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## **Information About the Role of Optometry in Early Intervention for Autism Spectrum Disorders (ASD)**

**Leonard J. Press, O.D, FCOVD, FAAO**

Research has shown conclusively that the earlier autism spectrum disorders (ASD) are identified, the better the ultimate outcome will be for a child's overall development. While early intervention services involving occupational therapy, physical therapy and speech therapy are increasingly common prior to age three, comparatively little attention is paid to visual development.

With this in mind, I and a colleague (Dr. Jack Richman) realized that the ASD field was overlooking a potentially valuable resource. The absence of eye contact, unresponsiveness to facial gestures, and/or difficulty in sharing joint attention are signs of abnormal or atypical visual development.

Optometrists are among the first professionals to assess an infant or toddler. Dr. Richman pioneered the use of one of the standard tests for infant looking patterns, a face dot test. Elsewhere, in a textbook I co-authored on Pediatric Optometry, I reviewed the significance of the looking patterns of young children.

Dr. Richman and I put this information together to demonstrate how this potentially places Optometry in the vanguard of identifying infants and young children at risk for developing ASD characteristics. This is a very exciting development, and helps integrate our work into the mainstream of approaches to identifying and helping children with ASD.

The full article detailing the importance of involving Optometry in early intervention assessment and services is now available for download on this website:

Press LJ, Richman JE.

The Role of Optometry in Early Identification of Autism Spectrum Disorders  
Optometry & Vision Development. 2009; 40(3):141-149.

Read more: [http://www.visionhelp.com/vh\\_autism\\_05.html#ixzz2dqL4Nc45](http://www.visionhelp.com/vh_autism_05.html#ixzz2dqL4Nc45)



## Vision Therapy Explored in Autism Magazine

By Nancy Torgerson, O.D., F.C.O.V.D.

The *Autism File* Issue 44 (June-July 2012) features an excellent article on the transformative power vision therapy can have on the learning and behavior of children diagnosed on the autism spectrum. The article, "To See or Not to See?" written by Neil Margolis, OD, FCOVD, details his approach to performing a vision evaluation for special needs children. The article is beneficial for optometric care providers, for professionals working with those on the spectrum, and for parents, relatives and friends of people on the spectrum.

Dr. Margolis shares his insight that "nonverbal children often tell us, through their behaviors, what their problems are." In some cases, typical autistic behaviors like poor eye contact, looking through or beyond objects, extreme aversion to light, unusual reaction to sight, lack of reciprocal play, inordinate fear of heights or lack of appropriate fear of heights may be symptoms of visual problems that can be remediated with vision therapy. "It is incumbent on the developmental optometrist— through testing and observation— to understand whether vision is helping or interfering with performance and development," writes Dr. Margolis. "Optimizing the visual strategies and therapies available to us can yield significant benefits to children with autism." Areas Dr. Margolis covers in his evaluation include eye teaming, tracking, visual processing, visual spatial judgment, and central/peripheral vision. Dr. Margolis gives easily understandable explanations for how and why these areas specifically relate to the vision issues of patients with autism. Ideas for setting up and conducting an examination that help put special needs patients at ease, making the exam process as comfortable as possible for all involved, are also described. Dr. Margolis writes, "If my evaluation suggests that a child's vision skills may be a significant barrier to progress, a vision therapy intervention program can be designed to develop these skills." Within the article is a parent's first-hand account of the effectiveness of such a program as an alternative treatment alongside suggestions for locating an optometrist who offers vision therapy. Helpful tips for once therapy begins are also inside.

The article can be accessed by ordering a back issue in hard copy or a digital PDF download through *The Autism File* website at [www.autismfile.com/store/](http://www.autismfile.com/store/)

Read more: [http://www.visionhelp.com/vh\\_autism\\_10.html#ixzz2dqLMtsTJ](http://www.visionhelp.com/vh_autism_10.html#ixzz2dqLMtsTJ)



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### **Temple Grandin, Ph.D, Speaks About Vision Problems in Autism**

A world-renowned individual with autism, Temple Grandin spoke to the large gathering of developmental optometrists at the annual meeting of COVD in Phoenix, AZ, in 2003.

