

# **The Effectiveness of Hippotherapy for Children with Autism-spectrum Disorders**

## **Comparative study of the treatment effects of hippotherapy: ATEC Survey of parents and instructors**

**Tag Words:** Hippotherapy, Autism, Autism-spectrum disorder, ATEC Survey

**Authors:** Taylor Aaron, Sharon Cubelo, Merrill Simpson with Julie A. Fagan, Ph.D

### **Summary (MS)**

There is little research regarding the type of equine assisted therapy (EAT) known as hippotherapy for children who have been diagnosed with Autism Spectrum Disorder (ASD).

Our research involves surveying parents and therapists of children with ASD that are participating in a hippotherapy regimen. We are using the Autism Treatment Evaluation Checklist (ATEC) survey that is a vetted survey used to evaluate patients with Autism on their speech/language/communication capabilities, sociability, sensory/cognitive awareness, and health/physical/behavioral state. We asked parents and therapists to complete the ATEC survey twice, thinking retrospectively to the patient's state before participating in hippotherapy sessions and to the present day. All patients were still presently participating in hippotherapy treatments. We are assessing progress based on parents and therapists answers pre and post-treatment and comparing the ATEC score. A decrease in ATEC score indicates efficacy of therapy method(s). We personally handed out surveys at a barn in Long Valley, NJ and e-mailed surveys to a therapist in Cranbury, NJ.

### **Video Link**

<http://www.youtube.com/watch?v=U57yDra-OnE>

### **Introduction**

#### **Hippotherapy Defined (MS)**

The American Hippotherapy Association defines Hippotherapy as a physical, occupational, or speech therapy treatment strategy utilizing equine movement (American Hippotherapy Association, 2010). During a hippotherapy session, the horse's movement influences the client rather than the client influencing the horse. Activities are incorporated by the therapist utilizing the horse's movement as a therapy aid to help the client move toward physical, cognitive, or psychosocial goals. (Macauley & Gutierrez, 2004). People conducting hippotherapy include physical, occupational, or speech therapists (American Hippotherapy Association, 2010). Therapists direct the movement of the horse while observing the client and altering the movement and activities accordingly (American Hippotherapy Association, 2010).

The horse provides a dynamic base of support and its walk enables sensory input to vestibular, proprioceptive, tactile, and visual channels (American Hippotherapy Association, 2010). The

consistent, repetitive motion of the horse's walk stimulates the nervous system of the client, allowing them to build physical and cognitive responses. (Macauley & Gutierrez, 2004).

The horse is used as a therapeutic aid for a multitude of benefits provided including the animal's movement, sensory input, tone and affect (Lutz, 2010). The repetitive movement influences posture, mobility, balance and promotes shifting of position to maintain center of gravity (Lutz, 2010). Trunk musculature control and strength is promoted to maintain balance and the lumbar spine, pelvic, and hip joints are mobilized (Lutz, 2010). Head and trunk postural control is also encouraged (Lutz, 2010). The horse's unique, three-dimensional movement in space provides continuous tactile, proprioceptive, auditory, visual and vestibular feedback (Lutz, 2010). The movement of the client's pelvis while sitting on a walking horse mimics the natural movement of a human walk, providing inimitable sensory stimulation (Lutz, 2010). The rhythmical movements and warmth of a horse reduces spasticity and there are reports of motivational improvements (Lutz, 2010).

Clients that are appropriate for hippotherapy include people who are at least 2 years old (Lutz, 2010). Indications for hippotherapy include neurological disorders such as Cerebral Palsy, a traumatic brain injury, brachial plexus injury (Lutz, 2010). Genetic and metabolic disorders such as Down Syndrome are also appropriate patients (Lutz, 2010). Mild behavioral and cognitive disorders like Autism spectrum disorders are good candidates for hippotherapy (Lutz, 2010). . Precautions include mild seizure disorders, Multiple Sclerosis, and hip subluxation due to potential severe weakness and imbalance (Lutz, 2010). Contraindications for hippotherapy include people with severe allergies, fear of horses, inability to maintain a sitting position, osteoporosis, and severe seizure disorders because it would be dangerous to put patients with these symptoms and disorders on a horse (Lutz, 2010).

Hippotherapy results in physical and psychosocial benefits that have been documented or reported. (Macauley & Gutierrez, 2004). Physical benefits include improved muscle symmetry, postural alignment, facilitation of normal movement, balance and mobility, and improved respiratory and motor control of speech (Macauley & Gutierrez, 2004). Additional physical benefits include improved cardiovascular status and decreased spasticity (Lutz, 2010). Psychosocial benefits include improvement of self concept, locus of control, affect, behavior (Macauley & Gutierrez, 2004), attention span, spatial awareness, concentration, listening skills, interest in learning, and verbal skills (Lutz, 2010).

Typical protocols involve hippotherapy sessions once or twice a week for 45-60 minutes (Lutz, 2010). The team conducting hippotherapy sessions consists of the therapist or instructor, one or two sidewalkers, and the horse leader (Lutz, 2010). Off the horse clients may perform ground skills such as tacking and grooming the horse, barn chores such as feeding the horses, gait training, controlled walking, and other therapeutic activities before or after riding (Lutz, 2010). Fine motor skills are utilized to put on the helmet and body control and strengthening is exercised when mounting and dismounting the horse (Lutz, 2010).

On the horse clients warm up by through the utilization of opposing motions to become aware of their center of balance (Lutz, 2010). These motions include flexion/extension, side bending, trunk rotation, and abduction/adduction (Lutz, 2010). Therapeutic activities include

altering the client's position by sitting forward, backward, and sideways, kneeling, standing, prone over barrel and backwards, supine over barrel and forwards, propping on elbows, two-point (hovering over the barrel of the horse supporting body with leg strength), crossing midline, and extending arms (Lutz, 2010). Manipulation of the horse's movement is performed for postural control and trunk strength and include walk-halt transitions, circles, serpentine, walk-trot transitions (Lutz, 2010). Fine motor skills are also improved through grasp and release and manipulation of therapeutic equipment (toys, books, balls, etc.) or the horse's reins (Lutz, 2010). Directing the horse using the reins also enhances bilateral coordination (Lutz, 2010). Communication skills and behavior management are enhanced during hippotherapy sessions by encouraging the client to communicate with the horse to perform tasks (Lutz, 2010). Cool-down for the session usually involves a short trail ride (Lutz, 2010).

Hippotherapy is considered a specialization of equine-assisted therapy (EAT), a type of animal-assisted therapy that is performed by a licensed therapist and uses the horse as a mechanism for treatment (Macaulley & Gutierrez, 2004). EAT and hippotherapy can be distinguished from equine-assisted activities (EAA) because EAA are focused on the horse and teaching horse-related skills (riding) and improving a person's general quality of life. (Macaulley & Gutierrez, 2004). Therapeutic riding is classified under the category of equine-assisted activities (Bass et al., 2009). Therapeutic horseback riding is also used to treat people with mental and physical disabilities using horseback riding to improve posture, balance and mobility while developing a bond between the horse and the rider. (Bass et al., 2009).

Hippotherapy is performed by a licensed Physical Therapist, Occupational Therapist, or Speech Therapist while therapeutic riding is performed by a Certified Therapeutic Horseback Riding Instructor (NARHA) (Lutz, 2010). During a hippotherapy session there is one-on-one attention to the patient by the Therapist and the Hippotherapy team, in contrast to Therapeutic riding, which includes one to six participants in a lesson (Lutz, 2010). In a hippotherapy session clients have more physical involvement and movement independent of directing the horse while the clients in a therapeutic riding session have less physical involvement (Lutz, 2010). Therapeutic riding sessions wouldn't include as specific matching of the client to the horse as in a hippotherapy session because depending on the client's disorder, horses are asked to maintain a calm demeanor during stressful and demanding sessions (Lutz, 2010). The goals of therapeutic riding are centered around improving the riding skills of the client while hippotherapy is centered around therapeutic goals that involve improving the physical, mental, and psychosocial functioning and quality of life of the client (Lutz, 2010). Hippotherapy tends to be more expensive than therapeutic riding (about \$100-150 versus \$40-80 per session) but hippotherapy is more likely to be funded by insurance than therapeutic riding (Lutz, 2010).

### **Autism Spectrum Disorder (SC)**

Autism Spectrum Disorder (ASD) consists of a range of complex neurodevelopment disorders, specifically ones that involve social impairments, communication difficulties, and restricted, repetitive, and stereotyped patterns of behavior (Autism Speaks). The milder forms of ASD involve Asperger syndrome, childhood disintegrative disorder and pervasive developmental disorder not otherwise specified (PDD-NOS). The most severe form is Autistic disorder (also known as autism, or classical ASD). No two children are alike as there can be a huge variance in

severity and character. It is believed that there is a strong genetic basis to the causes of autism along with other causes linked to environmental factors affecting the time before and during the birth. Events that deprive the brain of oxygen, specifically at those times, may hinder the proper development and function of the brain (Autism Speaks).

Typically, symptoms will be seen before age three and a diagnosis at two can be considered “reliable, valid and stable” according to the CDC; however, many children are not diagnosed until age four (Autism Speaks). Diagnosis for autistic disorder tend to occur earlier than with the less severe ASD, which usually take place around four years and five months, and specifically for Asperger Disorder the diagnosis is much later around six years and three months (US Autism and Asperger Association). Some of the specific diagnostic criteria for autistic disorder include: problems using and understanding language, impaired social interaction, unusual play, repeated behavioral patterns and/or movements, and difficulty adjusting to changes in routine (US Autism and Asperger Association). According to the current DSM-5 diagnostic manual, certain symptoms are characteristic to a specific part of the autism spectrum.

### **The Effectiveness of Hippotherapy for Autistic Patients (MS)**

The majority of research regarding the effectiveness of hippotherapy exists in children with cerebral palsy, but other populations for research include people with multiple sclerosis, spinal cord injuries, and autism spectrum disorders (Lutz, 2010). It is possible that the multi-sensory environment provided through the use of animal-assisted activities would provide benefit to children with social and communication deficiencies (Bass et al., 2009).

The first to study hippotherapy as a versus traditional therapy for children with moderate to severe language and learning disabilities was Dismuke (1985). Twenty-six children participated, 11 received traditional therapy through the public school system and 15 received hippotherapy (Dismuke, 1985 referenced in Macauley & Gutierrez, 2004). Results indicated greater language improvement in participants that received hippotherapy in comparison to participants that received treatment in a public school setting (Dismuke, 1985 referenced in Macauley & Gutierrez, 2004). Dismuke stated that these results indicated a need for hippotherapy programs for the handicapped, specifically for research on the effectiveness of hippotherapy in speech-language pathology.

Macauley and Gutierrez studied the effectiveness of hippotherapy versus traditional therapy for three boys, ages 9,10, and 12 years with language-learning disabilities. Macauley and Gutierrez hypothesized that children would make more progress with language and speech goals after a hippotherapy session than they would after a traditional clinic-based therapy session. Their study involved having the patients and their parents independently completing a questionnaire regarding whether or not traditional therapy (indicated by T1) or hippotherapy (indicated by T2) (Macauley & Gutierrez, 2004). Macauley & Gutierrez then compared responses from each type of therapy and the result was that parents and children indicated improvement after traditional therapy and hippotherapy. Improvement was noted in speech and language abilities as well as improved motivation and attention (Macauley & Gutierrez, 2004). Hippotherapy has potential for children with learning language disabilities because it is a dynamic therapy tool that stimulates the sensory-motor system of the client- providing a template

to build physical and cognitive responses (Macauley & Gutierrez, 2004).

**TA:**

The next piece of literature we reviewed is a study involving hormonal changes in patients who are going through hippotherapy titled “Quantification of Hormonal Changes by Effects of Hippotherapy in the Autistic Population”. As they studied the effects of equine therapy, the researchers discovered that there is an influence on the autistic patient from specific hormones. Through non invasive techniques such as salivary samples, the study focused on the hormone levels of cortisol and progesterone in the autistic individual during the therapy and how these levels were affected (Tabares et al, 2012). Overall, the results from this study presented that equine therapy decreased the levels of salivary cortisol in the remaining sessions and also the levels of salivary progesterone. The researchers concluded that hippotherapy sessions for individuals with ASD showed an improvement in their social attitudes, which was confirmed by the hormone levels tested in the individuals (Tabares et al, 2012).

Autism Spectrum Disorder, or ASD, is described as an intricate developmental disorder that directly affects the development of the brain which leads to problems with social and communicative skills. The DSM-IV describes Autism as a disorder that affects a wide realm of things such as communication, imagination, planning, and emotional reciprocity. Symptoms of this disability include inability to socially interact, isolation and stereotypes, and uncontrolled movements of the limbs (DSM-IV, 1997). For the purpose of this study, the researchers focused on the communicative and emotional deficiency within these subjects. Hippotherapy, a type of physical therapy, uses horses to help treat movement disorders. Generally these movement disorders come from neuromuscular and neurological pathologies. Not only does the horse help physically, but it mentally helps the patient and keeps them motivated. Often times, children with other disabilities such as Down Syndrome have also benefited from this therapy (Tabares et al, 2012). It is also noted that there is not a lot of scientific research or publications regarding hippotherapy, which makes it difficult to study. Most information that has been published is all subjective information from parents or coaches evaluating the improvement of the patient. Through the evaluations, the evaluators claim to note improvement in communication, speech, coordination, and sociability.

Oxytocin is a hormone that was looked at in this study. It is known that oxytocin is involved in recognition and establishment of social relationships and also linked to the development of trust between people. Oxytocin also reduces anxiety and affects fear conditioning and extinction of fear. After further analysis, recent studies showed that there are significantly lower levels of oxytocin in the blood plasma in autistic children (Tabares et al, 2012). This hormone was also shown to have helped adult autistic individuals retain the ability to evaluate emotional meaning of speech intonation, meaning oxytocin has been connected to processes like learning, memory, sexual, and maternal conduct.

