

Equine Assisted Therapy: An Exploration of Therapeutic Riding & Hippotherapy

By Rebecca Belmore, Graduate Level Distance Learning Student,
College of Health and Human Performance, University of Florida, Gainesville, FL

“The past year has seen great strides in the development of my daughter. The excitement is evident as we arrive at the barn. We see the seven-year-old toothless grin as she grabs her boots, hat, and pony treats. Her willingness to cooperate and get “with the program” is an unbelievable accomplishment and due only to the trust and faith in her instructor... and a wonderful pony named Pumpkin”

–Parent of a rider with Down’s syndrome and hearing impairments

Equine Assisted Therapy can work wonders, as illustrated in the previous quotation. There has been much confusion in the past as to what therapeutic riding (TR) and hippotherapy (HPOT) truly are. With this paper I hope to make the clarification as to their definitions and what makes these approaches different. I will look at the general benefits of Equine Assisted Therapy and the specific benefits to a number of disabilities including cerebral palsy, autism, and intellectual disabilities.

The North American Riding for the Handicapped Association defines therapeutic riding as using equine-oriented activities for the purpose of contributing positively to the cognitive, physical, emotional, and social well-being of people with disabilities (NARHA Instructor Education Guide, 2002). Hippotherapy (from the Greek word “hippos,” meaning horse) is then defined as a direct medical treatment with the assistance of a horse (NARHA, 2002). Medical professionals: primarily physical, occupational, and speech therapists use this medical treatment for clients with movement dysfunctions. Clients benefit from improvements in dynamic posture and balance, as well as improvements in sensory processing and functional mobility.

The following is an illustration of how the speech and language pathologist might use the same type of activity to get different results when teaching a therapeutic riding lesson compared to a hippotherapy session. While working on sequencing and memory in a TR lesson she may say, “turn left at the large green cone, right at the small green cone, around the big blue cone and then around the arena and stop at every word that rhymes with cat.” The focus is on a horse related activity, not the movement of the horse. In a HPOT session she would give the direction to the rider to “say words that rhyme with cat” while child is sitting on a walking horse. The therapist is using the movement of the horse to facilitate improved language skills (MaCauley, 2004). Although the activity seems very similar, the focus and outcome is extremely different.

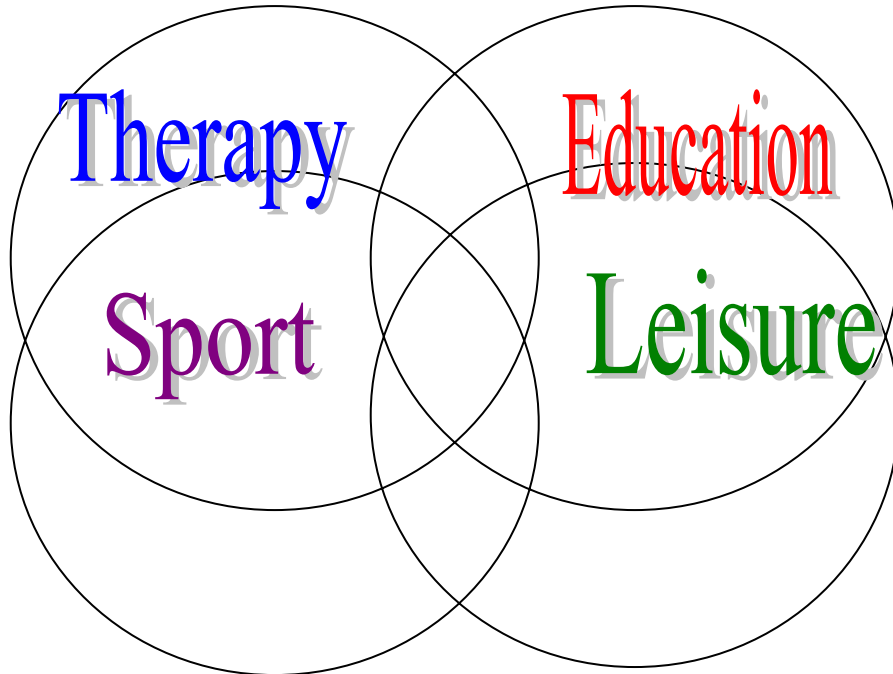


Figure 1: Classifications of Therapeutic Riding

THERAPEUTIC RIDING

Therapeutic Riding (TR) is a special training program in which persons with disabilities learn horsemanship skills in order to pursue their area of interest, whether it is of a therapeutic nature or for recreation (Engal, Galloway and Bull, 2006). These horsemanship skills provide multi-task learning that can help a person with a disability to achieve daily living skills. According to NARHA (2002), therapeutic riding is broken down into four classifications (Figure 1). These are detailed as follow:

