

Article ▶ Vision Therapy for an Adult with Surgically Removed Congenital Cataract

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ABSTRACT

Rachel Hochman was born with a unilateral congenital cataract that was removed at the age of two. Her dominant eye was subsequently patched from the age of two through ten. She wore a hard contact lens until the age of 29 when she received a lens implant. She did not engage in vision therapy until the age of 36 after learning about it while listening to an interview with Dr. Susan Barry on National Public Radio. Vision therapy changed Rachel's life. When she was monocular, she looked out at the world. Now that she is binocular, she experiences being part of the world. The neurological transformation to binocular vision created positive kinesthetic, psychological, and emotional changes she is extremely grateful to experience on a daily basis.

Keywords: binocular vision, congenital cataract, vision development, vision therapy

Looking up from my intake form, Dr. Lessmann gazed over his glasses and calmly stated, "You must have been a very angry child." I was speechless and asked myself, "How could he know that?" He immediately saw my core vulnerability; I had been an angry child. At 36 years-old, the warm flush of embarrassment washed over me. A torrent of memories thrust me into a cataract of shame: spilled milk at the dinner table and the displeasure of my father, missed balls on the playground, and the resultant teasing by peers. My lower back and upper lip dampened with sweat. I recalled the persistent headaches and outbursts of frustration, the inexplicable bruises on my right arm and leg from bumping into objects that someone with normal vision would have seen. Despite my admittance into the gifted program, I needed intense concentration to complete my classroom work. I responded with clenched fists and outbursts of frustration when someone interrupted my studies. A flashback entered my consciousness: snarling at my typing teacher because I received a C grade for the semester. Obviously, I could not transcribe the material accurately; convention required the template on my right side where I could not see it. My bad side, my bad eye ... the void in my vision/life that I hoped Dr. Lessmann, a developmental optometrist, could grant me access to.

As a child, I rarely felt that I belonged. I was maliciously teased by my peers and pressured to participate in impossible (or so I thought) activities by ruthless gym-teachers and well-meaning parents. I might have been happy to laugh at well-meaning jibes (were they to occur), and play typical sports (if I felt I was capable) but my frustration level was high; thus, my tolerance and self-confidence were low. I wore a patch on my left eye, the "good eye", the eye I could see out of, the eye that had better than perfect vision, for nine years beginning at the age of two. It was not a black pirate patch with an elastic band to crush my curls, but rather a flesh-colored adhesive patch that my mother or I stuck on each morning before school, and I happily tore off before bed each night. Often, my father

would draw geometric forms or butterflies and flowers on the patch with brightly colored crayons. But, a cyclops is never pretty and a girl with monocular vision does not do well when recess or gym involves ball sports. The patch and my inability to play ball sports made me different, an easy target for bullying in elementary and middle school. The mockery made me sensitive and defensive; the memories of specific taunts oppressed me, retarding any natural athletic abilities that I might have had. Sadly, the institutional memory of my peers haunted me through high school. I had few friends, and I stayed away from sports. My own memories kept me distant from others, distrustful, and feeling unlikable through college.

I was born with a cataract. Between one and six children in 10,000 are born with a unilateral cataract. These are not like the cataracts of senility, which are stimulated by exposure to ultra-violet light, but rather an interruption of the fetal developmental process that leaves excess tissue around the lens of the eye. According to the many ophthalmologists who have examined my eyes, I am lucky to have a circular shaped pupil, a lack of amblyopia, and sight in my right eye. During the early 1970s when I was a child, congenital cataracts were rarely recognized early enough to provide significant correction. When congenital cataracts were removed, the process was not always successful. Following my operation, at the age of two, my left eye was patched to train my brain and right eye to see. My right eye was fitted with a thick, hard, uncomfortable, contact lens that gave my eye 20/70 vision. I had a few eye exercises (but was never given the opportunity to develop stereopsis), frequent eye doctor appointments, a yearly hospital visit (once a year, I accidentally slept in my lens causing a scratched cornea each time), and a hidden physical difference that significantly influenced my interactions with my peers and my parents.

I was active and athletically inclined, but I could not play sports. Catching, kicking, and hitting a ball require depth perception. Depth perception, the ability to locate an

object in space and correctly judge its distance, speed, and future position, allows an athlete to coordinate hands, feet, racket, or bat to connect with a rapidly moving ball. Some depth perception is available to those with monocular vision, but the cues that provide precision come from stereopsis or stereo-vision. I lacked stereopsis because my eyes did not work together. As a child I could not anticipate the location of a softball, kickball, basketball, or tennis ball or even the huge target presented by the vaulting horse in gymnastics. Despite the patch, contact lens, and exercises, my good left eye, my brain, and my bad right eye just would not work together to create depth perception.

