

Treatment Intervention Advisory Committee Review and Determination

Date: October 28, 2016

To: DHS/DLTC

From: Wisconsin Department of Health Services, Treatment Intervention Advisory Committee: Lana Collet-Klingenberg, Ph.D. (chairperson)

RE: Determination of MeMoves as a proven and effective treatment for individuals with autism spectrum disorder and/or other developmental disabilities

This is an initial review

This is a re-review. The initial review was July 2015.

Section One: Overview and Determination

Please find below a statement of our determination as to whether or not the committee views MeMoves as a proven and effective treatment for children with autism spectrum disorder and/or other developmental disabilities. 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 DHS/DLTC, 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 practice is in regard to quality research. We do not make funding decisions.

Description of proposed treatment

MeMoves was developed by Chris Bye and Roberta Scherf. It consists of a package of DVD, CD, guidebook and activities that are proposed to calm children with ASD and other disabilities. There is a home version for purchase for \$99.95 and a school/professional version for \$2199.95. The creators also have a version for adults, LifeMoves. The website for the package is extensive and consists of a description of the package, links for purchase, videos, and numerous anecdotal testimonials.

Me Moves' key assumptions are:

- Movement produces physiological changes that can be therapeutic. Much of this involves the vagal (10th cranial) nerve and its control over large segments of the nervous system. The presumption is that the vagal nerve's state is directly responsible for our behavior therefore if it is over- or underactive, or is dysfunctional (e.g., in a state of anxiety—fight or flight) then behavior will likewise be dysfunctional.
- Moving clients beyond the fight or flight reflex is a key task of therapy. In short the reflexive behavior we engage in large determines whether other behavior (social, emotional, etc.) will occur. Therefore the “vagal tone” determines whether the client will be able to respond normally.
- Vagal tone is taken as an indicator of one's ability to regulate behavior accordingly.

The website makes many claims that the package is effective: “MeMoves™ delivers an engaging, multisensory activity that makes anything that follows easier and more effective. During four years of use as a transitional tool and priming activity, MeMoves™ has demonstrated significant benefits and shown itself to be a very efficient tool for self-regulation, activating the parasympathetic nervous system quickly and effectively (in large part through the vagus nerve), creating a calm and attentive state while providing safety and affiliation for the user. We believe the neurological foundation for MeMoves™ results are based in Stephen Porges’ Polyvagal Theory which posits the necessity of “safe, appropriate social engagement” as the primary mechanism for neurological recovery and behavioral change. MeMoves™ expressive features of emotion, music and gestures all perfectly align with the elements of the social engagement system identified by Porges. The benefits have been significant, widespread, and consistent; increased speech and language, eye contact, imitative behavior, processing ability, motor skills and collaborative behavior, and decreased bullying. Users become more socially integrated and organized as they advance their skills in a variety of areas. As we continue to see significant positive changes in social skills after extended use, we believe that MeMoves™ embodies the tenets of Stephen Porges’ work. By strengthening the connection between our hearts and brains through the vagus nerve, we increase our capacity for connection, friendship and compassion. After years of trying to create a tool for the nervous system, it’s a wonderful thing to discover that at its core, MeMoves™ is really a tool for the heart.” (quoted verbatim from <http://thinkingmoves.com/why-memoves-is-important/>)

The creators posit that the MeMoves system of calming moves and activities engages the parasympathetic nervous system, which enables individuals to engage socially. Stephen Porges is a researcher and academic with a long career and publication history. However, Stephen Porges is not listed as a developer of the program, and it is unclear whether he was involved in the program or endorses it.

Synopsis of review

The original review in July 2015 found no published, peer-reviewed research showing effectiveness of the MeMoves program. The review examined the Polyvagal theory, on which MeMoves claims to be based. The Polyvagal theory and Stephen Porges’ and colleagues’ work has an extensive research base, but no research has been done to support MeMoves in light of this theory.

The reviewers for the October 2016 re-review found no published research since the last review.

In sum, it is the decision of the committee that MeMoves remain at a Level 5 – Untested (Experimental) Treatment.

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: DLTC-TIAC Treatment Review Evidence Checklist

Name of Treatment: MeMoves

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:

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

Date: October 28, 2016

Committee Members Completing Initial Review of Research Base: Tia Schultz, Roger Bass

Committee Decision on Level of Evidence to Suggest the Proposed Treatment is Proven and Effective:
Level 5 – Untested (Experimental Treatment)

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

July 2016 Review

The reviewers contacted Me Moves and requested research and documentation regarding the theory and practice of Me Moves. A handbook, a user guide, and video links were provided. Four unpublished manuscripts targeting ASD cited in the handbook are listed below. None of these materials are published, peer-reviewed research.

