



interactive metronome

Encompass Health

Interactive Metronome Virtual Certification Course

Discover the scientific evidence behind IM & learn hands-on practical application for addressing critical brain timing skills in order to improve outcomes in the areas of cognitive, communicative, motor, sensory, and academic performance in conditions like ADHD, Autism, Dyslexia, Stroke, and TBI.

Presented by Dara Weger, M.S., CCC-SLP
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1



Dara Weger, M.S., CCC-SLP
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- Undergraduate & Masters degree from the University of Central Arkansas & a Certificate of Clinical Competence issued by the American Speech-Language-Hearing Association
- Employed at Novant Health Rehabilitation Hospital, an affiliate of Encompass Health
- Serves as the National Program Champion for Interactive Metronome within Encompass Health Corporation, previously HealthSouth Rehabilitation
- Contributed to the development of the IMC Virtual Certification Course for Encompass Health, Adult Best Practice Certification Course, Fall Prevention Protocol and numerous adult-oriented webinars.
- Extensive expertise & experience in the field of neurological disorders, with IM and other modalities, successfully integrating it into practice by modifying it to individually meet patient's needs.

IM Instructor since 2007

2



Live Course Agenda

Today's course agenda (8.5 total hours *1.5 hours for breaks= 8 contact hours):

Start Time	End Time	Total Time	Description
07:15 am EST	07:45 am EST	30 minutes	Registration & Continental Breakfast
07:45 am EST	10:30 am EST	2 hours, 45 minutes	Introduction, Research, Case Discussion and Q & A
10:30 am EST	10:45 am EST	15 minutes	Break
10:45 am EST	11:15 am EST	30 minutes	Introduction to IM: Hardware/Software Features
11:15 am EST	01:15 pm EST	2 hours	IM Assessment, IM Training Phase 1 Instruction and Labs
01:15 pm EST	02:15 pm EST	1 hour	Lunch Break
02:15 pm EST	03:15 pm EST	1 hour	IM Training Phase 2 Instruction and Labs
03:15 pm EST	04:00 pm EST	45 minutes	IM Training Phase 3 Instruction and Labs
04:00 pm EST	04:15 pm EST	15 minutes	Break
04:15 pm EST	04:45 pm EST	30 minutes	IM Training Phase 4 Instruction and Labs
04:45 pm EST	05:15 pm EST	30 minutes	Closing Thoughts and Post-Test
Total Live Course Time		9.5 hours	*Includes 1.5 hours for breaks
Total Course CEUs		8 Contact Hours	

Today you are with me (YAY) a total of 9.5 hours, which includes an hour and 30 minutes of break time.

Your course CEUs will be 8.0 Contact Hours.

THANK YOU for investing your time to learn about IM! We are confident that we can help your clients achieve the outcomes your clinic excels to achieve.

3

Interactive Metronome





- Used by medical, rehab, educational & sports professionals in over 50 countries around the globe
- Used in 90+ Encompass Health Facilities
 - Under the current contract, all new EH hospitals will add IM.
- Evidence-based, objective biometric assessment & treatment tool
- Improves neural timing, rhythm & brain network synchronization
- Actively engages patient in the process of rehabilitation
- Flexible settings and clinical utility to meet individual needs & provide the just-right challenge
- Implemented in clinic, at home or combination



4

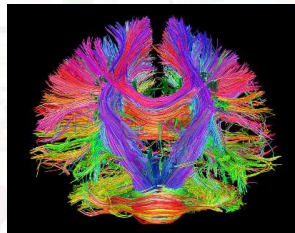
The Science Behind IM


5

Timing in the Brain

SCALE	MECHANISMS
Microsecond processing - sound localization - synchronization	- neural conduction delays - variable inhibition
Millisecond processing - G-protein signaling/second messengers - calcium detection - motor coordination	?
Second processing - circadian time estimation	?
Circadian rhythms - Acute - Chronic	- transcription/translation - autoregulatory feedback loops - epigenetic/rhythmic

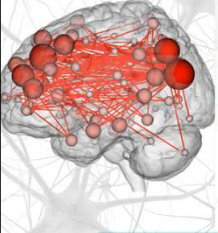


Neural network synchronization ...



