

# **The Impact of Therapeutic Horseback Riding on the Motor Functioning and Social Behavior of Children with Autism Spectrum Disorders**

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**Search Terms:** children AND autism AND horseback riding, children AND autism AND hippotherapy, children with autism AND horse\* AND social

**Years:** 2003-2013

**Databases:** Academic Search Premier, CINAHL, ERIC, Google Scholar, MEDLINE, SPORTDiscus

**Number of Articles:** 6

## **Summary of Research Findings**

This literature review includes six articles documenting the impact of therapeutic horseback riding interventions on the motor functioning and social behavior of children with Autism Spectrum Disorders (ASD). Participants in all six studies were children with ASD who ranged in age from four to sixteen years old, and participated in therapeutic horseback riding sessions for approximately one hour, at least once a week, over a four to twenty week period.

Five out of the six interventions utilized live horses at riding stables (Bass, Duchowny, & Llabre, 2009; Gabriels, Agnew, Holt, Shoffner, Zhaoxing, Ruzzano, Clayton, & Mesibov, 2011; Ghorban, Sedigeh, Marzie, & Yaghoob, 2013; Jenkins & Reed, 2013; Ward, Whalon, Rusnak, Wendell, & Paschall, 2013), while the remaining program utilized a simulated horse indoors (Wuang, Wang, Huang, & Su, 2010). During sessions, participants were involved in mounting and dismounting a horse (Bass et al., 2009; Gabriels et al., 2011; Ghorban et al., 2013; Ward et al., 2013), practiced their riding skills (Bass et al., 2009; Gabriels et al., 2011; Ghorban et al., 2013; Ward et al., 2013), and participated in horse grooming activities (Bass et al., 2009; Gabriels et al., 2011; Ghorban et al., 2013). Some sessions also incorporated games (Bass et al., 2009; Gabriels et al., 2011; Wuang et al., 2010) and stretching techniques (Gabriels et al., 2011; Wuang et al., 2010).

Results revealed statistically significant improvements in a variety of motor functions (Gabriels, et al., 2011; Jenkins, et al., 2013; Wuang, et al., 2010) and social behaviors (Bass et al, 2009; Gabriels et al., 2011; Ghorban et al., 2013; Jenkins & Reed, 2013; Ward et al., 2013;Wuang et al., 2010) of children with ASD.

Although limitations associated to attrition (Bass et al., 2009), rater bias (Gabriels et al., 2011; Ghorban et al., 2013) and time constraints (Ghorban et al., 2013; Jenkins & Reed, 2013; Ward et al., 2013) were noted, therapeutic horseback riding appears to be a viable treatment modality for improving motor functioning and social behavior in children with ASD.

