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FOCUS EYE CENTRE NEWSLETTER — SPRING 2005

LVC in the Mainstream

After more than a decade of great results, laser vision correction has become North America's most popular elective procedure.

Hit television shows like *Extreme Makeover* and *The Swan* have dramatically underscored society's embrace of elective surgery, including the most popular form of mainstream elective surgery: laser vision correction (LVC).

High profile athletes like Tiger Woods and Mike Weir have benefited from LVC,

"LVC isn't just surgery for the stars... it's now just something that people do."

as well as Hollywood headliners such as Courtney Cox-Arquette, Nicole Kidman and Drew Carey (he still wears glasses for 'the look'). But LVC is not just surgery for the stars anymore; chances are that you know of someone — a co-worker, close friend, or family member — who has undergone what is known as 'refractive surgery'.

Demand for LVC soared in the 1990s, with the number of procedures in the U.S. peaking in 2000 at 1.42 million, effectively making it America's most common form of elective surgery. A

boom in LVC hit Canada that same year and saw clinics attracting patients from Canada, the U.S. and abroad. The numbers in the North American market remained steady for the next few years until recently, when the industry entered a mini boom period, due in large measure to the introduction of Wavefront technology (see sidebar, *Wavefront at the Forefront*).

Considered the biggest breakthrough in LVC since the invention of the laser itself, Wavefront is a diagnostic technique that allows for a detailed and personalized mapping of the imperfections in the eye. Much like a fingerprint, each person's visual error is unique and can now be captured and mapped using a WaveScan system. The information is then digitally recorded and transferred to the laser, allowing the ensuing procedure to be customized according to the specific refractive errors of the patient.

The results posted since Wavefront was introduced at Focus three years ago have been impressive. Most people get a post-operative level of vision that is equal to what they had with glasses or contacts, and a significant number of individuals are achieving a level of vision that exceeds the best corrected vision they enjoyed before their LVC procedure.

"The majority of the patients at Focus who choose a Wavefront procedure are getting outcomes that result in *better* than 20/20 vision," says Dr. David Edmison, Medical Director at Focus Eye Centre. "The overall results we are seeing have been nothing short of excellent."

In an interview for a European magazine, vision science researcher Dr. Raymond Applegate — who has been involved with Wavefront technology since its inception — equates the improve-

ment in quality of vision to "driving on a dark rainy night and being able to see someone walking along in black t-shirt and blue jeans."

Wavefront has certainly been instrumental in LVC's move into the mainstream, but the reasons for the popularity of LVC are actually as plentiful as the 10 million who've had the procedure. The most common answers to "Why did you have laser vision correction?" fall into one of three categories: safety, effectiveness, and duration of the procedure. ("It was the easiest thing I've ever done," Cox-Arquette told *Los Angeles Magazine*, referring to a procedure that was over faster than an episode of *Friends*.)

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Wavefront at the Forefront

By Pippa Wysong

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Custom made lenses brought to you in the blink of an eye. Sound futuristic? Look no further than the emerging Wavefront technology.

This technology is taking the optical world by storm and promises to make huge inroads in eye care in the very near future.

Wavefront provides a map of how light travels in your eye, and determines your eye glass or contact lens prescription 25 times more accurately than traditional methods. Here's how it works: Light is beamed into your eye, goes back to the retina, then bounces back through the eye onto a detector. This detector shows how well your eyes focus light rays.

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You Go First

The experience of family or friends can make LVC a real option. (It can also ease the strain on a vision-impaired relationship!)

Rob Johnson laughingly admits that his wife “made him do it”.

Barbara, 56, is very pleased with the results of laser vision correction (LVC) at Focus, and her 57-year-old husband gained confidence from this experience. “There was some joking at my expense about ‘sending Barb in first’ to see if it works,” says Rob with a laugh, “but now I wish I’d done it 20 years ago!”

“Rob was there to watch the entire, short operation,” says Barbara of a dutiful partner who accompanied her to all appointments and was present during the procedure.

This primary research proved invaluable because it enhanced Rob’s familiarity and comfort with the realities of LVC. A retiree from Bell Canada who now runs a business consulting firm in Ottawa, Rob supplemented this first-hand knowledge with ‘Net searches, and was admittedly impressed by the praise pro athletes have heaped on LVC (“If Tiger Woods had it done, then it must be okay,” he says).

Meantime, he realized that his eyesight and ability to play sports were deteriorating with equal and disturbing speed.

“I could not see where my golf shots were going... I had trouble seeing moguls downhill skiing... I had trouble with scopes and iron sights on my rifles... [and] I couldn’t see close and far at the same time on a billiards table.”

