

Treatment Intervention Advisory Committee Review and Determination

Date: June 29, 2018

To: Wisconsin Department of Health Services

From: Wisconsin Department of Health Services Treatment Intervention Advisory Committee:

Lana Collet-Klingenberg, Ph.D. (chairperson) *LCK*

RE: Determination of Hippotherapy as a proven and effective treatment for children and adults

- This is an initial review
 - This is a re-review. Previously reviewed (rated) on May 2012 (4), January 2013 (4), April 2014 (4), January 2015 (4), and January 2016 (4).
 - No new research located; determination from January 2016 stands (details below)
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Section One: Overview and Determination

Please find below a statement of our [determination](#) as to whether or not the committee views Hippotherapy as a proven and effective treatment. In subsequent sections you will find documentation of our review process including a [description](#) of the proposed treatment, a [synopsis](#) of review findings, the [treatment review evidence checklist](#), and a listing of the [literature](#) considered. In reviewing treatments presented to us by the Department of Health Services, we implement a review process that carefully and fully considers all available information regarding a proposed treatment. Our determination is limited to a statement regarding how established a treatment is with regards to quality research. The committee does not make decisions regarding funding.

Description of proposed treatment

Practitioners of hippotherapy define it as follows: “Hippotherapy is a physical, occupational or speech and language therapy treatment strategy that utilizes equine movement. Hippotherapy literally means ‘treatment with 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 hippoterhapy, the movement of the horse influences the client. The client is position on the horse and actively responds to his movement. The therapist directs the movement of the horse; analyzes the client’s responses; and adjusts the treatment accordingly. This strategy is used as part of an integrated treatment program to achieve functional outcomes.” (retrieved March 21, 2014, from <http://www.childrenstheraplay.org/hippotherapy>).

Lanning, Baier, Ivey-Hatz, Krenek, and Tubbs (2014) provide the following context for understanding the relationship between the various equine-related therapies. “[Equine Assisted Activities and Therapies] EAAT is a collective term describing two main types of interventions: equine assisted activities (EAA) and equine assisted therapies (EAT). EAA includes therapeutic horseback riding (THR), vaulting, carriage driving and non-riding activities with the horse. Whereas, EAT describes therapies including equine assisted psychotherapy and hippotherapy (a physical, occupational or speech

therapy treatment strategy that utilizes equine movement) (Professional Association of Therapeutic Horsemanship International 2014).” (Lanning, et al., 2014, p. 1898).

This review is only for interventions specifically defined as hippotherapy. Studies evaluating "therapeutic horseback riding" were not included in this review. Equine assisted psychotherapy is evaluated in its own separate review.

Synopsis of current review (January, 2016)

Committee members completing current review of research base: Shannon Stuart and Amy Van Hecke

Please refer to the reference list ([Section Four](#)) which details the reviewed research.

The committee's conclusions are that no new research studies specific to Hippotherapy that meet inclusion requirements have been published since the last review in January 2015. In prior reviews, there has been only one published study for hippoethapy found and reviewed, and this study was of low quality, as it had no control group.

Committee’s Determination: After reviewing the research and applying the criteria from the [Treatment Review Evidence Checklist](#), it is the decision of the committee that Hippotherapy retain an efficacy ratng of Level 4 (Insufficient Evidence).

Review history

(January 2015)

The reviewers only found one article specifically evaluating hippotherapy that passed initial screening criteria and was published since the last review. A full review of the study was completed. Due to the study having no comparison group and a small sample size, it did not meet criteria to be included as evidence for an evidence based practice.

In sum, it is the decision of the committee that hippotherapy remains at Level 4- Insufficient Evidence for ASD.

(April 2014)

Our review of the extant research is that there is insufficient scientific data to support the effectiveness of hippotherapy for the treatment of individuals with autism spectrum disorder. Indeed, there are many anecdotal reports attesting to its effectiveness, but no well-designed studies on hippotherapy have been reported to date. Many of the published papers are either simply descriptive in nature or case studies with no experimental control that do now allow confidence in a causal relationship between hippotherapy and improvement in meaningful outcomes. The Horse and Humans Research Foundation (HRRF) has funded only two grant projects that focus specifically on children with ASD – one grant project is an extension of Bass et al. (2009) and the other was just initiated in January 2012. Note that we read the proposal abstract for the recently funded project. The researchers are only looking at changes within 15 children over time, without any experimental controls. Of the articles listed below, only the Taylor et al., (2009) study fits the definition of hippo-therapy and none of the studies established experimental control or did not demonstrate significant results. See the TIAC review on Equine-Assisted Psychotherapy from November 2013 for a discussion of that literature.

In sum, it is the decision of the committee that hippotherapy remains at Level 4- Insufficient Evidence for ASD.