6

Power of Millisecond Feedback



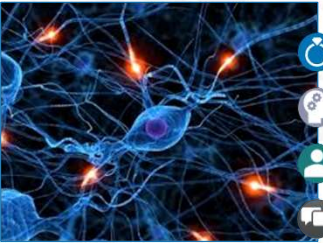
Through intense repetition & millisecond feedback, IM synchronizes neural networks vital for...

- Auditory processing
- Expressive/receptive language
- Reading comp/fluency/rate
- Fine/gross motor coordination & balance
- Processing speed
- Attentional control
- Working memory
- Executive functions

Increased synchronization → → → Increased efficiency and speed of communication
 along white matter tracts → → → Improvement in cognitive, sensory & motor skills

7

Interactive Metronome & Neuroplasticity



- Engagement
- Repetitions
- Synchronization
- Feedback

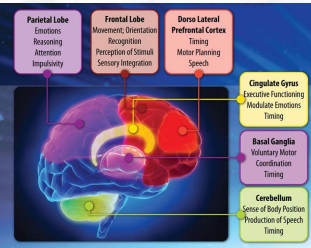
8

Neurotiming® Timing is neurological!

IM Neuro-Imaging Study
 Presented at 65th Annual American PM&R Conference

Alpiner (2004). Results from this pilot fMRI study show IM directly promotes neural efficiency, with bilateral activation of multiple parts of the neuro-network. Repetitive auditory-motor training, specifically IM, holds promise for neuroplasticity of higher and lower brain centers.

The human brain's efficiency and performance depends upon the seamless transition of neuronal network signals from one area of the brain to another.




- Parietal Lobe**: Emotions, Reasoning, Attention, Impulsivity
- Frontal Lobe**: Movement, Orientation, Recognition, Perception of Stimuli, Sensory Integration
- Dorsal Lateral Prefrontal Cortex**: Timing, Motor Planning, Speech
- Cingulate Gyrus**: Associative Functioning, Modulate Emotions, Timing
- Basal Ganglia**: Voluntary Motor, Coordination, Timing
- Cerebellum**: Sense of Body Position, Production of Speech, Timing

9

Why Assess the Timing System?

Timing is foundational...

- Attention
- Executive Functions
- Working Memory
- Processing Speed
- Speech & Language
- Social Skills
- Reading & Other Academic Skills
- Motor Control & Coordination
- Sensory Processing & Integration

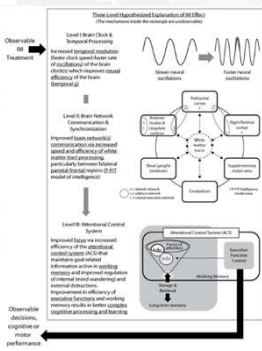


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10

Research Supports “The IM Effect” Principle:

1. IM increases the speed & synchronization of neural oscillations ... improving neural efficiency
2. IM increases the speed & efficiency of white matter tract processing resulting in increased brain network communication ... particularly between parietal & frontal regions
3. IM increases the efficiency of the attentional control system, working memory & executive functions for better focus, more complex cognitive processing & learning.



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11

TRAUMATIC BRAIN INJURY RESEARCH



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12

Traumatic Brain Injury
Effects of Interactive Metronome® Therapy on Cognitive Functioning After Blast-Related Brain Injury: A Randomized Controlled Pilot Trial by Nelson et al. 2013

n=46 active-duty soldiers with mild-moderate blast-related TBI

- Experimental:**
 - Treatment as Usual (OT, PT, ST)
 - 18 sessions of IM training @ frequency of 3 sessions per week
- Control:**
 - Treatment as Usual (OT, PT, ST)

