

AUTISM: A NEURODEVELOPMENTAL APPROACH

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We serve a God of hope. In I Cor. 10:13, our Lord promises that our trials will not be too great and that He will provide a way of escape. We, at ICAN, firmly believe that the hope that the Lord has provided for parents of children with a diagnosis of autism lies in the very nature of our created being.

What does this diagnosis of Autism mean anyway?

Autism is a very confusing diagnosis that can strike fear and dread into the heart of parents. In seeking answers for their children, parents are faced with a wide range of information about what to do. A further parental burden comes when trying to train a difficult child with many confusing, conflicting, odd and unexplained behaviors. As they seek out experts, the advice ranges from no potential for improvement to only minimal glimmers of promise. Families take on additional burdens of time, education and finances in the desperate hope that despite the negative prognosis, there is something they can do to help their child.

Autism is a diagnosis that is more prevalent today than ever before. According to CDC numbers, 1 in 166 children will be diagnosed with autism (or on the autism spectrum) with the prevalence in boys 4 times higher than in girls. (1) This compares to the 1 in 10,000 incidence of autism diagnosis just 20 years ago. Though some of the increase in diagnosed cases can be attributed to improved screening methods detecting the condition, this increase in diagnosis cannot be entirely explained away by simply improved diagnostic screening. (2) Logic demands that something environmental must be going on that is the cause of the marked increase in the incidence of autism. If underlying causes can be found, then treatment is possible. Unfortunately, rather than looking into environmental causes that may have caused the marked increase in the condition over the past 20 years, most research money is going into genetic research, that attempt to identify genes or sets of genes that are precursors to autism. Again, logic demands that the gene pool does not change so drastically in 20 years to result in such a large increase in autism.

About the diagnosis of autism

Diagnosis of autism is made based on the DSM IV scale of behavioral and functional characteristics (3) which is both symptomatic and subjective. Children can display a wide range of functional issues and still fall within the broad criteria, making this diagnosis even more confusing to parents. Diagnosis based on the DSM IV does not in any way indicate the cause or the treatment needed to achieve normal function. Some children do not talk, some talk in an echolalic or scripted fashion. Some children cannot read, others read very early and well, but in an obsessive way. All children within this diagnosis have some type of social impairment and most have repetitive behaviors. Is there anything that can explain such a wide range of functional disturbances? The answer is Yes! The commonality that all these children have is sensory dysfunction, meaning one or more of their senses are not functioning normally. This is why it is imperative to find and treat the root causes and not the symptoms.

Depending on the model with which children are evaluated, different solutions emerge. As neurodevelopmentalists, we do not try to diagnosis or label, but we evaluate each child as an individual.

The Doman/Delacato developmental profile was derived by a dedicated, eclectic group of individuals, lead by the famous neurosurgeon, Dr. Temple Fay. This group was researching ways to improve the function of individuals with brain injury. (4) We use a modification of the Doman/Delacato developmental profile to assess the major sensory input pathways (tactile, visual and auditory) to the child's central nervous system and to evaluate the major motor output pathways (gross motor, fine motor and expressive speech and language) for the purpose of understanding developmentally each child's strengths and weaknesses. (5) With this model of hierarchical development and the fact of neuroplasticity (the ability of the central nervous system to be 'rewired' with stimulation) (6), it is found that parents can be empowered with the information to help their children progress. This is the key. Specific stimulation of sensory pathways with the appropriate frequency, intensity and duration can normalize them. As neurodevelopmentalists, we see this as THE hope promised in I Cor. 10:13.

Dr. Carl Delacato in his groundbreaking work, *The Ultimate Stranger* (7) describes his path of discovering the distorted sensory system as the basis to explain some of the odd behaviors of autistic children. A genius can be described as someone who looks at the same things everyone else sees and yet finds something new. This is certainly the case with Dr. Delacato.

After working to help develop ways to improve the function of children with brain injury, Dr. Delacato took on the unheard of task of improving extreme behavior in autistic children. During his path of discovery, he saw some of the same type of repetitive behaviors in blind and deaf children that were seen in autistic children. However, in the case of blind and deaf children, these were called 'blindisms' and 'deafisms' not autism. This led him to explore the sensory system of autistic children to see if this was a root cause of the odd and repetitive behaviors. And indeed, he did find distorted sensory input and was successful at stimulating those sensory pathways in many children to resolve behavioral issues and bring about improved function. He found sensory inputs of auditory, visual and tactility being either too sensitive (hypersensitive), not sensitive enough, (hyposensitive), or what he described as 'white noise input,' a scrambled message that cannot be interpreted well by the brain.

