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ALTERNATIVE WAYS FOR TREATING THE CHARACTERISTICS OF AUTISM WITHOUT THE USE OF MEDICATION

Student Article by Heather Coleman

Abstract

Autism is a neurological disorder that affects one out of 66 children worldwide (Autism Speaks, 2015). Although, some people feel that medication is a benefit for treating individuals with autism, nevertheless, there can be alternative methods in the treatment of how the brain develops that does not include medication: such as brain based exercises, reducing primitive reflexes, and using a holistic approach. Through a series of extensive brain based exercises, in conjunction with reducing the primitive reflexes, as well as incorporating natural vitamins, minerals and essential oils, parents may be able to see the brain grow in unison. Once the brain is balanced, there could be a reduction in the characteristics of autism.

Introduction

The world of autism has evolved tremendously since 1908. From Leo Kanner to Hans Asperger, there has been a wide range of characteristics and diagnosis concerning Autism Spectrum Disorder. Ranges that considered childhood schizophrenia to the lack of maternal bonding as a component to what encompasses the characteristics of autism. Among all the researchers: there is no cure for the neurological brain imbalance that is known as autism. A child with autism processes daily tasks and emotions differently within their brains for many reasons that are unknown. The human brain is a complex organ that controls every movement, thought, reflex, and emotional response. Every part of the brain works together in some facet to make human interaction possible. Imagine if the brain had the ability to correct itself and restore the missing connections that were not flowing properly. "This year, 1.5 million children entering school – that's 1 out of every 6 five or six-year-olds – will be diagnosed with some type of neurological disorder that affects the ability to learn and socially interact" (Melillo, 2010, p. 4). Could it be possible that there is a way to help manage the diagnosis of autism without the use of medication?

Brain Hemispheres

The brain is divided between the left and right hemisphere, which in turn is divided into four sections. The left hemisphere is the logical side of the brain and is responsible for analytical thinking including speech, fine motor skills, intelligence, and impulsivity. This part of the brain helps a person recognize words, letters, and numbers in sequence, while helping the brain read and process information. The right hemisphere is the intuitive side of the brain. This part of the brain controls socialization skills, nonverbal communication, facial recognition, and emotion are processing (Sousa, 2001, p. 168). Many of the typical characteristics that are present in individuals with autism are controlled by brain function. When individuals with autism demonstrate a deficit in hemispheric activity, either on the right or left side of the brain, one might question if this imbalance contributes to the diagnosis of autism.

Sections of the Brain

The human brain is further divided up into four sections. Each of these sections play a pivotal role in how the human brain develops over time. The cerebrum, also referred to as the cortex, is the largest part of the brain and is sectioned off into four parts: occipital lobe, temporal lobe, parietal lobe, and frontal lobe. Each of these sections is responsible for many of the characteristics and functions of daily human life.

The occipital lobe is in the back of the brain and houses all functions associated with vision processing. The primary function of this area in the brain is to intercept signals and send them for visual processing. The temporal lobe, located towards the bottom part of the brain, supports the individual's processing skills and stores information for long and short-term memory. The temporal lobe allows the brain to process what it hears through the ears and consequently works with speech and language skills. The parietal lobe is in the center of the brain and responsible for processing how we receive touch and pressure. Lastly, the frontal lobe is in the front part of the cerebrum and is responsible for socialization and attention span, in addition works with expressive language, and reasoning (Melillo, 2010, pp. 24-26). When trying to understand the complexity of the brain, looking at this three-pound organ is vital to understanding the essentials to life.

Limbic System

Another critical area of the brain is the limbic system, which is located inside the cerebellum. There are four subparts that make up the limbic system and these parts help the cerebellum function properly. The primary responsibility of the limbic system is to control the emotional response and help an individual process those emotions. The first two parts of the limbic system are the thalamus and hypothalamus and work in conjunction to help process sensory stimulation, motor function, emotions, and hunger. The amygdala, a tiny organ, located in the temporal lobe, helps process the emotion of

fear and works in conjunction with the flight/fight trait individuals might experience in times of stress, anxiety, or fear. The final section of the limbic system is the hippocampus and helps the brain with memory as well as the body's response to spatial relationships.

