

Effect of Therapeutic Horseback Riding on Posture in Children with Cerebral Palsy

Source: Bertoti, D. B. (1988). Effect of therapeutic horseback riding on posture in children with cerebral palsy. *Physical Therapy*, 68(10), 1505-12.

Purpose:

The purpose of this study is to measure postural changes of children with spastic cerebral palsy after participation in a therapeutic riding program.

Design/Methods:

There were 11 participants in this study (4 girls, 7 boys), all were children with moderate to severe spastic cerebral palsy and were between the ages of 2 years 4 months to 9 years 6 months. Eight of the subjects were diagnosed with spastic diplegia and three with spastic quadriplegia. The study used a repeated-measures design with a pretest 1 followed by 10 weeks of no riding, then pretest 2 followed by 10 weeks of a therapeutic riding program, ending with a posttest after the 10 weeks. Three pediatric physical therapists that were not involved in the therapeutic riding program did all the assessments. Posture was assessed through a scale developed by the author for this study in order to rate observable qualities of postural control and symmetry of five body areas: head and neck, shoulder and scapula, trunk, spine and pelvis. Each of these areas received a score from 0-3 and were all added for a total composite score. Qualitative data of therapist's observations on posture were also gathered throughout study and sessions. During the 10-week riding period, participants attended sessions twice a week for 60-min sessions and the children rode in groups of three. Children rode in prone, side-lying and sitting positions while the horse was led at a walking pace. Each session focused on achieving reduced spasticity and reducing postural compensation with facilitating trunk control, weight shift, normal rotation of the body axis and dissociation at the shoulders and pelvis through various positioning and balancing activities.

Results:

Improvements in posture were significant during the therapeutic riding period. All participants recorded improvements in posture in comparison to pretest 2 right before therapeutic riding began. The children with spastic diplegia demonstrated improvements in all 5 postural areas, whereas the children with spastic quadriplegia demonstrated greater improvements in the proximal head and neck and shoulder and scapula areas than in the trunk, spine and pelvis. Additionally, overall subjective clinical improvements were reported by all physical therapist and parents, including decreased fear of movement, decreased hypertonicity and improved weight-bearing and functional skills.

Strengths:

This study included a pretest 1 followed by no therapeutic riding activities and then a pretest 2 followed by the 10-week riding program, which allowed for comparison between the two time periods of participation in the riding program versus no riding program.

Limitations:

The author created her own measure to assess posture, therefore, making it difficult to compare to other studies and measures.

Practical Application:

Therapeutic riding programs or hippotherapy may be effective in improving posture and managing spasticity while building strength and postural control in children with cerebral palsy.