

## LVC Blasts into Orbit



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Poor eyesight has long been the bugaboo of many aspiring astronauts, disqualifying more would-be space travelers than any other physical requirement since the beginning of the U.S. astronaut program in 1959. Now, nearly a half-century after the program began, NASA is loosening its vision standards, allowing more men and women to reach for dreams of flying into space.

As it kicked off recruitment of the 2009 candidate class, the National Aeronautics and Space Administration said for the first time it will consider applicants who have undergone two common types of vision-correction surgery: laser-assisted in situ keratomileusis, known as Lasik; and photorefractive keratectomy, or PRK. It will also slightly relax requirements for uncorrected vision to allow more contenders who wear glasses or contact lenses.

“The NASA endorsement of Lasik and PRK is a big thing,” says Smith L. Johnston, a NASA physician who oversees astronauts’ medical standards. Dr. Johnston says the reversal will

open the door to many “sharp people” who in the past would have been ruled out. NASA allows some people who wear glasses or contacts to be astronauts — but only if their vision needs just minor correction, so that they can still function without them if necessary. Under the change, which follows similar moves by the Navy and Air Force regarding eyesight standards for pilots, people whose uncorrected vision would otherwise disqualify them can get surgery.

NASA’s endorsement of refractive surgery is a bit of good news for the vision-correction field itself, whose growth in the U.S. has slowed in recent years despite a number of technology improvements. David Harmon, president of Market Scope LLC, an industry research firm in Manchester, Mo., expects about 1.4 million procedures in the U.S. this year, a level that falls a tad short of the peak year of 2000 and represents only a 1% growth rate over 2006.

NASA astronaut applicants need a bachelor’s degree in engineering, science or math, along

with three years of relevant professional experience. NASA said it is accepting applications through July 1, with final selections to be announced early in 2009. Twelve to 30 people are typically selected from a pool of several thousand applicants. But the space program has exacting vision standards and failure to meet them has historically been “the No. 1 disqualifier” for astronauts, Dr. Johnston said.

Dave Gianakos, a 53-year-old pilot for Northwest Airlines, still remembers feeling “crushed” when his eye doctor told him at age 7 that the vision in his left eye was “less than 20-20.” The slight myopia disqualified him from being a Navy pilot, he says. If both NASA and the Navy had eased their vision

*“NASA’s decision reflects more than a decade of research by military eye doctors, especially in the Navy.”*

requirements 30 years ago, he says, he might have “gone the military route, and possibly become an astronaut.” That path has been followed by many astronauts who started out as military pilots. Commercial airline pilots are generally allowed to wear glasses, contacts or have vision-correction surgery.

NASA’s decision reflects more than a decade of research by military eye doctors, especially in the Navy.

Efforts to find a safe and reliable vision-improvement procedure began in the early 1990s after Navy SEALs complained about the hassles of glasses and contact lenses, which many wore despite having very good

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uncorrected vision. The Department of Defense wanted to improve retention of highly trained personnel, such as pilots, whose vision needs to stay sharp as they age. Private doctors say the Navy's refractive surgery research is unusually authoritative because of its independence from commercial companies and industry bias.

In May, the Air Force changed its policy to allow people applying for aviation jobs to have had Lasik surgery. That follows a similar move by the Navy last year. The Air Force said its decision was based on studies showing "little to no effect" on treated eyes when they were subjected to the wind blast of aircraft ejection or exposure to high altitude.



NASA also says it worried about adverse effects of astronauts' exposure to pressure changes during shuttle liftoffs and extravehicular space walks.

These concerns focused on the first step of Lasik, in which a surgeon uses either a hand-held device or a laser to create a flap in the cornea. The flap is lifted and folded back before the underlying cornea is reshaped with a different type of laser.

Doctors have feared that extreme environments, such as those found underwater or in space, could cause flap dislocations, possibly leading to a catastrophic vision loss.

Navy research has found that the three-year risk for such dislocations is extremely small, about 1 in 9,000.

Such worries were well-founded, however. People who had an early type of vision-correction surgery — RK, or radial keratotomy — can suffer alarming corneal changes at high altitude. Military doctors documented the problems in studies done on RK patients on Pike's Peak in Colorado in the early 1990s. The findings helped to explain the experience of a renowned mountain climber and RK patient, Beck Weathers, whose eyesight failure on Mount Everest was described in the 1998 book, "Into Thin Air."