An individual with autism has many challenges establishing and maintaining social relationships, speech and language deficits, spatial concerns, and the ability to handle emotional responses. When examining the function of the limbic system in the brain, analyzing the brain and looking for way to correct any disconnect could help reduce some of the characteristics of autism that may be present.

Brain Stem

The brain stem is the last part of the human brain to discuss and is located at the base of the brain connected to the spinal cord. The brain stem works on processing and sending the essential brain connections to the spine, which then sends signals throughout the human body. If the brain of an individual with autism has not developed properly, then "correct" signals cannot be sent to the appropriate areas.

When examining the essential components of the brain of a typical functioning individual, it is imperative that the brain correctly develops in each of the key areas. When identifying individuals with autism and the neurological disorder that is associated with it, brain development could be key in determining areas of struggle. Restructuring how the brain grows could change the way a human brain develops.

Primitive Reflexes

Primitive reflexes are specific reflexes linked with the central nervous system and are present during the first year of an infant's life. As the body's natural response to handle sensory stimulation; they should be nonexistent by the time a child turns one. There are essentially eight primitive reflexes present for a child to experience normal development. These reflexes are: Moro reflex, rooting reflex, palmar reflex, Landau reflex, Spinal Galant reflex, Asymmetrical Tonic Neck reflex (ATNR), Tonic Labyrinthine reflex (TLR), and finally Symmetrical Tonic Neck reflex (STNR). When these reflexes remain intact past infancy, it could lead to developmental delays in sensory stimulation, speech and language, fine motor skills, coordination, emotional response, and brain development (Melillo, 2010).

The matrix in Table 1 (adapted from Melillo, 2010) defines what the functions of each reflex and how are beneficial to the development during the infancy stage of life. The matrix also shows when primitive reflexes should be phased out and what could happen if the reflexes remain intact after they should have been phased out.

Table 1
Primitive Reflexes and Their Functions

Primitive Reflex	Function of Reflex	When it appears	Phased out	Concerns when reflex remains
Moro Reflex	Fight or Flight Response	Birth	Four Months	Sensory Overload, anxiety, impulsivity
Rooting Reflex	Feeding and heading turning	Birth	Four Months	Speech/Language, Thumb Sucking
Palmer Reflex	Finger and hand grasp	Birth	Six Months	Fine Motor Skills, handwriting
Landau Reflex	Head/Posture development	Three to Five Months	One year	Proprioception, Motor development
Spinal Galant Reflex	Assists in the birthing process, sensory stimulation	Utero/Birth	Nine Months	Concentration, Memory Function
ATNR	Assist in birth canal, simultaneous hand/arm movement	Birth	Six Months	Hand/Eye Coordination, Tracking in reading and writing
TLR	Rolling, Crawling, Walking	Birth	Four Years Old	Muscle Tone, Balance, Spatial Awareness
STNR	Crawling	Six Months	Eleven Months	Muscle Coordination

When Primitive Reflexes Remain

According to Melillo (2010), “retaining the primitive reflexes well after infancy can lead to developmental delays in sensory processing, autism, and learning disabilities” (para. 2). Results from the research showed “participants who have higher rating of primitive reflexes i.e. Moro reflex and Galant reflex...show persisting developmental stages related to certain motor and cognitive functions” (Konicarova & Bob, 2012, p. 135). Being able to understand some of the sensory challenges that individuals with autism struggle with, looking at the functions of the primitive reflexes can show how they could be directly linked to sensory processing. For example, anxiety is a cause for concern for

individuals with autism. Reducing the Moro reflex, which is responsible for the fight or flight reflex, could help eliminate some anxiety. Many of the characteristics of autism fall under the sensory category. When looking at the primitive reflexes and the functions associated with the reflexes, many of the characteristics of the reflexes are areas of concern for individuals with autism. Eliminating the primitive reflexes that are still present in individuals with autism, could lead to the elimination of some of the characteristics that are typical within autism.

Medication and the Treatment of Autism

Autism Spectrum Disorder (ASD) is a neurological disorder that affects an “estimated 1 out of 42 boys and 1 in 189 girls in the United States” (Autism Speaks, 2015, para. 4). While there is no cure for autism, some doctors, educators, and parents feel that medication is a good supplement to help manage some of the characteristics. According to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (2013), some typical characteristics of Autism include: deficits in social communication and repetitive behaviors. In addition, children with autism are known to have obsessive-compulsive behaviors, limited eye contact, repetitive language, and an inability to maintain appropriate social conversations.