## **Knowledge Transition Plan:**

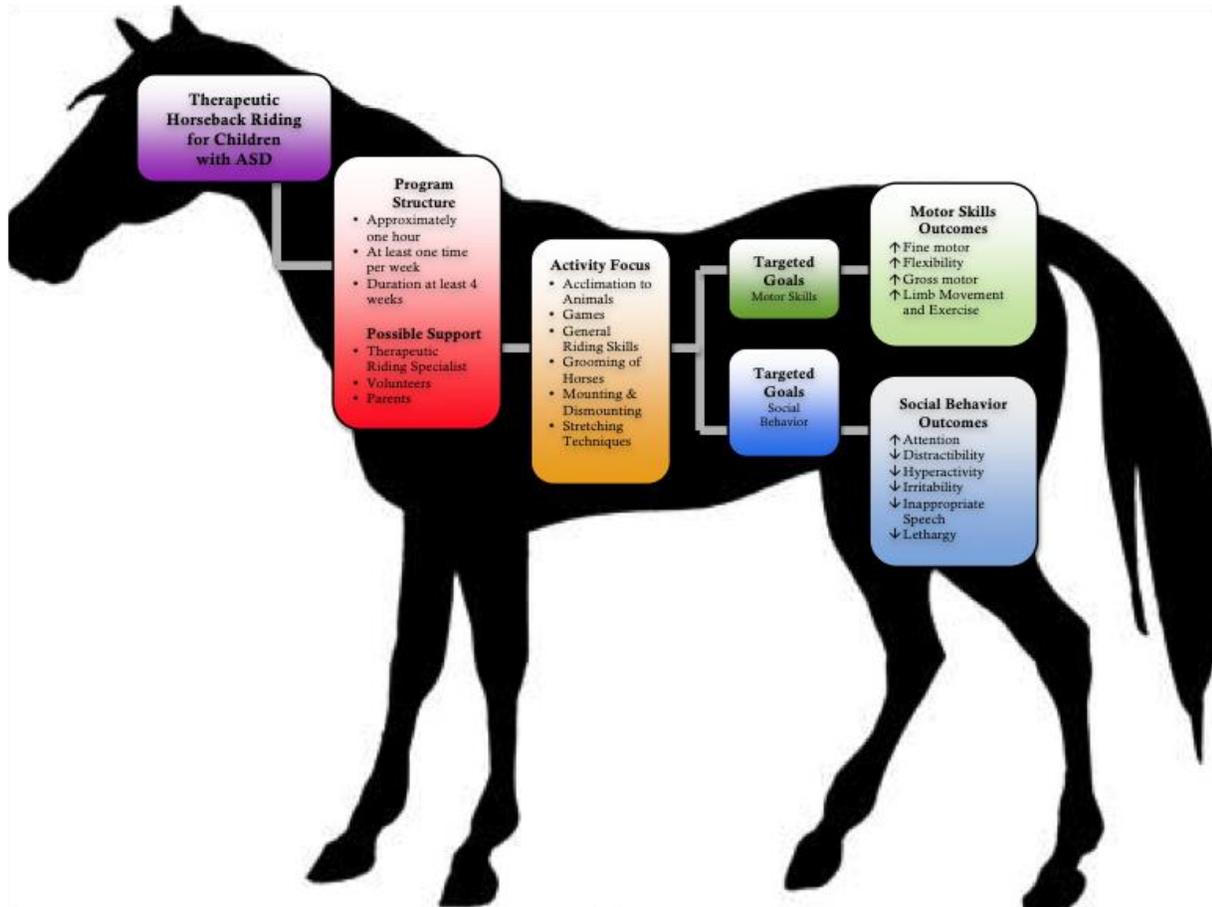
Certified Therapeutic Recreation Specialists (CTRS's) developing treatment plans focused on improving the motor functioning and/or social behaviors of children with Autism Spectrum Disorders (ASD) may want to consider utilizing therapeutic horseback riding (THR) as an evidence-based intervention. Prior to implementing treatment sessions, the CTRS should ensure he/she has basic knowledge and experience in horseback riding as well as access to a stable that is familiar with therapeutic riding practices. It is recommended that CTRS's without specialty training in THR work collaboratively with a certified therapeutic riding specialist. Additionally, since it is common for multiple individuals to support children with ASD during THR sessions, the CTRS might also consider involving volunteers and/or parents in the planned interventions.

Sessions should be structured so they are offered one or two times per week, lasting for approximately one hour each time. Programs should extend for a minimum of a four week period, but might extend up to 20 weeks. If therapists are limited by the number of treatment sessions they can provide, they should be aware that some studies have documented therapeutic effects that have been maintained for up to six months following discontinuation of the intervention.

Treatment sessions should incorporate a variety of activities that might include familiarizing the child with the animal, horse grooming and care, mounting and dismounting, general riding skills, games and/or stretching. Motor functioning goals should be structured towards improving fine motor skills, increasing flexibility, improving gross motor movements, improving limb movements and increasing exercise since these are areas where the literature has documented positive outcomes. Social behavior goals should be focused on increasing attention,

decreasing distractibility, decreasing hyperactivity, decreasing irritability, decreasing inappropriate speech and decreasing lethargy.

In addition to traditional therapeutic horseback riding, recreation therapists should also consider using a Simulated Developmental Horse-Riding Program (SDHRP), since positive outcomes have also been documented using Joba® exercise equipment. This may be particularly helpful for therapists who have limited access to therapeutic riding stables, programs with limited staff support, clients with allergies to horses and/or individuals living in areas where the climate may restrict outdoor sessions year round.



#### References

- Bass, M., Duchowny, C.A., Llabre, M.M. (2009). The effect of therapeutic horseback riding on social functioning in children with autism. *Journal of Autism Development Disorder*, 39, 1261-1267.
- Gabriels, R., Agnew, J., Holt, K., Shoffner, A., Zhaoxing, P., Ruzzano, S., Clayton, G., & Mesibov, G. (2011). Pilot study measuring the effects of therapeutic horseback riding on school-age children and adolescents with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 5(1), 578-588.
- Ghorban, H., Sedigheh, R.D., Marzieh, G., & Yaghoob, G. (2013).The effectiveness of therapeutic horseback riding on social skills of children with autism spectrum disorder in shiraz, iran. *Journal of Education and Learning*, 2 (3), 79-84.
- Jenkins, S., Reed, F. (2013). An experimental analysis of the effects of therapeutic horseback riding on the behavior of children with autism. *Research in Autism Spectrum Disorder*, 7 (6), 721-740.
- Ward, S., Whalon, K., Rusnak, K., Wendell, K., & Paschall, N. (2013).The association between therapeutic horseback riding and the social communication and sensory reaction of children with autism. *Journal of Autism & Developmental Disorders*, 43(9), 2190-2198.
- Wuang, Y., Wang, C., Huang, M., & Su, C. (2010).The effectiveness of simulated developmental horse-riding program in children with autism. *Adapted Physical Activity Quarterly*, 27, 113-126.