The same Pike's Peak studies, however, found no such problems with PRK, a procedure that uses a laser to reshape the cornea without cutting a corneal flap. Further studies validated the safety and effectiveness of PRK, which the Navy approved for aviators in 2004. But the surgery can be painful [Ed. Note: Focus mitigates discomfort via a strict regimen of drops and post-op care] and the minimum recovery time for pilots is about three months, a long layoff. By contrast, Lasik requires a much shorter recovery time and is virtually painless.

*"NASA endorsement of Lasik and PRK is a big thing."*

These advantages allowed Lasik in the late 1990s to quickly surpass PRK, which received Food and Drug Administration approval in 1995. But human tests showed that visual outcomes for Lasik patients weren't as good as those for PRK, says Steven Schallhorn, an ophthalmologist who oversaw the Navy's refractive surgery program before retiring earlier this year to go into private practice in San Diego...

...NASA [w]as the last frontier. No treated astronaut has ever flown in space. But that could change quickly now that the agency has rescinded its opposition. At least one astronaut requested surgery — and was denied — before the change.

*Reprinted with permission from the Wall Street Journal* ■

## FAST FACT

### What is Wavefront?

Originally developed for use in high-powered telescopes to reduce distortions when viewing distant objects, Wavefront ("CustomVue") is laser vision correction that employs a diagnostic laser system that analyses the optical errors in the eye.

Much like a fingerprint, each person's visual error is unique and can now be captured through the use of a WaveScan System. The information is digitally recorded and transferred to the laser, making a Wavefront procedure customized to the specific refractive errors of the individual.

Wavefront means that ophthalmologists can correct aberrations, or imperfections, of the eye that previously were not measured, offering the potential to improve vision beyond correction attained with either contacts or glasses.

## All About Safety

Safety should be a patient's number one concern when considering any procedure involving the eye.

Focus incorporates safety in all aspects of LVC — our surgeons' technique, the technology we use, and aftercare highlighted by our Lifetime Commitment.

Focus's Standard of Care is Wavefront — it produces fewer complications than other procedures and leverages the most advanced technology available while being minimally invasive to the structure of the eye.

## KINGSTON UPDATE

### One Good Turn

*"For a community to be whole and healthy, it must be based on people's love and concern for each other."*

Those words from Henrik Ibsen make me think that the 19<sup>th</sup> century Norwegian playwright would have liked Kingston. This is a special spot; a place that is part big city and part small town; a community that cares. As such, whether you are running a gas station, law practice, theatre, or healthcare clinic, there is a responsibility to be involved; to give a little back.

At Focus, we try to do our part and take the wheel when appropriate (Ibsen also said, "A community is like a ship; everyone ought to be prepared to take the helm.") and consider any accolades we receive to be icing atop the proverbial cake.

Focus completed its 4<sup>th</sup> year of walking 5km and sponsoring "The Child Development Centre" here in HDH. We were thrilled when we recently won 1<sup>st</sup> place in the Cities in Bloom contest in their category. And Focus Eye also secured Gold Status once again in the *Kingston This Week* Reader's Choice awards.

I'd like to extend a sincere thanks to our patients who spread the word about Laser Vision Correction and their experiences. We feel that we have become a part of their families as we treat many members from the same family, from moms, dads, brothers, sisters, sons and daughters. And we understand that a good word is the greatest compliment we can receive.

But good words don't count for nearly as much as good actions. As old Henrik Ibsen also said: "A thousand words will not leave so deep an impression as one deed."



Sincerely,  
Michelle Owen  
Manager, Focus Eye Centre  
Kingston



Sara Harrison

# Seeing the world with new eyes

By Sara Harrison

**M**arcel Proust once wrote that “The real voyage of discovery consists not in seeking new landscapes but in hav-

ing new eyes.” I can relate. Ever since I was a child, I dreamed of having a pair of new eyes.

I hated wearing glasses but I hated not being able to see well. Kids called me “Four Eyes” if I wore them, and if I didn’t wear them, people called me “Sara Squinty.” Finally, my eye doctor let me try contact lenses, which in 1974 were fairly new, especially for children. Problem solved — I was an instant object of curiosity and respect in the school yard. Instead of calling me names, kids gathered to see me repeatedly remove and reinsert my little greenish lenses, over and over and over.

Over the last 33 years, however, the thrill factor of the contacts wore off considerably. They were always a bit annoying. For example, I frequently lost lenses in the deceptive, neon green shag carpeting of my childhood bedroom. Such accidents were my parents’ problem, who shelled out hundreds replacing the little lost lenses, probably wondering how such a tiny piece of plastic could cost as much as a family vacation.