By December of 2004, he had seen — and had — enough. He scheduled a Wavefront PRK procedure for that very week.

Rob’s strategic planning and business modeling company, Solutions North, takes him from the Canadian Arctic to California. LVC surgery required him to restrict his air travel for a period, which was an obstacle, but when the right time frame presented itself, things moved quickly and efficiently.

“I called [Focus] for an initial appointment on a Monday, had the appointment on Wednesday of the same week, the Wavefront diagnosis on Thursday, and surgery on Friday.”

The Focus team “was better than I could have imagined. I deal with executives and professional people in my business. The folks at Focus... really care about me. They are top-notch at what they do.”

As for the procedure and subsequent appointments, he says, “They were fast and not stressful. That means a lot to me, as I am quite

sensitive about anything to do with my eyes.”

He recalls, “The surgery itself went very well” and the recovery time and process “was not a very big deal.”

When asked how the decision has impacted his life, Rob delivers a decisive reply: “It’s a big difference! There is a sense of freedom about not having to wear glasses that is better than I had imagined. I wake up being able to see everything. During the winter I didn’t play golf, but my pool game improved, and so has my shooting on the range. And friends and acquaintances have remarked that I look different and better — younger.”

“I am completely happy with the results.”

As for his wife’s journey to clear vision, Barbara explains that, “Glasses had been an unwelcome part of my life for more than 18 years, beginning with reading glasses and progressing to bifocals.”

But, until recently, she had not considered laser surgery for a number of reasons: “As a special education teacher, I knew that taking time off for elective surgery was not an op-

“There were no more bifocals, prescription sunglasses and constantly changing from one to the other.”

tion during the school year. And summers flew by in a blur of summer courses, children home from university and time at our cottage.” There was also, she says, “a fear of jeopardizing the sight that I still had.” For someone that loves hands-on activities, “that was a big deterrent,” she admits.

“Then, she retired and everything changed. On a check up with her eye doctor, Barbara asked about the possibility of wearing contacts. Her doctor suggested laser surgery “might be another, more liberating option”. Barbara’s her brother-in-law had already gone through the process, and she started seriously considering the benefits: “No more frosty glasses half way down a ski slope, losing my glasses on a canoe trip or trying to adjust the angle of my bifocals in order to hit a golf ball.”

“There would be no more bifocals, prescription sunglasses and constantly changing from one to the other,” she adds, noting that hav-



Rob and Barbara Johnson

ing LVC “would also ease the strain on my long-suffering husband” who was often called upon to discover “where I had last set [my glasses] down.”

Finally, Barbara admits to a bit of vanity: “I hated the look of [glasses] on my face [so] when Rob offered the procedure as a retirement gift, I jumped at the chance.”

“Was I nervous? Initially yes, but I had little time to worry as the surgery was scheduled soon after my first appointment,” she says. “As well, everyone that I talked to at [Focus] was willing to answer all my questions. Many had experienced the procedure first-hand.”

“Not only was detailed, written information provided but the process, as well as normal reactions, were well described to me.”

On the day of the surgery, Barbara was at ease. “All the while, a calm voice told me exactly what was being done and how long

it would take,” she recalls of the standard LASIK procedure she had in October of 2003.

Recovery during the next few days held no surprises — “It was just as described,” she says. “And follow-up appointments over the next few days assured me that all was well.” (Barbara had a re-treatment at six months, and “that too went just as smoothly”.)

So how has the decision impacted her life?

“Where do I begin? Almost immediately I could see better than I had with glasses. It took several months to stop reaching for them on waking in the morning. And I constantly felt that I’d forgotten something as I left the house,” she says, “however, I now enjoy all the sewing, gardening, camping, kayaking, skiing, biking, etc. that retired life affords you... All without glasses!”

“I’m now a totally free woman,” says Barbara. “But my golf game hasn’t improved.”

All in the Family

After a healthy wait, the daughter of Focus Eye's staff optometrist in Kingston has Wavefront PRK.

There is perhaps no greater testament to the efficacy of laser vision correction (LVC) than to have an optometrist recommend the procedure. When that optometrist happens to be your father, it's almost impossible to ignore the advice.

Such is the case with Sarah Kogon.

The 25-year-old had spent the majority of her life looking at the world through thin layers of plastic. The hassles started when she was 11 and needed contact lenses for gymnastics, and continued during a year abroad when, as a Masters student at the University of Wales, she split her time between international politics and rugby.

"I couldn't even lie in bed and read without contacts," groans Sarah.