Oxytocin is released irregularly in the blood, making it difficult to measure levels. However, it is known that autistic children tend to have the lowest levels (Tabares et al, 2012). For this reason, a strategy to measure the changes in the levels of oxytocin can be done through direct analysis of cortisol and progesterone. There is a definite relationship between oxytocin and cortisol, since oxytocin counteracts the effects of cortisol. Saliva is used as a biological non-

invasive way to detect hormone levels in the body. Therefore, instead of using plasma, salivary samples were used to measure the levels of cortisol and progesterone in the body. The objective of the study was to verify whether hippotherapy leads to an improvement of social attitudes in autistic people, through analysis of hormone levels in the saliva. Specifically, they looked at cortisol and progesterone which are closely related to oxytocin, which is a hormone that gets released as a neuro-endocrine response to positive social stimuli. The ages of the subjects being used were 8-16, diagnosed with autism, and all male (Tabares et al, 2012). This piece of information is particularly important for our study because it deals with the same age group that we are looking at in our own research.

The first sessions with Hippotherapy showed a statistically significant increase in cortisol levels compared to the pre hippotherapy states. There was also a large decrease in cortisol levels in Post-Hippotherapy in the first session, compared with the rest of the Post Hippotherapy sessions. This is significant because it shows that there is decrease in cortisol as therapy takes its course. Salivary samples showed that progesterone levels increased Post- Hippotherapy, which was statistically significant with respect to Pre-Hippotherapy levels (Tabares et al, 2012). This shows that individuals with autism who participated in hippotherapy were experiencing physiological benefits.

The children in this study were subject to alterations in routine due to their characteristic mental inflexibility. The results from the first day prove this through an increase in cortisol hormone. They were asked to do stressful acts in front of the researchers, which translated into hormonal reactions raising the cortisol levels in the patient (Tabares et al, 2012). The progesterone levels followed the same patterns and increased even under stressful conditions.

All these results come to an important conclusion; hippotherapy did have a direct effect on hormone levels through the analysis of salivary samples. The researchers concluded in this study that hippotherapy was beneficial for the autistic patients, and that in order for this to be carried out successfully, the programs have to be personalized for each patient (Tabares et al, 2012).

After reviewing this study, it is evident that this research may be helpful for our project. We are trying to show that hippotherapy is a great treatment type for patients with autism in more aspects than one. Many may think of therapy as strictly a physical aspect, however, hippotherapy provides therapy in more areas than one. This study shows that hippotherapy had a clear influence on specific hormone levels, specifically cortisol and progesterone. When these levels increased, due to its relation with oxytocin which is a hormone released as a neuroendocrine response to positive social stimuli, it showed that the hippotherapy was indeed improving the child's social attitudes. The children progressed with the horse by continuously building a trustworthy and comforting relationship, as indicated by their hormone levels in their saliva. This provides evidence to suggest that hippotherapy may serve as a beneficial source of treatment for individuals with autism.

#### **SC:**

A fairly recent study was performed in 2009 to test the effects of hippotherapy on the volition of a child. Volition is a child's interests, self-efficacy and motivation to engage in new activities (Taylor, *et. al.*, 2009). By improving a child's volition, there will be an improvement in their level of engagement and their ability to learn. This study was designed to be used a

preliminary evidence of the less recognized benefits of using hippotherapy for children with autism (Taylor, *et. al.*, 2009).

The data collected was based on a questionnaire, the Pediatric Volitional Questionnaire (PVQ), which uses an observation rating scale to reflect a child's competency, motivation to explore and their achievement (Taylor, *et. al.*, 2009). This is done by using a four point scale rating from passive, hesitant, involved, and spontaneous. For each time point that data was collected, the child was placed in a controlled setting, called "structured play" that encouraged the children to explore the objects available to them (Taylor, *et. al.*, 2009).

Overall, each child had an improvement in volition from their baseline to their observation after the sixteen weeks (Taylor, *et. al.*, 2009). Each child's pattern of change was different as far as between when most of the change was seen (Taylor, *et. al.*, 2009).

Based on our problem and solution, this article is extremely helpful in finding the overall benefit for specific syndrome deficits, such as self-efficacy and motivation. Especially because this study focuses on children with autism, we can consider its data pertinent. We hope to take this research further, and concentrate on the whole benefit of hippotherapy on children with autism, and evaluate the efficacy of this uncommon therapy for children with other diagnoses as well as autism. The study took place over a short time period of sixteen weeks; whereas some of our patients will have been in therapy for years. Another important thing to consider in regards to all types of therapy is that therapy sessions tend to be geared specifically for the patient.

Although having a set of identical exercises for all of the patients involved in a study will aid in reducing the amount of variables involved in the experiment, it may also hinder the development that could potentially occur by having individually designed sessions for each patient. Our project will allow for this leniency in session structure to ensure that the highest potential of benefit can be observed.

### **Community Action: ATEC Survey of Parents and Therapists**

#### **MS:**

The goal of our research was to survey parents of patients and their therapists regarding the efficacy of the hippotherapy program the patient has participated in. Research will focus on patients diagnosed with Autism Spectrum Disorder; although, some patients may have more than one diagnosis (such as cerebral palsy).

#### **TA:**

We used the surveys created by the Autism Research Institute, the Autism Treatment Evaluation Checklist (ATEC). The ATEC survey was created by Bernard Rimland and Stephen M. Edelson of the Autism Research Institute in order to have an accurate measurement scale for patients with autism. Prior to the creation of this survey, hundreds of studies were published with attempts to evaluate the different psycho-educational and biomedical interventions that were proposed to help autistic children. However, much of the research led to inconclusive or deceiving results, due to the fact that there were no useful tests or means of measurement to evaluate the effectiveness of treatment for autistic patients. There were, however, scales that were for determining whether a child had autism or not, but none that measured treatment

effectiveness. The consistency of the ATEC survey was tested by conducting a split-half reliability test over 1300 completed ATEC surveys. The internal consistency reliability was high and came to be a .94 total score. There are also studies that continually being done to ensure that the survey its validity with modern times. Jim Adams, a professor at Arizona State University conducted a survey testing the reliability of the survey using 22 parents, and had results that proved to be very encouraging. Dr. Adams continuously collects data for his study, to constantly be checking on the reliability of the survey. Dr. Doreen Granpeesheh, a member of the Center for Autism Related Disorders (CARD) is also doing a study examining the validity of the ATEC survey. She is doing so by comparing the results from the ATEC survey with results from other treatments (Autism Research Institute).

This survey is a form that was created to be taken by the parent, teacher, or caregiver, and consists of 4 subtests. It consists of a speech/language communication section, a sociability section, a sensory cognitive awareness section, and a health/physical/behavioral section which was filled out by the parents (Lord, 1991). There also is an instructor survey asking specific questions about the skill level of the patients, long and short term skills acquired, situations when the child is symptomatic, how the therapy caters to an child's special needs, and so on (Autism Research Institute). By using these surveys and getting different perspectives from the child's support system and treatment team, we have a better understanding of how this type of therapy benefits an autistic child and how effective it really is. By using previous research and conducting our own, we will be able to not only understand better about how hippotherapy is effective, but also be able to spread the word about the great nontraditional services that are offered for autistic patients.

#### **SC:**

Throughout our project, we hoped to gain more information about hippotherapy and discover the benefits it can offer an autistic patient. On top of all the literature we have reviewed and will further discuss, we plan to conduct our own research. We have been in contact with multiple barns and have visited one to evaluate in person patients with autism and watch them interact with the horses in their therapy sessions. During our visits to the barns the parents received the survey to have their opinions on how their child/patient has progressed over their hippotherapy sessions. Each parent will have two surveys to fill out based on the child's condition. One for before they began therapy and the current condition based on the benefits of the therapy. We want to know everything we can about the patient before the therapy began to create a baseline for comparison. One for their current condition and the benefits they have seen thus far. Many of the patients we surveyed had been in hippotherapy for a few years and based on the length of our research, we could not survey the patients at the very end of their therapy. The therapist running these patients' sessions also will have surveys to fill out, two for same baseline/current comparison and a third specifically designed for the therapists.

Those of us involved in performing this research and handing out the ATEC survey have completed the Human Subject Certification.

#### ***Survey Results***

Completed by Lydia Millner of Blue Pines Physical Therapy, LLC.  
Instructor Survey (Please fill out written response's once PER instructor)



- What tasks do you employ in your program specifically for autistic children?  
*Eye contact when giving verbal instructions. Hand-eye coordination. Pictures for tasks requested if applicable. Cause and effect for tasks performed. Initiate conversation, One-step commands progress to multi-step.*
- What activities do you think provide the child with the most mental and physical stimulation?  
*Sensory input of horse moving while asking child to perform a given task, then patient seeing horse and people respond.*
- The severity of the symptoms of autism greatly vary, are there certain activities you use in certain situations?  
*Yes. Hand-wringing or shaking is redirected with words like hands down/ quiet hands or tactile cues guiding child's hands to saddle, thighs, or neck of horse. Screaming- requests for quiet/indoor voices, and if no change, stop horse and ask child to de-mount.*
- Are there certain skills that you consider long term versus short term skills when working with a child with autism?  
*Yes. Social skills and core strength and communication and coordination are long term skills. Short term are initial or initiating eye contact and attempts at communication with horse or other members of the team.*

### ***ATEC Results***

1. SJ
  - a. Instructor survey results (baseline & final)
  - b. Scatter plot of data
- LM
  - Instructor survey results (baseline & final)
  - a. Scatter plot of data
- TK
  - Instructor survey results (baseline & final)
  - a. Scatter plot of data
- MJ
  - Instructor survey results (baseline & final)
  - a. Parent survey results (baseline & final)
  - b. Scatter plot of data
- DE
  - Instructor survey results (baseline & final)
  - a. Parent survey results (baseline & final)
  - b. Scatter plot of data
- CA
  - Instructor survey results (baseline & final)
  - a. Parent survey results (baseline & final)
  - b. Scatter plot of data

### **ATEC Analysis:**

**SC:**

All surveys were inputted into the ATEC survey report questionnaire to be evaluated. By comparing the the baseline scores (from before beginning hippotherapy) to their current condition, we can decide whether or not there was decrease in their score representing an improvement. We also had the same survey filled out by the therapist for another interpretation of the patient (excluding the health/ physical behavior- section IV). This will help us to have a less biased opinion of the patient. The therapist ATEC for each student omitted section IV due to the potential inability of a physical, occupational, or speech therapist to answer questions in that section. Scores from instructor's section I, II, and III are compared to those individual section scores from parent surveys, especially the overall total score (excluding the section IV).

Descriptions of each child's score report along with visual representation for all children are included below the score report.

[http://www.autism.com/index.php/ind\\_atec\\_report](http://www.autism.com/index.php/ind_atec_report)

---

**SJ-** Parent did not get survey back

**SC:**

SJ's main benefit of hippotherapy has been seen in section I, whereas the others showed no changes. It is interesting to note, that the section I began with the lowest score, and was still the one to decrease, whereas section II beginning with the highest score had no change. There was an overall change by four points.

**SJ\_INSTRUCTOR\_BASELINE**

**TOTAL AND SUBSCALE SCORES**

Total Score: 52

I. Speech/Language/Communication: 13

II. Sociability: 22

III. Sensory/Cognitive Awareness: 17

**SJ\_INSTRUCTOR\_FINAL (1.5 years)**

**TOTAL AND SUBSCALE SCORES**

Total Score: 48

I. Speech/Language/Communication: 9

II. Sociability: 22

III. Sensory/Cognitive Awareness: 17

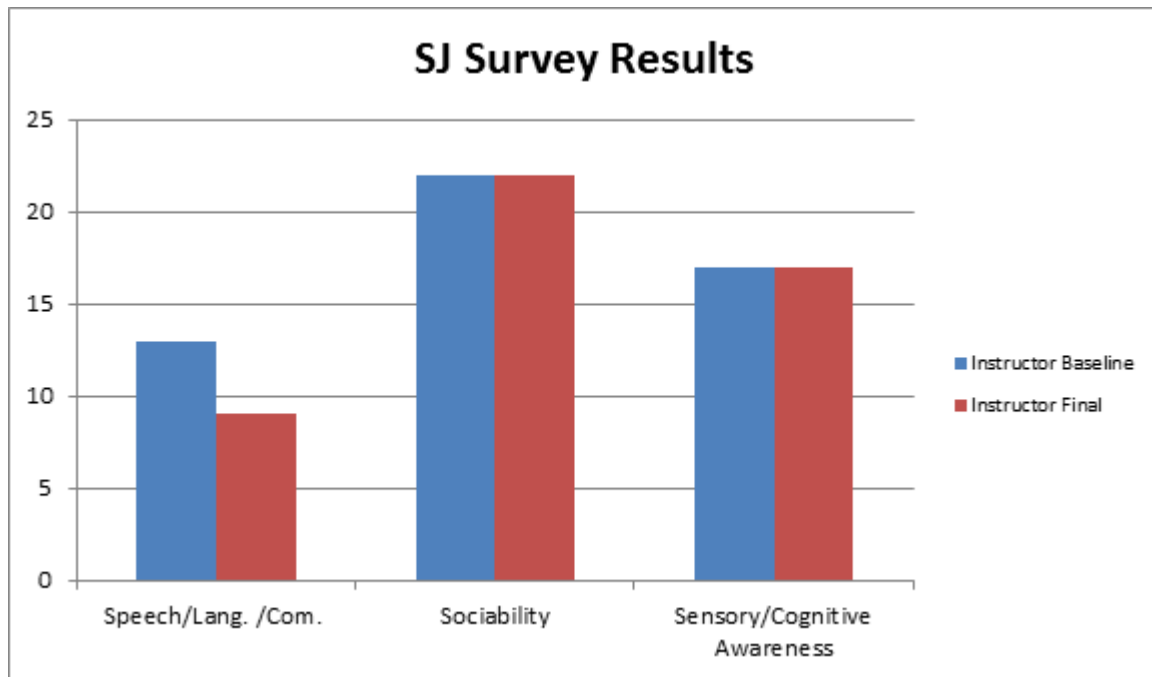


Fig. 1: SJ survey results based on instructor and parent ATEC surveys

**LM- Parent noncompliant**

**SC:**

According to the instructor's surveys, there was an improvement in both sections II and III, and no change in section I. There was an overall change by five points.