In 2006, Vintage Books released an expanded, second edition of Dr. Grandin's classic book, *"Thinking in Pictures: My Life with Autism"*. Dr. Grandin made quite an impression the optometrists in attendance at her lecture and, judging by the content of her book, the converse is true as well.

On page 79, Dr. Grandin writes: "If visual processing problems are suspected, the child should see a developmental optometrist. This is a special eye doctor who can do therapy and exercises to help the processing problems that are inside the brain. In many of these children, the eye itself is normal but faulty wiring in the brain is causing the problem."

It is vital to understand that children with autism may have normal eyesight (20/20), yet benefit from either special lenses or prisms, and active vision therapy. A new book just published in 2006 by a colleague of ours, Dr. Melvin Kaplan, explores the points made by Temple Grandin in much more detail. Dr. Kaplan's book is entitled: *"Seeing Through New Eyes: Changing the Lives of Children with Autism, Asperger Syndrome and other Developmental Disabilities through Vision Therapy"*, and is published by Jessica

Read more: [http://www.visionhelp.com/vh\\_autism\\_04.html#ixzz2dqMMyyiL](http://www.visionhelp.com/vh_autism_04.html#ixzz2dqMMyyiL)



## **When Children Can't Process Stimuli**

**From ABCNEWS.com; Reprinted with Permission.**

**July 21, 2002** For most children, the exploration of new sights and sounds is exhilarating. But for 5-year-old Tanner, noise can be painfully overwhelming, setting him off on a temper tantrum. Even his own mother's touch can be traumatic for him.

"There were times when I couldn't understand how upset he would get," says his mother, Karen. "It didn't seem just behavioral to me. It seemed something else was going on."

In fact, there was something else going on. After years of searching for answers, Tanner was diagnosed with Sensory Integration Dysfunction, abbreviated DSI (Dysfunction in Sensory Integration, so as not to be confused with Sudden Infant Death Syndrome, SIDS).

### **What Is the Condition?**

DSI is a complex neurological disorder, manifested by difficulty processing sensations. DSI causes children to process sensation from the environment or from their bodies in an inaccurate way, resulting in "sensory avoiding" patterns. Children with DSI can also have "sensory seeking" patterns or "dyspraxia," a motor planning problem.

Children with sensory seeking patterns do not always process that sensory input is coming in to the brain, so they may seek out more intense or longer duration sensory experiences. Those with sensory avoiding tendencies have nervous systems that feel sensation too easily or too much. They are overly responsive to sensation, so certain sounds and touches may feel painful, making them respond with aggression or withdrawal. Children with dyspraxia have difficulty with fine- and gross-motor skills and trouble with balance.

Like Tanner, 6-and-a-half-year-old Emma Reinhardt is overly sensitive to sensation. "Things that can be just simply annoying to the rest of us, can actually be painful to her," says her mother, Terri Reinhardt.

For example, Emma's head is extremely sensitive to touch and she finds the sound of running water painful, so washing her hair generally involves kicking, screaming and crying. The size and feel of a bathtub also frightens Emma, so she usually takes a bath in a small bucket in the kitchen. Whenever her brother plays the violin, she screams, and clipping her toenails is an ordeal.



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## **Improving Quality of Life**

Though Sensory Integration Dysfunction can often go undetected or be misdiagnosed, it can be treated. Occupational therapy can facilitate the development of the nervous system's ability to process sensory input in a more normal way.

In Emma's case, an occupational therapist works with her to confront the sensation she fears. To change her reaction to sound, she is encouraged to blow a toy whistle while she swings an activity that calms her.

To learn how to cope with her sensitivity to touch, the occupational therapist strokes her arms with brushes.

"If we can find these kids early, we can prevent them from losing self-esteem," says Lucy Miller, Ph.D., an occupational therapist who directs the Sensory Integration Dysfunction Treatment and Research center at The Children's Hospital in Denver. "We can prevent school failure, we can prevent all kinds of family problems."

While therapy is not a cure, some experts speculate that it may actually change the way the brain experiences sensations, so that the child can begin to respond in a more normal way.

