

Not Autistic or Hyperactive. Just Seeing Double at Times

By LAURA NOVAK
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As an infant, Raea Gragg was withdrawn and could not make eye contact. By preschool she needed to smell and squeeze every object she saw. "She touched faces and would bring everything to mouth," said her mother, Kara Gragg, of Lafayette, Calif. "She would go up to people, sniff them and touch their cheeks." Specialists conducted a battery of tests. The possible diagnoses mounted: autism spectrum disorder, neurofibromatosis, attention-deficit hyperactivity disorder, anxiety disorder.

A behavioral pediatrician prescribed three drugs for attention deficit and depression. The only constant was that Raea, now 9, did anything she could to avoid reading and writing. **Though she had already had two eye exams, finding her vision was 20/20, this year a school reading specialist suggested another.** And this time the optometrist did what no one else had: he put his finger on Raea's nose and moved it in and out. Her eyes jumped all over the place. Within minutes he had the diagnosis: convergence insufficiency, in which the patient sees double because the eyes cannot work together at close range.

Experts estimate that **5 percent** of school-age children have convergence insufficiency. They can suffer headaches, dizziness and nausea, which can lead to irritability, low self-esteem and inability to concentrate. Doctors and teachers often attribute the behavior to attention disorders or seek other medical explanations. Mrs. Gragg said her pediatrician had never heard of convergence insufficiency.

Dr. David Granet, a professor of ophthalmology and pediatrics at the University of California, San Diego, said: "Everyone is familiar with A.D.H.D. and A.D.D., but not with eye problems, especially not with **convergence insufficiency**. But we don't want to send kids for remedial reading and education efforts if they have an eye problem. This should be part of the protocol for eye doctors." In 2005, Dr. Granet studied 266 patients with convergence insufficiency. Nearly 10 percent also had diagnoses of attention deficit or hyperactivity — three times that of the general population. The reverse also proved true: examining the hospital records of 1,700 children with A.D.H.D., Dr. Granet and colleagues found that 16 percent also had convergence insufficiency, three times the normal rate.

"When five of the symptoms of A.D.H.D. overlap with C.I.," he said, "how can you not step back and say, Wait a minute?"

Dr. Eric Borsting, an optometrist and professor at the Southern California College of Optometry who has also studied the links between vision and attention problems, agreed. "We know that kids with C.I. are more likely to have problems like loss of concentration when reading and trouble remembering what they read," he said. "Doctors should look at it when there's a history of poor school performance."

Dr. Stuart Dankner, a pediatric ophthalmologist in Baltimore and an assistant clinical professor at Johns Hopkins, said that children should be tested for convergence difficulty, but cautioned that it was not the cause of most attention and reading problems. Dr. Dankner recommended an overall assessment by a psychologist or education specialist. "An eye exam should be done as an adjunct," he said, "because even if the child has convergence difficulty, they will usually also have other problems that need to be addressed." Doctors recommend a dilated eye exam and a check of eye teaming and focusing skills. Testing includes using a pen or finger to test for the "near point of convergence," as well as a phoropter, which uses lenses and prisms to test the eyes' ability to work together. There is no consensus on how to treat convergence insufficiency. Next spring, the National Eye Institute will announce the results of a \$6 million randomized clinical trial measuring the benefits of vision therapy in a doctor's office versus home-based therapy. For Raea Gragg, the treatment was relatively simple. For nine months she wore special glasses that use prisms to help the eyes converge inward. She then had three months of **vision therapy**. She has just entered fourth grade and is reading at grade level. "Raea didn't know how to describe it because that's all she's ever known," her mother said. "She felt like she had been telling us all along that she couldn't see, but nobody listened."

Correction: October 4, 2007

An article in Science Times on Sept. 11 about convergence insufficiency, in which a patient sees double because the eyes cannot work together at close range, misidentified the specialty of the doctor who diagnosed and treated the problem in Raea Gragg. The doctor, Carl Hirsch, who was not identified in the article, is an optometrist, not an ophthalmologist.

National Eye Institute

October 2008 — Results from the Convergence Insufficiency Treatment Trial found that approximately 75 percent of patients with convergence insufficiency who received in-office therapy by a trained therapist plus at-home treatment reported fewer and less severe symptoms related to reading and other near work.