

Horses and Humans Research Foundation

Grant award summary

2010 *Basic neurobiological and psychological mechanisms underlying therapeutic effects of Equine Assisted Activities (EAA/T)*

University of Rostock, Germany

Principal Investigators: Dr. Andrea Beetz, Dr. Henri Julius, Dr. Kurt Kotrschal, and Dr. Kerstin Uvnas-Moberg

This research study tests the theoretical basis for the effects of equine assisted activities on youth with social and emotional disorders. In the first of two controlled trials, the research team will investigate whether human-horse interactions have a positive effect on difficult mother-child relationships. The hypothesis is that children in the EAA group will show more improvement in the mother-child relationship and interaction due to the activation of the oxytocin system by the interaction with the horse, than the control group without animal support. In the second controlled trial, the research team will explore if human-horse interactions facilitate the development of a trustful relationship between an insecurely attached child and his or her therapist which allows the child to open up and talk about emotionally stressful situations.

2010 *Effects of Hippotherapy on Balance and Gait in Ambulatory Children with Spastic Cerebral Palsy*

Central Michigan University

Principal Investigators: Debbie Silkwood-Sherer and Nancy McGibbon

The purpose of this study is to determine if the addition of 12 weekly hippotherapy sessions to a child's usual therapy program will improve balance and gait. Thirty children with spastic cerebral palsy, ages 3 – 6 years, will be recruited for this multi-site, randomized controlled clinical trial. An intervention group will receive 12 weeks of once weekly hippotherapy in addition to their usual therapy, and a control group will continue with their usual therapy without hippotherapy. Outcome measures: Balance and gait measures will be the pediatric balance scale, the standardized walking obstacle course, and the 1-minute walk test. The Activities Scale for Kids (5-6 yr) and the Children's Assessment of Participation and Enjoyment-preschool version (3-4 yr) will measure activities and participation. The Beery Test of Motor Integration will measure visual-motor integration, and the PedsQL-CP will be used to measure health-related quality of life. Statistical analysis of the data will determine if the children who received hippotherapy made greater gains on the tests than those who did not receive hippotherapy and if there are correlations between the specific measures.

2008 *The Effect of Equine Assisted Activities on the Social Functioning in Children with Autism*

Good Hope Equestrian Training Center Miami, FL

Principal Investigator: Dr. Margaret Bass

This study will evaluate the effect of therapeutic horseback riding lessons (TR) on the social function and attention of children, ages 7 -12, who are diagnosed with autism.

25 subjects will be randomly assigned to the experimental group and 25 subjects will be similarly assigned to the control group. The experimental group will receive therapeutic riding lessons once a week for 12 weeks. The control group will not have any exposure to riding lessons during the study period of 12 weeks. Outcome measures will be taken before and after the 12 week study period. The subjects' parents and teachers will complete the Social Responsiveness Scale (SRS) and Sensory Profile

(SP). The two groups will be compared between pretest and posttest. Change in the experimental group will also be observed following 8 weeks of no TR with a second posttest using the SRS and SP. \$50,000 (Pilot study results published in the *Journal for Autism & Developmental Disorders*)

2008 Hippotherapy to Improve Postural Control in Children with Cerebral Palsy

*Faculté de médecine et Des Sciences de la santé, Université de Sherbrooke Québec, Canada
Université du Québec a Trois-Rivières, Département des sciences de l'activité physique Trois-Rivières, Canada*

Principal Investigators: Dr. Helene Corriveau, Dr. Claude Dugas, Danielle Champagne

The goal of this project is to measure the effect of a ten week Hippotherapy [HPT] intervention on the control of head and trunk movement for children with cerebral palsy. The research design incorporates appropriate baseline and outcome laboratory measures, but is unique in using novel instrumentation to chart the subject's progress in therapy, while simultaneously controlling the movement of the horse. A sample size, determined by the appropriate statistical power analysis, of 18 subjects, and their therapeutic mounts, will be fitted with portable, telemetry recording, accelerometers. These devices record the speed and magnitude of the subjects' upper body and head displacement, as they are actually mounted and engaged in HPT. The accelerometry data will allow the investigators to demonstrate specific pre and post treatment effects, and the evolution during treatment of greater head and trunk, postural control. Whether any if the observed changes are maintained by the subjects, will be evaluated in the same way, ten weeks after the end of treatment. \$50,000

2006 Improvement in Trunk/Head Stability and Upper Extremity Control after HPOT

Washington University of Medicine, Program in Occupational Therapy St. Louis, MO

Principal Investigators: Tim Shurtleff, Dr. Jack Engsberg, Dr. John Standeven

The study will investigate changes in control of head, trunk and upper extremity movement following hippotherapy treatment (use of the rhythmic movement of a horse to effect therapeutic gains) in children with spastic diplegia cerebral palsy. They will ride a motorized barrel in the motion laboratory for several 15 second tests while video cameras measure their ability to control body movements and measure their performance on some simple reaching tasks. Participants will then complete a session in hippotherapy before being re-tested in the motion lab. After another three months, they will participate in a third two hour testing session. \$50,000

"Changes in Dynamic Trunk/Head Stability and Functional Reach after Hippotherapy" has been accepted for publication in the Archives of Physical Medicine and Rehabilitation.