When we did go on family camping trips, it was hard to manage contact lenses; on canoe trips, it was even harder. I took a lot of these trips; thus, there were many contact lens casualties. You need a sterile bathroom environment for contacts, and the wilderness lacks such amenities. Not only did the contacts get dirty and uncomfortable during camping, the lenses floated out of my eyes while I was swimming. The costs really added up. Finally, an insurance program was offered to my parents by the optometrist. We got our money’s worth out of that plan, indeed.

As an adult, contacts still annoyed me. The problem was the discomfort, even with the development of gas-permeable lenses which allow more oxygen to the eye surface. Further, I became allergic to the preservatives used in almost all contact solutions. I still owned glasses, which were hideous, thick, stop-sign models that I wore when I could not be seen in public or to work, when the contacts became intolerable. Yet, the embarrassment of wearing glasses was nearly as bad as the discomfort of wearing contacts.

Recently, it was time to end the insanity, for once and for all. I didn’t care what it cost, or

if it hurt to get it done. Desperate, I had an initial examination for surgical vision correction at Focus Eye Centre in Kingston’s Hotel Dieu Hospital. Despite the poorness of my vision, the consultant explained that my eyes could be corrected and I wouldn’t need glasses if I opted for monovision correction. That meant that they would use a laser to shape one eye’s vision for close reading, and one for distant sight. Feeling cross-eyed for a while seemed a small penalty to pay, so I went ahead.

That’s how, over the summer, I finally became a regular, sighted person.

On the day of surgery, my accompanying guests viewed the surgery on a television screen, but it’s a good thing they didn’t bring popcorn. After freezing my entire eye, the doctor spent only a total of 40 seconds correcting one eye and 45 seconds on the other, using a computer generated map of my eyes that guided the laser. The whole procedure was the length of an average commercial break between TV shows.

During it, I felt nothing except a little pressure against my eyes. Afterwards, I could see all the exquisite details around me for the first time in my life. I wondered what other miracles of modern medicine would become commonplace in the future: maybe the laser-doctoring techniques shown on Star-Trek were not that far-fetched after all.

While my new eyes were extremely sensitive to light, a temporary effect lessened by special sunglasses, the healing process for my eye surface was quite uncomfortable during the first few days. Having healed, though, I see as well as I did with glasses and without the discomfort of contacts. Not only can I work for more hours at my computer without eye strain, I can do adventurous things like scuba-diving or even skydive without having to worry if I will lose something or be able to see anything. All these things are worth a lot to me in terms of quality of life.

But seeing my loved ones’ faces and the world clearly—with new eyes—that’s priceless. ■

## QUESTIONS & ANSWERS

### A ‘Pleasant Experience’

Pavel (Paul) Brun, 29, is a Software Engineer in the Professional Services — Custom Applications Development department of Mitel Corporation. He spends long hours in front of the computer screen but when his days finally draw to a close, he likes to relax with a competitive game of Ultimate, a leisurely swim, or a few hours of downhill skiing.

An active guy, Paul is not unlike many others who long thought about laser vision correction before finally visiting Focus. Today, more than a year after his Wavefront procedure, Paul tells *In Focus* about his fear of lasers, a laid-back recovery, and the 20/15 vision he now enjoys.



Paul Brun

**Q. Did you have any trepidation about laser vision correction?**

**A.** Of course, I was a little nervous and anxious about the procedure. We were talking about a laser that will be used on my eyes... so yeah... I was nervous.

**Q. Why was LVC attractive to you? And in what aspects of your life did you hope to see improvement?**

**A.** Being able to wake up in the morning and seeing the clock clearly, being able to enjoy swimming without worrying that my contacts would slip out, and not having to carry extra weight in my travel bags when I went on business trips. That is why surgery was attractive.

**Q. Tell us why you opted for Wavefront?**

**A.** I had a Wavefront PRK procedure because it was more a precise procedure. I also thought PRK was safer than LASIK surgery where an incision is made.

**Q. How was your recovery period?**

**A.** The recovery period was a pleasant experience. It took a little while to get used to putting drops in my eyes, which was no big deal. It was actually nice to be able to relax for four days and not have to worry about anything except eating, sleeping and post-op procedures — nothing more, nothing less.

**Q. Have you recommended LVC or Focus?**

**A.** Oh yes.

**Q. What is your current level of vision?**

**A.** 20/15.

**Q. Was the price worth the result?**

**A.** Definitely, the return on investment is priceless. I was hesitant after hearing the cost of the procedure, but I have no regrets. None.