Her mood quickly turns upbeat when asked about her decision to have laser vision correction (LVC). She explains that the procedure has become so commonplace that it wasn't a question of 'why' so much as 'why not'. "[Laser vision correction] has been around so long that it's not the new thing anymore," she says. "And people are so comfortable with it — there was really no reason to *not* have the procedure."

It helped that her father, Dr. David Kogon, is an optometrist at the Focus Eye clinic in Kingston's Hotel Dieu Hospital.

Even so, her surgery was delayed. (It was a healthy wait that stemmed from a fluctuating prescription.) After returning from Wales, Sarah's prescription was holding steady at minus five and her procedure was scheduled. "I had been waiting for the surgery for a long time," says Sarah, whose eagerness was fueled by the positive experiences of others. "Everybody who has had it done says great things about it."

Notwithstanding Focus's strong clinical results, her father says the deciding factor was less than scientific: "She never liked herself in glasses. She was just fed up."

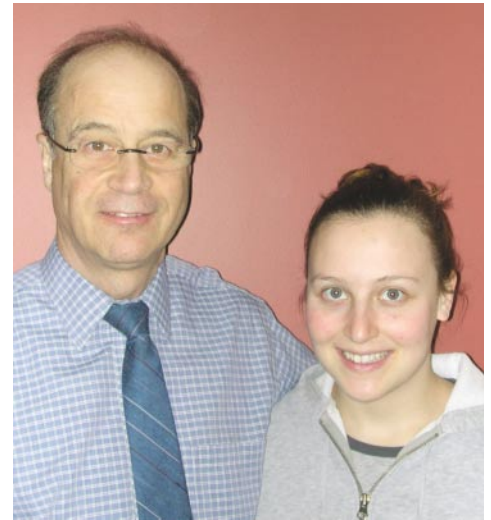
Sarah scheduled a procedure with Dr. John Cheung for November 2004. Luckily, by that time, Wavefront procedures had become the standard of care at Focus. So, after taking into account a very active lifestyle and conferring with Dr. Cheung, she opted for Wavefront PRK.

These days, she is extremely pleased with her outcome, as well as the prospects of a summer spent enjoying herself rather than wrestling

"Sarah never liked herself in glasses. She was just fed up."

with lenses and solutions. "It will be great to open my eyes under water and go camping or sleep over at a friend's place without having to worry about putting dirty fingers into my eyes to get my contacts out."

She has "no regrets". Two weeks after her procedure, Sarah was seeing at 80% to 90% of her best corrected visual acuity — and, these days, she can read every line of the eye chart in her father's office. ■



Focus's Dr. David Kogon with Sarah Kogon

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LVC in the Mainstream

Then there are the life-transforming results, including life without the hassles and costs of glasses and/or contact lenses. "I just wish I'd done it sooner," says Rob Johnson (see *Patient Profile*), who recently had a Wavefront PRK procedure at Focus.

The Ottawa resident was able to "rationalize fear away" after his wife, Barbara, underwent her own procedure at Focus. "Barb was very happy about how her surgery had worked out," says Rob.

Comments like this underscore the fact that we live in an exciting new era in ophthalmology — a time during which proven technology is providing quick, safe and effective results each year for thousands of LVC patients. Perhaps the greatest testament to the growing success and widespread adoption of LVC, comes — in an understated way — from one young Focus patient.

As she puts it: "Laser vision correction is now just something that people do." ■

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Wavefront at the Forefront

Dr. Jeffrey Machat, the Toronto-based co-founder of the North-America wide TLC eye clinics, was the first to use the technology in Canada, back in March, 2000. Since then, Wavefront has been used mainly in LASIK eye surgery, which is performed over a million times a year in North America. In LASIK, a laser is used to sculpt away tissue from the cornea (the clear part of your eye covering the pupil) to change its shape and improve its focusing power.

Conversely, a PRK procedure uses a "cool" laser to remove a microscopic layer of epithelium, thereby avoiding the creation of a corneal flap.

In both forms of surgery, Wavefront provides important information about a person's vision that other tests miss. One of its huge advantages is that it takes into account the multiple individual differences in every eye. For the first time ophthalmol-

ogists can provide treatment that is personalized to the individual eye. "Custom has made a dramatic difference not only in the quantitative visual results, but in qualitative visual results," says Machat. Wavefront has improved the safety of laser vision correction, and substantially reduced problems with night vision by allowing for more precise and accurate treatments.

Researchers are investigating the technology to help better diagnose cataracts and other vision problems, too, says Dr. Samuel Masket from the US Eye Surgical Education Committee in Los Angeles.

