

The Role of Vision in Autism

by Christina M. Danley, O.D.

When a child has difficulty paying attention, has poor handwriting, is uncooperative or even disruptive in the classroom, it is easy to assume that this behavior is just part of being on the spectrum. However, these behaviors are often a sign that there is a vision problem.

In order to understand the role vision plays in the life of a child with autism we must first answer the question, what is vision? Merriam-Webster Dictionary defines vision as “the special sense by which the qualities of an object (as color, luminosity, shape, and size) constituting its appearance are perceived through a process in which light rays entering the eye are transformed by the retina into electrical signals that are transmitted to the brain via the optic nerve.” This definition barely scratches the surface of everything that is involved in vision but it does make the point that vision is more than just seeing the “20/20” line on the eye chart.

Most people don’t realize that our eyes are actually part of the brain. So it stands to reason that if someone has a developmental delay or disability that impacts the brain, their vision would be compromised in some way. In fact, 35 areas of the brain are primarily or totally involved with the processing of visual information.

Being able to see things clearly from a distance of 20 feet (i.e., “20/20”) is just one of over 15 visual skills required to read, learn and function in life. While 1 out of 4 normal children struggle with reading and learning because of undiagnosed vision problems, research is showing that a significantly higher percentage of children with autism spectrum disorders have vision problems that are not identified. When these vision problems are treated, it can make a huge difference in their lives.

Approximately 20% of children with autism have an eye turn (strabismus). As a parent, you may be able to see your child’s eye turn all the time or some of the time, depending on the size of the turn. However, it is usually easier to see the symptoms in your child’s behavior. This can include a head tilt, head movement or body movement when trying to read. This can tire your child out and make comprehension and paying attention difficult.

In addition, children on the spectrum can also have vision problems that involve their peripheral vision. It is our peripheral vision that helps us process visual information, how we relate to things spatially, and how we choose where we place our attention. It helps us answer the questions, “Where am I?” and “Where is it?” Stimming, hand flapping and even toe walking help keep the child grounded when there is a problem with how visual information is processed. There are a variety of additional behaviors that most people assume are just part of being on the spectrum which actually are signs that there is a vision problem present that is treatable. For example: poor eye contact, side viewing, peripheral glancing, reduced visual attention, watching spinning objects, eyeballing things (getting really close to objects), watching things repetitively, inability to listen and look simultaneously, stiff-legged walk, poking at the sides of the eyes, closing or covering one eye, and inability to catch or throw a ball.

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changes in the neurology and the way the child understands his world. Children who were previously non-verbal, suddenly begin speaking when they are given special glasses that are designed to help them process visual information. Other children stop “eyeballing” things.

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Diagnosis and treatment of vision problems that impact autism spectrum disorders are performed by developmental optometrists. The testing is much more extensive than a routine vision examination. The emphasis of the testing is designed to determine, “How do we get this child to become more connected to the world around them?”

Optometric vision therapy is a non-surgical treatment option for eye turns as well as a variety of other vision problems which plague autistic children. It is typically a service that is provided by developmental optometrists and it has been around for over 70 years.

People with autism have very delicate sensory systems, of which vision is a critical component. The visual management plan that is designed for the individual can be coordinated with other doctors and therapists involved in this multi-disciplinary care. The outcome of an effective visual management plan is a transformation that lasts a lifetime.

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