Surgery Quality Assurance, www.usaeyes.org
- Who shouldn’t get LASIK? Those with extreme prescriptions: 12 diopters or more of nearsightedness, 6 diopters or more of farsightedness, and 5 diopters or more of astigmatism. Diabetes is a relative contraindication; check with your surgeon. If you fall into one of these categories, have hope - each year brings new advances.

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as the incisions used in laser procedures. Combined with the corneal swelling that occurs naturally at high altitude, the microscopic gaps in the post-RK cornea can cause vision problems. LASIK virtually eliminates this problem, largely due to the type and direction of incision, and the thoroughness with which it heals. Medical literature does report climbers having a temporary return of nearsightedness if they ventured above 16,000 feet within a year of having LASIK, but these are rare. Reassuringly, the climbers’ vision returned to normal when they descended. Many more cases demonstrate climbers doing well at altitude after LASIK, including Nancy Feagin, who summited Everest in spring 2001 after having LASIK in 1998. “No problems whatsoever. It was great!” she says. The best advice seems to be: have LASIK well in advance of your next trip to high altitude - preferably one year ahead to ensure complete healing.

The experience

Moderately nearsighted, I'd fantasized off and on about vision-correction surgery since a climbing buddy had a good result with RK in the 1980s, but I never worked up the nerve. Then last summer three coworkers, one of whom is a climber, had LASIK from the same doctor, Ella Faktorovich, a highly regarded eye surgeon at the Pacific Vision Institute in San Francisco, California. All three friends waltzed back into work a day later seeing 20/20 or better, with no lasting adverse effects. The climber took off for a six-week roadtrip shortly thereafter, from which she sent tantalizing emails about life without glasses. I signed up for a free consultation. After an overview of the procedure with an assistant, I sat down with Dr. Faktorovich - who turns away one in five prospective patients for medical reasons - for a corneal mapping to rule out irregularities that would preempt surgery. Three days before the scheduled procedure, I came back in for an extensive series of tests and measurements. By this time I was nervous enough that I almost hoped I'd be disqualified, but alas, I sailed through the tests and was told to report back wearing comfortable clothes two days later. The procedure itself turned out to be trivial. The staff greeted me with a Valium, put a hair cap on me, and swabbed my face with antiseptic. They led me into



the procedure suite, where Dr. Faktorovich and her assistants were waiting, in full scrubs, masks, and gloves, and laid me on the table. One eye was propped open so I couldn't blink (a little odd but not painful) and doused with drops, including topical anesthetic and antibiotics. After my eyeball was stabilized with a small suction device, I heard the phrase that had haunted my nightmares for three weeks: "Keratome, please." Something that looked a little like a speedometer needle whirred around the periphery of my vision, and the flap was cut, painlessly. Surreal doesn't begin to describe what happened next: Dr. Faktorovich moved the flap aside - remember, you're not feeling any of this, just watching it through a Valium haze - and the laser pumped for a moment (you don't see any sci-fi death rays, just a small green dot that you focus on). Then I saw Dr. Faktorovich use a soft little brush to smooth the flap back in place. She set a three-minute timer and paused, just keeping an eye on my eye, and kept the reassurances coming, like a trusty belayer talking me through a tricky crux. After three minutes, she switched over and did the other eye. After I'd spent about eight minutes total on my back - the actual procedure took only about 30 seconds per eye - an assistant led me away. I chilled out on a cot for half an hour, eyes closed. Dr. Faktorovich took a last good look at both eyes, then taped clear shields over both and sent me home. After four hours with eyes closed per doctor's orders, I blinked them open and took a look around. 15 years of glasses gone, just like that! The morning after the procedure I could read the 20/15 line on the eye doctor's chart. Now six months out, I have 20/15 vision in one eye, 20/20 in the other. I suffered no adverse side effects beyond dryness that abated in one month. With a few exceptions like long flights or 10-hour workdays at the computer, I don't need to use lubricating drops, and I haven't had any night-vision problems. Climbing without glasses is emancipating. I no longer worry about losing my specs five pitches up. I'd forgotten what it was like to have great peripheral vision and unlike wearing contacts, there's no worry about chalk and dust in the eyes. Best of all is the "freedom factor," setting off for a day or weekend of climbing without stressing about backups, straps, or scratches. And that's just warm-weather rock climbing: Alpinists, wall climbers, or anyone whose sport takes them into wet and difficult conditions in the backcountry may find LASIK even more liberating.

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www.CLIMBING.com June 15, 2002