Since sensory input is the way we gain information about the world, it is the basis of our learning, discovering and intellectual growth. Without clean, consistent sensory input, the world is strange, unpredictable and even painful. The odd behaviors of children with autism do not have to be explained by psychosis. These children are trying to make the best sense of the world that they perceive. Our job is to help them by careful observation of their function which will then indicate which sensory channels are distorted. We can then provide appropriate stimulation to normalize their pathways and improve function.

Autistic behavior based on a neurosensory model.

We describe response to sensory issues as the basis of the diagnosis. The odd behaviors of autistic individuals, the accompanying repetitive behaviors, and sensory play give us clues as to how that individual perceives his environment. Based on Dr. Delacato's observations and our work with thousands of children with autism, we have concluded that sensory issues are at the heart of the diagnoses of autism.

In the area of tactile input to the brain, there are general patterns we see. Children with a label of autism often have a very high pain tolerance, have low muscle tone, and lack of coordination. These children crave deep pressure, repetitively hit themselves, or bang into things trying to get the deep sensation that they are missing. These same children are often overly sensitive on the skin surface. They resist being held, are irritated by textures, and annoyed by light touch. The children can be overly sensitive to temperature changes, or be unable to perceive hot and cold at all. Smell distortions may result in a child seeking strong or disgusting smells and engaging in disturbing behaviors. Mouth sensitivity problems are common, causing the children to resist foods, citing problems with textures and temperature. Distortion of tastes and smells cause many children to make very limited food choices. Rejection of food not only inconveniences and distresses parents, it also negatively affects the child's health and nutrition.

The auditory pathways to the brain are often distorted in children with autism. Though audiograms may show good or very good hearing, some children interpret sounds as painful and simply shut down when auditory stimulation is present. Parents often take their children for a hearing test as the first sign that something is wrong, usually when the child is not responding to his name or is not talking. However, autistic children do not have a lack of hearing acuity, rather, they have tonal distortion in their interpretation of auditory information. Sounds that seem normal to us may be painful to children with such issues. These are children whose behavior may break down in noisy or confusing environments such as malls or large stores. Their hands are often covering their ears. Alternatively, they may act as if they are deaf.

Interventions such as AIT, Tomatis and a plethora of other sound therapies have helped many children improve function by remediation of auditory and related issues and normalization of auditory disturbances. We have experienced consistent and rewarding results with the superior technology of Samonas Sound Therapy, which not only addresses the auditory pathways to the brain, but works on the spatial aspects of sound interpretation. This unique Samonas technology and recordings with superb attention to quality and technological innovation presents only in this system of intervention. (8)

Lack of expressive communicative language is another quality often seen in children with autism. Normalizing the auditory pathways so that the tonal processing can be clear and consistent is of the utmost importance for developing language. After this is addressed, a child can then begin to develop sequential processing or auditory short-term memory. Regardless of chronological age, a person must have an auditory sequential processing of at least two pieces before expressive language will begin to grow in output. (9)

Visual disturbances are another area we often see in children on the autism spectrum. Parents often report little to no eye contact, fascination with spinning wheels or mirrors, engagement in visual sensory play by dangling objects in their peripheral visual field, or odd finger play. On evaluation of these children we find them to be overusing their peripheral vision (hypersensory) and underusing their central detail vision (hyposensory). This child lives in a world of peripheral

vision, that is, s/he only perceives edges and motion. Rather than attending to the pertinent information in his/her environment from which meaning could be derived s/he attends only to irrelevant visual information in the environment.

Our experience is that interrupting and stopping sensory play is vital to improvement of the individual while we work to stimulate that sensory pathway to normalize it, making the drive to do sensory play less and less. (10)

Basing our work on Dr. Delacato's findings, many neurodevelopmentalists in the past 30 years have helped many, many children improve function. New ways of stimulating these sensory pathways to help normalize function are always being found. Other professionals have worked from the premise of sensory dysfunction being the underlying cause of autism and developed methods of identifying and stimulating a dysfunctional sensory system to try to achieve normalcy. Dr. Jean Ayres work on sensory integration (10) is an example of the occupational therapy world taking up this battle and applying their own knowledge to help more and more children.

Metabolic Issues in Autism.

In trying to understand the 'whys' of sensory dysfunction in children labeled with autism, many have explored the realm of environmentally caused metabolic disturbances with fruitful results.