1. **Therapy** – Equine activities are used as a form of therapy to achieve physical, psychological, cognitive, behavioral and communicative goals. The therapy is provided by a licensed health professional. Such professionals integrate the treatment principles of their profession into the equine activities used in a treatment setting. Several health professions including physical therapy, occupational therapy, speech pathology, and psychology have developed specialized forms of treatment using the horse within these professions. Hippotherapy falls into this classification of TR.
2. **Education** – Equine activities are used to achieve psycho-educational goals for people with physical, mental, and psychological impairments, as well as to provide individuals with skill in the sport. The emphasis is to incorporate cognitive, behavioral, psychological, and physical goals into the program plan while teaching. Credentialed TR instructors, education specialists, and health professionals are involved in the design and implementation of the program.
3. **Sport** – People with physical, mental, or psychological impairments can participate in sport activities, adapted as needed, with the horse. Activities are directed toward the acquisition of skills leading to the accomplishment of specific horsemanship goals. By learning the skills needed for the sport,

therapeutic and recreational goals are also achieved. Therapeutic riding instructors are primarily responsible for the design and implementation of the program.

4. **Recreation and Leisure** – People with physical, mental and psychological impairments may use equine activities, adapted as needed, as a recreation and leisure experience. The emphasis is on an enjoyable and relaxing experience that provides additional therapeutic benefits in the areas of socialization, posture, mobility and an overall improved quality of life. Therapeutic riding instructors and recreational therapists are primarily responsible for program development. (NARHA, 2002)

Riding is therapeutic in many ways. Measurable gains are found in:

- *Coordination skills
- *Speech/Language skills
- *Emotional control
- *Social awareness
- *Peer relations
- *Self-concept
- *Improved work skills
- *Self-confidence
- *Increased internal “locus” of control
- *Because riding is a “risk” activity there is a feeling of euphoria, courage and pride (Engal, et al., 2006)

HIPPOTHERAPY

The unique combination of the horse, the horse’s movement, and a non-clinical environment produces an extraordinary effort on all systems of the body. Therefore, although hippotherapy is frequently used to achieve physical goals, it also affects psychological, cognitive, social, behavioral, and communicative outcomes (Heine, 1997). HPOT is truly a multidisciplinary form of treatment. HPOT is a treatment approach that uses activities that are meaningful to the client and addresses individual goals. Hippotherapy does not teach specific skills associated with being on the horse; rather, it provides a foundation of improved neuromotor function and sensory processing.

Following is an example of a meaningful activity in which multiple systems of the body are affected: A young client may be asked to move from facing forward to facing backward and then to all fours. In this position, he reaches one hand down to pat the horse. This activity is overlaid on the constant rhythmical 3-dimensional movement of the horse (Heine, 1997). Therefore, in addition to the obvious physical response and exertion of the trunk muscles, there are increases in sensory input to the following systems of the body:

- *Vestibular – facing backward while the horse is moving forward
- *Proprioceptive – heavy touch pressure through the hip, knee, wrist, elbow, and shoulder joints in the “all fours” position.
- *Tactile – touching the soft, warm coat of the horse

- *Cognitive – higher level motor planning skills
- *Motor – stability of hips and pelvis required are to maintain position while reaching forward with one hand

This is a meaningful activity for trunk weakness, poor pelvic control, low gross motor skills, weak motor planning, and diminished sensory processing skills (Heine, 1997).

Therapeutic riding and hippotherapy are two distinctly different parts of Equine Assisted Therapy. A licensed therapist in Occupational, Physical or Speech therapy, who has specific training, provides hippotherapy. The goals are therapy directed, such as improved balance, coordination, posture, fine motor control, improved articulation, and increasing cognitive skills. Therapeutic riding teaches the rider to control the horse with such skills as reining, use of aids, and stable management.