Leigh, P. (2010) Interactive Visuo-Motor Therapy as a Supplementary Communication Treatment Model for Children with Autism Spectrum Disorders. Delivered at the International Meeting for Autism Research. Unpublished.

Locke, P., Stansberry, L. (2016). Me Moves in an ASD Classroom. Unpublished

Radcliff, M. (2011). Using Me Moves to Reduce Off-Task Behavior in a Mixed Pre-K Classroom. Unpublished.

Titone, P.L. Can Imitative Exercises Improve Social Communication Skills in Individuals with Autism Spectrum Disorders? Unpublished.

Literature Reviewed for Previous Determinations

MeMoves website: <http://thinkingmoves.com>

These articles were reviewed, but none of them evaluated MeMoves:

Bal, E., Harden, E., Lamb, D., Van Hecke, A. V., Denver, J. W., & Porges, S. W. (2010). Emotion recognition in children with autism spectrum disorders: Relations to eye gaze and autonomic state. *Journal of Autism and Developmental Disorders*, 40(3), 358-370.

DeGangi, G. A., DiPietro, J. A., Greenspan, S. I., & Porges, S. W. (1993). Psychophysiological characteristics of the regulatory disordered infant. *Pediatric Physical Therapy*, 5(3), 158-159.

Doussard-Roosevelt, J. A., Joe, C. M., Bazhenova, O. V., & Porges, S. W. (2003). Mother-child interaction in autistic and nonautistic children: Characteristics of maternal approach behaviors and child social responses. *Development and Psychopathology*, 15(02), 277-295.

Heilman, K. J., Bal, E., Bazhenova, O. V., & Porges, S. W. (2007). Respiratory sinus arrhythmia and tympanic membrane compliance predict spontaneous eye gaze behaviors in young children: A pilot study. *Developmental Psychobiology*, 49(5), 531-542.

Patriquin, M. A., Scarpa, A., Friedman, B. H., & Porges, S. W. (2013). Respiratory sinus arrhythmia: A marker for positive social functioning and receptive language skills in children with autism spectrum disorders. *Developmental Psychobiology*, 55(2), 101-112.

- Porges, S. W. (1992). Vagal tone: a physiologic marker of stress vulnerability. *Pediatrics*, 90(3), 498-504.
- Porges, S. W. (1995). Orienting in a defensive world: Mammalian modifications of our evolutionary heritage. A polyvagal theory. *Psychophysiology*, 32(4), 301-318.
- Porges, S. W. (1995). Cardiac vagal tone: a physiological index of stress. *Neuroscience & Biobehavioral Reviews*, 19(2), 225-233.
- Porges, S. W. (2001). The polyvagal theory: phylogenetic substrates of a social nervous system. *International Journal of Psychophysiology*, 42(2), 123-146.
- Porges, S. W. (2003). The polyvagal theory: Phylogenetic contributions to social behavior. *Physiology & Behavior*, 79(3), 503-513.
- Porges, S. W. (2004). The Vagus: A mediator of behavioral and physiologic features associated with autism. *The Neurobiology of Autism*, 65-78.
- Porges, S. W. (2004). Neuroception: A subconscious system for detecting threats and safety. *Zero to Three (J)*, 24(5), 19-24.
- Porges, S. W. (2005). The Vagus: A mediator of behavioral and physiologic features associated with autism. *The Neurobiology of Autism*, 65.
- Porges, S. W. (2007). The polyvagal perspective. *Biological Psychology*, 74(2), 116-143.
- Porges, S. W., Doussard-Roosevelt, J. A., & Maiti, A. K. (1994). Vagal tone and the physiological regulation of emotion. *Monographs of the Society for Research in Child Development*, 59(2-3), 167-186.
- Porges, S. W., & Furman, S. A. (2011). The early development of the autonomic nervous system provides a neural platform for social behaviour: A polyvagal perspective. *Infant and Child Development*, 20(1), 106-118.
- Porges, S. W., Macellaio, M., Stanfill, S. D., McCue, K., Lewis, G. F., Harden, E. R., ... & Heilman, K. J. (2013). Respiratory sinus arrhythmia and auditory processing in autism: Modifiable deficits of an integrated social engagement system?. *International Journal of Psychophysiology*, 88(3), 261-270.
- Van Hecke, A. V., Lebow, J., Bal, E., Lamb, D., Harden, E., Kramer, A., ... & Porges, S. W. (2009). Electroencephalogram and heart rate regulation to familiar and unfamiliar people in children with autism spectrum disorders. *Child Development*, 80(4), 1118-1133.