Viewpoint ▸ An Opportunity to Make a Difference, Seeing the Bigger Picture for Children with Special Needs

Celia Hinrichs, OD, Sudbury, Massachusetts

When C first walked into my office, his mother told me, "He might do more for you if we sing. Do you know 'Baby you can drive my car'?" I had read C's history and knew that he often pinched people or shut down when stressed, so I expected a challenging evaluation. I began to sing.

C's case is helpful in illustrating both the many facets of dealing with a patient with multiple special needs and how improved techniques and framework allow behavioral optometrists to make a substantial difference for such a patient.

In the 35 years that I have worked with special needs children, the field has undergone sweeping changes. In the beginning of my career, techniques to evaluate non-verbal patients were not readily available. Moreover, doctors were not trained to think about adapting their evaluation methods or to develop more creative solutions to allow for effective assessment and treatment. Today, the techniques have drastically improved. The development of Preferential Looking Techniques (PLT),[1] the Mohindra technique for retinoscopy,[2] and the use of the Randot E in PLT[3] format allow us better to assess and to predict outcomes.

Theories of cognitive[4] and multisensory loading[5-7] frame our understanding of treatment approaches. More importantly, the work of Harry Wachs, OD[8] and Stanley Greenspan, MD[9] provided frameworks to approach visual thinking and to understand the importance of emotional connections in any learning.

When I first saw C, he was 9 years old but only in the second grade, in large part because he was "unable to use vision to support his other skills." His mother noted that his left eye went up when he turned his head. The occupational therapist said C could not fixate or track. He rubbed his eyes frequently and often worked very close to the paper on his desk. Clinicians familiar with the importance of vision as an output system noted that C was not using vision to support his motor skills.

To complicate matters, C's medical history was limited. Parents are often overwhelmed by their child's need to see many medical and educational professionals, and they are not educated to ask for copies of each visit at the time of the evaluation. I knew that C was the product of 32 weeks' gestation, an unplanned Caesarean secondary to fetal distress, and associated failure to thrive. He needed a nasogastric tube at 16 months to support feeding issues and had surgery for an undescended testicle at two years of age. Later it was discovered that he received extensive testing in another state, which indicated no genetic abnormalities. C also showed no abnormalities in any imaging studies. Previous hospital records alluded to an eye specialist appointment at 18 months of age for visual tracking concerns. A later ophthalmological evaluation noted only seasonal allergies. His mother reported that there were concerns about his vision, but he never qualified for services from a teacher of the visually impaired (TVI) in school. With the gaps in C's medical history, connecting the limited functional vision information I was likely to acquire in testing with any specific medical diagnosis or vision therapy protocol in order to make the best decision regarding treatment was even more challenging.

Singing C's favorite Beatles songs with him allowed me to engage him in testing. C sang all the words in perfect pitch, demonstrating a gift I had yet to discover. C's testing was consistent with a number of profound visual issues. C could only find the non-illuminated Feinbloom numbers, with both eyes open, if I pointed directly to them and presented single numbers (10/20). With full chart presentation, his acuity with both eyes dropped to 10/160. Near acuity was significantly worse, with C finding isolated numbers only to 20/200.

Len Press, OD[10] has taught us that amblyopia diagnosis and treatment gives us wonderful insight into a child's performance. In children with special needs, visual acuity is often very important for supporting better communication. Speech and language specialists can use our assessment for designing an effective communication system. C was being taught to read, but he did not recognize all of his letters and struggled to find them on the page.

Further testing supported a left hyper esotropia that appeared somewhat worse in right gaze. Measurements were approximate, as he could not reliably fixate. C also resisted fully abducting his left eye. Ocular health was within normal limits except for eyelash issues and tearing of his eyes that appeared related to a history of tear duct stenosis. Results were at best fleeting such that accurate diagnoses were difficult.

Just as C was becoming fatigued, his mother mentioned that he had "reading glasses" at home. She never understood the importance of his prescription, and C wore them intermittently as he did not read. At this point, C was tired and beginning to act out in the exam to express his fatigue; the evaluation was over for that day. My findings supported the hyperopia, so I recommended that he wear the "reading glasses" as much as possible and return for further evaluation as soon as possible.

When C returned, his mom reported that he struggled with the +1.50 OU eyeglasses. His acuity had improved to 20/80 at near, but his mother stated that he continually removed the eyeglasses. Refraction results can fluctuate considerably in this population and may shift dramatically with the child's body position. The child should be fully supported (even on

the floor if necessary) for your best result. Near findings are critical as attention to the target is better and the child's world for daily activities is primarily at near. A reduction from the full prescription can allow a child to integrate more visual information with less sensory and cognitive overload.

