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VISION QUEST

After LASIK left her disillusioned, Ginny Graves looked to a revolutionary noninvasive treatment to finally find focus.

I was diagnosed with nearsightedness at age eight, and by middle school, my prescription stronger, I was saddled with the universal signifier of nerdiness: thick glasses. I battled the image as best I could, but to some extent, my out-of-focus eyes came to define my looks—and my life. With my glasses on, I felt like people couldn't see the real me. Without them, I couldn't see much of anything.

What at first was a vanity issue became a matter of entitlement once vision-correction surgery came along in the nineties. For a price, perfect eyesight could be mine. I yearned to wake up to a crisply in-focus world the same way some women pine for a smooth brow. And yet, the idea of a scalpel slicing through my cornea sounded horrifying. Even my ophthalmologist didn't recommend the early versions of the surgery. So I waited till the procedure seemed nearly foolproof: scalpel-free (lasers cut the cornea), computer-guided, accurate to the nanometer. In June 2007, I shelled out $7,000 for top-of-the-line LASIK.

Given my longtime lust for 20/20 vision and certain practical considerations—my corneas were plenty thick; my eyesight was well within the range of correctable—I seemed like the person who, for years afterward, would use the word *miracle* when describing my transformation. And indeed, when I opened my eyes the next morning and could see the rose petals—individual petals!—on the bush in my neighbor's yard, I did have a hallelujah moment. But as my eyes healed, the true state of my vision came into sharper focus—unlike that of my left eye, which was still slightly, infuriatingly blurry. When I drove after dark, I saw phantom halos around headlights. Worst of all, I struggled to read. Books, newsprint, menus—everything close up—were fuzzy, especially in dim light. Did I really get rid of my chic Kate Spade frames only to replace them with stodgy reading glasses?

"That often happens when you put off surgery till midlife, because your eyes are aging," my eye doctor explained. I imagined my corneas flabby and wrinkled, but presbyopia, as it's called, is actually caused by the hardening of the eyes' focusing apparatus, and it affects almost everyone in their 40s. I have the expensive unguents to deal with crow's-feet, but what does one do for old eyes? The solutions sounded dispiriting: implantable lenses (another anxiety-provoking procedure) or, alas, reading glasses, the kind that would eventually, inevitably, dangle granny-like from a chain around my neck.

I didn't have full-blown LASIK remorse—I was too happy to be free of full-time prescription eyewear—but I was a bit disappointed, an emotion most of us don't associate with the hugely popular surgery. In reality, around 5 percent of the 28 million LASIK patients worldwide are plagued by similar problems—or more disturbing ones, like sharp pains or perpetually dry eyes, according to a report from the recently formed LASIK Study Task Force. Though serious issues afflict few, the Food and Drug Administration was concerned enough to embark on a study looking at the quality of people's lives after surgery and what can be done to improve it. Instead of waiting for the results of the investigators' report, I did some research of my own into what, short of surgery, could help me see more clearly.

In a database of recent studies I found a promising possibility: RevitalVision, a new computer program to train the brain to help you see better. Developed several years ago by an Israeli scientist, the reasonably priced treatment (around $500), slated to be available in eye doctors' offices in the United States and on the Web later this year, is one of a wave of interventions for a range of problems based on the hopeful notion that, contrary to what was once believed, you can teach an aging brain new tricks.

Unlike glasses or surgery, which help focus the eyes, RevitalVision is designed to sharpen the functioning of the visual cortex, the part of the brain that processes images. "Your eye is like a camera lens—all it does is capture the image," explained Stephen Slade, M.D., an ophthalmologist in Houston who has conducted clinical trials of the program. "In order for you to perceive what that image is—a face or a fork—the information has to travel to the brain."

Although the costly before-and-after studies to prove how RevitalVision actually retrains the brain have yet to be done, research has shown that it can improve vision in those who are mildly nearsighted as well as people in midlife (like me) who want to fend off reading glasses. In a recent study of post-LASIK patients, those with lingering myopia not only gained an average of two lines on the eye chart, they also improved in a skill known as contrast sensitivity, which helps you discern objects that blend into the background—like a menu in a dimly lit restaurant.

finding focus

Hopeful, I called one of the authors of the study, ophthalmologist Daniel Durrie, M.D., to see if I'd be a good candidate. "You would be ideal because you have mild myopia and you're just starting to have trouble reading," he said. "Chances are, the training will help with both."

I went to my optometrist, who by a lucky fluke is one of a handful of doctors in the country who could hook me up with the RevitalVision software. During my vision test, I could read the bottom of the eye chart easily with my right eye, but the letters were a blur with my left. He sent me home with the training disc and this encouraging comment: "You should start seeing improvement in your vision after about ten sessions."

I couldn't wait to get started. After two computerized evaluation sessions to help the program determine the subtle strengths and weaknesses of my vision and calibrate the training to meet my specific needs, I received an E-mail from Devon Smith, a RevitalVision employee who explained that he was my personal vision specialist. "I'm here to monitor your progress, motivate you if needed, answer any questions you may have, and generally help you with whatever you need," he said with the zeal of a cruise director. I felt like I was embarking on a fantasy voyage. Destination: perfect vision.

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I quickly discovered, however, that brain training is no holiday. Because the program works best in complete darkness, I had to do it in the garage. There I sat, surrounded by surfboards, bikes, and dusty old boxes, straining to decipher subtle differences between two shadowy gray images that flashed momentarily on my laptop's screen, a task that required Zen-like concentration. Sometimes I had to pick out the darker of the two fuzzy images; other times the goal was to identify the image with the greatest contrast between light and dark gray lines—tasks I repeated over and over, with slight variations, for nearly 30 minutes every day.

The images—two dark quarter-inch shadows sandwiched between three lighter-gray lines—looked remarkably similar to the two vertical grooves that appeared between my brows after the grueling sessions. Known as Gabor patches (for a mathematician, not the actresses), they're specifically designed to improve the processing in the most rudimentary level in the visual cortex.

"Practicing with Gabor patches improves edge detection, which helps with most real-world tasks, especially reading. Letters are all about edges," says Max Riesenhuber, Ph.D., associate professor of neuroscience at Georgetown University.

After my sessions, I was a little edgy (and headachy) myself. I called Devon to see if it's normal to be so exhausted from the training. "It's hard work," he agreed. "But the harder you try, the more you're going to improve."

No pain, no gain. But where, exactly, was the gain? I had completed ten sessions, and as far as I could tell, my vision hadn't changed. I was starting to worry—and I was relieved that I got to take a four-day break for a trip to New Orleans with my friend Diane. One night, we ate at a quaint courtyard restaurant in the French Quarter, lit only by votives. Diane pulled out her reading glasses and was still struggling to see the menu. "What does that say?" she said more to herself than to me. I glanced at my menu. "Jambalaya," I said. The lighting was bad, the writing was small, but I could read the menu clearly.

I returned to my last ten training sessions with renewed enthusiasm and continued to notice slight improvements. Headlights were less glary. Newsprint was crisper. When I sat down with a book before bed, I no longer had to hold the book at arm's length to decipher words. And, when I went to my eye doctor for my final post-training exam, I could read the smallest letters on the eye chart: EDFCZP. I had gained a whole line! I've never been so happy to see anything in my life. □