And newer devices are being developed that will identify irregularities that affect vision in specific parts of the eye, such as the cornea, the lens, or even in the vitreous fluid that makes up most of the eyeball, according to Masket.

In the not too distant future, doctors will likely use the technology to diagnose numerous blinding diseases and perhaps create custom lens implants and contact lenses. ■

Popular 'Mapping'

Demand dictated that Focus invest in another WaveScan system

(Ottawa) — Focus has added a new WaveScan Wavefront System to accompany the one that has been in use since late 2002. This additional diagnostic capability means staff are better able to meet the rising demand for Wavefront, which has become the standard of care at Focus.

Everyone who visits a Focus clinic has the opportunity to have a WaveScan diagnosis in order to determine refractive error and optical aberrations, and then your surgeon can determine whether a Wavefront-guided procedure (Wavefront PRK, Wavefront LASIK) is possible and appropriate.

The WaveScan system captures information that is unique to the patient and displays it as a "map" of that person's eye. The information is transmitted to the laser prior to surgery, allowing for a customized procedure that, in the majority of Focus cases, results in vision that exceeds what patients had with either glasses or contact lenses.

VISX, Inc. — the maker of the WaveScan — has reported that outcomes over six and 12 months have exceeded what the U.S. Food & Drug Administration requires. The manufacturer also notes that at the six month mark four times as many patients were very satisfied with their night vision, compared with the night vision they had with glasses or contacts. ■

Navy Doc Sees Wavefront as 'Standard of Care'

(Louisiana) — Proven diagnostic technology known as Wavefront is pushing the science of vision measurement and correction beyond the familiar 20/20 line on eye charts, to a new benchmark.



Dr. Schallhorn

According to Dr. Steven C. Schallhorn, Director of Cornea and Refractive Surgery at the **U.S. Naval Medical Center** in San Diego, it marks the beginning of "a monumental paradigm shift."

Wavefront gives surgeons a new window into the imperfections of the human eye. As a result, laser treatments can be customized, producing unparalleled results. At an American Academy of Ophthalmology symposium in New Orleans, Dr. Schallhorn referred to improvements in contrast sensitivity/acuity, better night vision, more predictable refraction and fewer re-treatments as "compelling evidence" that Wavefront procedures are "clinically superior" to standard forms of LVC.

Many patients report superior clarity in their Wavefront-treated eyes: Wavefront-improved contrast and night vision means many patients can not only make out a letter on a chart —but they see that letter in lower light.

For its part, in the hope that freedom from glasses or contacts can improve combat readiness, the U.S. Defense Department is funding corrective surgery, including Wavefront techniques. (*Business Week* has reported that one initiative — the Warfighter Refractive Surgery Program — has a US\$15 million budget to correct the vision of soldiers, sailors, and aviators.)

What makes Wavefront so promising? The answer rests in its ability to customize the surgical procedure using a "Wavefront map", which involves diagnostic laser system that analyses the optical errors that are unique to an individual's eye (see feature, *LVC in the Mainstream*).

The conclusion Dr. Schallhorn has drawn: "Customized Wavefront-guided treatments generally produce better visual outcomes." ■

Alumni News

In Focus checks in with past patients to see how they are doing now.

■ GARY BLAIN

Wavefront PRK, monovision, Dec. 15, 2004

"My Wavefront LVC experience with Focus was excellent. I was so happy to pitch those glasses away... Before, I couldn't even see my food without a pair of glasses. It's simply the best thing I could have done."

■ BOB MULHOLLAND

Wavefront PRK, monovision, Oct. 6, 2004

■ DEBBIE MULHOLLAND

Wavefront PRK, monovision, Sept. 1, 2004

"Both my wife and I are extremely satisfied and extremely happy with the results and we've recommended it to both friends and our family. Our procedures went great; we're just sorry we didn't do it sooner."

■ COLIN WELDON

Standard PRK, monovision, Nov. 3, 2004

■ DEBBIE WELDON

Wavefront PRK, Oct. 6, 2004.

"I went scuba diving in a pool last week and didn't have to wear glasses for the first time since I started wearing them in Grade 1... that was awesome." ■

Did You Know?

Focus routinely treats patients who, as part of the natural ageing process, have lost the ability to focus on near objects and are experiencing blurred vision.

The treatment, called **Monovision**, can reduce or eliminate the need for reading glasses in those patients over the age of 40. Focus has been offering Monovision for many years with outstanding results.

During a Monovision procedure, the dominant eye is corrected for distance vision, while the non-dominant eye is slightly "under corrected", which means its primary focus is for close vision. Both eyes continue to function normally while the brain adjusts and chooses which image to focus on. ■



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