13

ASSESSMENT	SKILLS MEASURED	OUTCOME
DKEFS: Color Word Interference	Attention, response inhibition	Cohen's d= .804 LARGE p=.0001
RBANS Attention Index	Auditory attention, auditory memory & processing speed	Cohen's d= .511 LARGE p=.004
RBANS Immediate Memory Index	Auditory attention, auditory memory & processing speed	Cohen's d= .768 LARGE p=.0001
RBANS Language Index	Confrontation naming, verbal fluency, & processing speed	Cohen's d= .349 MED p=.0001
WAIS-IV Symbol Search	Processing speed, short-term visual memory, visual-motor coordination, cognitive flexibility, visual discrimination, speed of mental operations, & psychomotor speed	Cohen's d= 0.478 MED p=.0001
WAIS-IV Coding	Visual attention, processing speed, short-term visual memory, visual perception, visual scanning, visual-motor coordination, working memory, & encoding	Cohen's d= .630 LARGE p=.0001
WAIS-IV Digits Sequencing	Auditory attention, working memory, cognitive flexibility, rote memory & learning.	Cohen's d= .588 LARGE p=.021
DKEFS Trails: Motor Speed	Motor speed, executive functions	Cohen's d= .790 LARGE p=.015
DKEFS Trails: Letter Sequencing	Processing speed, working memory, and executive functions	Cohen's d= .626 LARGE p=.0001

IM group demonstrated substantial improvement on 21 of 26 neuropsychological measures

14

Traumatic Brain Injury
Effects of Interactive Metronome Therapy on Cognitive Functioning After Blast-Related Brain Injury: A Randomized Controlled Pilot Trial by Nelson et al. 2013

EEG findings...

- IM group showed re-myelination and reestablishment of critical white matter tracts and neural synchronization of bilateral prefrontal & parietal cortices
- Control group demonstrated further decline

IM training substantially improved...


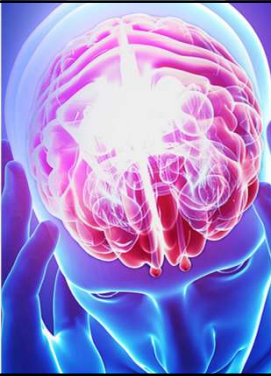
- Auditory and visual attention
- Processing speed
- Working memory
- Response inhibition
- Executive functions

15

Traumatic Brain Injury
 Effects of Interactive Metronome® Therapy on Cognitive Functioning After Blast-Related Brain Injury: A Randomized Controlled Pilot Trial by Nelson et al. 2013

“The addition of IM therapy to SRC [standard rehab care] 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.”

Lonnie Nelson, PhD

16





MOTOR AND NEUROLOGICAL DYSFUNCTION RESEARCH




17

Hemiplegia
 Computer-Based Rhythm and Timing Training in Severe, Stroke-Induced Arm Hemiparesis by Beckelheimer et al. 2011

- n = 2 (68 & 75 yrs)
 - 68-year-old male: 23 years post ischemic stroke with R hemiplegia
 - 77-year-old male: 2 years post ischemic stroke with L hemiplegia
 - Both with minimal active movement of affected arm/hand prior to study

18

Hemiplegia
 Computer-Based Rhythm and Timing Training In Severe, Stroke-Induced Arm Hemiparesis
 by Beckelhimer et al. 2011

Intervention:

- 30 min of IM training
- 25 min of traditional OT targeting practice of meaningful functional movement based upon patient goal-selection



Results:

- ↑ ability to grasp, pronate, and supinate arm & hand
- ↑ ability to perform ADLs
- ↑ self-efficacy
- ↑ self-report of quality of life

“IM does not require active, distal movement to be effective (most other technologies do).”

“IM training is easily incorporated into traditional treatment where patients can practice functional movement.”

Quotes by lead researcher,
 Sarah C. Beckelhimer

19




Upper Extremity Function
 Effects of Interactive Metronome training on upper extremity function, ADL and QOL in stroke patients Ga-Hul Yu et al. 2017

n=30 adults, 6 months post-CVA

- **EXPERIMENTAL:**
 - n=15
 - IM training for 15 weeks
- **CONTROL:**
 - n=15
 - Completed bilateral arm exercises independently for same time period

IM group demonstrated greater improvement in:

- Finger control
- Self-care ADLs
 - feeding, toileting, dressing & transfers
 - most notable change in dressing
- Overall motor function
- Quality of life



20

Parkinson's Disease
 Computer-Based Motor Training Activities Improve Function in Parkinson's Disease: a Pilot Study by Togasaki

n=36 individuals with mild-moderate Parkinson's

- **Control Group:** rhythmic movement and clapping to music, metronome, or playing videogames
- **Experimental:** Interactive Metronome training x 20 hours (rhythmic movement + feedback for timing)

“In this controlled study computer directed rhythmic movement training was found to improve the motor signs of parkinsonism.”