(January 2013)

In sum, given the general lack of empirical support for Hippotherapy, as well as research directly related to Hippotherapy as a comprehensive treatment package, it is our decision that Hippotherapy has insufficient evidence at this time to be considered a proven and effective treatment. It is notable, however that the practice has some evidence, particularly for children with cerebral palsy, and could, within the foreseeable future meet criteria as a level 3 (emerging evidence) practice.

(May 2012)

In sum, given the general lack of empirical support for Hippotherapy, as well as research directly related to Hippotherapy as a comprehensive treatment package, it is our decision that Hippotherapy has insufficient evidence at this time to be considered a proven and effective treatment. It is notable, however that the practice has some evidence, particularly for children with cerebral palsy, and could, within the foreseeable future meet criteria as a level 3 (emerging evidence) practice.

Section Two: Rationale for Focus on Research Specific to Comprehensive Treatment Packages (CTP) or Models

In the professional literature, there are two classifications of interventions for individuals with Autism Spectrum Disorder (National Research Council, 2001; Odom et al., 2003; Rogers & Vismara, 2008):

- (a) **Focused intervention techniques** are individual practices or strategies (such as positive reinforcement) designed to produce a specific behavioral or developmental outcome, and
- (b) **Comprehensive treatment models** are “packages” or programs that consist of a set of practices or multiple techniques designed to achieve a broader learning or developmental impact.

To determine whether a treatment package is proven and effective, the Treatment Intervention Advisory Committee (TIAC) will adopt the following perspective as recommended by Odom et al. (2010):

The individual, focused intervention techniques that make up a comprehensive treatment model may be evidence-based. The research supporting the effectiveness of separate, individual components, however, does *not* constitute an evaluation of the comprehensive treatment model or “package.” The TIAC will consider and review only research that has evaluated the efficacy of implementing the comprehensive treatment *as a package*. Such packages are most often identifiable in the literature by a consistently used name or label.

National Research Council. (2001). *Educating children with autism*. Washington, DC: National Academy Press.

Odom, S. L., Brown, W. H., Frey, T., Karusu, N., Smith-Carter, L., & Strain, P. (2003) Evidence-based practices for young children with autism: Evidence from single-subject research design. *Focus on Autism and Other Developmental Disabilities, 18*, 176-181.

Odom, S. L., Boyd, B. A., Hall, L. J., & Hume, K. (2010). Evaluation of comprehensive treatment models for individuals with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders, 40*, 425-436.

Rogers, S., & Vismara, L. (2008). Evidence-based comprehensive treatments for early autism. *Journal of Clinical Child and Adolescent Psychology, 37*, 8-38.

Section Three: TIAC Treatment Review Evidence Checklist

Name of Treatment: treatment modality to be reviewed

Level 1- Well Established or Strong Evidence (DHS 107 - Proven & Effective Treatment)

- Other authoritative bodies that have conducted extensive literature reviews of related treatments (e.g., National Standards Project, National Professional Development Center) have approved of or rated the treatment package as having a strong evidence base; authorities are in agreement about the level of evidence.
- There exist ample high quality studies that demonstrate experimental control and favorable outcomes of treatment package.
 - Minimum of two group studies or five single subject studies or a combination of the two.
 - Studies were conducted across at least two independent research groups.
 - Studies were published in peer reviewed journals.
- There is a published procedures manual for the treatment, or treatment implementation is clearly defined (i.e., replicable) within the studies.
- Participants (i.e., N) are clearly identified as individuals with autism spectrum disorders or developmental disabilities.

Notes: At this level, include ages of participants and disabilities identified in body of research

Level 2 – Established or Moderate Evidence (DHS 107 - Proven & Effective Treatment)

- Other authoritative bodies that have conducted extensive literature reviews of related treatments (e.g., National Standards Project, NPDC) have approved of or rated the treatment package as having at least a minimal evidence base; authorities may not be in agreement about the level of evidence.
- There exist at least two high quality studies that demonstrate experimental control and favorable outcomes of treatment package.
 - Minimum of one group study or two single subject studies or a combination of the two.
 - Studies were conducted by someone other than the creator/provider of the treatment.
 - Studies were published in peer reviewed journals.
- Participants (i.e., N) are clearly identified as individuals with autism spectrum disorders or developmental disabilities.

Notes: at this level, include ages of participants and disabilities identified in body of research

Level 3 – Emerging Evidence (DHS 107 – Promising as a Proven & Effective Treatment)

- Other authoritative bodies that have conducted extensive literature reviews of related treatments (e.g., National Standards Project, NPDC) have recognized the treatment package as having an emerging evidence base; authorities may not be in agreement about the level of evidence.
- There exists at least one high quality study that demonstrates experimental control and favorable outcomes of treatment package.
 - May be one group study or single subject study.
 - Study was conducted by someone other than the creator/provider of the treatment.
 - Study was published in peer reviewed journal.
- Participants (i.e., N) are clearly identified as individuals with autism spectrum disorders or developmental disabilities.