**Q. Any other comments or thoughts?**

**A.** I would like to thank the staff for their support. It is not an easy decision to make, and their kindness made all the difference. ■

## Employers use eyecare to show *they* care

(Ottawa) — An increasing number of corporations and labour unions have placed themselves in the vanguard of health benefits by offering coverage for those workers seeking laser vision correction.

"It's a progressive step for organizations that are serious about helping their people enjoy life — be it at work or at play," says Nancy Bast, Patient

Services Coordinator with Focus Eye Centre. "Companies are recognizing the long-term cost-savings involved with laser vision correction."

A sampling of organizations offering LVC coverage in Canada as part of an employee benefits packages are Bell Canada which offers \$1000 toward "elective procedures" via Manulife; the Electrical Safety Authority which earmarks \$3000 through Great West Life; and PC maker Dell, which offers its employees access to a Health Spending Account, funds from which can help staffers rid themselves of glasses. Likewise, the Ontario United Steel Workers and Local 71 Plumbers Union unions extend coverage for LVC.

Meanwhile, in the United States, where, according to the Vision Council of America, more than a third of Americans using corrective eyewear are considering having laser eye surgery to improve or correct their vision, Ameritas Life has introduced LASIK Advantage<sup>SM</sup>, an innovative laser vision correction benefit option. LASIK Advantage was available to customers of the Lincoln, Nebraska-based insurance provider as of June 1.

Sometimes, however, getting coverage for laser vision correction depends on an employee's resourcefulness when investigating the scope of their benefits package.

"Many plans do not reference laser vision correction, but upon further investigation and digging prospective patients realize that a portion [of their benefits dollars] can be put towards LVC," says Bast. "It is definitely in a patient's best interest to look into their insurance coverage." ■

## Surgery is increasingly precise

By Shari Rudavsky

(Indianapolis) — Improvements in laser eye surgery have led to safer and better procedures. Now, doctors can provide treatments that are almost as individual as fingerprints, experts say.

The surgery aims to correct the shape of a person's cornea, which, along with the eye's natural lens, focuses light to create an image on the retina. The surgeon uses the laser to remove minuscule amounts of corneal tissue.

Doctors can now sculpt the cornea so that it refracts images near-perfectly.

"Consider it as if you were able to buy shoes," said Dr. Earl Lanter of Lanter Eyecare and Laser Surgery. "Congratulations. You can now buy shoes to the nearest tenth of a size."

About a decade ago, LASIK surgery — in which surgeons cut a flap in the cornea to access the tissue on which they work — represented the latest procedure. The past 10 years, however, have seen doctors hone not just that surgery, but also Photorefractive Keratectomy (or PRK), the method that preceded it.

PRK erases one of the few rare risks associated with LASIK, the possibility that problems, such as an infection, can develop under the flap, says Dr. Wayne Bizer, a clinical spokesman for the American Academy of Ophthalmology. ■

Source: *The Indianapolis Star*

## 'For the first time in 20 years I have eyelids'

(Ottawa) — In only a few short months Everest SurgiCentre is getting rave reviews from patients for the Eyelid Rejuvenation (Blepharoplasty) procedures being performed by oculoplastic specialist Dr. Kevin Smith.

"I am very fortunate to have found Dr. Smith," says Janet Page, 63, who had her upper eyelids treated at Everest this past July. "He made me feel very comfortable throughout the procedure and I am thrilled with the results," adds the Nepean woman, whose lids were dropping so much that she looked "tired, even drunk" in some photographs.




Dr. Smith



Blepharoplasty was just the tonic. The procedure — performed by Dr. Smith with local anesthesia in as few as 45 minutes — rejuvenates puffy, sagging or tired-looking eyes by removing excess fat, skin and muscle from the upper and lower eyelids. It may be done for cosmetic reasons or to improve sight by lifting droopy eyelids out of the patient's field of vision.

"I was not trying to look 23 again. I am not," says Page. "I am a 63-year-old grandmother to six children." But that didn't mean she was without options when it came to improving the appearance of her eyes.

Page had been considering Eyelid Rejuvenation for a while, and had watched as a good friend underwent the procedure in Vancouver. Then she spotted a newspaper ad that spurred her to call Focus Eye and make an appointment with Dr. Smith for a consultation. Within weeks she was treated and on route to a speedy recovery that involved minimal bruising as well as a visit from two of her grandchildren. It was just a week after her procedure, but the kids "didn't notice a thing".

Page explains that she doesn't have a startled look. Instead, she says, "For the first time in 20 years, I have eyelids." ■



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