Doctors and others suggested that with practice I could play but there were more impediments than my vision. In order to develop the physical ability to play ball sports, I needed to be psychologically capable, but taunts from my peers and performance pressure from my father created enough visceral emotional distress to ensure that I was not. During recess in elementary school we would play kickball. In gym we played every possible sport with a ball from basketball to some weird form of soccer where we scooted around the floor on rolling dollies. At home my father insisted I practice tee-ball. In the summer I had tennis lessons, and at birthday parties (when I was invited) there was always a pick-up ball-game of some sort. I was picked last for teams, humiliated when I swung out in kickball and softball, and unable to smack a volleyball or make a basket. When I played sports, I was required to wear racquetball glasses, an additional source for ridicule because it was the era before famous basketball players made them fashionable.

Once, after I missed an easy catch while playing softball at a birthday party, I was so harangued by my “friends,” that I tried to explain my handicap. Of course as pre-teens, they couldn’t understand, so they laughed and teased me more. I looked normal, why couldn’t I play like them? I left the field and the party in tears. My father thought he would help by setting up tee-ball in our backyard, but under the influence of his perfectionist nature and my lack of confidence, I couldn’t even strike an immobile object. Finally, the tennis pro told my parents that the situation was hopeless; he couldn’t teach me to play. As a child I didn’t recognize that this was his failure not mine.

It wasn’t until my second year of graduate school that I began to recognize my athletic capabilities, and like-ability. During graduate school in California, my self-esteem continued to increase. I began rock-climbing and kayaking (white-water and sea) as much as possible. My community developed. My white-water kayaking friends were a protective family on and off the river. I led climbs in Yosemite and Joshua Tree National Parks, kayaked class III-IV rapids, and guided sea-kayakers through fog and steep seas off the California coast. We braved adiabatic winds in the Bay of California, strong currents under the Golden Gate Bridge, and tumbling surf off the Bolinas Beach. On each adventure, I was part of a team, men and

women who watched out for my safety, just as I watched out for theirs. I’d become an athlete.

Eventually, friends encouraged me to pay softball, volleyball, and Frisbee. I insisted that they practice with me, away from others. I caught, swung, hit, and threw until the misses were fewer. In non-competitive games when I felt liked and respected, I managed. Sometimes (probably less than 50 percent of the time), I connected bat and softball, caught grounders (once in the face), served volleyballs, and threw on-target. But each time I approached the plate, a serve or a catch, I had to steady myself, remind myself that no one would tease me if I missed, no one but myself would push me if I didn’t feel comfortable. However, it took many years before I managed to enjoy a racket sport, badminton. After many false serves, heart palpitations of frustration, even tears, my husband’s calm coaching allowed me to return many serves and volleys. I was stunned that I could laugh, goof-around, and even have fun playing. I had come close to conquering the deep-rooted embarrassment than stemmed from my visual inabilities, but I had not addressed the neurology of the situation.

One afternoon in June of 2006, I was preparing lunch while listening to National Public Radio, a habit that I had been too busy to indulge for weeks. Serendipitously, Robert Krulwich was interviewing Sue Barry, a neurobiology professor in her late 40’s, about her visual abnormalities and her experiences with vision therapy (VT). After a life of monocular depth perception, Sue learned to see in stereopsis. I couldn’t believe what I was hearing. Prior to VT Sue thought she knew what she was missing, at least intellectually, until she began treatment with a vision therapist. Then she recognized the space between snowflakes and the steering wheel in her car popping-out at her. Like Sue, all my life I had been told it was impossible for me to develop binocular depth perception. Sue’s visual difficulty, alternating strabismus, was different than mine, but if a woman in her late 40’s could learn how to see, so could I. I stopped preparing lunch, and with tears streaming down my face, I wondered if there was a chance for me too.

Lunch forgotten, I dashed to my computer to search for a vision therapist close to my location. None were within an hour’s drive. Discouraged, I called two offices only to find out that they were no longer serving patients. The Vision Development Institute (VDI) in Pittsburgh, PA at an hour and forty minute drive was my next option, and I wasn’t ready to give up. Hopeful but skeptical, I called the VDI office. Questioning my judgement and expecting disappointment, I insisted on talking to the doctor prior to scheduling an appointment. Dr. Lessmann hadn’t ever worked with an adult who had a unilateral congenital cataract. I wasn’t surprised because I had never met another adult who had one either, but he was optimistic. I scheduled an appointment; it was worth a try. I had waited my whole life to learn how to see.

