Looking Beyond the Symptoms of Developmental Disorders
Functional Disconnect Syndrome and its Impact on the Brain

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Our country is currently experiencing record rates of autism and attention deficit hyperactivity disorder. ADHD in children has risen over 20% over the last four years. CDC statistics show 11% or 1 in 9 children are diagnosed with ADHD and a recent statistic from the CDC found that 1 in 50 children are affected with ASD (autism spectrum disorder).

Worst of all, doctors and researchers still aren't sure exactly what causes these disorders. There is any number of theories ranging from concerns about the environment and pollution to outcries over hormones and chemicals in our food to fears over vaccinations. To make matters even more complicated, many children with autism and developmental disorders often have other health concerns such as food allergies and vitamin b12 deficiency.

As a result, doctors and medical researchers sometimes become overly focused on the *symptoms* of autism, rather than discovering its root cause and preventing it in the first place. It's a common issue in Western medicine: We treat the symptoms rather than looking at the big picture and encouraging wellness and health before issues arise.

When it comes to autism and other developmental disorders, the big picture is the brain. These conditions come down to brain imbalances, also known as Functional Disconnection Syndrome (FDS). FDS produces an imbalance in maturity and development in different areas of the brain. Simply put, it's when one side of the brain grows too quickly and/or when the other side of the brain grows too slowly. The two hemispheres of the brain need to work together in order to have optimal functioning, but when one side is more developed than the other, the hemispheres will have trouble communicating.

Numerous studies have found that children with autism also have impaired functioning and abnormal brain growth. In small children their brains seem to grow too large and then later on their brains seem to be smaller or more immature in certain areas, but in the vast majority of children with autism, their brains are of a normal size, the connections between the left side and the right side are impaired as one side grows at a more rapid rate in the years following birth. In a paper I presented to the European Society of Pediatric Research, my team of researchers and I compared the EEG measurements of children with autism to those who did not have autism. We found that the electrical activity in the right hemisphere was significantly reduced relative to the left in children with autism but not in those without autism. There was also an increase in activity and connectivity in the left hemisphere. We also documented significantly less communication *between* the two hemispheres in children with autism.

These brain imbalances can occur because the brain is built, not born. As children learn and explore their world, their interaction with the environment causes the brain cells to become more interconnected and the brain physically grows larger and more connected. The two sides of the brain become more synchronized and coordinated as well as more connected and specialized. When the brain matures it then controls and balances the immune system, the autonomic system, the digestive system, the hormone system, the blood sugar system as well as the sensory, motor and cognitive functions.

When a child has autism and other neurobehavioral issues, it involves brain imbalances in all of these systems, which is why children with these issues often have a wide range of symptoms ranging from not only their behavior but also in their eating and sleeping habits and beyond. Additionally, these children have skills that are advanced for their age. This is because one side of the brain is more developed and mature than the other, which is why children with autism, for example, can be delayed in some areas yet highly intelligent in others.

The good news is that researchers and medical experts are learning more and more each day. And, the more we learn, the more we find ways not only to decrease the symptoms of these disorders but perhaps even to prevent them altogether.

By working to help correct brain imbalances such as those which cause conditions like ADHD and autism, we can help these incredibly gifted and intelligent children to excel as they interact with their world.