**LM\_INSTRUCTOR\_BASELINE**

TOTAL AND SUBSCALE SCORES

Total Score: 85

I. Speech/Language/Communication: 27

II. Sociability: 25

III. Sensory/Cognitive Awareness: 33

**LM\_INSTRUCTOR\_FINAL ( 5 months)**

TOTAL AND SUBSCALE SCORES

Total Score: 80

I. Speech/Language/Communication: 27

II. Sociability: 23

III. Sensory/Cognitive Awareness: 30

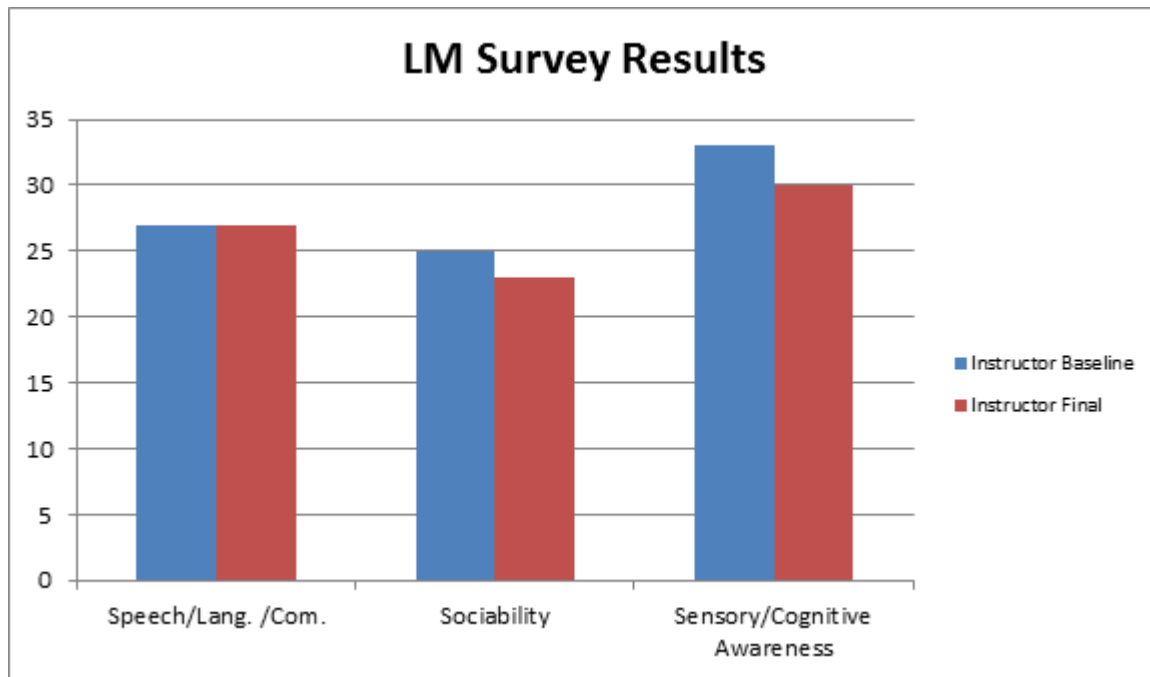


Fig. 2: LM survey results based on instructor and parent ATEC surveys

**TK-** Parent noncompliant

**SC:**

There was an overall change in three points, which is the smallest change in every child, regarding only instructor surveys. The decreasing change being in mostly section II. Section III shows the only section to have increased the amount of points (and therefore, showing worse symptoms). Because it is only a two point change and there is still a trend showing an overall improvement in the child.

**TK\_INSTRUCTOR\_BASELINE**

**TOTAL AND SUBSCALE SCORES**

Total Score: 73

I. Speech/Language/Communication: 25

II. Sociability: 26

III. Sensory/Cognitive Awareness: 22

**TK\_INSTRUCTOR\_FINAL (9 months)**

**TOTAL AND SUBSCALE SCORES**

Total Score: 70

I. Speech/Language/Communication: 24

II. Sociability: 22

III. Sensory/Cognitive Awareness: 24

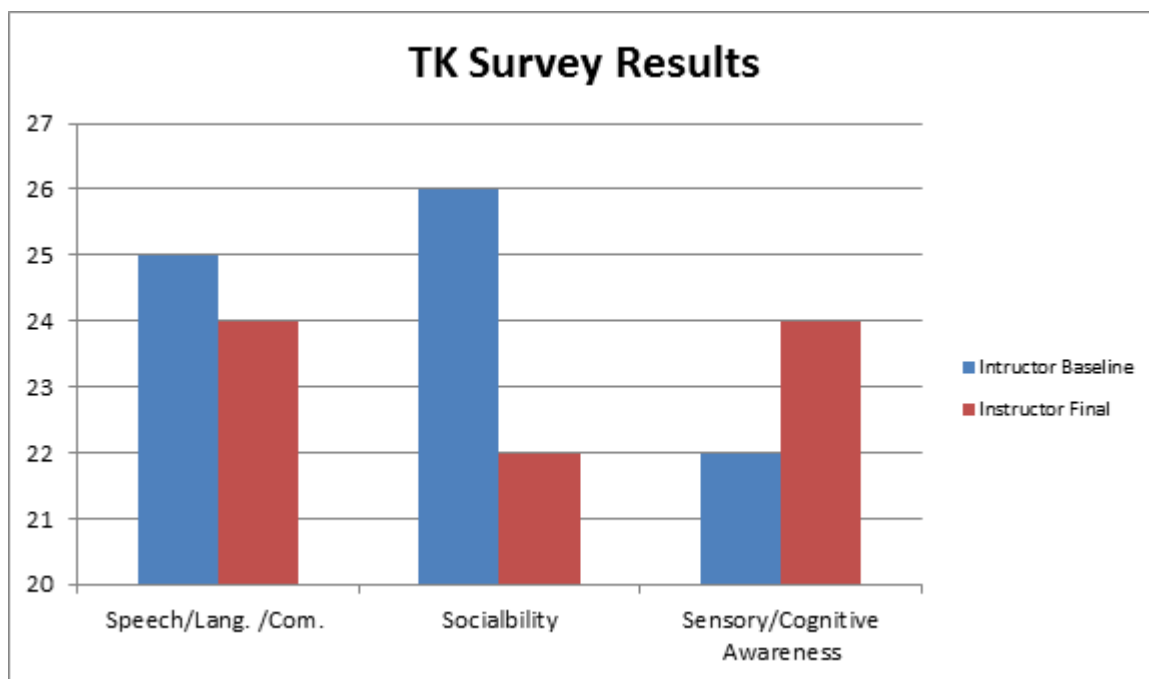


Fig. 3: TK survey results based on instructor and parent ATEC surveys

### SC:

For patient MJ, the baseline total score from the parents was 61 compared to the current score of 31. After two short years, there was a 30 total point improvement. Although most of the points were improved in the section IV, there was an improvement in each section. The instructor's evaluation on MJ, led to total points of 28 compared to the parents' 13.

### **MJ\_INSTRUCTOR\_BASELINE**

#### TOTAL AND SUBSCALE SCORES

Total Score: 39

I. Speech/Language/Communication: 0

II. Sociability: 30

III. Sensory/Cognitive Awareness: 9

### **MJ\_INSTRUCTOR\_FINAL (1.5 years)**

#### TOTAL AND SUBSCALE SCORES

Total Score: 28

I. Speech/Language/Communication: 0

II. Sociability: 21

III. Sensory/Cognitive Awareness: 7

### **MJ\_PARENT\_BASELINE**

#### TOTAL AND SUBSCALE SCORES

Total Score: 61

- I. Speech/Language/Communication: 0
- II. Sociability: 14
- III. Sensory/Cognitive Awareness: 7
- IV. Health/Physical/Behavior: 40

**MJ\_PARENT\_FINAL (1.5 years)**  
**TOTAL AND SUBSCALE SCORES**

- Total Score: 31
- I. Speech/Language/Communication: 0
  - II. Sociability: 8
  - III. Sensory/Cognitive Awareness: 5
  - IV. Health/Physical/Behavior: 18

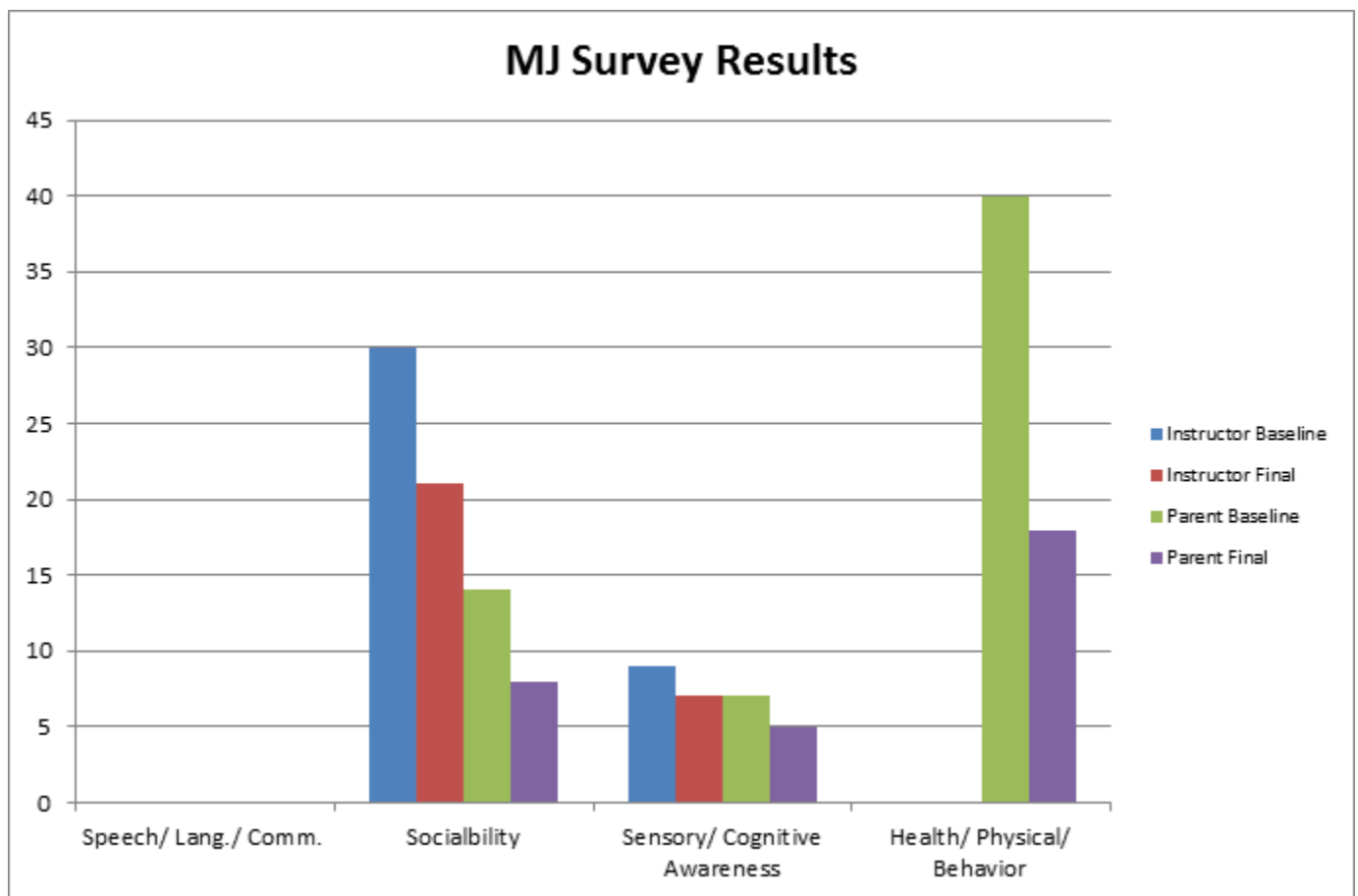


Fig. 4: MJ survey results based on instructor and parent ATEC surveys

**DE-** Father completed survey in a few minutes during session. 7 Years of hippotherapy, with no change based on ATEC, this patient’s parent stated that the main objective of therapy was for increased trunk strength.

**SC:**

There was no change in points as scored by the ATEC survey filled out by the parent . However, this patient has noted on their survey that the purpose for hippotherapy was for trunk strength

training; which is not easily measured by this survey in particular. This patient's father, whom we spoke with, shared with us the obvious benefits that DE has seen from hippotherapy. The child has increased dramatically in trunk strength and is now capable of sitting up and standing for prolonged periods of time, which before beginning hippotherapy, could not. The instructor and parent surveys are very comparable to one another in their point values

The instructor's scores shows an improvement in section II and in section III. Although this student was receiving therapy for strength training, they also showed an improvements in other areas that the child had symptoms in.