My experiences with medical professions had not been altogether positive; thus, after years of not feeling listened to by doctors, I wondered whether embarking on a process that

had so much emotional gravity for me would be possible if the doctor was not on my team. Seven years prior, I sought an ophthalmologist to insert a lens implant in my right eye. Surprisingly, it was a difficult to find someone willing. I had visited an ophthalmologist once or twice every year of my life for a routine check-up: the obligatory eye-dilation, pressure check, and refraction. I thought I knew what it was like to go to the ophthalmologist, consequently, I wasn't worried. The first ophthalmologist that I visited sent in a resident physician. After politely explaining that I did not wish to see a resident because my situation was unusual, the ophthalmologist appeared, reluctant and combative. When I explained that I wished to discuss a lens implant, he insultingly explained that, I "was lucky to have vision in that eye at all, let alone good cosmesis. Many people in [my] position had mis-shaped pupils, no sight at all, and significant amblyopia." Thus, I was very nervous entering Dr. Lessmann's office. But my worry faded after he looked at my intake form and saw right through to my angry inner child. Roald Dahl writes, "Children tell little more than animals, for what comes to them they accept as eternally established." In one sentence, Dr. Lessmann conveyed to me that he knew that the frustrations my visual difficulties caused were not how I had to experience my life. We immediately scheduled appointments for my return.

When I began my journey, I knew it would result in profound change. I had felt abnormal my entire life. I knew without a doubt that I would see better and that change might make me feel more normal. I hoped I would stop bumping into things, be able to see three-dimensional movies, catch objects thrown to me, feel more confident doing the action sports I loved (cycling, alpine and Nordic skiing, kayaking), and reduce the painful torsional compensatory adaptations that resulted from my monocular vision. What I didn't know is that my experience in the world would be holistically better, more enjoyable, and joyful. As my vision developed, edges became sharper, colors became brighter, I began to feel in the world, rather than viewing the world. I credit this to the creation of a greater peripheral field of view and the perceptual distinction that came with my binocular vision.

Perceptual distinction provides humans with a greater linkage to the world around them. Humans innately look for this connection by naming objects, but people who don't have stereopsis don't have the same type of figure-ground understanding as those who do have stereopsis. Therefore, the connection to the world around me was broken. Ground for people with stereopsis is space. Space provides an empty or negative background that allows easier discernment of figure from ground; thus, creating the simple perceptual distinction of object or non-object. Ground for people without stereopsis is everything behind the figure of interest. Thus, things rather than space help the monocular human understand the object of interest. I would define distance between objects using size relationships, linear perspective, and object overlap and shading of contours. Thus, in a way,

objects were blended together for me by being super-imposed on one another. I had no true sense of space. I could not see the fish swimming next to my seat while watching the three-dimensional aquarium movies at the science museum. There was only figure for me, there was no ground. Prior to VT, my world was like reading a book with 7 pt font, single-spaced lines, and pages with no margins.

Initially, Dr. Lessman and his staff needed to encourage my brain to accept that what my right eye was seeing was real. During my first visit, Dr. Lessman placed prism glasses over my eyes along with red-green lenses. This method was used to dissociate the images. Ideally, my right eye would see a green image and the left a red image. Dr. Lessman gave me a golf ball to hold. I could only see a red golf ball, the golf ball that my left eye was seeing. There wasn't a green golf ball. He asked me to squeeze the ball, roll the ball in my hand, and move it through the air. I could not see the green ball. It was frustrating and embarrassing. I hated feeling incapable. I could feel the heat rising as I began to sweat and tears began to well up, but he encouraged me. After a succession of visits with the same type of exercises, using smaller white objects, like golf tees and inserting them into holes, or tracing with them, the suppression my brain was enacting on my right eye broke down. But, it was playful, like a Cheshire Cat; it would come and go. My brain would let my right eye see, then it would superimpose the information from my left eye, and I lost all sensation from my right eye. Patience in the process allowed me to move past suppression. Finally, one morning, while swimming backstroke, I saw my right arm with my right eye. Slowly, I began to see the right side of my body all the time!