21

How Does Rhythm Affect Gait and Parkinson's Disease? 





 Visit our YouTube Channel for More Best Practice Videos: [YouTube.com/IMetronome](https://www.youtube.com/IMetronome)  VIDEO 22

22


Healthy Aging Fall Risk
 Effects of the Interactive Metronome on Memory Process and Balance with Aging Adult 60+ Population by Leonard G. Trujillo 2015

- n= 9 healthy aging adults age 60 – 80 years
- IM training**
 - 12 IM sessions over 8 weeks*
 - 6-week break
 - 6 IM sessions over 4 weeks*
 - *max 275 reps per session, upper extremity exercises only while seated
- Cognitive & balance tests administered:**
 - Pre-intervention
 - After initial 12 sessions
 - After 6-week break
 - At conclusion of study





23

Healthy Aging Fall Risk 

Effects of the Interactive Metronome on Memory Process and Balance with Aging Adult 60+ Population by Leonard G. Trujillo 2015


Assessment	Overall Improvement
Modified IM Long Form Assessment	77%
Short Form Test	31%
Math Fluency (WJIII)	23%
Reading Fluency (WJIII)	12%
Decision Speed (WJIII)	5%
Visual Matching (WJIII)	4%
The d2 Test of Attention	16%
Four Step Square Test	88% *
The 9 Hole Peg Test	3%

Most notable effect on Four Step Square Test despite ONLY UPPER EXTREMITY EXERCISES, indicating improved...

- Balance
- Motor speed
- Decreased fear of falling

Results of Math Fluency, Reading Fluency & d2 Test of Attention indicate increased ...

- Attention
- Cognitive speed




24

Fall Risk Reduction

Interactive Metronome addresses fall risk reduction by improving:

- Attention in distractions
- Executive functions, including impulse control
- Cognitive & motor speed
- Motor control & coordination
- Weight-shifting, balance & dynamic gait



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25

Ongoing Research



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26

Case Studies



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27

Julie: Severe Concussion

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VIDEO

28

John: CVA

- 47 yr old father of 4 teenagers & primary source of family income suffered a right hemisphere stroke
- Very anxious to return to independence & work
- Impairments in...
 - Self-care
 - Activities of daily living
 - Balance
 - Mobility
 - Left upper extremity function (significant tremor & spasticity)
 - Cognitive abilities

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29

Return to Independence

As John's timing improved with each IM session, so did his cognitive & motor skills. After 19 sessions, he...

- regained independence with self-care, activities of daily living and management of medications & checkbook
- demonstrated significant improvement in balance & coordination to vacuum, grocery shop etc.
- successfully passed a driver's evaluation & resumed driving
- returned to work full time and his normal routine

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30

Richard: Parkinson's

- 81 yr old ALF resident
- Fallen 5 times over the past year
- complains of difficulty initiating mobility with impact on transfers, walking, ADLs, & leisure activities like bowling and golf.
- Indep w extra time: supine-to-sit
- SB assist w cues for safety & weight shift: sit-to-stand

- Ambulates 400 feet with short, shuffling steps – lacks heel strike on L foot – unable to clear obstacles
- Requires assistive device for safety but refuses use



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31

31

Richard: Parkinson's




TREATMENT:

- 12 IM sessions (700-800 reps each) using In Motion Trigger

RESULTS:

- Fewer freezing episodes
- Returned to bowling, golfing, & group exercise classes
- Ambulates on all surfaces with modified independence
- No assistive device



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VIDEO

32

32

Amputee: Fredrick



AMPUTEE RELEARNS TO WALK

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VIDEO

33

33

IM Demo

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im

VIDEO

Encompass Health Videos

34

Who Benefits from IM?