For Tanner, such therapy has made all the difference.

"Therapy for Tanner has completely given him quality of life back," his mother says. Her son is happier, has fewer outbursts and gets along better with people.

And now the loving touch of his mother no longer leaves Tanner shouting in pain.



## Q&A: Sensory Integration Dysfunction

### **What kind of behavior might indicate this condition?**

Children with sensory seeking patterns may be hyperactive, unaware of touch or pain, touch others too often, engage in unsafe behaviors, such as climbing too high, or enjoy sounds that are too loud. Those with sensory avoiding behaviors may respond to being touched with aggression or withdrawal, be overly cautious or afraid to try new things, uncomfortable in loud or busy environments, or overly sensitive to smells. With children who have dyspraxia, some behaviors that can be observed are difficulty with fine- and gross-motor skills, clumsy and awkward movements and trouble with balance.

### **How is Sensory Integration Dysfunction diagnosed?**

Sensory Dysfunction is usually diagnosed by an occupational therapist, a speech and language pathologist or by a physical therapist. The primary standardized assessment tool for children ages 4 through 8 who may have learning, behavioral or developmental delays is the Sensory Integration and Praxis Test, which can be administered by a therapist who is SIPT certified. Therapists also use clinical observation and parent-teacher interviews to assess sensory integration dysfunction.

### **How is Sensory Integration Dysfunction treated?**

Occupational Therapy is used to treat the condition, with the goal of enabling children to take part in the normal activities of childhood. For example, therapists may evaluate how a child perceives sensation and how that affects his/her emotions, attention, motor skill or learning abilities. Treatment, which usually occurs in a sensory-enriched gym with tactile, visual, auditory and taste opportunities, can facilitate the development of the nervous system's ability to process sensory input in a more normal way.

Read more: [http://www.visionhelp.com/vh\\_autism\\_07.html#ixzz2dqMetGyB](http://www.visionhelp.com/vh_autism_07.html#ixzz2dqMetGyB)



## **VISION AND AUTISM**

### **Statement from the College of Vision Development**

Autism is a neurobiological disorder that is described as a behavioral syndrome. Individuals with autism have difficulty with processing and responding to information from their senses, and with communication and social interaction. Vision problems are very common in individuals with autism. Symptoms of autism may include visual components such as lack of eye contact, staring at light or spinning objects, fleeting peripheral glances, side viewing and difficulty attending visually. Other symptoms of autism include lack of reciprocal social interaction, delays in development and a hypo or hyper-response to sensory information. Symptoms appear over time as the child shows a pattern of developmental problems.

Some persons with autism use visual information inefficiently. They have problems coordinating their central and side vision. When asked to follow an object with their eyes, they usually do not look at it directly. They scan or look off to the side at the object. These individuals may have difficulty maintaining visual attention. Eye movement disorders and strabismus are also common.

Many persons with autism are tactually or visually defensive. Tactually defensive persons are over stimulated by input through touch. They are always moving and wiggling. They avoid contact with texture. Visually defensive persons avoid contact with specific visual input and may have hypersensitive vision. They have difficulty with visually "holding still" and frequently rely on a constant scanning of visual information in an attempt to gain meaning.

As a result of poor integration of central and peripheral visual input, individuals with autism may have difficulty processing information. Once central focus is gained, they ignore side vision and remain fixated on a task for excessive periods. Since the visual system relates to motor, cognitive, speech, and perceptual abilities, these areas may also be affected when the visual processing is interrupted.

The vision evaluation of persons with autism varies depending on their developmental, emotional and physical level. After a thorough patient history, a comprehensive vision examination is attempted. The examination includes but is not limited to, an evaluation of: visual acuity, eye tracking and fixations, depth perception, color vision, eye teaming and focusing, the presence of nearsightedness, farsightedness and /or astigmatism, eye health and visual fields.

Testing may also be performed using lenses and/or yoked prisms while the patient does specific activities such as walking, ball catching and throwing. Observation of postural adaptations and compensations while the patient is sitting, walking and standing with and without the lenses and prisms is often conducted.

