

# BREAKING NEWS!!!

## DVBIC research on IM just published in the September online issue of Journal of Neuropsychology!

**Effect of Interactive Metronome® Therapy on Cognitive Functioning After Blast-Related Brain Injury: A Randomized Controlled Pilot Trial**

DVBIC funded study began **AUG 2010**

- Randomized Study
- Compared PRE TESTS vs POST TESTS (IM Treatment & Treatment as Usual)

**Summary of Cognitive Finds**

IM therapy showed significant improvements in **21 out of 26** cognitive assessments, including:

- SENSORY INTEGRATION
- MEMORY
- PROCESSING SPEED
- ATTENTION

**IM Physiologically CHANGED the Brain**

- Parietal Lobe:** Movement, Orientation, Recognition, Perception of Stimuli, Sensory Integration
- Frontal Lobe:** Emotions, Reasoning, Attention, Impulsivity

EEG showed IM increased activation & coordination in the Frontal & Parietal Lobes

Time Since Last Injury: **28.6 MONTHS**

**50** Combat Soldiers

**2.9** Avg Blast Injuries Each

Published in the Journal of Neuropsychology · September 2013

### Effect of Interactive Metronome Therapy on Cognitive Functioning After Blast-Related Brain Injury: A Randomized Controlled Pilot Trial

Authors: Lonnie A. Nelson, Margaret MacDonald, Christina Stall, and Renee Pazdan

Preliminary findings of a randomized, controlled study concerning the efficacy of IM for remediation of cognitive deficits in active duty soldiers following blast-related mild-to-moderate TBI. The study compared outcomes of standard rehabilitation care alone (OT, PT, SLP) to the same standard rehabilitation care + 15 IM treatment sessions. The group that received IM in addition to standard care outperformed the group who received standard rehabilitation care alone on several neuropsychological measures with medium to large effect sizes. Future publications based upon this study will reveal the results of 6 month follow-up testing (still in process) and analysis of electrocortical (EEG) data.

[Neuropsychology](#). 2013 Nov;27(6):666-79. doi: 10.1037/a0034117. Epub 2013 Sep 23.

## **Effects of interactive metronome therapy on cognitive functioning after blast-related brain injury: a randomized controlled pilot trial.**

[Nelson LA](#)<sup>1</sup>, [Macdonald M](#), [Stall C](#), [Pazdan R](#).

### **Author information**

#### **Abstract**

##### **OBJECTIVE:**

We report preliminary findings on the efficacy of interactive metronome (IM) therapy for the remediation of cognitive difficulties in soldiers with persisting cognitive complaints following blast-related mild-to-moderate traumatic brain injury (TBI).

##### **METHOD:**

Forty-six of a planned sample of 50 active duty soldiers with persistent cognitive complaints following a documented history of blast-related TBI of mild-to-moderate severity were randomly assigned to receive either standard rehabilitation care (SRC) or SRC plus a 15-session standardized course of IM therapy. Primary outcome measures were Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Index Scores. Secondary outcome measures included selected subtests from the Delis-Kaplan Executive Functioning System (Trail Making Test and Color-Word Interference) and the Wechsler Adult Intelligence Scale-Fourth Edition (Symbol Search, Digit-Symbol Coding, Digit Span, and Letter-Number Sequencing) as well as the Integrated Visual and Auditory Continuous Performance Test.

##### **RESULTS:**

Significant group differences (SRC vs. IM) were observed for RBANS Attention ( $p = .044$ ), Immediate Memory ( $p = .019$ ), and Delayed Memory ( $p = .031$ ) indices in unadjusted analyses, with the IM group showing significantly greater improvement at Time 2 than the SRC group, with effect sizes in the medium-to-large range in the adjusted analyses for each outcome (Cohen's  $d = 0.511$ ,  $0.768$ , and  $0.527$ , respectively). Though not all were statistically significant, effects in 21 of 26 cognitive outcome measures were consistently in favor of the IM treatment group (binomial probability =  $.00098$ ).

##### **CONCLUSION:**

The addition of IM therapy to SRC appears to have a positive effect on neuropsychological outcomes for soldiers who have sustained mild-to-moderate TBI and have persistent cognitive complaints after the period for expected recovery has passed.

PsycINFO Database Record (c) 2013 APA, all rights reserved.

PMID:

24059443

[PubMed - indexed for MEDLINE]