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Outstanding Selections from Around the World

AUTISM

ASPERGER'S

DIGEST MAGAZINE

**Boosting
Self-Esteem
in the ASD Child**

**THREE YEAR IEPS
FACT OR FICTION?**

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TOP 10 TIPS For Dealing with Special Interests



SEEING THE LIGHT

BY JENNIFER AND DANIEL HOFFIZ

At the Sensory Center children and adults, on the spectrum or not, are helped through integrated, individualized sensory programs.

According to the Autism Society of America, most, if not all, individuals on the autism spectrum have some form of sensory processing disorder – being either over-sensitive or under-sensitive to stimuli such as light, sound or touch. However, parents across the country still encounter professionals with little or no knowledge of the role of sensory integration. In fact, many parents and professionals are unaware that sensory processing imbalances contribute to many of the behavior and communication challenges that are characteristic of autism spectrum disorders (ASDs).

Our son Steven was diagnosed with severe autism at age two. Prior to his diagnosis, we attempted to address his already evident challenges through physical therapy, which started at 12 months. By 17 months of age he was enrolled in a school for mentally handicapped children. At two, Steven was displaying all of the classic symptoms of autism: poor coordination and motor skills, hand flapping, rocking, obsessive/compulsive behavior, eye contact avoidance, extreme unjustified fearfulness, self-injurious behavior, severe tantrums, toe walking, balance problems, sensitivity to sounds, difficulty coping with crowds and lack of language.

Steven fit the textbook definition of autism in all areas except one: instead of avoiding human contact, he craved hugs and cuddles – an atypical trait for some children on the spectrum.

To us, his parents, every hug, every cuddle, every time he reached out to connect with us in that way was a glimmer of hope that maybe Steven could be helped. This hope propelled us on a quest to ensure that Steven had every opportunity to develop into a normal, healthy and self-sufficient adult. We frequented medical conventions searching for information, threading together treatments that made sense, while dispensing with those that did not. On the biomedical side, Steven underwent chelation therapy to remove the near-fatal amount of mercury within his system. On the behavioral side, he participated in 40-hours-a-week applied behavioral analysis therapy sessions, coupled with occupational therapy, physical therapy, speech therapy and social skills classes. He tolerated a gluten and casein-free diet, chiropractic therapy and enormous amounts of vitamins, minerals and supplements. As a result, by age four Steven had made noticeable progress. However, a piece of the puzzle still seemed to be missing.

Despite all of the intervention, Steven still had sound sensitivities, visual processing problems and balance issues. The more we watched our son, the more we became convinced that Steven had sensory issues that were being overlooked and untreated, issues that were impeding his progress with the other interventions we were using. Against the advice of several specialists with whom we worked, we followed our innate parental intuition and began sensory integration work with Steven. It was this experience that opened our eyes to the pivotal role that Steven's sensory system played in his overall functioning and his road to recovery. So profound was the discovery that we embarked on a path to help not only Steven, but other children on the spectrum as well.

Vestibular Processing: The Cornerstone of Sensory Integration

Our current understanding of sensory integration arose from the work of A. Jean Ayres, Ph.D., OTR., the first person to recognize sensory processing disorder. Ayers defined sensory integration as "an innate neurobiological process" that involves the integration and interpretation of sensory stimulation from the environment by the brain. As an occupational therapist, Ayers was interested in the way sensory processing and motor planning disorders interfere with daily life functioning and learning. After years of research, she developed an intervention program using a swing that stimulated the vestibular system (the brain's sensory motor processing system) to improve the way the brain processes sensory information. **Ayers believed the vestibular system to be the unifying system that primes the entire nervous system to function more effectively.**

Since then, the vestibular system has been shown to be the foundation necessary for the proper functioning of the nervous system. In the womb, the vestibular system is the first sensory system to develop; it serves as an organizational tool for other brain processes. Ineffective or irregular processing of messages from the vestibular system can result in gravitational

insecurity, hyperactivity, distractibility and problems with learning and social behavior. The good news is that these impairments can be addressed through the use of controlled motion. Motion stimulates nerve growth and prompts the brain stem area to organize optimally, thereby providing the foundation necessary for more complex learning.

Light Impacts More Than Just Vision

According to the American Optometric Association 80 percent of learning occurs through vision. When light enters the eye, it gently expands constricted visual fields and increases the amount of electrical current in the brain. In addition to affecting the visual centers, light also goes to the pineal and hypothalamus glands in the brain. These are the brain's master regulators, collectors and senders of information for the body. Light therapy, called "phototherapy", allows more light to reach the brain which results in improvements not only in visual skills and peripheral vision, but also in memory, speech, mental association, hand-eye coordination and the brain's chemical processes.

Symptoms of sensory dysfunction vary in range and intensity from person to person. Some individuals have overly sensitive reactions to touch, taste and certain sounds and types of light. Other symptoms include problems with coordination, delays in speech, language and motor skills, and activity levels that are unusually high or low. Slow mental processing and impaired memory are common indications of sensory issues. Some people experience gravitational insecurity, which can cause unreasonable anxiety when sitting or standing on moving objects.

Behaviorally, sensory dysfunction can manifest as impulsivity, distractibility, irritability and difficulties with social emotional response and social interaction skills.

Individuals with ASDs often exhibit light sensitivities and visual processing problems of one form or another are common among these individuals. Visual challenges can inhibit progress realized from other forms of therapy and often the academic success of individuals, whether or not on the spectrum, is hampered simply by the inability to process one or more frequencies of light. Our son Steven exemplified this. As a result of testing we discovered that although he had no identifiable light sensitivities, he still had visual processing problems.