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- Stroke & Other Neurological Impairments
- Concussion
- Traumatic Brain Injury
- ADHD
- Craniotomy (brain aneurysm, tumor...)
- Chemo Brain
- Prosthetic Limb
- Multiple Sclerosis
- Parkinson's
- General Debilitation
- Fall Risk Reduction
- Healthy Aging
- Sports Performance/Enhancement
- Executive Function Disorder
- Auditory Processing Disorder

35

Seizure Precautions

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There are no documented cases of IM contributing to seizures in epileptics, but it is possible if seizures are not medically controlled.

Stress, fatigue, & stimuli that are auditory, visual, vestibular, &/or rhythmical can elicit seizures in individuals with epilepsy.

Avoid known triggers if using IM with an individual who has epilepsy and proceed only with physician's approval.



36

Implanted Pacemaker & Defibrillator Precautions




When worn on the head, **headphones do not pose a health risk** to individuals with implanted pacemakers & defibrillators. All headphones (wired and wireless) contain a magnetic substance called neodymium for the purpose of sound reproduction which may cause electromagnetic interference with these implanted devices **if the headphones are placed within 3 centimeters of the surface of the chest.** Keeping the headphones at least 3 centimeters away from the surface of chest is considered safe, at which point experts say there is *no longer any electromagnetic interference.*

Individuals with implanted pacemakers & defibrillators should avoid draping headphones around the neck to avoid direct contact with the chest.






37

Let's Get Started



- Quiet space
- No distractions
- 'Do Not Disturb' sign
- Cell phone turned OFF
- Internet access
- Chair(s) without arm rests
- Speaker

38

IM 10.0 New Software Release!!





39

IM 10.0 Software FEATURES

Participate as your instructor guides you through the software...

*View IM Program Features Appendix Page A-10

Labels and features shown in the screenshot:

- (TEMPO) Adjust Tempo
- (MINUTES) Adjust Task Training Minutes
- (REPETITIONS) Adjust Repetitions
- (REF) Adjust Reference Tone Volume
- (GUIDE) Adjust Guide Sound Volume
- (RO) Adjust Right On Sound Volume
- (SRO) Adjust Super Right On Sound Volume
- (Game) Adjust Game Sound Volume
- (Master) Adjust Master Sound Volume
- (DIFFICULTY) Adjust Difficulty
- (SRO) Adjust Super Right On
- (BURST) Adjust Burst Threshold
- (GUIDE) Very Early Indicator During Training Sessions
- (RO) Early Indicator During Training Sessions
- (SRO) Indicator During Training Sessions
- (RO) Late Indicator During Training Sessions
- (GUIDE) Very Late Indicator During Training Sessions
- (BURSTS) View Bursts During Training Sessions
- (TASK AVERAGE) View Average Hits Score During Training Sessions
- (BAR) View Highest In A Row SRO Hits During Training Session
- (SRO) View SRO Hits During Training Session
- Indicates Menu can be hidden during training

40

Lab 1 - Start a New File

Select:

- FILE
- NEW
- THIS COMPUTER

You will be brought back to the main IM Training Screen.

Enter NEW USER Information

Choose: SAVE in the IMProData File

To confirm you created a file. Verify that your Member Information has populated.

41

IM Auditory & Visuals


Cowbell

Lower millisecond scores are better!

Timeline: 1 second = 1,000 milliseconds


0 - 15 ms Perfect
16 - 40 ms Above Average
41 - 100 ms Average

42

Short Form: Task 1 & 2 Demo 

- **Task 1 Selective attention**
 - Both Hands
 - No guide sounds
 - No visual cues unless hearing impaired
 - 5 beat warm up
 - Do not cue the patient during the task
- **Task 2 Divided attention**
 - Both Hands
 - Guide sounds on
 - No visual cues unless hearing impaired
 - 5 beat warm up
 - Do not cue the patient during the task