“Why can’t we just do hippotherapy with our clients – we know it’s the best therapy “tool” around. It sure beats vestibular swings, tunnels, bolsters and balls for that three dimensional movement and sensory integration.”

–Licensed Occupational Therapist

AUTISM

Autism is a complex developmental disability that typically appears during the first three years of life and affects a person’s ability to communicate and interact with others (Autism Society of America). Autism is defined by a certain set of behaviors and is a “spectrum disorder” that affects individuals differently and to varying degree. There is no known single cause for autism. There is no one approach to working with autism. Because of the wide spectrum of characteristics and symptom, several therapies are utilized. Many of these include behavior modification, speech language therapy, vision therapy, sensory motor therapy, and integration therapies. All of these can and are addressed in therapeutic riding classes (Kohn, 1996).

Therapeutic riding programs provide both physical and emotional benefits, improving coordination and motor development, while creating a sense of wellbeing and increased self-confidence. Because children with autism lack time concept skills, following a specific schedule for each lesson has become a major part of the riding program. Each lesson begins with putting on the helmet and progresses through grooming, mounting, riding, dismounting, grooming, and removing the helmet. This reinforces sequencing and time skills. The technique of riding double, face-to-face, and on a bareback pad builds interaction, the basis of socialization. Studies have shown this leads to improved communication skills (Kohn, 1996). When individuals gain words, they realize this gives them power- the power to control their lives and the environments around them. Individuals build special relationships with their horse partners that quickly generalize to increased contact and involvement with others, i.e. family and teachers.

“Sokki does his job well. His job is to be responsible for me when I’m with him. Sokki is my horse, my therapy. My walking has gotten better over the years. I had to re-learn

walking. My mental attitude, too, has gotten better, as Sokki has allowed me a measure of independence and a feeling of being able to do things.”

-Teenager with spinal cord injury

CEREBRAL PALSY

Cerebral palsy is a condition caused by damage to the brain, usually occurring before, during or shortly after birth. “Cerebral” refers to the brain and “palsy” refers to a disorder of movement or posture. Cerebral palsy is neither progressive nor communicable. It is also not curable, although education, therapy, and technology can help people with cerebral palsy lead productive lives. There are three main types of cerebral palsy: 1) Spastic-leads to stiff and difficult movement, 2) Athetoid- includes involuntary and uncontrolled movement, and 3) Ataxic-gives a disturbed sense of balance and depth perception (Baker, 1995).

People with cerebral palsy have difficulty coordinating and producing purposeful, functional movement. Some people have too much muscle tone (spasticity) while others have too little tone (hypotonia). Those with too much tone hold their limbs in rather stiff postures, and it is difficult to relax these muscles. Individuals with athetoid cerebral palsy will have fluctuating tone. Using treatment techniques to temporarily make tone more normal does not suddenly result in normal, coordinated movement patterns.

Despite these factors, the rhythmic motion, shape, warmth, and inherently motivating quality of the horse can be helpful to people with cerebral palsy throughout their lives. Therapeutic riding can facilitate cognitive and sensorimotor development in childhood, help develop a sense of responsibility, self-confidence, and fair play in adolescence and provide life long recreation and sport. It can do all this while stimulating the good posture, balance and flexibility needed for functional independence off the horse (Baker, 1995).

The benefits of therapeutic riding and hippotherapy for the individual with cerebral palsy include:

- Maintenance of range of motion and flexibility
- Stretching and relaxation
- Increased quantity, quality, and volume of speech
- Improved coordination of breathing, swallowing, and sound production
- Improved self-confidence and courage
- Decrease spasticity
- Increased weight shift
- Increased balance and rotational skills
- Improved postural control
- Decrease fear of movement and position change
- Decreased extensor muscle hypertonus and hip adductor muscle spasticity
- Improved movements for sitting, walking, and standing
- Improved weight-bearing strength and endurance (Bertoli, 1988)

Although there has been some disagreement as to the frequency and intensity of therapy sessions, (and additional studies need to be conducted), it appears that twice weekly sessions of at least 30 minutes for a minimum of ten weeks might be the best therapy protocol for individuals with cerebral palsy (Bertoli, 1988).

