Effectiveness of Interactive Metronome Training for Children with ADHD

Bethany Fox  
*Western Michigan University*

Corinne Leer  
*Western Michigan University, corinne.n.leer@wmich.edu*

Follow this and additional works at: https://scholarworks.wmich.edu/ot_posters

Part of the Occupational Therapy Commons

**WMU ScholarWorks Citation**

This Article is brought to you for free and open access by the Occupational Therapy at ScholarWorks at WMU. It has been accepted for inclusion in Occupational Therapy Graduate Student Evidenced-Based Research Reviews by an authorized administrator of ScholarWorks at WMU. For more information, please contact wmu-scholarworks@wmich.edu.
Effectiveness of Interactive Metronome Training for Children with ADHD

WESTERN MICHIGAN UNIVERSITY

1 Ask: Research Question
What is the effectiveness of Interactive Metronome (IM) training for improving functioning among children with ADHD?

2a Acquire: Search
Databases: PubMed, Scopus, ClinicalKey, & Google Scholar

Patient/Client Group: Children, pediatrics, ADHD

Intervention: Interactive metronome, synchronized metronome

Comparison: no treatment, standard OT

Outcome(s): functioning, attention, concentration, academic performance, behavior, cognitive functioning, coordination, motor functioning

2b Acquire: Selected Articles
Leisman, Mualem, Machado (2013): A quasi-experimental design that examined the effect of Synchronized metronome intervention in the areas of academics and overall functioning of children with ADD/ADHD.

Cosper, Leer, Peters, & Bishop (2009): A pretest/posttest design that examined the efficacy of Interactive Metronome training on attentional control and motor functioning in a group of children with mixed attentional and motor coordination disorders.

Shaffer, Jacokes, Cassily, Greenspan, Tuchman, & Stemmer (2001): A randomized control-group pretest/posttest design that examined the effects of the IM on motor and cognitive skills in a group of children with ADHD.

3a Appraise: Study Quality

Leisman, Mualem, Machado (2013): Level 3, n=150. Strengths: longitudinal, used randomization in selection of treatment group, and included control group. Limitations: background characteristics not comparable between treatment groups, number of participants in the control group was much smaller, and the control group was a convenience sample.


Shaffer, Jacokes, Cassily, Greenspan, Tuchman, & Stemmer (2001): Level 2, n=56. Strengths: longitudinal, RCT, reliable measures. Limitations: potential interaction effects, inclusion of only males, limited age range, and did not provide complete quantitative data.

3b Appraise: Study Results

Leisman, Mualem, Machado (2013): Synchronized metronome was effective in improving performance on all academic subtests (p<.01) and decreasing behaviors related to ADD/ADHD (p<.001) when compared to control group.

Cosper, Leer, Peters, & Bishop (2009): IM improved motor coordination, most notably seen in visuomotor control (p=.02) and visual relations time (p<.05). The study did not show support for IM causing improvements in sustained attention.

Shaffer, Jacokes, Cassily, Greenspan, Tuchman, & Stemmer (2001): IM produced better outcomes in the areas of attention, motor control, language processing, reading, and self-regulation when compared to those who received video game treatment or no treatment. Of the 58 variables measured 53 showed improvement (p<.001).

4 Apply: Conclusions for Practice
Children with ADHD may show functional improvements from IM, specifically when addressing academic, behavioral symptoms, and motor control. IM may be a helpful OT tool to utilize, but future research is needed to examine the effectiveness of IM with other therapies and the impact on ADLs/ADLs. Future research is needed to help clarify which areas of function IM is most effective in addressing. Additionally, more studies are needed that utilize randomization, include a larger sample size, and increase homogeneity of control and treatment groups.

References


Interactive Metronome showed positive results for improving function in academic performance, motor coordination, and behavioral symptoms in children with ADHD.