Commonly Prescribed Medications for Autism

Many medications prescribed for autism are generally antidepressants and/or anti-psychotics because these medications typically treat the core characteristics of autism. When deciding which medications are best for an individual with autism, medical professionals should take into consideration the prevalent second characteristics that encompass the diagnosis which include: anxiety, depression, behavioral problems, irritability, impulsivity, hyperactivity, and seizures. Unfortunately, there is no single medication that eliminates or reduces characteristics. Autism Speaks (2012) listed Prozac, Zoloft, and Ritalin as the most commonly prescribed medications because they tend to treat anxiety, depression, and hyperactivity which are most prevalent in all individuals with autism. With any medication, there are common side effects, which include a decrease in energy, appetite, muscle soreness, and a wide range of other side effects. Since autism is a neurological disorder, one could assume there are medications available that impact brain function along with helping to reduce some of the characteristics seen in autism.

Arbaclofen

The medication Arbaclofen, according to Coghlan (2010), is reported to work with the brain along with the chemicals it produces. Essentially, it “is intended to rebalance brain chemistry” (p. 1). The article by Coghlan went on further to explain, “we are trying to normalize signaling functions within the brain” (p. 2). This is revolutionary in autism as a neurological disorder, using a drug to rebalance brain activity could significantly reduce autism characteristics. This drug also reports showing a reduction in irritability, and tantrums, while improving some basic social skill interaction. Autism Speaks (2012)

published articles from numerous journals regarding Arbaclofen. Research indicted much of the same theories and principles about the drug. Specifically looking at the social aspects of autism and how the drug significantly reduced the social avoidance for individuals with autism (Berry-Kravis, Hessler, & Rathmell, 2012). Autism Speaks (2012) also published articles refuting Arbaclofen explaining how drug companies are no longer funding the clinical trial. Although participants were reporting improvements, the drug company said that Arbaclofen only helped about a third of the participants and often made symptoms worse. The companies also stated there was no real way to see if the behaviors were changed or if it was wishful thinking on the parent's behalf. With these statistics, they considered the trial a failure and no longer had the funding to continue (Pollack, 2013).

Additional Medications

When looking at medications that are provided to help individuals with autism, there are two other medications described as "suitable". The first medication, Clomipramine, was found to be successful in treating social awkwardness by reducing impulsivity and obsessive-compulsive disorder tendencies. In a study conducted by Buitelarr and Willemsen-Swinkels (2000), they examined individuals between the ages of 13-33 and found this drug was successful in four out of five participants. It should also be noted since the medication has major side effects, which include grand mal seizures, extreme caution should be used when taking the medicine. Desipramine is the other medication that has shown promise in managing some of the characteristics of autism. The medication is considered an anti-depressant and when combined with lithium, shows a reduction in social behaviors, anger, and hyperactivity (Buitelarr & Willemsen-Swinkels, 2000).

Is Medication Enough?

When considering appropriate medication and how to treat an incurable epidemic that is plaguing our nation, one should consider alternatives to medication to help reduce or eliminate the characteristics of autism. Often, doctor and psychiatrists are so quick to diagnose an individual and offer medication to treat the symptoms instead of trying other alternatives that could be less invasive with minimal side effects. Many medications prescribed to individuals with autism often mask the characteristics but do not actually treat the individual. Researching and developing other alternative ways to help this neurological brain disorder could help with overmedicating. Questions should always be asked such as: What happens when medication does not work? What happens when the dosage needs to be continually adjusted with growth and development? Caretakers and the medical community sometimes end up in a vicious cycle of adjusting and readjusting medications without helping to eliminate or reduce the characteristics of autism.

Alternative Methods for Treating Autism

There is currently no medication that effectively treats autism. However, many parents have turned to alternative ways to help ease some of the symptoms of autism. In conjunction with speech and language and occupational therapy, parents are looking towards a more holistic approach when treating the characteristics of autism. Since we know that autism is a neurological disorder, other options such as chiropractic care, essential oils, and brain exercises could lead to a decrease in the characteristics of autism.