#### **DE\_INSTRUCTOR\_BASELINE**

##### **TOTAL AND SUBSCALE SCORES**

Total Score: 84

I. Speech/Language/Communication: 23

II. Sociability: 33

III. Sensory/Cognitive Awareness: 28

#### **DE\_INSTRUCTOR\_FINAL (3 years at current facility + 4 years at alternate facility)**

##### **TOTAL AND SUBSCALE SCORES**

Total Score: 80

I. Speech/Language/Communication: 23

II. Sociability: 30

III. Sensory/Cognitive Awareness: 27

#### **DE\_PARENT BASELINE AND FINAL**

##### **TOTAL AND SUBSCALE SCORES**

Total Score: 81

I. Speech/Language/Communication: 21

II. Sociability: 18

III. Sensory/Cognitive Awareness: 20

IV. Health/Physical/Behavior: 22

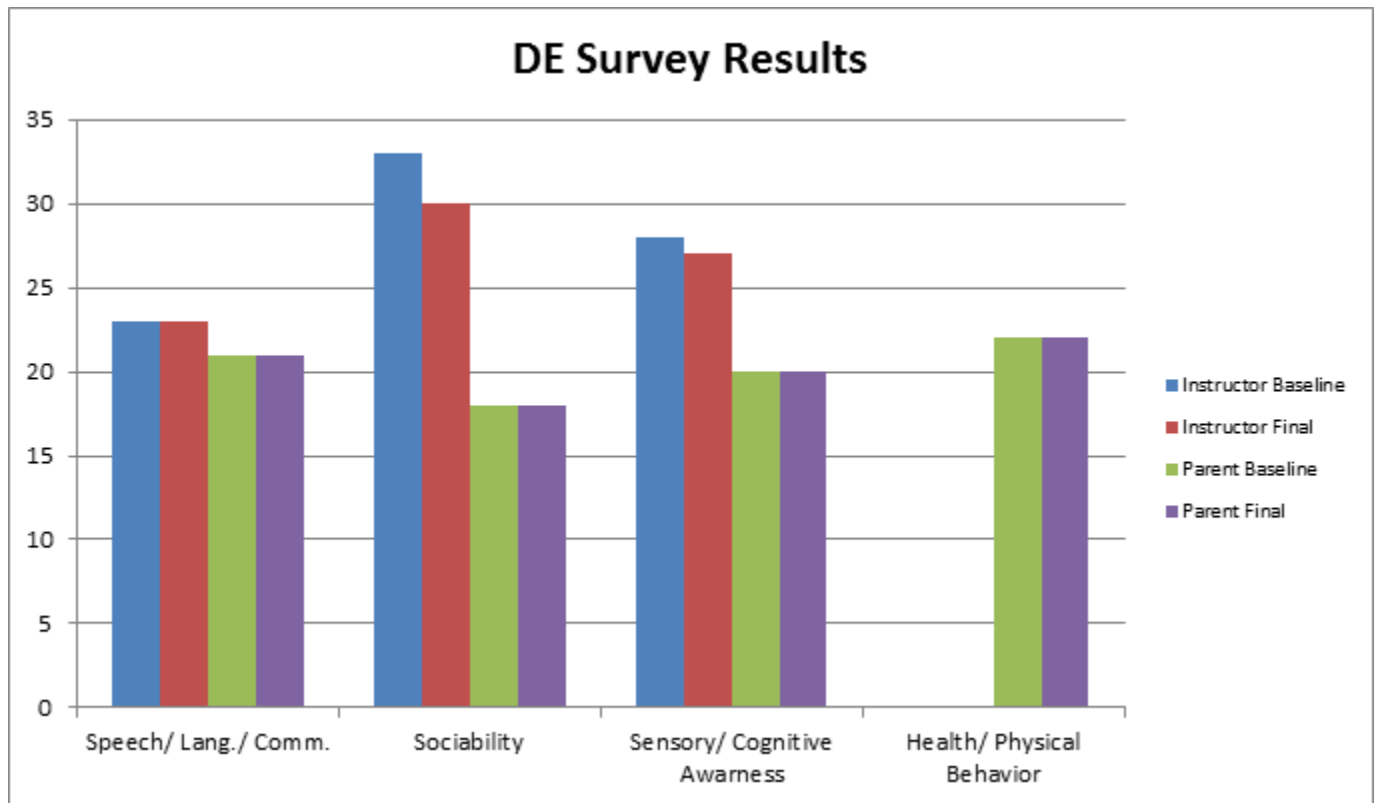


Fig. 5: DE survey results based on instructor and parent ATEC surveys

CA has shown significant improvements in every section based on both the instructor and parent surveys. This child had the only survey in which the parents scored a section higher than the instructor did. For section III, the parent baseline was scored as a 23 while the instructor baseline was only at a 20, and the parent final portrayed a much larger difference of ten points, while the instructor final only had a change of four.

**CA\_INSTRUCTOR\_BASELINE**

**TOTAL AND SUBSCALE SCORES**

Total Score: 65

I. Speech/Language/Communication: 23

II. Sociability: 22

III. Sensory/Cognitive Awareness: 20

**CA\_INSTRUCTOR\_FINAL**

**TOTAL AND SUBSCALE SCORES**

Total Score: 57

I. Speech/Language/Communication: 22

II. Sociability: 19



III. Sensory/Cognitive Awareness: 16

**CA\_PARENT BASELINE**

**TOTAL AND SUBSCALE SCORES**

Total Score: 82

I. Speech/Language/Communication: 16

II. Sociability: 15

III. Sensory/Cognitive Awareness: 23

IV. Health/Physical/Behavior: 28

**CA\_PARENT FINAL (6 years)**

**TOTAL AND SUBSCALE SCORES**

Total Score: 42

I. Speech/Language/Communication: 10

II. Sociability: 8

III. Sensory/Cognitive Awareness: 13

IV. Health/Physical/Behavior: 11

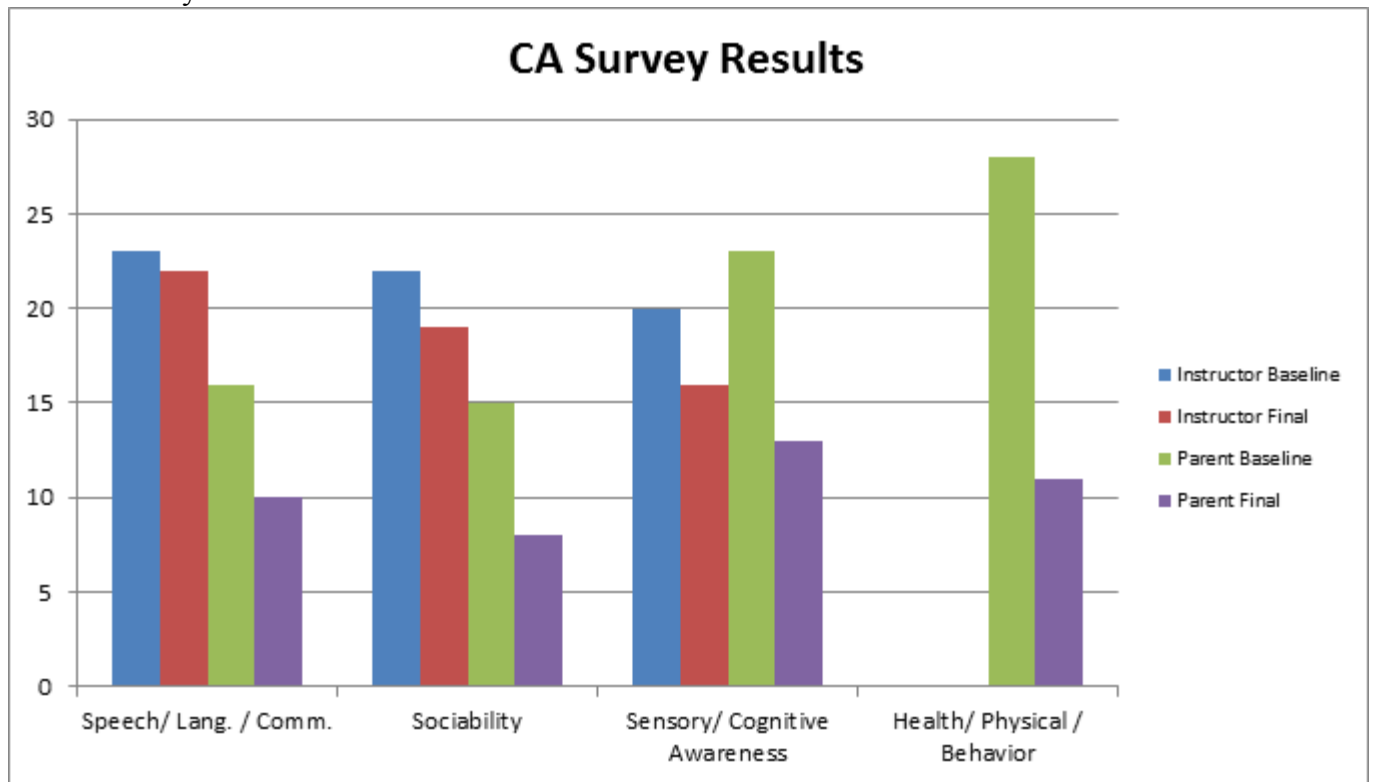


Fig. 6: CA survey results based on instructor and parent ATEC surveys

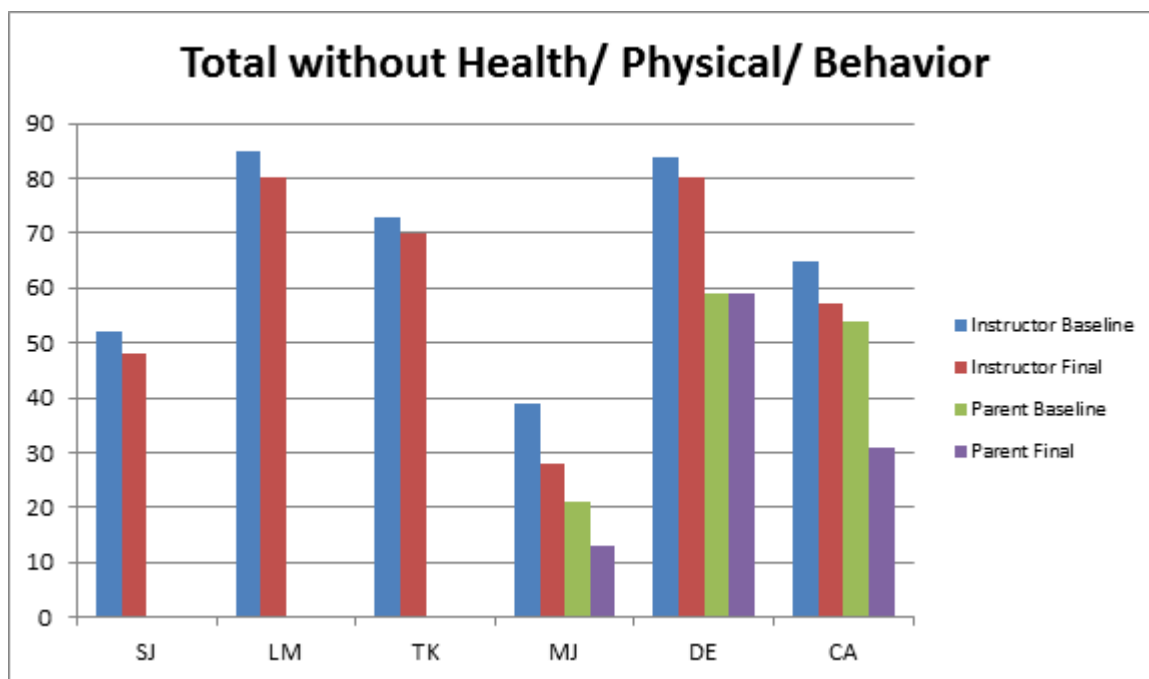


Fig. 7: This graph represents the total scores without section IV for every child based on the surveys we received. This was done because that section was omitted from the instructor survey.

### SC:

Every child based on both instructor and parent surveys showed an improvement in score. This is obvious in figure 7 in that the baseline bar is higher versus the final bar for every instructor survey. For DE there was no change in the parent survey, and yet, it is still mentioned by the parent that there was a significant change in DE since beginning therapy.

Based on the instructor's surveys, MJ showed the biggest improvement by a decrease in 10 points. CA's parent survey showed a significant change of reducing the number almost by half. The average decrease in total points (excluding section IV) according to the instructor survey was 5.5 points. According to the parents surveys, the average excluding section IV was 10.33 and including section IV was 23.33.

### Discussion

### SC:

When reviewing the results it is obvious that the parents and the instructor score the respective children quite differently. There was only one section of one child survey when the parent scored the child higher than the instructor did: CA, section III. For every other child and section that both instructor and parent filled out, the instructor indicated more symptoms than the parent did. The amount of change for each section also varied greatly, the largest change seen by the instructor surveys (with only the surveys and sections that both instructor and parent filled out)

was a total of nine points seen in section II of MJ. This is compared with the parents where the most change in one section (filled out by both parent and instructor) was 10 points. Although our project had an extremely small population size, we are able to see a trend in the improvement of the symptoms these children had due to autism. As seen in Figure 7, it is obvious that there is at least some improvement for every child. There is little research actually done on the efficacy of hippotherapy for autism, and although this trend may not be enough to conclude its benefits, it is convincing evidence to pursue further research.

**MS:**

Changes that could be made to our study to improve the experimental model would be to have a larger sample size of patients, at least 10, but an even larger sample size would increase statistical significance of results. One variable that should be reduced is the amount of time each patient has been participating in sessions. In order to increase the comparability of data sets it would be advantageous for researchers to begin all patients with sessions at the same time and to “end” sessions or gather ATEC data after a recommended amount of time participating in hippotherapy sessions- about 6 months to a year (once or twice a week). Controlling the start and end time of a therapy regime would reduce human error in the “pre” survey, increasing accuracy of the ATEC score before treatment. For our study we asked parents and therapists to think back to before the patient began hippotherapy sessions, ranging from 5 months- 5+ years. Having a more homogenous sample of patients would improve the experimental model by increasing comparability of results. For our limited data set the baseline parent and instructor ATEC scores were drastically different between patients, indicating a different symptom severities between each patient. For example, patient ED had an instructor baseline score of 84, indicating severe autistic symptoms, while patient MJ had an instructor baseline score of only 39, indicating more mild symptoms of autism. In order to increase comparability of data it would be beneficial to include individuals within a specified range of baseline ATEC scores. In order to set the range researchers would have to ask themselves if they were interested in testing the efficacy of hippotherapy for mildly autistic or severely autistic patients. Researchers should be interested in testing a population of autistic patients that would display noticeable improvement within the time period of the study. According to instructor survey results, the patient who showed the most improvement as a result of hippotherapy (MJ) had the lowest baseline ATEC score of 39. According to parent survey results, the patient that showed the most improvement as a result of hippotherapy (CA) had a relatively high baseline score of 82. It would be more accurate to use instructor survey results completed by the same person for a variety of patients as a basis for improvement because parents are more biased towards their own children. In order to decrease bias even further it would be preferable for the instructor to have no personal connection to the patient or family at the beginning of the study. In our study all of the instructor surveys were completed by the same physical therapist from one barn and all the parent surveys completed were from families who had sessions from the same physical therapist. To improve the model and make the study more representative of a larger population it would be beneficial to survey parents and therapists from multiple facilities.

## References

Autism Speaks; What is Autism?, <http://www.autismspeaks.org/what-autism>

Bass M. M., Duchowny C.A., Llabre M. M. (2009). The effect of therapeutic horseback riding on social functioning in children with autism. *Journal of Autism Developmental Disorders*. 39, 1261-1267

Centers for Disease Control and Prevention . *Autism Spectrum Disorders (ASDs)*. 29 March 2012. 25 March 2013.

DSM-IV, Diagnostic and Statistical Manual for Mental Disorders, Masson, 1997.

Lutz B. (2010). Clinical implications of hippotherapy. Chapman University Presentation.

