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Technology Assessment Report

Name of the Technology and DSM-IV Disorder of Focus:

Hippotherapy in the Treatment of Autistic Disorder

Description of the Technology:

Hippotherapy (also referred to as equine movement therapy, therapeutic horseback riding) is a type of physical therapy for patients with impaired walking related to cerebral palsy or other motor dysfunctions. The term hippotherapy literally means, "treatment with the help of the horse", from the Greek word hippos, meaning horse. Specially trained physical and occupational therapists use this treatment for clients with movement dysfunction. In hippotherapy, the horse influences the client, rather than the client influencing the horse. The client is positioned on the horse and actively responds to the movement of the animal. The therapist directs the movement of the horse, analyzes the client's responses, and adjusts the treatment accordingly. The goals of treatment are to improve the client's posture, balance, mobility and function. An alternative description notes that hippotherapy utilizes riding skills and gymnastic exercises for emotional, cognitive and sensorimotor benefits.

Almost all of the published research literature on hippotherapy focuses on its efficacy as a treatment for cerebral palsy, spinal cord injury and other neuromuscular disorders. In a recent survey of practitioners from 24 countries, the rank order of usage of hippotherapy for persons with disabilities is as follows: (1) cerebral palsy, (2) traumatic brain injury/post-traumatic stress syndrome, (3) multiple sclerosis, (4) hemiplegia, (5) development delay/Down's syndrome, (5) sensory integration deficit and (6) spina bifida.

The American Hippotherapy Association has declared that hippotherapy is a "therapeutic tool within a modality" and not an actual therapeutic procedure in and of itself. It has recommended to its members to use the code 97799 (unlisted procedure) or 97112 (neuromuscular reeducation) when billing insurers in order in order to maintain true integrity in the coding process. As of April 2005, CMS released a new code for this procedure: S8940 (Equestrian/hippotherapy per session).

1. Technology must have final approval from the appropriate government regulatory bodies.

N/A – There are no reported drugs or devices used in the hippotherapy method requiring governmental regulatory approval.

2. The scientific evidence must permit conclusions about the effects of the technology on health outcomes. *(Conclusive evidence in peer-reviewed medical literature to enable the evaluation of the effectiveness and efficacy of the procedure or drug.)*

The majority of the literature regarding hippotherapy consists of small case series published in the German literature. English language publications consist of small case series mainly for adolescents or adults.

The effects of hippotherapy in children were examined in 13 studies including 84 children, ages 2-12, with different types of disabilities. These studies used either small convenience samples (8 or fewer), pre-experimental design, pre-test/post-test, or case description.

A review of the literature was conducted in 2003 to synthesize findings of the effects of hippotherapy on the motor behavior of young children with or at risk for developmental delays/ disabilities or impairment in social-emotional development.[1] One published study specifically measured improvement in gross motor functioning in what were termed "developmentally delayed" children.[2] The children in this study realized significant improvement in gross-motor function in post-intervention measurement.

We were not able to find any published studies in peer-reviewed medical literature measuring the effects of this treatment on patients with Autistic Disorder.

3. The technology is as safe and effective as existing alternative treatments.

The safety of hippotherapy has not been a subject of discussion/ study in the scientific peer-reviewed literature. However, the National Institute of Health notes in its 1987 Consensus Paper on The Health Benefits of Pets, that there may be dangers to people in any pet–people relationship such as risk of infections, allergies and injuries associated with lack of veterinary medical advice.[3] They conclude that additional research is needed to better define those situations, hazards and populations with high risks as well as those with low risks. It should be noted that this particular intervention is conducted either by physical therapists or occupational therapists who are generally well-trained in hippotherapy. Many receive additional certification through Occupational Therapy departments of colleges and universities.

The Rolandelli, Dunst report cited only one study (1984, Dismuke) where a control group was used to compare against an existing alternative treatment (speech and language therapy in a clinical setting compared against speech and language therapy in structured horseback riding.) However, specific study results were not cited. The authors noted that in this study, researchers used the Language Assessment, Remediation and Screening Procedure and the Clinical Discourse Analysis tools to measure language and social-emotional outcomes respectively. As they discuss the studies in their synthesis, they say, "although most investigators generally report positive effects in the physical, social-emotional, or language domains for most study participants, procedural and methodological problems, lack of appropriate controls, weaknesses in research designs, questionable statistical analysis, and other factors (e.g., alternative explanations) call into question the claim that hippotherapy is the source of the benefits provided."

4. The technology improves the net health outcome, i.e., there is conclusive evidence that the benefits outweigh the risks.

There are no scientific studies where there is conclusive evidence that the benefits of hippotherapy outweigh the risks.

5. The improvement in health outcomes is reliably obtainable outside investigational settings.

Hippotherapy has been conducted widely throughout the world outside of investigational settings since the late 1970s. Forty-eight countries now have active therapeutic riding programs for persons with disabilities with more than 650 therapeutic riding centers currently operating throughout North America. However, as stated, there is insufficient evidence in investigational settings that this technology is effective for treating Autistic Disorder.

Conclusion *(is the new technology proven or experimental, and summary of why)***:**

Our conclusion is that hippotherapy for the treatment of Autistic Disorder is investigational at this point in time. The current data are inadequate to permit scientific conclusions about the established efficacy of hippotherapy in the treatment of Autistic Disorder. The conclusion is not that hippotherapy is ineffective in all conditions, but that adequate research is not available to claim an evidence base for the effectiveness and safety of this practice in the treatment of Autistic Disorder. This is consistent with the findings of Blue Cross of California which established Medical Policy in 2003 and in 2004 declaring hippotherapy as investigational.[4]

Determination: Experimental **Effective Date:** 3/25/05

References:

1. Rolandelli, Pamela S., Dunst, Carl J., Influences of Hippotherapy on the Motor and Social –Emotional Behavior of Young Children with Disabilities, Bridges Practice Based Research Syntheses, Vol 2, Number 1, September 2003.

2. Winchester P, Kendall K, Peters H, Sears N, Winkley T. The effect of therapeutic horseback riding on gross motor function and gait speed in children who are developmentally delayed. Phys Occup Ther Pediatr. 2002; 22 (3-4); 37-50.

3. The Health Benefits of Pets, National Institutes of Health, OMAR Workshop, September 10-11, 1987, Consensus Statements NIH Consensus Development Program. Accessed website – http://consensus.nih.gov/ta/003/003_statement.htm_ Equine Movement Therapy (Hippotherapy).

4. Medical Policy Blue Cross of California. December 20, 2004.

5. Glasoe, Barbara L., PT, Semantics' – To be Exuberant or to be Correct, American Hippotherapy Association. Accessed website - www.americanhippotherapyassociation.org on 2/21/05.