In C's case, testing revealed he was most comfortable in a bifocal (+0.75 sph OU with a +1.00 add OU). This allowed him the best distance acuity at the time and supported best fixation during near retinoscopy testing. C was now able to identify the Randot E at 18 inches and Randot figures at near to 600 seconds of arc.

C's visual skills improved over the next year, and his prescription shifted. Binasal occlusion had decreased his esophoria. With his new single vision glasses (+2.00 sph OU), he tested 20/30- each eye and 20/25- OU while viewing the full chart of illuminated Snellen letters. At near, he responded to 20/30 print with a template. His fixation was still less than optimal, but he could fixate in all positions of gaze, and there was no longer any evidence of an eye turn. At times he could appreciate the Randot E to 3 feet and Randot figures at near of 100-200 seconds of arc as repeat testing sometimes fluctuated. His ocular allergies were creating discomfort and were treated.

With all his gains, those working with C still noted that he seemed "lost in space." His parents were now interested in and supportive of pursuing office-based vision therapy. Visual information processing testing was done during several short sessions utilizing parts of the WACS battery, the SUNY Suchoff Motor Battery, and Gesell copy forms. It was noted that C completely shut down during the block-matching task. While C's chronological age was 9 years, his developmental age for all of the tests fell at the level of performance of a 3-year-old.

Optometric vision therapy was successful and improved his visual skills on many levels. C developed better ocular vestibular skills and motor planning. Improvement was also noted in directionality, fixation, tracking, and focusing. Overall his skills improved to the level of a 4- to 5-year-old child, and with this came a significant increase in facial attention, joint attention, and overall social interaction.

There was, however, a less positive note as we began reaching the limits of C's ability to make additional progress, particularly in further automaticity in his visual spatial skills. C began to shut down more often during his optometric vision therapy sessions, and the family reported more significant difficulty at school. Theories of cognitive loading reinforce the need for multisensory and cognitive loading in all optometric vision therapy tasks. As C was finding the increased load overly challenging, I strongly recommended that the family seek evaluation with a neuropsychologist experienced with complex special needs. C's improved visual skills would now allow the neuropsychological testing more accurately to reflect his true challenges and strengths. The testing revealed that C had a profound right hemisphere disorder. The right hemisphere disorder helped explain C's difficulty organizing and building structure with new information. His education required an adaptation – a parts-to-whole approach for the child. With implementation of this new methodology, C began to improve in school.

C was also displaying many of the patterns of a child with a dorsal cerebral visual impairment (CVI) based on the newest research, which has dramatically changed our understanding and definition of CVI.[11] Visual field testing indicated possible functional constriction of his peripheral visual field, but C's ability to participate fully in the testing was somewhat inconsistent. The significant boundaries of his visual learning and his ability to use vision to guide his actions were becoming more obvious as other talents that relied less on visual skill emerged. He was registered as a child with dorsal cortical vision impairment so that he could access appropriate school and community services to enhance his learning and daily living skills.

Another concern that emerged was C's continued struggles with activities that involved his left side and how he could not balance on his left foot.[12] I recommended further orthopedic and physical therapy testing. An orthopedist evaluated C and noted that his left knee was dislocated. Physical therapy was initiated, and when I next saw C, he was proud to demonstrate his new physical skills, including better balance and left side control.

Optometric interns, patients, and parents were often discussing my social and emotional engagement with special needs children who presented with multiple issues. However, no one had a system to define this engagement to maximize treatment success. Stanley Greenspan, MD and Serena Wieder, PhD have put together this all-important link in their DIR/Floortime model with input from Harry Wachs, OD. When Dr. Greenspan and Dr. Wieder standardized their approach, we then had a construct that defined and laid out a path for supporting emotional engagement in children. Success meant relating with the child and helping the child connect with his current environment. Singing Beatles songs together gave me an emotional connection to C that he could use to join me in the evaluation of his vision. Furthermore, this partnership better enabled me to see the big picture and treat the whole person. It allowed me to appreciate C's strengths and how I could capitalize on them to help him achieve maximum success.

C's case shows us not only the complexities of working with the special needs population, but also the joy and success it can bring for both the doctor and the patient. I was able to improve C's visual skills significantly for learning using all the wonderful techniques that have been developed in our field. The success also involved an understanding of when C would likely benefit from further assessment and our role in helping families connect with other appropriate professionals. Even with C's clinical diagnoses – significant right hemisphere disorder and cortical visual impairment – and their consequent

support needs, we can make a profound difference in the quality of this patient's life.

C is now a good drummer in a band and is living a life that would likely not have happened without optometric vision therapy and the caring intervention of a range of superior professionals. As Eileen Miller[13] tells us, "Art can permeate the very deepest part of us, where no words exist."

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Correspondence regarding this article should be emailed to Celia Hinrichs, OD, at CeliaHinrichsOD@verizon.net.

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