By using the Brock string and the Barrel or Three-Dot card, I learned to control the ghost images created by my right eye and to combine them into three-dimensional images created by my binocularly trained brain. Each week, I spent five to seven hours on my own, at home, practicing. I bought my own antique stereoscope complete with cards. The stereoscope exercises required me to point at figures simultaneously with each hand in the respective field of view. I had a small leather folder in which I kept all of my VT accoutrement. I traveled with it. My first Brock String, made of thin twine with tiny beads, one sixteenth of an inch in diameter, was too subtle for me. I couldn't see the converging or diverging line with my right eye, so I made my own Brock string with half-inch diameter beads on a thick shoelace to create a larger target. To help me learn to recognize and trust depth, I fashioned diffuser caps from clear plastic pen caps that I placed on tiny mag-lights. I moved the lights away from and towards a mirror in a darkened room while wearing anaglyph glasses. This was a particularly effective exercise for me, and it made me laugh because I imagined that if someone found me practicing they would think I was engaged in some unusual ritual. I also hung a Marsden ball in my attic. I used the Marsden ball while balancing on an unstable surface, with a hoop made out of

a coat hanger, and of course with anaglyph glasses. I read everything I could find about VT. I bought textbooks like Leonard Press's Applied Concepts in Vision Therapy. I was MOTIVATED.

I spent 10 months in therapy. I insisted that Dr. Lessmann work with me rather than an assistant because I wanted the benefit of his expertise and creativity. He is an engineer by initial training; thus, by nature a problem-solver. He could think in the moment and alter the VT techniques to address what I was experiencing. According to Dr. Lessmann's records we used at least 61 exercises over the course of my treatment, some of which he created specific for my visual training needs. Because I was spending at least six hours a week working on my own at home, I was intensely curious and wanted to understand the rationale for each exercise. However, he wouldn't explain the expected outcomes or methods because he had concerns that my expectations would then affect my ability to benefit from the exercises. Obviously, he thought very carefully about each step.

Dr. Lessmann worked with me on multiple scales from central vision and accommodation to gross and fine motor skills. I balanced on rails with prism goggles, tossed and caught bean bags, called out letters on the Marsden ball, used the stereoscope with pointers. He would throw beanbags straight to me, from behind me and over my head. I passed loops of wire over a ball suspended from the ceiling. I used the Slap Tap exercise regularly to balance the handedness confusion due to being right-handed and left-eyed. Slap Tap was shockingly difficult for me, but it explained my challenges as a musician and as an athlete. I had a distinct lag in any right-sided movements, despite being a righty, while my left-side was always rushing in to complete an action. This confusion, in conjunction with my monocular depth perception surely impacted my athletic abilities and made playing the piano and violin as a child especially challenging. As part of my therapy, I also tried anaglyph materials to develop depth perception, but they never seemed to create change for me. However, polarized three-dimensional materials were highly effective.

The addition of prism in my glasses prescription and playing with polarized projected quoits were the gateway to the beginnings of my experience of a three-dimensional world. The inexplicably astounding shift from monocular to binocular vision began in a room that I suspect was meant to be a closet. In the close, deep darkness of that tiny space, while wearing polarized glasses and wielding an old time blackboard pointer rod, I fiddled with the stereo-projector and polarized glasses, viewing slides of quoits and balls. I moved the projected images into the middle of the room and behind the screen. I pointed at them and between them and was thrilled by the space I was experiencing. It was the first time that I'd seen a three-dimensional image as a whole rather than either just the half of the image that my left eye "saw" or two un-fused images that my untrained eyes could not bring together. Apparently,

the message of space between objects established itself in my brain and translated to the real world.

I began to see motion parallax. It was fascinating and unexpected, so I created opportunities to experience it, by looking out windows and using the frame to help me see motion. Edges became sharper and then colors became brighter. I was amazed at how my world was changing. It was becoming more beautiful and meaningful with each tiny leap in my vision.

My husband and I are avid cyclists. One bright morning as we rode the Youghiogheny Trail, I noticed that my husband's red bike shirt was almost fluorescent against the green trees, and he appeared to be floating along the path in between the trees. On so many rides, I'd never noticed how bright the colors were around me and how we were riding in the world not on the trail. However, these changes were nothing compared to what I experienced next.