Many children with autism have major metabolic disturbances and are actually physically sick. This huge area of research and many clinicians have helped improve the lives of children with autism in the areas of: implementation of special diets, supplementation for nutritional deficiencies, correction of disturbed metabolic pathways, chelating of heavy metals, identifying and eliminating environmental toxins, yeast and other pathogen overgrowth in the guts of these children; including even live viruses and lesions in the intestinal tract of some children. (12) Parents often report strongly adverse reactions to foods, chronic diarrhea or constipation, impaired sleep patterns, strange rashes, fevers and temperature disturbances and so forth. Parents can spend hundreds to thousands of dollars searching for answers to metabolic issues for their children. Our association of neurodevelopmentalists has experienced good results with Chembalance (13), which is a unique and inexpensive approach to balancing blood chemistry and pH. We also have seen the most consistent and significant 'healing' with the use of the Specific Carbohydrate Diet if further intervention is needed. (14) Metabolic intervention is often an important step in piecing together a solution for the autistic child's issues.

A note about ABA

ABA or Applied Behavioral Analysis, has been touted as the only scientifically proven method of helping children overcome autism. (15) The intensive one-on-one behavioral methodology is widely used at great expense to parents and school districts. Reports of recovery using ABA vary from 43% in the original work by Dr. Lovaas to more generally 10-20% in parent discussion lists. Some parents are mortgaging their homes and going in debt to provide this intensive intervention for their children. Such is the heart that our Lord has given parents for their children.

Because the diagnostic criterion for autism is behavioral, a behavioral answer is the world's response to this diagnosis, and ABA is THE behavioral based answer.

Some children indeed have improved using ABA, and from a neurodevelopmentalist perspective it is understandable why this has occurred. A child that is doing 20 – 60 hours per week of ABA has no time to engage in sensory play, and as we stated earlier, reducing or stopping sensory play is vital in getting progress in development. By not reinforcing negative activities, ABA allows the child to progress instead of being stuck in his own sensory world. ABA also provides much on-on-one input and attention. Certain skills can be taught through much repetition, and ABA is often able to move a child from the inability to follow any directions to the ability to follow one-step and some two-step directions. From our perspective, how the child uses his/her brain and sensory system can actually change the function and structure of that system. Therefore these initial gains can result from simply changing the use of the central nervous system and as follows, the function of the child to some degree. However, though some initial progress may be made, root causes of autism, sensory distortion and underlying metabolism, are not being directly addressed.

So, although ABA can be helpful in teaching autistic children specific skills and getting some to begin initial talking and engaging, it has serious gaps in the intervention necessary to lead to long-term results. Thus we have found it to be less generally helpful than a more eclectic approach that addresses underlying causes. The neurodevelopmental approach is focused on changing the entire system from the foundation up so that skills are acquired naturally because system is

progressing in a natural developmental hierarchy. This is very different than a skill by skill teaching approach which can tend toward isolated skill development.

Parent-driven research into alternative therapies using ABA with other approaches is outlined in such books as *Facing Autism*, by Lynn Hamilton and *The Sound of Falling Snow* by Annabel Stehli.

An alternative to the rigorous and expensive ABA approach, one which many of the parents we have worked with and have used successfully is the techniques of Dr. James MacDonald. He trains parents to become communicating partners with their children. (16) This natural interactive methodology has helped many children improve in language, communication and social skills in a very playful and more easily generalized way.

Behavioral training

Our standards for behavior of children with autism are very high. God's call to parents to minister to and train their children is not negated by a diagnosis of autism. In the book, *Too Wise to be Mistaken, Too Good to be Unkind*, Cathy Steere relates the journey of discovering that her son was autistic and helping him improve. It is heartening to read of the faith and courage that Cathy Steere had in standing by God's Word and training her son to be obedient and controlled even though it was hard for him and for his parents (17). Training a child with autism to be well behaved and obedient must be done with firmness and mercy; firmness in having high Biblical standards and mercy by realizing that certain situations are causing great fear or pain and helping control the environment to reduce stress to the child. Obedience training is absolutely necessary implement a recovery program.

A Conclusion of Hope

Most children can be helped to improve and some can recover to the point that they lose their diagnosis. As more and more research is done, we pray that causes of the diagnosis are found, the upward trend of increased injury to children is stopped and that more and more children are helped to reach their full God-given potential.

Ultimately, our continued prayer is that all children would be viewed as made in the image of God, not valued by what they can and cannot do, but based on their inherent value as human beings. All children deserve to receive the help they and their parents need, to be held up in prayer and the support of the church and community to help them run the gauntlet of the diagnosis of autism. As we learn more and move forward to help more families with children with autism, we must never forget the ultimate source of our knowledge and strength which is Christ.

Philippians 3:14 "I can do all things through Christ who strengthens me"

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