Macauley B. L., & Gutierrez K. M. (2004). The effectiveness of hippotherapy for children with language-learning disabilities. *Communication Disorders Quarterly*. 25(4), 205-217

Renee R. Taylor, Gary Kielhofner, Caitlin Smith, Sherri Butler, Susan M. Cahill, Monica D. Ciukaj & Melanie Gehman (2009): Volitional Change in Children With Autism: A Single-Case Design Study of the Impact of Hippotherapy on Motivation, Occupational Therapy in Mental Health, 25:2, 192-200

Tabares, C; Vicente, F; Sanchez, S; Aparicio, A; Alejo, S; Cubero, J. (2012). Quantification of Hormonal Changes by Effects of Hippotherapy in the Autistic Population. *Neuromechanical Journal*, 2012, Vol. 6, No. 4, pp. 311-316.

US Autism and Asperger Association; What are Autism Spectrum Disorders?, <http://www.usautism.org/definitions.htm#DSM4>

US Autism and Asperger Association; What is Autism?, <http://www.usautism.org/asds.htm#whatisautism>

Autism Speaks; What is Autism?, <http://www.autismspeaks.org/what-autism>

Wilson, H. W. "Autism Awareness Month: What Every Educator Should Know." *Curriculum Review* April 2013: Vol. 52, Issue 8. Internet.

### **Appendices**

1. Survey questionnaire
2. Consent form
3. ATEC survey url
4. Additional instructor survey
5. Additional parent survey
6. ATEC survey results for each patient

### ***Appendix 1: Equine Assisted Therapy Survey Questionnaire***

Thank you for participating in this study. Completing this survey will enable us to examine the response to treatment for autism with the use of the horse as a therapy tool. It should take approximately 20-30 minutes to complete. Please make sure you are filling out the proper survey (marked either "Parent" or "Instructor"). If you are taking the parent survey, you are filling out the survey in two capacities. First, you are filling out the survey as you recall your child to be prior to starting any equine assisted therapies (PRE). Second, you are filling out the survey as you view your child now (POST). The key to each section is written under the heading for each category. Please also take the time to fill out the few short response questions at the beginning.

Be sure to include your child's initials on the top of the first page. For each instructor, fill out the short response questions on page 1 in regard to your particular equine assisted therapy practices. Then, complete the survey for each child. Be sure to initial the top of the survey *with the child's initials*. The key to each section is provided at the beginning of the survey. Please feel free to comment on any or all of the measurement parameters. Once you have completed the survey, please return to **Laurie Landy (Executive Director)**. We do not want names on the surveys, so please identify the children by initials only. We appreciate your time and cooperation!

### ***Appendix 2: Consent Form***

#### **COMPARATIVE PERCEPTION OF THE TREATMENT EFFECTS OF EQUINE ASSISTED THERAPY**

#### **(EAT) IN AUTISTIC CHILDREN: A SURVEY OF PARENTS AND EAT TRAINERS** (March 2013)

Julie Fagan, Ph.D with students Taylor Aaron, Sharon Cubelo, and Merrill Simpson

**INTRODUCTION:** You are invited to voluntarily participate in a research study that will measure treatment effects of equine assisted therapy (EAT) on children with autism spectrum disorder.

**INFORMATION:** Parents of children with autism spectrum disorder will be asked to complete a survey that should take approximately 20-30 minutes to complete. The survey, the Autism Treatment Evaluation Checklist or ATEC survey, will consist of multiple-choice questions. The survey will also ask you to recollect the behaviors of the child before EAT. You will be asked about your child's diagnosis that was previously provided by a professional. EAT trainers of the

above children will also be asked to complete the ATEC survey. Some additional fill in the blank and open-ended questions will be asked to identify preferred horse-related activities that seemed beneficial (or not) in the treatment of autism spectrum disorder.

**BENEFITS:** You will not receive any direct benefit for participating in this research. However, it is expected that the research will provide scientists with a better understanding of whether equine assisted therapy is beneficial in the treatment of autism spectrum disorder.

**RISKS:** This study consists of only a survey and there are no risks involved.

**CONFIDENTIALITY:** This research is completely anonymous. No information will be recorded that could identify you (you will not be asked your name, address, phone number).

**COMPENSATION:** You will receive no monetary compensation for participating in this study.

**RESEARCH QUESTIONS:** If you have any questions regarding the study, you may contact Cassie Messina at (914)-774-1236 or Dr. Julie Fagan at 848-932-8354 or email her at [Fagan@rci.rutgers.edu](mailto:Fagan@rci.rutgers.edu)

**SUBJECT RIGHTS:** If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at: Rutgers University Institutional Review Board for the Protection of Human Subjects; Office of Research and Sponsored Programs, 3 Rutgers Plaza, New Brunswick, NJ 08901-8559; Tel: 848 932 4058; Email: [humansubjects@orsp.rutgers.edu](mailto:humansubjects@orsp.rutgers.edu)

**Appendix 3: ATEC Survey;** [http://www.autism.com/index.php/ind\\_atec\\_survey](http://www.autism.com/index.php/ind_atec_survey)

**Appendix 4: Instructor Survey (Please fill out written response's once PER instructor)**

- What tasks do you employ in your program specifically for autistic children?

---

---

---

---

---

- What activities do you think provide the child with the most mental and physical stimulation?

---

---

---

---

---

- The severity of the symptoms of autism greatly vary, are there certain activities you use in certain situations?

---

---

---

---

· Are there certain skills that you consider long term versus short term skills when working with a child with autism?

---

---

**Appendix 5:**  
**Child Initials:** \_\_\_\_\_

**Parent Survey**

Age:

Gender:      Male              Female

Has the child been diagnosed by a professional?      Yes              No

What was the diagnosis from the professional?

Low-Functioning Autistic (LFA), High-Functioning Autistic (HFA), Asperger's Syndrome (AS),  
Autistic Spectrum Disorder (ASD), Pervasive Developmental Disorder-Not Otherwise Specified  
(PDD-NOS)

Other: \_\_\_\_\_

Do you know if a certain test was used and if so what score your child received? (i.e. CARS)

---

Was your child professionally evaluated pre or post interaction with any type of Equine Assisted  
Therapy?

PRE              POST

How long has your child participated in equine assisted therapy, or therapeutic riding?

---

## *Appendix 6: ATEC Results*

### **SJ\_INSTRUCTOR\_BASELINE**

Date: 4/18/2013 2:18:19 PM

Child's Name: S J

#### TOTAL AND SUBSCALE SCORES

Total Score: 52

I. Speech/Language/Communication: 13

II. Sociability: 22

III. Sensory/Cognitive Awareness: 17

#### I. Speech/Language/Communication

1. Knows own name: Very true
2. Responds to `No' or `Stop': Somewhat true
3. Can follow some commands: Very true
4. Can use one word at a time: Very true
5. Can use 2 words at a time: Very true
6. Can use 3 words at a time: Very true
7. Knows 10 or more words: Very true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Not true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Somewhat true
12. Often uses several successive sentences: Not true
13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Somewhat true

Total for Section I: 13

#### II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Not descriptive
2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Somewhat descriptive
4. Uncooperative and resistant: Somewhat descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Not descriptive
7. Shows no affection: Somewhat descriptive
8. Fails to greet parents: Somewhat descriptive



9. Avoids contact with others: Very descriptive
10. Does not imitate: Somewhat descriptive
11. Dislikes being held/cuddled: Somewhat descriptive
12. Does not share or show: Very descriptive
13. Does not wave 'bye bye': Somewhat descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Somewhat descriptive
16. Lacks friends/companions: Not descriptive
17. Rarely smiles: Very descriptive
18. Insensitive to other's feelings: Somewhat descriptive
19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Very descriptive

Total for Section II: 22

### III. Sensory/Cognitive Awareness

1. Responds to own name: Very descriptive
2. Responds to praise: Somewhat descriptive
3. Looks at people and animals: Somewhat descriptive
4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Somewhat descriptive
6. Plays with toys appropriately: Somewhat descriptive
7. Appropriate facial expression: Very descriptive
8. Understands stories on T.V.: Somewhat descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Somewhat descriptive
11. Aware of danger: Somewhat descriptive
12. Shows imagination: Not descriptive
13. Initiates activities: Somewhat descriptive
14. Dresses self: Somewhat descriptive
15. Curious, interested: Somewhat descriptive
16. Venturesome - explores: Not descriptive
17. Tuned in - Not spacey: Very descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 17

**SJ\_INSTRUCTOR\_FINAL**

Date: 4/16/2013 11:33:51 PM

Child's Name: SJ

## TOTAL AND SUBSCALE SCORES

Total Score: 48

I. Speech/Language/Communication: 9

II. Sociability: 22

III. Sensory/Cognitive Awareness: 17

### I. Speech/Language/Communication

1. Knows own name: Very true
2. Responds to `No' or `Stop': Somewhat true
3. Can follow some commands: Very true
4. Can use one word at a time: Very true
5. Can use 2 words at a time: Very true
6. Can use 3 words at a time: Very true
7. Knows 10 or more words: Very true
8. Can use sentences with 4 or more words: Somewhat true
9. Explains what he/she wants: Somewhat true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Somewhat true
12. Often uses several successive sentences: Somewhat true
13. Carries on fairly good conversation: Somewhat true
14. Has normal ability to communicate for his/her age: Somewhat true

Total for Section I: 9

### II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Not descriptive
2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Somewhat descriptive
4. Uncooperative and resistant: Somewhat descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Not descriptive
7. Shows no affection: Somewhat descriptive
8. Fails to greet parents: Somewhat descriptive
9. Avoids contact with others: Very descriptive
10. Does not imitate: Somewhat descriptive
11. Dislikes being held/cuddled: Somewhat descriptive
12. Does not share or show: Very descriptive
13. Does not wave `bye bye': Somewhat descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Somewhat descriptive
16. Lacks friends/companions: Not descriptive
17. Rarely smiles: Very descriptive
18. Insensitive to other's feelings: Somewhat descriptive

19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Very descriptive

Total for Section II: 22

### III. Sensory/Cognitive Awareness

1. Responds to own name: Very descriptive
2. Responds to praise: Somewhat descriptive
3. Looks at people and animals: Somewhat descriptive
4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Somewhat descriptive
6. Plays with toys appropriately: Somewhat descriptive
7. Appropriate facial expression: Very descriptive
8. Understands stories on T.V.: Somewhat descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Somewhat descriptive
11. Aware of danger: Somewhat descriptive
12. Shows imagination: Not descriptive
13. Initiates activities: Somewhat descriptive
14. Dresses self: Somewhat descriptive
15. Curious, interested: Somewhat descriptive
16. Venturesome - explores: Not descriptive
17. Tuned in - Not spacey: Very descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 17

### **LM\_INSTRUCTOR\_BASELINE**

Date: 4/18/2013 2:07:06 PM

Child's Name: L M

### TOTAL AND SUBSCALE SCORES

Total Score: 85

I. Speech/Language/Communication: 27

II. Sociability: 25

III. Sensory/Cognitive Awareness: 33

### I. Speech/Language/Communication

1. Knows own name: Not true
2. Responds to 'No' or 'Stop': Not true

3. Can follow some commands: Somewhat true
4. Can use one word at a time: Not true
5. Can use 2 words at a time: Not true
6. Can use 3 words at a time: Not true
7. Knows 10 or more words: Not true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Not true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Not true
12. Often uses several successive sentences: Not true
13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

Total for Section I: 27

## II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Very descriptive
2. Ignores other people: Very descriptive
3. Pays little or no attention when addressed: Very descriptive
4. Uncooperative and resistant: Somewhat descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Not descriptive
7. Shows no affection: Very descriptive
8. Fails to greet parents: Somewhat descriptive
9. Avoids contact with others: Not descriptive
10. Does not imitate: Somewhat descriptive
11. Dislikes being held/cuddled: Somewhat descriptive
12. Does not share or show: Very descriptive
13. Does not wave 'bye bye': Very descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Somewhat descriptive
16. Lacks friends/companions: Very descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Not descriptive
19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Very descriptive

Total for Section II: 25

## III. Sensory/Cognitive Awareness

1. Responds to own name: Not descriptive
2. Responds to praise: Not descriptive

3. Looks at people and animals: Somewhat descriptive
4. Looks at pictures (and T.V.): Somewhat descriptive
5. Does drawing, coloring, art: Not descriptive
6. Plays with toys appropriately: Not descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Not descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Not descriptive
11. Aware of danger: Not descriptive
12. Shows imagination: Not descriptive
13. Initiates activities: Not descriptive
14. Dresses self: Not descriptive
15. Curious, interested: Not descriptive
16. Venturesome - explores: Not descriptive
17. Tuned in - Not spacey: Not descriptive
18. Looks where others are looking: Not descriptive

Total for Section III: 33

#### **LM\_INSTRUCTOR\_FINAL**

Date: 4/16/2013 11:55:00 PM

Child's Name: L M

#### **TOTAL AND SUBSCALE SCORES**

Total Score: 80

I. Speech/Language/Communication: 27

II. Sociability: 23

III. Sensory/Cognitive Awareness: 30

#### **I. Speech/Language/Communication**

1. Knows own name: Not true
2. Responds to 'No' or 'Stop': Not true
3. Can follow some commands: Somewhat true
4. Can use one word at a time: Not true
5. Can use 2 words at a time: Not true
6. Can use 3 words at a time: Not true
7. Knows 10 or more words: Not true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Not true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Not true
12. Often uses several successive sentences: Not true

13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

Total for Section I: 27

## II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Somewhat descriptive
2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Very descriptive
4. Uncooperative and resistant: Somewhat descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Not descriptive
7. Shows no affection: Very descriptive
8. Fails to greet parents: Somewhat descriptive
9. Avoids contact with others: Not descriptive
10. Does not imitate: Somewhat descriptive
11. Dislikes being held/cuddled: Somewhat descriptive
12. Does not share or show: Very descriptive
13. Does not wave 'bye bye': Very descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Somewhat descriptive
16. Lacks friends/companions: Very descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Not descriptive
19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Very descriptive

Total for Section II: 23

## III. Sensory/Cognitive Awareness

1. Responds to own name: Not descriptive
2. Responds to praise: Not descriptive
3. Looks at people and animals: Somewhat descriptive
4. Looks at pictures (and T.V.): Somewhat descriptive
5. Does drawing, coloring, art: Not descriptive
6. Plays with toys appropriately: Not descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Not descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Somewhat descriptive
11. Aware of danger: Not descriptive
12. Shows imagination: Not descriptive