Hearing Affects All Areas of Life

Guy Bérard, M.D. documented in his book *Hearing Equals Behavior*, that hearing impacts all areas of life. Dr. Bérard, the inventor of auditory integration training (AIT), found that in addition to visual impairments, distortions in hearing or sensitivity to certain sounds could contribute to inappropriate or antisocial behavior, irritability, lethargy, restlessness and high-tension levels – characteristics common among the autism population. He also found that hearing anomalies affect speech and language development and learning ability.

Today auditory processing problems are thought to be the #1 most common sensory challenge among individuals with ASD. One of the more effective ways to ameliorate this challenge is by re-ordering the way the information is organized by the brain. This typically is done through listening to specially designed music stimulation programs which cover a range of sound frequencies.

Finding Answers and Effective Solutions

Many parents do not realize 1) that their child even has sensory issues, 2) the magnitude of the sensory issues their child faces and 3) that one sensory processing imbalance indicates a high probability the entire sensory system is not working properly. For example, a sound sensitivity often is accompanied by a light-processing imbalance. However, without an occupational therapist trained in sensory integration, it is almost impossible to identify this piece of the puzzle.

Furthermore, most doctors and educational/behavioral therapists do not tell parents about the role sen-

sory impairment can play in the overall effectiveness of other intervention programs, nor do they mention the ever-increasing amount of literature that suggests sensory integration can play a part in recovery from autism. This is especially true if the child does not exhibit obvious sensory problems such as tactile defensiveness, clothing sensitivities or issues related to the sense of smell or taste.



In our case, Steven had almost no “classic” symptoms of sensory processing disorder, but was helped tremendously by sensory integration. Even though his Occupational Therapist didn’t feel he had any sensory issues, we suspected otherwise based on our observations of Steven, especially noticing his sound sensitivities. Therefore, we ventured out on our own to seek resources and tried various sensory

methods, including brushing and using a weighted vest. However, no methods were helpful and training Steven to deal with loud noises proved virtually impossible.

Our research led us to the notion that his sensory issues were neurological, not behavioral. We wanted to treat him on a neurological level and fix the underlying problem, not just change his reaction to the problem with some external aid or internal coping mechanism. Since we couldn’t find the type of program we thought Steven needed, we decided to create our own, and thus the Sensory Center was launched.

Together with an advisory board comprised of doctors and experts in the fields of autism spectrum disorders, chiropractic neurology and optometry, we created a multi-tasking protocol that addresses the foundational brain processing and integration issues that cause these symptoms. Concentrating on the triad systems of sensory integration - vision, hearing and vestibular processing - we combined computer-controlled light and motion with digitally re-mastered sound to prompt the main sensory systems to learn or re-learn subconscious reception, processing and integration. Our protocol gives the individual the ability to process single forms of stimulation so that he or she can attempt more complex processing in their natural environment.

An Individualized Sensory Program (ISP) is developed for each child attending the Center, since each person has different reactions to sensory input. On an ongoing basis, the ISP is adjusted so that each individual receives the vestibular, auditory and visual stimulation needed. Our versatile system design makes this possible.

On the vestibular front, each different motion that a person experiences stimulates nerve growth in a different portion of the brain, so we designed eight different movements into our own oscillating motion bed. As our chiropractic neurologist can tell you, having this versatility allows us to better target the vestibular system's neuronal pathways.

On the visual front, we incorporated a highly specialized light instrument that is programmable to address each individual's particular condition. Our light unit uses 20 different light frequencies (seen as colors) to pinpoint and address any light processing imbalances an individual might have.

On the auditory front, we incorporated Bérard-based auditory integration training using music that has been digitally re-mastered to send random, isolated and specific high and low frequency sounds through headphones to each ear. This ensures that the individual cannot anticipate the sounds and, as a result, learns to "tune in." Bérard-based AIT aggressively stimulates auditory processing and usually results in improvements in auditory processing as well as improvements in academic and social skills.

The Sensory Center's approach is effective because it is specifically tailored to each child's unique sensory issues on an ongoing basis, resulting in a higher chance of success in normalizing neuronal pathways that reorder the sensory systems. This, in turn, often improves the effectiveness of other interventions since the integrated approach treats the whole person, rather than just one

of their senses. In addition to improvements in vision and hearing, improvements have been witnessed in:

- receptive and expressive speech
- social interaction/willingness to communicate
- gross and fine motor skills
- regulation of sleep and activity patterns
- focus, comprehension, concentration and organization
- tactile, taste and olfactory sensitivities
- balance
- hyperactivity

The ISP protocol used at the Sensory Center has helped children and adults with autism, Asperger's syndrome, attention deficit disorder, attention deficit/hyperactivity disorder, dyslexia, Down's syndrome, cerebral palsy, migraine headaches and even insomnia – with more than 15 percent having noticeable improvements during or immediately following their first session. Regardless of age or diagnosis, sensory imbalances are being addressed and progress is being made on multiple levels.

Today, our son Steven is fully included in a mainstream class. He has many friends and 90 percent of his therapy has been phased out. Understanding the importance that sensory issues play in autism is the key to Steven's success. The Sensory Center was created so that other individuals, perhaps your child, can experience similar success.

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[ED Note: When considering any new program for your child with ASD, remember the parent mantra we often mention in the Digest: **Question, Investigate, Evaluate.**]

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