INTELLECTUAL DISABILITIES AND DOWN SYNDROME

Intellectual disability is a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. This disability originates before the age of 18 (AAIDD). For individuals with intellectual disabilities, therapeutic riding offers a motivational opportunity to improve their concentration, attention span, memory, and language skill development.

There is incredible variety in abilities, motivation and functional life skills within the group of people diagnosed as intellectually disabled (Baker, 1997). This is a consideration for the therapeutic riding program and its staff. Careful information gathering and planning can make for an enjoyable experience for all involved. The program for an individual with intellectual disability is extremely individualized. There are many conditions linked to ID. They may include abnormal muscle tone, heart problems, vision or hearing loss, stereotypical behaviors, mental illness, and others (Baker, 1997). Careful information collecting can establish the abilities and needs of the rider. Often, the act of riding is so motivating to the individual that new activities and concepts are learned at the riding center and are carried over into everyday life.

Horse care and stable management should be included in the therapeutic riding program for individuals with intellectual disabilities. Many of the skills learned can be directly compared to human concepts. For example, horses eat and their nutrition is important; they and their environment need to be kept clean; they need regular exercise; and they have friends, opinions and moods. Therapeutic riding provides a wonderful opportunity for persons with intellectual disabilities to learn, grow, and become more fully members of their community. The rider may become capable of moving beyond the realm of therapeutic riding to progress to a quality local riding stable or horse ownership. This should be recognized as a significant accomplishment. Adults with intellectual disabilities, especially those living in small residential groups, are often looking for interesting recreational opportunities. Therapeutic riding centers don't have to look far to find groups within their own communities looking for these opportunities. This provides a wonderful opportunity for socialization and fun.

Down syndrome is the most common and readily identifiable condition associated with intellectual disabilities. There are more than 50 signs, but most children with Down syndrome have some of the following physical traits:

1. Short stature – a child grows slowly and, as an adult, is shorter than average
2. Muscle hypotonia accompanied by loose ligaments – child may seem to have less strength and the stomach may stick out due to weak abdominal muscles
3. A short, wide neck with excess fat and skin. This trait is less obvious as the child gets older.

4. Short, stocky arms and legs
5. Distinct facial features include small, low set ears, irregularly shaped mouth, and upward slant to eyes
6. Intellectual disabilities
7. Diseases including those affecting the heart, eyes, bones, thyroid, and intestine (National Institute of Child Health and Development)

Some people with Down syndrome also may have a condition known as Atlanto-Axial Instability (AAI). This is a misalignment of the top two vertebrae of the neck. This subject will be further detailed in the section referring to therapeutic riding contraindications. Taking all of these conditions into consideration with careful planning, the therapeutic horseback riding setting can be a source of great joy and satisfaction to the population of those with Down syndrome and intellectual disabilities. Generally, therapeutic riding can enhance problem-solving skills, motor planning and sequencing abilities, and greatly improve self-esteem.

“I was in the beloved sun riding a 1400 lb. beast and I was thrilled. Proudly I discovered that my rear remembered its seat. In moments I began to remember other former attributes like better balance, posture and above all, self-confidence. My future looked bright with freedom...”

- (Adult rider with MS who last rode a horse 13 years ago)

CONTRAINDICATIONS

Equine assisted therapy is not appropriate for all people with special needs. Each client must be individually evaluated to determine eligibility. There are definite contraindications to hippotherapy and therapeutic riding, which may cause more harm than good to the patient or put the horse, therapist, or volunteers at risk of injury. Some of these contraindications include, but are not limited to, Down syndrome under the age of three, unstable spine, uncontrolled grand mal seizures, atlantoaxial instability, and hemophilia. It is vital that the treating therapist, referring physician, instructor, and family all be in consensus with the treatment plan and be comfortable with the decision to participate in an equine assisted program.