13. Initiates activities: Not descriptive
14. Dresses self: Not descriptive
15. Curious, interested: Somewhat descriptive
16. Venturesome - explores: Not descriptive
17. Tuned in - Not spacey: Somewhat descriptive
18. Looks where others are looking: Not descriptive

Total for Section III: 30

### **TK\_INSTRUCTOR\_BASELINE**

Date: 4/18/2013 1:49:50 PM

Child's Name: T K

### TOTAL AND SUBSCALE SCORES

Total Score: 73

I. Speech/Language/Communication: 25

II. Sociability: 26

III. Sensory/Cognitive Awareness: 22

#### I. Speech/Language/Communication

1. Knows own name: Very true
2. Responds to 'No' or 'Stop': Somewhat true
3. Can follow some commands: Not true
4. Can use one word at a time: Not true
5. Can use 2 words at a time: Not true
6. Can use 3 words at a time: Not true
7. Knows 10 or more words: Not true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Not true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Not true
12. Often uses several successive sentences: Not true
13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

Total for Section I: 25

#### II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Somewhat descriptive

2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Somewhat descriptive
4. Uncooperative and resistant: Very descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Somewhat descriptive
7. Shows no affection: Not descriptive
8. Fails to greet parents: Not descriptive
9. Avoids contact with others: Somewhat descriptive
10. Does not imitate: Very descriptive
11. Dislikes being held/cuddled: Very descriptive
12. Does not share or show: Very descriptive
13. Does not wave 'bye bye': Very descriptive
14. Disagreeable/not compliant: Very descriptive
15. Temper tantrums: Very descriptive
16. Lacks friends/companions: Very descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Very descriptive
19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Not descriptive

Total for Section II: 26

### III. Sensory/Cognitive Awareness

1. Responds to own name: Very descriptive
2. Responds to praise: Somewhat descriptive
3. Looks at people and animals: Somewhat descriptive
4. Looks at pictures (and T.V.): Somewhat descriptive
5. Does drawing, coloring, art: Not descriptive
6. Plays with toys appropriately: Not descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Not descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Somewhat descriptive
11. Aware of danger: Somewhat descriptive
12. Shows imagination: Somewhat descriptive
13. Initiates activities: Somewhat descriptive
14. Dresses self: Somewhat descriptive
15. Curious, interested: Not descriptive
16. Venturesome - explores: Somewhat descriptive
17. Tuned in - Not spacey: Somewhat descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 22



## **TK\_INSTRUCTOR\_FINAL**

Date: 4/17/2013 12:55:26 AM

Child's Name: T K

### TOTAL AND SUBSCALE SCORES

Total Score: 70

I. Speech/Language/Communication: 24

II. Sociability: 22

III. Sensory/Cognitive Awareness: 24

#### I. Speech/Language/Communication

1. Knows own name: Very true
2. Responds to 'No' or 'Stop': Somewhat true
3. Can follow some commands: Somewhat true
4. Can use one word at a time: Not true
5. Can use 2 words at a time: Not true
6. Can use 3 words at a time: Not true
7. Knows 10 or more words: Not true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Not true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Not true
12. Often uses several successive sentences: Not true
13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

Total for Section I: 24

#### II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Not descriptive
2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Somewhat descriptive
4. Uncooperative and resistant: Very descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Not descriptive
7. Shows no affection: Not descriptive
8. Fails to greet parents: Not descriptive
9. Avoids contact with others: Somewhat descriptive
10. Does not imitate: Very descriptive
11. Dislikes being held/cuddled: Somewhat descriptive
12. Does not share or show: Very descriptive

13. Does not wave 'bye bye': Very descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Very descriptive
16. Lacks friends/companions: Very descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Very descriptive
19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Not descriptive

Total for Section II: 22

### III. Sensory/Cognitive Awareness

1. Responds to own name: Very descriptive
2. Responds to praise: Somewhat descriptive
3. Looks at people and animals: Somewhat descriptive
4. Looks at pictures (and T.V.): Somewhat descriptive
5. Does drawing, coloring, art: Not descriptive
6. Plays with toys appropriately: Not descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Not descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Somewhat descriptive
11. Aware of danger: Somewhat descriptive
12. Shows imagination: Somewhat descriptive
13. Initiates activities: Somewhat descriptive
14. Dresses self: Not descriptive
15. Curious, interested: Somewhat descriptive
16. Venturesome - explores: Not descriptive
17. Tuned in - Not spacey: Somewhat descriptive
18. Looks where others are looking: Not descriptive

Total for Section III: 24

### **MJ\_INSTRUCTOR\_BASELINE**

Date: 4/17/2013 10:01:54 PM

Child's Name: MJ

### TOTAL AND SUBSCALE SCORES

Total Score: 39

I. Speech/Language/Communication: 0

II. Sociability: 30

### III. Sensory/Cognitive Awareness: 9

#### I. Speech/Language/Communication

1. Knows own name: Very true
2. Responds to 'No' or 'Stop': Very true
3. Can follow some commands: Very true
4. Can use one word at a time: Very true
5. Can use 2 words at a time: Very true
6. Can use 3 words at a time: Very true
7. Knows 10 or more words: Very true
8. Can use sentences with 4 or more words: Very true
9. Explains what he/she wants: Very true
10. Asks meaningful questions: Very true
11. Speech tends to be meaningful/relevant: Very true
12. Often uses several successive sentences: Very true
13. Carries on fairly good conversation: Very true
14. Has normal ability to communicate for his/her age: Very true

Total for Section I: 0

#### II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Somewhat descriptive
2. Ignores other people: Very descriptive
3. Pays little or no attention when addressed: Somewhat descriptive
4. Uncooperative and resistant: Very descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Very descriptive
7. Shows no affection: Somewhat descriptive
8. Fails to greet parents: Somewhat descriptive
9. Avoids contact with others: Somewhat descriptive
10. Does not imitate: Very descriptive
11. Dislikes being held/cuddled: Somewhat descriptive
12. Does not share or show: Very descriptive
13. Does not wave 'bye bye': Very descriptive
14. Disagreeable/not compliant: Very descriptive
15. Temper tantrums: Very descriptive
16. Lacks friends/companions: Very descriptive
17. Rarely smiles: Somewhat descriptive
18. Insensitive to other's feelings: Very descriptive
19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Not descriptive

Total for Section II: 30

III. Sensory/Cognitive Awareness

1. Responds to own name: Very descriptive
2. Responds to praise: Very descriptive
3. Looks at people and animals: Very descriptive
4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Very descriptive
6. Plays with toys appropriately: Somewhat descriptive
7. Appropriate facial expression: Very descriptive
8. Understands stories on T.V.: Very descriptive
9. Understands explanations: Somewhat descriptive
10. Aware of environment: Very descriptive
11. Aware of danger: Somewhat descriptive
12. Shows imagination: Somewhat descriptive
13. Initiates activities: Not descriptive
14. Dresses self: Somewhat descriptive
15. Curious, interested: Somewhat descriptive
16. Venturesome - explores: Somewhat descriptive
17. Tuned in - Not spacey: Very descriptive
18. Looks where others are looking: Very descriptive

Total for Section III: 9

**MJ\_INSTRUCTOR\_FINAL**

Date: 4/17/2013 12:04:13 AM

Child's Name: M J

**TOTAL AND SUBSCALE SCORES**

Total Score: 28

I. Speech/Language/Communication: 0

II. Sociability: 21

III. Sensory/Cognitive Awareness: 7

I. Speech/Language/Communication

1. Knows own name: Very true
2. Responds to `No' or `Stop': Very true
3. Can follow some commands: Very true

4. Can use one word at a time: Very true
5. Can use 2 words at a time: Very true
6. Can use 3 words at a time: Very true
7. Knows 10 or more words: Very true
8. Can use sentences with 4 or more words: Very true
9. Explains what he/she wants: Very true
10. Asks meaningful questions: Very true
11. Speech tends to be meaningful/relevant: Very true
12. Often uses several successive sentences: Very true
13. Carries on fairly good conversation: Very true
14. Has normal ability to communicate for his/her age: Very true

Total for Section I: 0

## II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Not descriptive
2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Somewhat descriptive
4. Uncooperative and resistant: Very descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Somewhat descriptive
7. Shows no affection: Very descriptive
8. Fails to greet parents: Not descriptive
9. Avoids contact with others: Somewhat descriptive
10. Does not imitate: Not descriptive
11. Dislikes being held/cuddled: Very descriptive
12. Does not share or show: Not descriptive
13. Does not wave 'bye bye': Very descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Very descriptive
16. Lacks friends/companions: Very descriptive
17. Rarely smiles: Somewhat descriptive
18. Insensitive to other's feelings: Somewhat descriptive
19. Indifferent to being liked: Not descriptive
20. Indifferent if parent(s) leave: Somewhat descriptive

Total for Section II: 21

## III. Sensory/Cognitive Awareness

1. Responds to own name: Very descriptive
2. Responds to praise: Very descriptive
3. Looks at people and animals: Very descriptive

4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Very descriptive
6. Plays with toys appropriately: Somewhat descriptive
7. Appropriate facial expression: Very descriptive
8. Understands stories on T.V.: Very descriptive
9. Understands explanations: Somewhat descriptive
10. Aware of environment: Very descriptive
11. Aware of danger: Very descriptive
12. Shows imagination: Very descriptive
13. Initiates activities: Not descriptive
14. Dresses self: Somewhat descriptive
15. Curious, interested: Somewhat descriptive
16. Venturesome - explores: Somewhat descriptive
17. Tuned in - Not spacey: Very descriptive
18. Looks where others are looking: Very descriptive

Total for Section III: 7

### **MJ\_PARENT\_BASELINE**

Date: 4/3/2013 1:50:12 PM

Child's Name: M J

### TOTAL AND SUBSCALE SCORES

Total Score: 61

I. Speech/Language/Communication: 0

II. Sociability: 14

III. Sensory/Cognitive Awareness: 7

IV. Health/Physical/Behavior: 40

#### I. Speech/Language/Communication

1. Knows own name: Very true
2. Responds to 'No' or 'Stop': Very true
3. Can follow some commands: Very true
4. Can use one word at a time: Very true
5. Can use 2 words at a time: Very true
6. Can use 3 words at a time: Very true
7. Knows 10 or more words: Very true
8. Can use sentences with 4 or more words: Very true
9. Explains what he/she wants: Very true
10. Asks meaningful questions: Very true
11. Speech tends to be meaningful/relevant: Very true
12. Often uses several successive sentences: Very true

13. Carries on fairly good conversation: Very true
14. Has normal ability to communicate for his/her age: Very true

Total for Section I: 0

## II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Somewhat descriptive
2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Somewhat descriptive
4. Uncooperative and resistant: Very descriptive
5. No eye contact: Not descriptive
6. Prefers to be left alone: Not descriptive
7. Shows no affection: Not descriptive
8. Fails to greet parents: Not descriptive
9. Avoids contact with others: Somewhat descriptive
10. Does not imitate: Not descriptive
11. Dislikes being held/cuddled: Not descriptive
12. Does not share or show: Very descriptive
13. Does not wave 'bye bye': Not descriptive
14. Disagreeable/not compliant: Very descriptive
15. Temper tantrums: Very descriptive
16. Lacks friends/companions: Somewhat descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Somewhat descriptive
19. Indifferent to being liked: Not descriptive
20. Indifferent if parent(s) leave: Not descriptive

Total for Section II: 14

## III. Sensory/Cognitive Awareness

1. Responds to own name: Very descriptive
2. Responds to praise: Very descriptive
3. Looks at people and animals: Very descriptive
4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Somewhat descriptive
6. Plays with toys appropriately: Very descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Very descriptive
9. Understands explanations: Somewhat descriptive
10. Aware of environment: Very descriptive
11. Aware of danger: Very descriptive
12. Shows imagination: Somewhat descriptive

13. Initiates activities: Very descriptive
14. Dresses self: Somewhat descriptive
15. Curious, interested: Very descriptive
16. Venturesome - explores: Very descriptive
17. Tuned in - Not spacey: Somewhat descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 7

#### IV. Health/Physical/Behavior

1. Bed-wetting: Not a Problem
2. Wets pants/diapers: Not a Problem
3. Soils pants/diapers: Not a Problem
4. Diarrhea: Not a Problem
5. Constipation: Not a Problem
6. Sleep problems: Minor Problem
7. Eats too much/too little: Not a Problem
8. Extremely limited diet: Moderate Problem
9. Hyperactive: Moderate Problem
10. Lethargic: Not a Problem
11. Hits or injures self: Moderate Problem
12. Hits or injures others: Serious Problem
13. Destructive: Moderate Problem
14. Sound-sensitive: Serious Problem
15. Anxious/fearful: Moderate Problem
16. Unhappy/crying: Serious Problem
17. Seizures: Not a Problem
18. Obsessive speech: Moderate Problem
19. Rigid routines: Serious Problem
20. Shouts or screams: Serious Problem
21. Demands sameness: Serious Problem
22. Often agitated: Serious Problem
23. Not sensitive to pain: Not a Problem
24. Hooked or fixated on certain objects/topics: Serious Problem
25. Repetitive movements: Serious Problem

Total for Section IV: 40

**MJ\_PARENT\_FINAL (after 2 years)**

Date: 4/3/2013 1:56:00 PM

Child's Name: M J



## TOTAL AND SUBSCALE SCORES

Total Score: 31

I. Speech/Language/Communication: 0

II. Sociability: 8

III. Sensory/Cognitive Awareness: 5

IV. Health/Physical/Behavior: 18

### I. Speech/Language/Communication

1. Knows own name: Very true
2. Responds to `No' or `Stop': Very true
3. Can follow some commands: Very true
4. Can use one word at a time: Very true
5. Can use 2 words at a time: Very true
6. Can use 3 words at a time: Very true
7. Knows 10 or more words: Very true
8. Can use sentences with 4 or more words: Very true
9. Explains what he/she wants: Very true
10. Asks meaningful questions: Very true
11. Speech tends to be meaningful/relevant: Very true
12. Often uses several successive sentences: Very true
13. Carries on fairly good conversation: Very true
14. Has normal ability to communicate for his/her age: Very true