Note that the software automatically changes task exercise to Task 2

 46


46

Lab 2 - Complete a Short Form Test


- LAB
 - Training: Select Short Form Test
 - Training Visuals: AUDITORY/DEFAULT
 - Complete Exercise: Task 1
 - Record Task Average and then Close Score Box
 - ***Note that the software has automatically changed task exercise to Task 2***
 - Complete Exercise: Task 2
 - Record Task Average and then Close Score Box
 - Results Box:
 - What is your task average for each exercise?
 - Exercise 1: _____ Exercise 2: _____




Don't look at the computer screen or 'find' the flashing blue light on the MCU! 47



47

Patient Instructions for SFT 


- **SF Task 1 (Both Hands):**
 - You are going to hear a metronome beat through these headphones (*show headphones*)...
 - You will have a trigger strapped to the palm of your hand (*place glove & trigger on dominant hand*)...
 - As soon as you hear the metronome beat, start clapping your hands together like this right on the beat (*say "bing" and model clapping right on the beat*)...
 - Keep clapping on every beat until you no longer hear the beat.
- **SF Task 2 (Both Hands with Guide Sounds)**
 - This time, you will hear the same metronome beat and some other sounds that are called Guide Sounds. They tell you whether you are getting closer to the beat or whether you are way off the beat...
 - Focus on the metronome beat and clap right on the beat like you did last time...
 - Keep clapping until you no longer hear the beat.

 48


48

SFT Reports & Data Interpretation

- SELECT
- Reports
- *For these reports to populate, you must have data from at least 2 Short Form Test administrations on 2 separate dates.*
- Short Form Test Reports
 - Short Form Test Performance Analysis
 - Short Form Test Task Average Graph
- Compares MS Task Average scores to show improvement in synchronization over time
- If score for SF Task 1 is better than SF Task 2, why would that have happened?
- What if score on SF Task 2 is better than SF Task 1? What might that indicate?





You cannot view YOUR Short Form Test Graph or comparison reports today because you only have one set of data.



49

SFT Comparison Report Example

A-18 SAMPLE SFT PERFORMANCE ANALYSIS REPORT

Short Form Test Performance Analysis



Trainee ID: D Report ID: 192015

Comparison With Previous Session									
Task	Rep	Previous Test Score: 03/01/2015			Latest of Test Score: 03/01/2015			Performance Change from A to B	
		Test Avg.	SFT Avg.	100%	Test Avg.	SFT Avg.	100%	Test	100%
1	1	100	100	100	100	100	100	0	0
2	1	100	100	100	100	100	100	0	0
Comparison With Best Task Scores to Current File**									
Task	Rep	Previous Best Score: 03/01/2015			Latest of Test Score: 03/01/2015			Performance Change from A to B	
		Test Avg.	SFT Avg.	100%	Test Avg.	SFT Avg.	100%	Test	100%
1	1	100	100	100	100	100	100	0	0
2	1	100	100	100	100	100	100	0	0
Comparison With First Short Form Test in Current File									
Task	Rep	Best of Test in the File: 03/01/2015			Latest of Test Score: 03/01/2015			Performance Change from A to B	
		Test Avg.	SFT Avg.	100%	Test Avg.	SFT Avg.	100%	Test	100%
1	1	100	100	100	100	100	100	0	0
2	1	100	100	100	100	100	100	0	0

NOTES:
 * More than 20 repetitions of a task were completed no data will be reported for that task.
 ** Based on best Task Average score for each Short Form Test task in the current file.

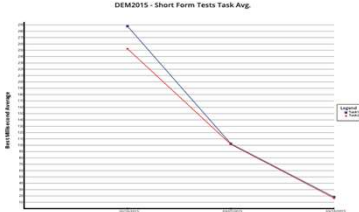
50

SFT Task Average Graph Example





SAMPLE SFT TASK AVERAGE GRAPH

DEM2015 - Short Form Tests Task Avg.