People with Down syndrome are more likely than most to have AAI. This is a condition in which the first two vertebrae of the spine (C-1 and C-2) are loosely connected by the corresponding ligaments that are supposed to hold the vertebrae together. This results in dislocation of the C1-C2 joint, placing pressure on and even completely disrupting the spinal cord at that level. AAI is a potentially life threatening condition and therapeutic horseback riding is contraindicated (Baker, 1996). NARHA's policy regarding AAI is as follows:

“Specific x-rays are needed to rule out this instability before riding is permitted. This condition can occur in adults with Down syndrome even though previous x-rays during or after childhood may have been interpreted as negative. At present, it is not known how often adults with Down syndrome should be tested to rule out atlantoaxial instability. Operating centers should not rely on x-rays taken before

the age of two and a half to three years, as [this area of the spine] has not [become fully formed bone] at this early age. A set of films taken just prior to riding is advisable” (NARHA.org)

The presence of AAI (a positive x-ray) is an absolute contraindication to participation at a NARHA Operating Center. This does not, however, eliminate all horse related activities. This individual may participate in stable management and horse care activities.

Multiple Sclerosis is generally not a contraindication to therapeutic riding. However, it is most clearly contraindicated during an acute exacerbation of symptoms (Baker, 1997). Riding is usually deferred until the episode has passed and the individual is back to baseline and function has stabilized. After an acute exacerbation is over, riding can help to regain what function may have been lost during the episode.

There are other precautions and possible contraindications. These may include temporary conditions such as allergies, recent surgery, and obesity. Other specific contraindications include: acute herniated disc, degeneration of the hip joint, excessive kyphosis or lordosis, hemivertebrae, severe osteoporosis, osteogenesis imperfecta, spondylolisthesis, uncontrolled gran mal seizures, and structural scoliosis greater than 30 degrees (Stable Possibilities at Chesterfield Farm).

ORGANIZATIONS

The North American Riding for the Handicapped Association was founded in 1969 and is the primary advisory group for equine assisted therapies in the United States and Canada. Headquartered in Denver, Colorado, NARHA’s mission is to “change and enrich lives by promoting excellence in equine assisted activities” (narha.org). To accomplish this mission, NARHA fosters safe, professional, ethical, and therapeutic equine activities through education, communication, research, and standards. The association ensures that its standards are met through an accreditation process for centers and a certification process for instructors.

American Hippotherapy Association, Inc. promotes the use of the movement of the horse as a treatment strategy in physical, occupational, and speech therapy sessions for people living with disabilities (americanhippotherapyassociation.org). AHA, Inc. consists of medical professionals (physical, occupational, and speech therapists) and others who are interested in the use of equine movement as a treatment strategy. AHA, Inc. is recognized as part of the international community that provides education, facilitates research and promotes Equine Assisted Therapy as an effective treatment strategy.

CONCLUSION

Therapeutic riding allows people with disabilities to participate in a complex and therapeutic activity in the same manner as an able-bodied person. People with disabilities can ride for rehabilitation or exercise, for fun and recreation. They can develop skills or take part in competition with others who have disabilities or with the able-bodied. Therapeutic riding is fun, and safe when carried out by a well trained staff with well trained horses. It is a strenuous sport and at one time rarely available to people with

disabilities. It is a means to independence and a way to develop confidence. It develops balance, strength, coordination, and endurance that can lead to riding with able-bodied people such as family members and friends.

Equine assisted therapy is not a cure all but it does offer certain unique components not found in traditional therapy settings. It provides a sensory rich, ecologically valid environment that plays a huge part in motivating a person to move.

REFERENCES

NARHA Instructor Education Guide. (2002). Denver, CO

MaCauley, B. (2004). Hippotherapy and Equine Assisted Therapy: Who Does What. *Hippotherapy*, 13 (1), Spring

Engal, B., Galloway, M., & Bull, M. (2006). The Horse, The Handicapped, and the Riding Team In A Therapeutic Riding Program. Durango, CO, Therapy Services

Heine, B. (1997). Introduction to Hippotherapy. *Strides*, 3 (2), April

Kohn, D. (1996). Medical Considerations for Therapeutic Riding and Autism. *Strides*, 2 (3), July

Baker, L. (1995). Cerebral Palsy and Therapeutic Riding. *Strides*, 1 (1), October

Bertoli, D. (1988). Effects of Therapeutic Horseback Riding on Posture in Children with Cerebral Palsy. *Journal Physical Therapy*, 8 (10), 1505-1512

Baker, L (1997). Medical Considerations for Therapeutic Riding and Mental Retardation. *Strides*, 3 (1), January