I thought I had a rich understanding of plants and nature, but I didn't because I didn't know their spaces. As a child I immersed myself in the green world of our forested backyard. Green plants flowed on the surface of our creek, green leaves hid me as I climbed trees, green-briars scratched my arms, and green ferns made my bouquets beautiful; the world was blanketed in green. During primary and secondary school, I learned names for a few plants that inhabited my wooded sanctuary. Given names, these plants gained meaning. The forest green lanceolate leaves of dog-tooth violet with their pale green and deep burgundy patterns would bring my favorite yellow flowers each spring. The bright-emerald, tripartite, smooth-margined leaves of jack-in-the-pulpit shared the funny envelop shaped pale green or brown striped flower that turned to bright red berries in the fall. Finally, as a junior in college, I took my first course in plant systematics, the science that names plants based on evolutionary relationships and morphology. My world expanded. My knowledge of botanical terminology allowed me to distinguish figure from ground. The day I recognized that the world was no longer a sea of green, but rather a mass of specific individuals colored in olive, emerald, celadon, jade, teal, and chartreuse brought me great joy. As a plant ecologist, I knew to search carefully for hidden sundews at the edge of boggy places, where I might find the camouflaged flowers of wild ginger in the spring, and that with much luck, I might find a shooting star blossoming on a rock out-cropping if I chose the right aspect and month. I thought I knew the forest.

Binocular vision completely changed my experience of nature. Unexpectedly, after months of VT, as I was strolling through a humble plantation of pines. Unexpectedly, I had an epiphany. At that moment, I realized that I had never before perceived the distinction of figure from ground. Vision therapy and the practice with three dimensional projected images, changed my perspective of the woods. I was amongst the trees, not looking out at them; they surrounded me in a way that was marvelously different than I'd previously experienced. The

crenellations of bark and appliqué of moss were deeper, the edges clearer and the colors brighter. Most unusual, the space between the trees was apparent. It was as if I had stepped inside a painting that I had spent my whole life observing. The depth of space and emotion was overwhelming. I was awed and moved to tears. I had never experienced a forest in this way.

I was looking at my world from the inside as part of it, rather than from the outside as separate from it. I had spent my life navigating a tight, space-free world, full of details that I could look at but not be among. Imagine reading an article printed on 8 x 11 paper with no margins, single-spaced, in 6 point serif font. That is what my monocular world was like. With the epiphany of binocular vision, my world changed to a white paper, an outline with 12 point san-serif font, double spaced, and one-inch margins. I could see space, recognize clear distinctions between objects, and locate myself within the world.

The flat glass panel separating me from the world around me had shattered. Now, being in the world, everything is more beautiful; colors are more vivid; everything has become more well-defined. I enjoy art, architecture, and movies more. My legs aren't bruised from running into unseen objects. I have an ability to really engage into my peripheral vision and be aware of all of my surroundings. Every activity including alpine and cross-country skiing, cycling, running, driving, gardening, and hiking is easier to navigate and more enjoyable to experience. My athletic comfort zone has gotten wider. While I still won't consider playing tennis, I am considering picking up mountain biking despite many years of resistance. There are trails by my house and friends who will encourage me. I'm skiing moguls after working with a sports glasses company to create a polarized goggle that reduces glare, includes my prism, and sits an appropriate distance from my face. It's so much easier to navigate the micro topography with binocular depth perception. Now that I compensate less, I enjoy more. Being in the world isn't just about inanimate objects and sports. It's also affected how I relate to, empathize with and experience my fellow human beings. It's so much easier to be part of things when I see myself among the animate and inanimate world. I now experience my physical body as connected to the world around me rather than separate from it. I equate that connectedness with joy! Joy that I could not have attained without the three dimensional vision I developed with VT.

“Rachel’s Story”: The Optometrist’s Point-of-View **By Hans F. Lessmann, OD**

Rachel brings to life what many of our binocularly challenged patients' experience but rarely express so vividly. She also shares the remarkable value of optometric VT that I have been blessed to share and practice.

Rachel is a talented, intelligent, and athletic young woman whose manifest potential was profoundly limited by a hidden organic and functional vision problem. Her vision problem affected all aspects of her life and was devastating

psychologically. Like a finely tuned sports car with a “hidden” flat front right tire, she looked good but did not perform well. She disappointed her friends, her parents, and herself. She tried to explain that she had a bad eye, but many, including herself, did not fully appreciate the impact. Reconciling this discrepancy was emotionally traumatic.

She was born with a congenital right cataract that was removed at age two. Ophthalmologists prescribed aphakic contacts and patching with little success but a lot of annoyance. Then, at 29, she had an IOL implanted. Interestingly, that same year she had many gastro intestinal issues that she attributed to a bad case of antibiotics. She reported a right hip injury in a biking accident when hopping a street curb. She described numerous symptoms of right eye pain, distance and near blur, bumping into objects on her right side, closing her right eye, and squinting in the sun. Later she noted that she could not see her right arm when swimming the back stroke unless it was in her left field of view.