Total for Section I: 0

### II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Not descriptive
2. Ignores other people: Not descriptive
3. Pays little or no attention when addressed: Not descriptive
4. Uncooperative and resistant: Somewhat descriptive
5. No eye contact: Not descriptive
6. Prefers to be left alone: Somewhat descriptive
7. Shows no affection: Not descriptive
8. Fails to greet parents: Not descriptive
9. Avoids contact with others: Somewhat descriptive
10. Does not imitate: Not descriptive
11. Dislikes being held/cuddled: Not descriptive
12. Does not share or show: Somewhat descriptive
13. Does not wave `bye bye': Not descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Somewhat descriptive

16. Lacks friends/companions: Somewhat descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Somewhat descriptive
19. Indifferent to being liked: Not descriptive
20. Indifferent if parent(s) leave: Not descriptive

Total for Section II: 8

### III. Sensory/Cognitive Awareness

1. Responds to own name: Very descriptive
2. Responds to praise: Very descriptive
3. Looks at people and animals: Very descriptive
4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Somewhat descriptive
6. Plays with toys appropriately: Very descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Very descriptive
9. Understands explanations: Very descriptive
10. Aware of environment: Very descriptive
11. Aware of danger: Very descriptive
12. Shows imagination: Very descriptive
13. Initiates activities: Very descriptive
14. Dresses self: Somewhat descriptive
15. Curious, interested: Very descriptive
16. Venturesome - explores: Very descriptive
17. Tuned in - Not spacey: Somewhat descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 5

### IV. Health/Physical/Behavior

1. Bed-wetting: Not a Problem
2. Wets pants/diapers: Not a Problem
3. Soils pants/diapers: Not a Problem
4. Diarrhea: Not a Problem
5. Constipation: Not a Problem
6. Sleep problems: Minor Problem
7. Eats too much/too little: Not a Problem
8. Extremely limited diet: Minor Problem
9. Hyperactive: Moderate Problem
10. Lethargic: Not a Problem
11. Hits or injures self: Minor Problem

12. Hits or injures others: Minor Problem
13. Destructive: Minor Problem
14. Sound-sensitive: Minor Problem
15. Anxious/fearful: Minor Problem
16. Unhappy/crying: Minor Problem
17. Seizures: Not a Problem
18. Obsessive speech: Minor Problem
19. Rigid routines: Minor Problem
20. Shouts or screams: Minor Problem
21. Demands sameness: Minor Problem
22. Often agitated: Minor Problem
23. Not sensitive to pain: Not a Problem
24. Hooked or fixated on certain objects/topics: Moderate Problem
25. Repetitive movements: Minor Problem

Total for Section IV: 18

#### **DE\_INSTRUCTOR\_BASELINE**

Date: 4/18/2013 12:11:05 PM

Child's Name: D E

#### **TOTAL AND SUBSCALE SCORES**

Total Score: 84

I. Speech/Language/Communication: 23

II. Sociability: 33

III. Sensory/Cognitive Awareness: 28

IV. Health/Physical/Behavior: 0

#### **I. Speech/Language/Communication**

1. Knows own name: Somewhat true
2. Responds to 'No' or 'Stop': Very true
3. Can follow some commands: Somewhat true
4. Can use one word at a time: Not true
5. Can use 2 words at a time: Not true
6. Can use 3 words at a time: Not true
7. Knows 10 or more words: Not true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Somewhat true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Not true
12. Often uses several successive sentences: Not true
13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

Total for Section I: 23

## II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Very descriptive
2. Ignores other people: Very descriptive
3. Pays little or no attention when addressed: Very descriptive
4. Uncooperative and resistant: Somewhat descriptive
5. No eye contact: Very descriptive
6. Prefers to be left alone: Very descriptive
7. Shows no affection: Very descriptive
8. Fails to greet parents: Somewhat descriptive
9. Avoids contact with others: Very descriptive
10. Does not imitate: Very descriptive
11. Dislikes being held/cuddled: Very descriptive
12. Does not share or show: Very descriptive
13. Does not wave 'bye bye': Very descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Somewhat descriptive
16. Lacks friends/companions: Somewhat descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Very descriptive
19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Very descriptive

Total for Section II: 33

## III. Sensory/Cognitive Awareness

1. Responds to own name: Somewhat descriptive
2. Responds to praise: Not descriptive
3. Looks at people and animals: Not descriptive
4. Looks at pictures (and T.V.): Somewhat descriptive
5. Does drawing, coloring, art: Not descriptive
6. Plays with toys appropriately: Not descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Not descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Somewhat descriptive
11. Aware of danger: Not descriptive
12. Shows imagination: Not descriptive
13. Initiates activities: Somewhat descriptive
14. Dresses self: Somewhat descriptive

15. Curious, interested: Not descriptive
16. Venturesome - explores: Somewhat descriptive
17. Tuned in - Not spacey: Not descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 28

**DE\_INSTRUCTOR\_FINAL**

Date: 4/17/2013 12:15:53 AM

Child's Name: D E

**TOTAL AND SUBSCALE SCORES**

Total Score: 80

I. Speech/Language/Communication: 23

II. Sociability: 30

III. Sensory/Cognitive Awareness: 27

**I. Speech/Language/Communication**

1. Knows own name: Somewhat true
2. Responds to `No' or `Stop': Very true
3. Can follow some commands: Somewhat true
4. Can use one word at a time: Not true
5. Can use 2 words at a time: Not true
6. Can use 3 words at a time: Not true
7. Knows 10 or more words: Not true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Somewhat true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Not true
12. Often uses several successive sentences: Not true
13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

Total for Section I: 23

**II. Sociability**

1. Seems to be in a shell - you cannot reach him/her: Very descriptive
2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Very descriptive
4. Uncooperative and resistant: Somewhat descriptive

5. No eye contact: Very descriptive
6. Prefers to be left alone: Very descriptive
7. Shows no affection: Very descriptive
8. Fails to greet parents: Not descriptive
9. Avoids contact with others: Very descriptive
10. Does not imitate: Very descriptive
11. Dislikes being held/cuddled: Very descriptive
12. Does not share or show: Very descriptive
13. Does not wave 'bye bye': Very descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Not descriptive
16. Lacks friends/companions: Somewhat descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Very descriptive
19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Very descriptive

Total for Section II: 30

### III. Sensory/Cognitive Awareness

1. Responds to own name: Somewhat descriptive
2. Responds to praise: Not descriptive
3. Looks at people and animals: Somewhat descriptive
4. Looks at pictures (and T.V.): Somewhat descriptive
5. Does drawing, coloring, art: Not descriptive
6. Plays with toys appropriately: Not descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Not descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Somewhat descriptive
11. Aware of danger: Not descriptive
12. Shows imagination: Not descriptive
13. Initiates activities: Somewhat descriptive
14. Dresses self: Somewhat descriptive
15. Curious, interested: Not descriptive
16. Venturesome - explores: Somewhat descriptive
17. Tuned in - Not spacey: Not descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 27

**DE\_PARENT BASELINE AND FINAL**

Date: 4/3/2013 1:55:59 PM

Child's Name:DE

#### TOTAL AND SUBSCALE SCORES

Total Score: 81

I. Speech/Language/Communication: 21

II. Sociability: 18

III. Sensory/Cognitive Awareness: 20

IV. Health/Physical/Behavior: 22

#### I. Speech/Language/Communication

1. Knows own name: Very true
2. Responds to 'No' or 'Stop': Somewhat true
3. Can follow some commands: Somewhat true
4. Can use one word at a time: Not true
5. Can use 2 words at a time: Not true
6. Can use 3 words at a time: Not true
7. Knows 10 or more words: Very true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Somewhat true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Not true
12. Often uses several successive sentences: Not true
13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

Total for Section I: 21

#### II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Somewhat descriptive
2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Somewhat descriptive
4. Uncooperative and resistant: Somewhat descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Somewhat descriptive
7. Shows no affection: Very descriptive
8. Fails to greet parents: Somewhat descriptive
9. Avoids contact with others: Somewhat descriptive
10. Does not imitate: Somewhat descriptive
11. Dislikes being held/cuddled: Somewhat descriptive
12. Does not share or show: Somewhat descriptive
13. Does not wave 'bye bye': Not descriptive

14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Not descriptive
16. Lacks friends/companions: Somewhat descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Somewhat descriptive
19. Indifferent to being liked: Somewhat descriptive
20. Indifferent if parent(s) leave: Somewhat descriptive

Total for Section II: 18

### III. Sensory/Cognitive Awareness

1. Responds to own name: Somewhat descriptive
2. Responds to praise: Not descriptive
3. Looks at people and animals: Somewhat descriptive
4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Very descriptive
6. Plays with toys appropriately: Somewhat descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Very descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Somewhat descriptive
11. Aware of danger: Not descriptive
12. Shows imagination: Very descriptive
13. Initiates activities: Somewhat descriptive
14. Dresses self: Not descriptive
15. Curious, interested: Somewhat descriptive
16. Venturesome - explores: Not descriptive
17. Tuned in - Not spacey: Not descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 20

### IV. Health/Physical/Behavior

1. Bed-wetting: Moderate Problem
2. Wets pants/diapers: Moderate Problem
3. Soils pants/diapers: Moderate Problem
4. Diarrhea: Not a Problem
5. Constipation: Moderate Problem
6. Sleep problems: Not a Problem
7. Eats too much/too little: Moderate Problem
8. Extremely limited diet: Moderate Problem
9. Hyperactive: Not a Problem



10. Lethargic: Not a Problem
11. Hits or injures self: Not a Problem
12. Hits or injures others: Not a Problem
13. Destructive: Not a Problem
14. Sound-sensitive: Not a Problem
15. Anxious/fearful: Not a Problem
16. Unhappy/crying: Not a Problem
17. Seizures: Serious Problem
18. Obsessive speech: Not a Problem
19. Rigid routines: Minor Problem
20. Shouts or screams: Not a Problem
21. Demands sameness: Not a Problem
22. Often agitated: Not a Problem
23. Not sensitive to pain: Moderate Problem
24. Hooked or fixated on certain objects/topics: Moderate Problem
25. Repetitive movements: Moderate Problem

Total for Section IV: 22

### **CA\_INSTRUCTOR\_BASELINE**

Date: 4/18/2013 12:02:05 PM

Child's Name: C A

### **TOTAL AND SUBSCALE SCORES**

Total Score: 65

I. Speech/Language/Communication: 23

II. Sociability: 22

III. Sensory/Cognitive Awareness: 20

#### **I. Speech/Language/Communication**

1. Knows own name: Somewhat true
2. Responds to 'No' or 'Stop': Somewhat true
3. Can follow some commands: Not true
4. Can use one word at a time: Somewhat true
5. Can use 2 words at a time: Somewhat true
6. Can use 3 words at a time: Not true
7. Knows 10 or more words: Somewhat true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Not true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Not true
12. Often uses several successive sentences: Not true

13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

-----

Total for Section I: 23

## II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Somewhat descriptive
2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Not descriptive
4. Uncooperative and resistant: Somewhat descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Very descriptive
7. Shows no affection: Somewhat descriptive
8. Fails to greet parents: Somewhat descriptive
9. Avoids contact with others: Very descriptive
10. Does not imitate: Somewhat descriptive
11. Dislikes being held/cuddled: Not descriptive
12. Does not share or show: Very descriptive
13. Does not wave 'bye bye': Somewhat descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Somewhat descriptive
16. Lacks friends/companions: Somewhat descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Very descriptive
19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Somewhat descriptive

Total for Section II: 22

## III. Sensory/Cognitive Awareness

1. Responds to own name: Somewhat descriptive
2. Responds to praise: Not descriptive
3. Looks at people and animals: Very descriptive
4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Somewhat descriptive
6. Plays with toys appropriately: Somewhat descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Not descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Somewhat descriptive
11. Aware of danger: Not descriptive
12. Shows imagination: Somewhat descriptive
13. Initiates activities: Not descriptive

14. Dresses self: Somewhat descriptive
15. Curious, interested: Somewhat descriptive
16. Venturesome - explores: Very descriptive
17. Tuned in - Not spacey: Somewhat descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 20

### **CA\_INSTRUCTOR\_FINAL**

Date: 4/16/2013 11:41:16 PM

Child's Name: C A

### TOTAL AND SUBSCALE SCORES

Total Score: 57

I. Speech/Language/Communication: 22

II. Sociability: 19

III. Sensory/Cognitive Awareness: 16

#### I. Speech/Language/Communication

1. Knows own name: Somewhat true
2. Responds to `No' or `Stop': Somewhat true
3. Can follow some commands: Not true
4. Can use one word at a time: Somewhat true
5. Can use 2 words at a time: Somewhat true
6. Can use 3 words at a time: Not true
7. Knows 10 or more words: Somewhat true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Somewhat true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Not true
12. Often uses several successive sentences: Not true
13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

Total for Section I: 22

#### II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Somewhat descriptive
2. Ignores other people: Somewhat descriptive

3. Pays little or no attention when addressed: Not descriptive
4. Uncooperative and resistant: Not descriptive
5. No eye contact: Somewhat descriptive
6. Prefers to be left alone: Very descriptive
7. Shows no affection: Somewhat descriptive
8. Fails to greet parents: Somewhat descriptive
9. Avoids contact with others: Very descriptive
10. Does not imitate: Somewhat descriptive
11. Dislikes being held/cuddled: Not descriptive
12. Does not share or show: Very descriptive
13. Does not wave 'bye bye': Somewhat descriptive
14. Disagreeable/not compliant: Not descriptive
15. Temper tantrums: Not descriptive
16. Lacks friends/companions: Somewhat descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Very descriptive
19. Indifferent to being liked: Very descriptive
20. Indifferent if parent(s) leave: Somewhat descriptive

Total for Section II: 19

### III. Sensory/Cognitive Awareness

1. Responds to own name: Somewhat descriptive
2. Responds to praise: Somewhat descriptive
3. Looks at people and animals: Very descriptive
4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Somewhat descriptive
6. Plays with toys appropriately: Somewhat descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Not descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Very descriptive
11. Aware of danger: Somewhat descriptive
12. Shows imagination: Somewhat descriptive
13. Initiates activities: Not descriptive
14. Dresses self: Somewhat descriptive
15. Curious, interested: Very descriptive
16. Venturesome - explores: Very descriptive
17. Tuned in - Not spacey: Somewhat descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 16