Chiropractic Care

Chiropractic care is no secret many people take advantage of the benefits of readjustments to align their spines, which in turn helps brain and body function. According to a clinical study conducted out of the United Kingdom, children with autism can receive benefits from chiropractic manipulation. In regards to the neurological aspects of the disorder, manipulation of the spine and neck area can help increase range of motion and the flow of neurotransmitters from the brain to the body. The study also reported some participants described a decrease in the dosage of medication, slight increase in speech processing, and increased eye contact and attention span (Jennings & Barker, 2006). On the contrary, there are also studies that showed there is no sound proof chiropractic care benefits individuals with autism. It was reported the manipulation could be traumatic for individuals with autism, as well as aggressive behavior, hypersensitivity to the light and sound, as well as trauma from the manipulation (Science Blogs, n.d.).

Essential Oils

Another alternative for treating and managing characteristics of autism for some parents are the use of essential oils. Found on the Do Terra Essential Oil website (Doterra, n.d.), essential oils are “gently and carefully distilled from plants that have been patiently harvested at the perfect moment by experienced growers from around the world for ideal extract” (para. 1). Essential oils are absorbed through the blood system and are best applied to the bottom of the feet or the back of the neck. There are five essential oils that have been reported by parents as having a positive effect on the typical characteristics displayed by their child. The first oil is Vetiver, reported to calm the nervous mind and help control anger, obsessive compulsive behavior, and irritability. The next oil is Cedarwood, also reported to have a calming effect. This oil works in conjunction with the pituitary gland and can help increase the brain’s natural response to produce melatonin, which could be beneficial for those sleepless nights (Embracing the Spectrum, 2015). Lavender is another oil that works with the nervous system to help reduce stress, insomnia, and meltdowns that could occur. Frankincense is an oil that helps stimulate the limbic system, which controls the human’s ability to monitor mood and natural instincts. This oil can be ingested in small amounts and helps boost and support the immune system. The last oil is peppermint, which has natural calming agents. This oil is mainly used for minor joint relief, migraines, and stomach discomfort but can also be used to help individuals with autism focus.

Exercise Your Brain!

Over the last several decades neuroscientists have found the brain to be able to change, meaning it has the ability to both physically and chemically change – *if* given the proper stimulation (Melillo, 2010, p. 9). Melillo (2010) believed targeting an individual's brain in the areas of sensory motor, nutrition, and academics will help target the areas in the brain that an individual could be struggling with. He also believed that when identifying which side of the brain shows a larger imbalance, exercises can be tailored to help correct that imbalance. These exercises are designed around the concept of eliminating or reducing the primitive reflexes that could still be present within an individual after their first year of life. For example, a character trait for individuals with autism could be high anxiety that could manifest itself into the fight or flight mode. Melillo (2010) believed reducing the Moro primitive reflex, which houses the startle reflex, could lead to a reduction in anxious tendencies. By performing and repeating this exercise over an extended period, fear and anxiety could be reduced. This exercise takes place with an individual sitting on the edge of chair while balancing their body on the edge. The left arm and left leg are crossed over one another, as the head faces downward. The key to the exercise is the balancing in this position. The individual would then extend both their legs and arms as they balance on the edge of the chair. Focusing the body on being fully open for roughly six seconds. This exercise is just one several that Melillo (2010) believed could be an alternative to treating autism without medication.

Conclusion

The human brain is an intricate organ responsible for controlling every thought, action, emotion, response, and bodily function in the human body. When the human brain is not functioning correctly, many areas can be affected. The brain is like a well-oiled machine, and if that machine has a misfire it will not operate correctly. The brain sends signals throughout the body to help with language, emotional responses, and social behaviors. Some of the characteristics of individuals with autism are social awkwardness, language impairments, emotional behaviors, and body placement. If the brain of a child with autism is not functioning correctly, he or she may have difficulty overcoming obstacles due to the diagnosis. The brain is also responsible for phasing out the primitive reflexes present in infancy. Having these reflexes can affect how the brain interprets the signals sent. Individuals with autism often have their primitive reflexes still intact which hinders any progress or growth they might have when going through occupational therapy and/or physical therapy. Eliminating these reflexes in children with autism can help eliminate or reduce some of the stereotypical characteristics present in children with autism. In addition, using a holistic approach of essential oils and chiropractic care could possibly offer parents and children of autism some relief of what can be thought of as an incurable diagnosis.

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