Most notably her optometric exam revealed an iatrogenic vertical tropia. She had right micro hypotropia secondary to a downward de-centered IOL. An induced vertical phoria is wrenching for the body, but less evident visually in her case as she could suppress that eye. This likely contributed to her right side instability, especially as it related to her right hip. She had some gross stereo. Due to the IOL, accommodative function was absent in her right eye but was also very sluggish in her left eye. Her near point retinoscopy was aided by a +0.75 for the left eye while the right eye showed little response. Additionally, she had a midline shift that centered over her left eye.

Recommendations

I prescribed the following for full time wear:

OD plano – 0.75 x 170 2[^] Base Up

OS plano

Add +0.75

Later I prescribed an asymmetric add of +1.50/+0.75.

She enrolled in our program of VT and completed 61 sessions. I introduced syntonics with a series of sessions with Mu Delta for 20 minutes and then a series combining Alpha Omega and Mu Delta for 10 minutes each.

In the training room, it was remarkable to witness her lateral asymmetry. When doing the Slap Tap procedure with a metronome, her right side response was delayed and her left side response was early, so together the sides seemed to average out on time while never being in synch. It was uncomfortable to watch and at the same time very frustrating. The same situation occurred with catching Tooties. This poised fit young woman looked absolutely ridiculous when put in motion trying to catch a Tootie. Her outward appearance contrasted starkly with her profound awkwardness in eye-hand coordination.

We developed a custom technique to deal with her central scotoma and amblyopia. This technique worked well for Rachel and may help other patients with micro tropias and associated

D-shaped scotomas. It involves using small central targets in instrument with fine pointers. Instruments like the drawing board, stereoscope, biopter, and cheiroscope utilized with flat and stereo fusion targets with detailed central targets in the fixing eye and a small blank central spaces for the non-fixing eye work best. In this case we created a derivative of this approach with a near rotor and a midline dividing mirror placed on the patient's bridge and bisecting through the exact center of the rotor. The rotor was black with a small three millimeters red dot placed not more than on to three centimeters from the center of the rotor. The patient had R/G anaglyphs and a small paint brush in her left hand. She had to brush the red reflected red dot in her left central field on each ½ rotation. Only her right eye saw the central target. She had to project it into her left central field and follow it with the paint brush. Note that she would see two dots, one real and the other reflected on each half rotation moving up or down depending on the rotation direction. She was to concentrate on the "reflected" dot. This technique was a "break-through" as it lit up her right central visual awareness which then increased depth perception and central and peripheral awareness.

The interesting concrete effect of increasing her right eye awareness and peripheral vision was when swimming the backstroke. Rachel reported that she could now see her complete right arm through the entire sweep of her arm out of the water. Before she only saw it partly when in her left field of view. She was beginning to integrate her right eye into the fabric of her life. It is hard to know what you don't know, yet fascinating to discover what you have been missing, even if it is ordinary.

The Prism

The prism was a key factor in her treatment. Ocular alignment is critical to developing binocularity and helping to remove the need to suppress. Vertical imbalances are particularly difficult to adapt to and therefore must be compensated. No one had recommended she wear glasses because they likely had not identified the vertical or considered it insignificant in an amblyopic eye. Besides she was 20/20 without glasses, why

impose another inconvenience unnecessarily when the patient is already self-conscious about her vision?

Discussion:

Despite her visual deprivation from the congenital cataract and the optical distortions of aphakic glasses and contact lenses, I believed her underlining neurology was intact and may be expressed if we could manage her optics and ocular alignment. The IOL was serendipitous in that it balanced the optics between the eyes providing an optical opportunity for binocularity.

At the same time the induced iatrogenic vertical imbalance from the IOL displacement was wrenching to the body. There is no way to escape this internal imbalance, hence the necessity for the prism. I believe this contributed to her chronic right hip instability and a severe impediment to integrating her right eye into the Gestalt of her binocular vision.

Rachel's vivid depiction of the impact her vision problem and her determination to overcome it is an inspiration to us all. Her experience revealed how a vision problem can covertly undermine one's potential. Sharing her story may inspire others suffering seemingly hopeless frustration to seek behavioral optometric care as a solution. Thank you, Rachel!

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