## CA\_PARENT BASELINE

Date: 4/16/2013 8:24:52 PM

Child's Name:CA

### TOTAL AND SUBSCALE SCORES

Total Score: 82

I. Speech/Language/Communication: 16

II. Sociability: 15

III. Sensory/Cognitive Awareness: 23

IV. Health/Physical/Behavior: 28

#### I. Speech/Language/Communication

1. Knows own name: Very true
2. Responds to `No' or `Stop': Somewhat true
3. Can follow some commands: Somewhat true
4. Can use one word at a time: Very true
5. Can use 2 words at a time: Somewhat true
6. Can use 3 words at a time: Somewhat true
7. Knows 10 or more words: Very true
8. Can use sentences with 4 or more words: Not true
9. Explains what he/she wants: Somewhat true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Somewhat true
12. Often uses several successive sentences: Not true
13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

Total for Section I: 16

#### II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Not descriptive
2. Ignores other people: Somewhat descriptive
3. Pays little or no attention when addressed: Very descriptive
4. Uncooperative and resistant: Somewhat descriptive
5. No eye contact: Not descriptive
6. Prefers to be left alone: Not descriptive
7. Shows no affection: Not descriptive
8. Fails to greet parents: Not descriptive
9. Avoids contact with others: Not descriptive
10. Does not imitate: Very descriptive

11. Dislikes being held/cuddled: Not descriptive
12. Does not share or show: Somewhat descriptive
13. Does not wave `bye bye': Very descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Somewhat descriptive
16. Lacks friends/companions: Somewhat descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Somewhat descriptive
19. Indifferent to being liked: Somewhat descriptive
20. Indifferent if parent(s) leave: Somewhat descriptive

Total for Section II: 15

### III. Sensory/Cognitive Awareness

1. Responds to own name: Somewhat descriptive
2. Responds to praise: Very descriptive
3. Looks at people and animals: Very descriptive
4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Not descriptive
6. Plays with toys appropriately: Not descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Somewhat descriptive
9. Understands explanations: Not descriptive
10. Aware of environment: Somewhat descriptive
11. Aware of danger: Not descriptive
12. Shows imagination: Somewhat descriptive
13. Initiates activities: Not descriptive
14. Dresses self: Not descriptive
15. Curious, interested: Somewhat descriptive
16. Venturesome - explores: Somewhat descriptive
17. Tuned in - Not spacey: Not descriptive
18. Looks where others are looking: Not descriptive

Total for Section III: 23

### IV. Health/Physical/Behavior

1. Bed-wetting: Serious Problem
2. Wets pants/diapers: Moderate Problem
3. Soils pants/diapers: Moderate Problem
4. Diarrhea: Not a Problem
5. Constipation: Moderate Problem
6. Sleep problems: Moderate Problem

7. Eats too much/too little: Moderate Problem
8. Extremely limited diet: Not a Problem
9. Hyperactive: Not a Problem
10. Lethargic: Moderate Problem
11. Hits or injures self: Minor Problem
12. Hits or injures others: Moderate Problem
13. Destructive: Minor Problem
14. Sound-sensitive: Moderate Problem
15. Anxious/fearful: Not a Problem
16. Unhappy/crying: Not a Problem
17. Seizures: Not a Problem
18. Obsessive speech:
19. Rigid routines: Not a Problem
20. Shouts or screams: Minor Problem
21. Demands sameness: Not a Problem
22. Often agitated: Minor Problem
23. Not sensitive to pain: Serious Problem
24. Hooked or fixated on certain objects/topics: Not a Problem
25. Repetitive movements: Moderate Problem

Total for Section IV: 28

**CA\_PARENT FINAL (6 years)**

Date: 4/16/2013 8:41:23 PM

Child's Name: CA

**TOTAL AND SUBSCALE SCORES**

Total Score: 42

I. Speech/Language/Communication: 10

II. Sociability: 8

III. Sensory/Cognitive Awareness: 13

IV. Health/Physical/Behavior: 11

**I. Speech/Language/Communication**

1. Knows own name: Very true
2. Responds to `No' or `Stop': Very true
3. Can follow some commands: Very true
4. Can use one word at a time: Very true
5. Can use 2 words at a time: Very true
6. Can use 3 words at a time: Very true
7. Knows 10 or more words: Very true
8. Can use sentences with 4 or more words: Somewhat true

9. Explains what he/she wants: Somewhat true
10. Asks meaningful questions: Not true
11. Speech tends to be meaningful/relevant: Somewhat true
12. Often uses several successive sentences: Somewhat true
13. Carries on fairly good conversation: Not true
14. Has normal ability to communicate for his/her age: Not true

Total for Section I: 10

## II. Sociability

1. Seems to be in a shell - you cannot reach him/her: Not descriptive
2. Ignores other people:
3. Pays little or no attention when addressed: Not descriptive
4. Uncooperative and resistant: Somewhat descriptive
5. No eye contact: Not descriptive
6. Prefers to be left alone: Not descriptive
7. Shows no affection: Not descriptive
8. Fails to greet parents: Not descriptive
9. Avoids contact with others: Not descriptive
10. Does not imitate: Somewhat descriptive
11. Dislikes being held/cuddled: Not descriptive
12. Does not share or show: Not descriptive
13. Does not wave 'bye bye': Somewhat descriptive
14. Disagreeable/not compliant: Somewhat descriptive
15. Temper tantrums: Not descriptive
16. Lacks friends/companions: Somewhat descriptive
17. Rarely smiles: Not descriptive
18. Insensitive to other's feelings: Somewhat descriptive
19. Indifferent to being liked: Somewhat descriptive
20. Indifferent if parent(s) leave: Somewhat descriptive

Total for Section II: 8

## III. Sensory/Cognitive Awareness

1. Responds to own name: Very descriptive
2. Responds to praise: Very descriptive
3. Looks at people and animals: Very descriptive
4. Looks at pictures (and T.V.): Very descriptive
5. Does drawing, coloring, art: Somewhat descriptive
6. Plays with toys appropriately: Somewhat descriptive
7. Appropriate facial expression: Somewhat descriptive
8. Understands stories on T.V.: Somewhat descriptive



9. Understands explanations: Somewhat descriptive
10. Aware of environment: Very descriptive
11. Aware of danger: Somewhat descriptive
12. Shows imagination: Somewhat descriptive
13. Initiates activities: Somewhat descriptive
14. Dresses self: Somewhat descriptive
15. Curious, interested: Somewhat descriptive
16. Venturesome - explores: Somewhat descriptive
17. Tuned in - Not spacey: Somewhat descriptive
18. Looks where others are looking: Somewhat descriptive

Total for Section III: 13

#### IV. Health/Physical/Behavior

1. Bed-wetting: Minor Problem
2. Wets pants/diapers: Not a Problem
3. Soils pants/diapers: Not a Problem
4. Diarrhea: Not a Problem
5. Constipation: Not a Problem
6. Sleep problems: Minor Problem
7. Eats too much/too little: Not a Problem
8. Extremely limited diet: Not a Problem
9. Hyperactive: Not a Problem
10. Lethargic: Minor Problem
11. Hits or injures self: Not a Problem
12. Hits or injures others: Not a Problem
13. Destructive: Minor Problem
14. Sound-sensitive: Minor Problem
15. Anxious/fearful: Minor Problem
16. Unhappy/crying: Not a Problem
17. Seizures: Not a Problem
18. Obsessive speech:
19. Rigid routines: Not a Problem
20. Shouts or screams: Moderate Problem
21. Demands sameness: Not a Problem
22. Often agitated: Not a Problem
23. Not sensitive to pain: Moderate Problem
24. Hooked or fixated on certain objects/topics: Not a Problem
25. Repetitive movements: Minor Problem

Total for Section IV: 11

## Letters to the Editor

Merrill Simpson  
Sent to: Autism Asperger's Digest  
Kim Fields, Managing Editor  
kfields@autismdigest.com  
PO Box 2257, Burlington, NC 27216

Dear Ms. Kim Fields  
Please consider publishing our letter to the editor below (and attached)  
Yours Sincerely,  
Merrill Simpson  
(973)-219-9069

I wanted to share with the readers of Autism Asperger's Digest how horses can be used as a therapy tool for children with Autism Spectrum Disorder. Two fellow researchers and I recently spent time observing hippotherapy sessions at a local barn (Northwest NJ) and were amazed at how well the children responded to the therapy. For readers who are not familiar with the term "hippotherapy," the American Hippotherapy Association defines hippotherapy as a physical, occupational, or speech therapy treatment strategy utilizing equine movement. Hippotherapy is considered a specialization of equine-assisted therapy (EAT), a type of animal-assisted therapy that is performed by a licensed therapist and uses the horse as a mechanism for treatment. After breaking his left arm, one boy with ASD refused to use his left hand and convinced his parents and doctors that he had a physical injury. Exploratory surgery was conducted and it was concluded that this boy's opposition to using his arm was psychological. No therapy treatment except hippotherapy gave him confidence to use both hands. An outside observer would never know that two years prior this patient would only use his right hand. My research group and advisor Dr. Julie Fagan are using the Autism Treatment Evaluation Checklist (ATEC) to survey parents of patients regarding the improvement of their child since they have participated in hippotherapy sessions. We are still in the data collection phase of our research but are planning to publish a paper on the effectiveness of hippotherapy for children with ASD. We would really appreciate if you could spread the word about this great opportunity, people interested in more information could visit: <http://www.americanhippotherapyassociation.org>

Merrill Simpson  
Graduating class of 2013, Rutgers University  
majoring in Animal Science  
with  
Dr. Julie M. Fagan, Professor at Rutgers University

Sent to Director of Autism Speaks in Princeton NJ  
(could not get personal email so sent to [newjersey@autismspeaks.org](mailto:newjersey@autismspeaks.org) - the contact us email site)

Dear Director of Autism Speaks in Princeton NJ,

My name is Taylor Aaron and I am a graduating senior at Rutgers University studying Exercise Science and Sport Studies. Currently, I am working on a senior research project studying effective treatments for autistic children. The results from my research have proven very interesting findings about treatments for autism and I'd like to share them with you, and hopefully you can share these findings in your Autism Speaks Newsletter.

My research has focused on the benefits of hippotherapy for the autistic population. The American Hippotherapy Association defines Hippotherapy as a physical, occupational, or speech therapy treatment strategy utilizing equine movement. During a hippotherapy session, the horse's movement influences the client rather than the client influencing the horse. Activities are incorporated by the therapist utilizing the horse's movement as a therapy aid to help the client move toward physical, cognitive, or psychosocial goals. The horse provides a dynamic base of support and its walk enables sensory input to vestibular, proprioceptive, tactile, and visual channels. The consistent, repetitive motion of the horse's walk stimulates the nervous system of the client, allowing them to build physical and cognitive responses. It has been seen through research that children with social limitations respond better to animals than with people.

Our research included going to hippotherapy sites and interviewing the parents and therapists to hear their take on the therapy. We also used the ATEC survey, filled out by parents and therapists, to get statistical data on where the child has truly improved since the start of hippotherapy.

I had the opportunity to interact with a young boy diagnosed with autism who has been in the program for almost 2 years. Before he started hippotherapy, he severely broke his left arm and was scarred ever since. Even after the arm healed, he refused to use and almost acted as if it was non-functioning. He completely adapted his life to only using one arm. His parents were so worried, they went to exploratory surgery to see if there was physically something wrong; however, the surgery proved it was completely psychological. After the family had tried everything, they went to hippotherapy. Throughout his 2 years of therapy, the boy completely forgot about his fear of using his left arm, and just focused on doing what he needed to with the horse. Therapeutic activities included cleaning the horse, brushing it, carrying saddles, using reins, which are all activities requiring the use of 2 hands. Now, the boy uses both arms in everyday life and continues going to hippotherapy to improve his social skills.

This experience was extremely liberating and proved the effectiveness of hippotherapy.

If more people understood what benefits it could provide for their autistic children, they may not feel so lost when it comes to deciding on a treatment. Not only is it fun for the kids, but it includes activities that improve their social and cognitive skills without them even knowing it.

By putting this story in your newsletter, you could inform the autistic population of the wonderful services that are available to them.

I appreciate your time and hope to hear a response from you soon!

Sincerely,  
Taylor Aaron  
856-381-3686  
Rutgers University

School of Environment Sciences  
Class of 2013

To: Equine Editor  
Subject: Hippotherapy, letter to editor

April 1st, 2013

Dear Editor of Equus Magazine,  
Please consider publishing my letter to the editor below (and attached).

My name is Sharon Cubelo and I am currently involved in a small research project to help see the benefits of hippotherapy for children with autism. My purpose for this letter is to ask for help from your popular magazine to spread awareness of this unique therapy to the rest of the horse community.

Hippotherapy, as defined by the American Hippotherapy Association, is a physical, occupational, or speech therapy treatment strategy using equine movement as a tool and is different than therapeutic riding in that the sessions are not geared toward learning how to horseback ride. This therapy is used for many different disorders and syndromes, and can help with physical strengthening, social interactions, and repetitive or inappropriate behaviors (and so much more!). Using a horse as a tool works wonders physically, as it is always a good workout based on the nature of the sport. As a social and behavioral tool the horse can be used as a motivator because the patients bond so well to the animal. Patients must learn to behave properly to continue the session, or to do certain things in order to get a reward.

This non-traditional therapy is perfect for children within the Autism Spectrum, because it helps with specific social and behavioral aspects of the disorder. One child who frequently would have tantrums that involved kicking and screaming learned to control herself in order to stay on the horse. She learned that if she wanted to behave inappropriately, she would not be able to continue riding. Now, in her everyday life, she rarely throws tantrums, and they are currently working on how she expresses her excitement.

There are many stories like hers that show just how obviously beneficial this therapy is.

However, surprisingly enough, there are many people who are unaware of hippotherapy. By spreading the word throughout the horse community, it will help horse lovers near and far find an alternative therapy that they can consider for friends and family. Horse lovers understand the emotional and physical benefits of working with our four-legged friends, and it's time to share it with a population that can really use these benefits for their daily life and wellbeing.

If you have any questions or wish for more information please feel to contact me, my email is [scubelo@gmail.com](mailto:scubelo@gmail.com)<<mailto:scubelo@gmail.com>>.

Thank you for your time and consideration,

Sincerely,

Sharon Cubelo

Rutgers University, Graduating Class of 2013

Animal Science Major, Equine Science Minor

Ross University School of Veterinary Medicine, Fall Class of 2013