Depending on the results of testing, lenses to compensate for nearsightedness, farsightedness and astigmatism, with or without yoked prism may be prescribed. A progress examination may be scheduled in three to five weeks to evaluate subjective changes and to repeat portions of the vision examination as needed. A consultation may also be scheduled to discuss the benefits of vision therapy. Vision therapy activities are used to stimulate general visual arousal, eye movement and the central visual system. The goals of the treatment program using lenses, prisms and vision therapy are to help the individual organize visual space and gain peripheral



stability so that he or she can better attend to and appreciate central vision. In addition, treatment is directed at gaining efficient eye teaming and visual information processing.

Treatment programs are coordinated with the patient's primary care physician and others who may be participating in the multidisciplinary management of the patient.

Members of the College of Optometrists in Vision Development (COVD) are optometrists who specialize in examining children and adults with developmental disabilities, including autism.

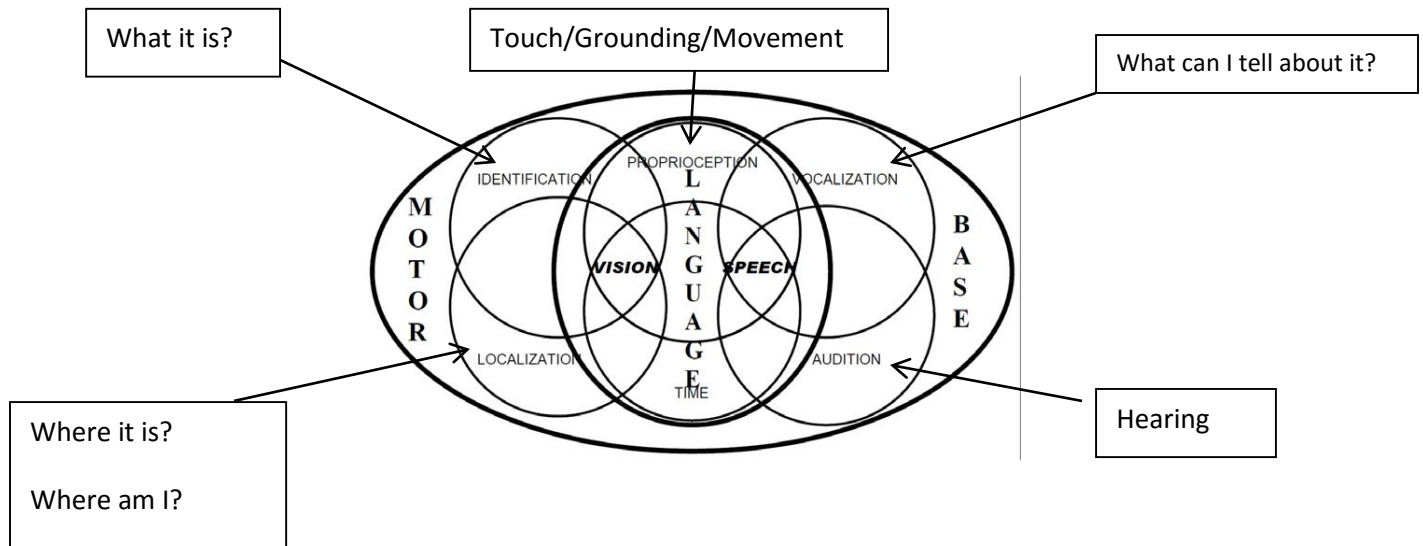
Fellows of the College are certified in the diagnosis and treatment of learning related vision problems. For further information, contact COVD or consult with a COVD member optometrist.

This informational paper was produced by the College of Optometrists in Vision Development, which board certifies qualified optometric physicians in vision therapy. For further information, see our website, [www.covd.org](http://www.covd.org).

WP12 Rev 1/2/08 ©2008

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## Based on Dr. Skeffington's Research



80% of what our brain processes is through the visual system. In order to process the visual as well as input from other stimuli our brain must have correct input in to make sense of what and how that information is processed and how we respond to that stimuli.

**Vision is not in the eye, but rather is in the interpretation of what is seen by brain!**