Notes: At this level, include ages of participants and disabilities identified in body of research

Level 4 – Insufficient Evidence (Experimental Treatment)

- Other authoritative bodies that have conducted extensive literature reviews of related treatments (e.g., National Standards Project, NPDC) have not recognized the treatment package as having an emerging evidence base; authorities are in agreement about the level of evidence.
- There is not at least one high quality study that demonstrates experimental control and favorable outcomes of treatment package.
 - Study was conducted by the creator/provider of the treatment.
 - Study was not published in a peer reviewed journal.
- Participants (i.e., N) are not clearly identified as individuals with autism spectrum disorders or developmental disabilities.

Notes: The committee also reviewed existing reports from authoritative bodies including the National Professional Development Center (2009, 2014) and the National Standards Project (2010). Neither of these bodies have identified Hippotherapy as an evidence based practice or an emerging/promising practice. It is notable that within the literature related to this practice, there are two common terms used: Hippotherapy (as practiced by licensed professional therapists, OT, PT, SLP), and therapeutic riding (as practiced by professional horseback riding specialists). It is further notable that with the population of individuals with cerebral palsy, Hippotherapy is considered an evidence-based practice as there exists research (e.g., Sterba, J.A., Rogers, B.T., France, A.P., & Vokes, D.A., 2002) to support its success in improvement of dependent variables such as muscle tone, strength, and coordination.

Level 5 – Untested (Experimental Treatment) &/or Potentially Harmful

- Other authoritative bodies that have conducted extensive literature reviews of related treatments (e.g., National Standards Project, NPDC) have not recognized the treatment package as having an emerging evidence base; authorities are in agreement about the level of evidence.
- There are no published studies supporting the proposed treatment package.
- There exists evidence that the treatment package is potentially harmful.**
 - Authoritative bodies have expressed concern regarding safety/outcomes.
 - Professional bodies (i.e., organizations or certifying bodies) have created statements regarding safety/outcomes.

Notes: At this level, please specify if the treatment is reported to be potentially harmful, providing documentation

References Supporting Identification of Evidence Levels:

- Chambless, D.L., Hollon, S.D. (1998). Defining empirically supported therapies. *Journal of Consulting and Clinical Psychology*, 66(1) 7-18.
- Chorpita, B.F. (2003). The frontier of evidence---based practice. In A.E. Kazdin & J.R. Weisz (Eds.). *Evidence-based psychotherapies for children and adolescents* (pp. 42---59). New York: The Guilford Press.
- Odom, S. L., Collet-Klingenberg, L., Rogers, S. J., & Hatton, D. (2010). Evidence-based practices in interventions for children and youth with autism spectrum disorders. *Preventing School Failure*, 54(4), 275-282.

Section Four: Literature Review

Literature reviewed for current determination:

No new references for current review

Literature reviewed for previous determinations:

Ajzenman, H. F., Standeven, J. W., & Shurtleff, T. L. (2013). Effect of hippotherapy on motor control, adaptive behaviors, and participation in children with autism spectrum disorder: A pilot study. *American Journal of Occupational Therapy*, 67, 653–663.

Bass, M. M., Duchowny, C.A., & Llabre, M. M. (2009). The effect of therapeutic horseback riding on social functioning in children with autism. *Journal of Autism and Developmental Disorders*, 39, 1261-1267.

Gabriels, R.L., Agnew, J.A., Holt, K.D., Shoffner, A., Zhaoxing, P., Ruzzano, S., Clayton, G.H., & Mesibov, G. (2012). Pilot study measuring the effects of therapeutic horseback riding on school-age children and adolescents with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 6, 578-588.

Keino, H., Funahashi, A., Keino, H., Miway, C., Hosokawa, M., Yayashi, Y, & Kawarkita, K. (2009). Psycho-education horseback riding to facilitate communication ability in children with pervasive developmental disorders. *Journal of Equine Science*, 20, 79-88 (24).

Kern, J. K., Fletcher, C. L., Garver, C. R., Mehta, J. A., Grannemann, B. D., Knox, K. R., Richardson, T. A., & Trivedi, M. H. (2011). Prospective trial of equine-assisted activities in autism spectrum disorder. *Alternative Therapies*, 17(3), 14-290.

Stoner, J. B. (2004). Riding high. *Advance for Occupational Therapy Practitioners*, 20(13).

Taylor, R. R., Kielhofner, G., Smith, C., Butler, S., Cahill, S. M., Ciukaj, M. D., & Gehman, M. (2009). Volitional change in children with autism: A single-case design study of the impact of hippotherapy on motivation. *Occupational Therapy in Mental Health*, 25, 192-200.

eference list - all references that have been reviewed for this modality

The following article helped clarify the distinction between hippotherapy and other equine-related interventions:

Lanning, B. A., Baier, M. E. M., Ivey-Hatz, J., Krenek, N., & Tubbs, J. D. (2014). Effects of equine assisted activities on Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 44, 1897-1907.