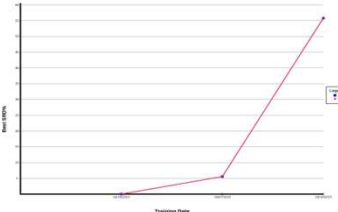


51

SFT SRO% Graph Example 

SAMPLE SHORT FORM TEST SRO% GRAPH A-19

DEM2015 - Short Form Tests SRO%




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52

Long Form Assessment (LFA)

- HOW/WHY YOU ADMINISTER:
 - As a beginning assessment to determine areas of deficit
 - Do not allow patient to look at computer screen
 - Show Demonstration Videos of each exercise prior to starting
 - Do not allow patient to *practice before (they need to understand the exercise but should not master the motor plan prior to starting).
 - Upon completion, compare Task Average (MS) to Indicator Table as a reference point for future training
 - Re-administer at interim training and discharge



Remember! You can modify or skip tasks on the LFA to individualize for your clients!


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53

LAB 3: Complete LFA

LAB

- Select Long Form Assessment
- Select Long Form Type (Pre Interim or Post)
- Note Exercise 1 and 14 are the same as the Short Form
- Watch exercise videos between exercises
- Complete it
- ***Note that the software automatically changes to the next exercise once the exercise is completed.**
- You do not need to write down your scores




Compare your scores to Indicator Table (see Appendix)

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54

Patient Instructions for LFA



- As with SFT, explain that the person will hear a steady metronome beat through the headphones
- **Prior to each LFA task**, explain & model the correct movement
- Tasks 1-13 are WITHOUT guide sounds. Task 14 is the only one WITH guide sounds. Instructions for this task are the same as SFT Task 2.


DO NOT ALLOW YOUR CLIENT TO LOOK AT THE COMPUTER SCREEN!

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55

Pull Up Your LFA Report

- SELECT:
 - Reports
 - Long Form Assessment
 - LFA Calculations
- Compare Task Average score for LFA Task 1 (without guide sounds) to Task 14 (with guide sounds)
- Were lower extremity tasks harder than upper extremity tasks?
- How did the right-side tasks compare to left-side tasks?
- What does it mean if scores with dominant hand are worse than non-dominant hand?




You cannot view your Attend Over Time report today because you did not complete it – but feel free to add it to your labs today if you'd like!

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56

LFA Calculations Report Interpretation

- Compare MS scores to Indicator Table (*lower scores are better*)
- Compare Early to Late %
 - Balanced (close to 50-50) may indicate good rhythm
 - Predominantly Late may indicate slow cognitive processing or coordination issue
 - Predominantly Early is somewhat typical – check DATA LIST view to see if hits are EARLY or VERY EARLY. Predominantly very early hits may indicate impulsivity.




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57

Data List View

Data List View is useful to look at % VERY EARLY & % VERY LATE as this may indicate impulsivity or processing delay



SELECT

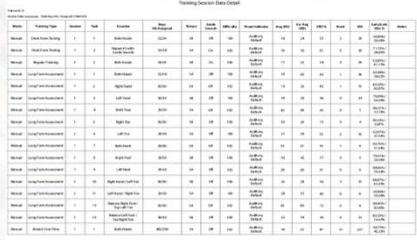
- Result View
- Data List View
- Select date
- Look at your LFA data % very early and % very late (most of the hits should fall in early, SRO and late)

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61

Data List View

Data List View is useful to look at % VERY EARLY and % VERY LATE as this may indicate impulsivity or processing delay



SELECT


- View
- Data List View
- Select date
- Look at your % very early and % very late *this correlates to the 'guide' buzzer sound

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62

IM Assessment Modifications

- Skip IM assessment (i.e., infant, toddler, low functioning) & go directly to total hands-on IM
- Seated or assist for balance
- Skip certain tasks if unable to complete
- Rest breaks
- Complete over more than one session
- Speakers
- Placement/type of headphones
- Alternative triggers/switches
- Decrease volume
- Visual mode (only if hearing loss)