Baker, L (1997). Medical Considerations for Therapeutic Riding and Multiple Sclerosis. *Strides*, 3 (2), April

Baker, L (1996). Medical Considerations for Therapeutic Riding and Down Syndrome. *Strides*, 2 (4), October

ELECTRONIC RESOURCES

National American Riding for the Handicapped Association, Inc. Web site: www.narha.com (accessed April 10-20, 2008)

Autism Society of America. Web site: www.autism-society.org (accessed April 10-20, 2008)

American Association on Intellectual and Developmental Disabilities. Web site: www.aaid.org (accessed April 10-20, 2008)

National Institute of Child Health and Development. Web site: www.nichd.nih.gov (accessed April 10-20, 2008)

Stable Possibilities at Chesterfield Farms. Web site: www.stablepossibilities.com (accessed April 20, 2008)

American Hippotherapy Association. Web site: www.americanhippotherapyassociation.org (accessed April 10-20, 2008)

Riding to the Top. Web site: www.ridingtothetop.org (accessed April 10-20, 2008)

APPENDIX A

Major Concept and Skill Development

(<http://www.freedomride.com/hippotherapy.shtml>)

* **Body Localization** - Student develops the ability to locate and identify parts of the horse's body. This activity aids in developing an awareness and understanding of one's own body.

* **Body Abstraction** - Student develops the ability to generalize and transfer body localization to himself and others.

* **Muscular Strength** - Student develops the ability to use his muscles to perform physical tasks with the horse.

* **Health & Hygiene** - Student develops an understanding of the principles of health and hygiene. In caring for the horses, students are led to understand and utilize good habits.

* **Balance & Rhythm** - Student develops the ability to maintain gross and fine motor balance and to move rhythmically with the horse. Student is continuously involved in interpreting and reacting to the horse's movements.

* **Body Spatial Organization** - Student develops the ability to move in space. The majority of the activities require the student to direct and move the horse within a given area.

* **Directionality & Laterality** - Student develops the ability to know and respond to right, left, up, down, forward, backward, and directional orientation. Activities focusing on directing the horse in a specific direction are used to aid the student in developing sensitivity to directionality of his body and space.

* **Time Orientation** - Student develops an awareness of time concepts, by involving him in determining feeding time, exercise time, and resting time for the horse; Students develop an awareness of the effect of weather and seasonal changes on horseback riding activities. They learn to anticipate riding activities based on weather conditions.

* **Visual Acuity** - Student develops the ability to see objects in his visual field and to differentiate them meaningfully and accurately. Activities that require the student to direct and move his horse around or through objects in the riding ring aid in developing this skill.

* **Visual - Form Discrimination** Student develops the ability to differentiate visually the forms and symbols in the horse's environment. Activities, in and around the stable,

aid in developing this skill. A student identifies equipment, stall, food and the name of 'his' horse.

* Anticipatory Response - Student develops the ability to anticipate the probable outcome of his behavior with the horse. If he yells or kicks the horse, he knows the horse will probably become frightened or run. This aids the student in predicting the consequences of his own behavior and that of others in a given situation.

* Comprehension - Students develop the ability to use judgment and reasoning in riding and working with the horse. This enhances his ability to use judgment and reasoning when interaction with other forces in his environment.

APPENDIX B

Therapeutic Benefit of Games on Horseback

Games provide a fun outlet for friendly competition and allow riders to transfer skill learned in games on foot to horseback. Initially, this may take time for riders to generalize the concepts from a foot game to a riding game, but most riders quickly catch on. Below are some of the common games that are played on horseback and some of their therapeutic benefits (Riding to the Top)

Red Light/Green Light

- *Reinforces “walk on” and “whoa” commands and the aids that are used
- *Increases awareness of other riders in the lesson
- *Increases communication amongst team members- rider, volunteer, instructor
- *Improves listening skills

Simon Says

- *Improves listening skills
- *Provides rider education regarding the parts of the horse
- *Develops right/left discrimination
- *Challenges riders’ coordination and balance

Brush Box Relay

- *Reinforces the grooming sequence done earlier during grooming and tacking
- *Challenges memory skills
- *Assists with sequencing
- *Improves coordination
- *Encourages communication