RECORD MODIFICATIONS FOR LATER COMPARISON

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63


Quick Review of IM Settings and Definitions


REF: Reference Tone (Cowbell)
GUIDE: Buzzer sound when you're way too early or way too late
RO: Rubber Band Twang that tells you when you're within the set difficulty range of training
SRO: Reward tone that tells you if you are within the set SRO range.
IAR: Highest number of consecutive SRO hits during a task
BURST: A setting to help motivate your clients to get SRO hits! Several bursts can be earned during each task. The more bursts achieved, the more neural synchronization is taking place!
DIFFICULTY: The setting that determines when your client hears the "Guide" sound
TEMPO: Beats per minute or speed of the metronome (default is 54 bpm)

 im360

64

IM Training Overview


	Phases 1-2	Learn IM Ref Tone & Auditory/Visual Guides with Hand Exercises
TIMING	Phases 3-4	Use Auditory/Visual Guides to Improve Timing & Rhythm with Hands first, then with Foot & Bilateral Exercises

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65

Frequency, Intensity & Duration

- Repetition is required in order to make lasting, functional changes in the brain.
- Performing a little IM here and there or for a short period of time will not lead to functional neurological change.
- Aim for 3x/week with minimum of 30 minutes of active IM training per session (i.e., within 45 min session, 30 min is on the machine actively training). Approximately 1400-1600 reps per session (adapt as appropriate according to age & tolerance).
- Duration varies depending upon baseline timing skills & other factors. Determine an interval for re-assessment and communicate that to students, patients, & caregivers (rather than telling them a predetermined number of IM training sessions).
- Interdisciplinary functional group activities in an inpatient setting has added a layer of treatment needed to exceed previously expected outcomes. Recognizing the average short length of stay requires therapist to maximize treatment time to increase opportunities for repetition and task practice.

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66

BR4

IM Training: Phase 1



LEARN REFERENCE TONE


- Goal: Understand concept of clapping & tapping on the beat. Ok to be hitting too early or too late. But should not be opposite or random.
- Scores may not improve much until feedback for timing is introduced in Phase 2.




67

67

IM Training: Phase 1






USING IM WITH ADULTS

30 min of IM training per session (approx. 1400-1600 reps) per session as tolerate


- Reference tone ONLY
- Guide sounds turned OFF
- Hand exercises only (**Both Hands, Right Hand, Left Hand**)
- 1-3 minutes per exercise; repeat same exercises over length of session to facilitate mastery
- Encourage smooth, continuous and fluid hand movement





68

68

Strategies to Facilitate Timing



- Prime with 54bpm metronome playing in background at home
- Hands-on assistance from IM provider to give a sense of timing & rhythm (**best of provider has completed IM and established good timing**)
- Whole body movement to the beat rather than isolated body part (**rocking on ball to the beat, etc..**)
- Increase tempo initially if individual is hitting way too fast – go with flow, then gradually decrease to 54 bpm
- Manage sensory needs (**lighting, noise, sensory inputs, sensitivities, cravings**)
- Reward to motivate individual toward training!!

69

69

Slide 67

BR4 Make Picture all the way shown

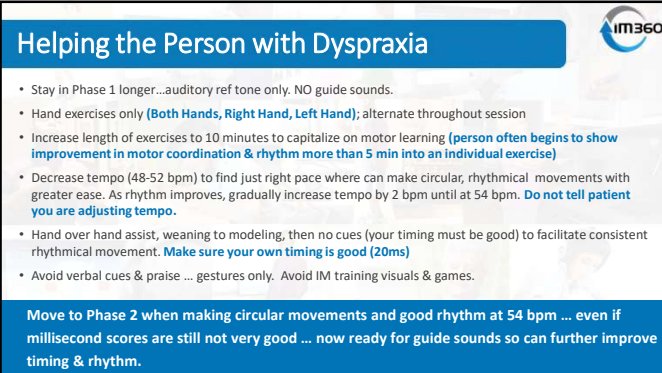
Bricole Reincke, 6/16/2021



Dyspraxia

- If impaired motor planning & sequencing, may exhibit:
 - Linear rather than circular movements
 - Trouble sequencing both toes, both heels, and/or bilateral tasks
- Motor planning & sequencing issues will cause problems with responding to guide sounds & will interfere with progress
- Needs to be addressed in Phase 1 with reference tone only before moving to Phase 2 where guide sounds are introduced

70

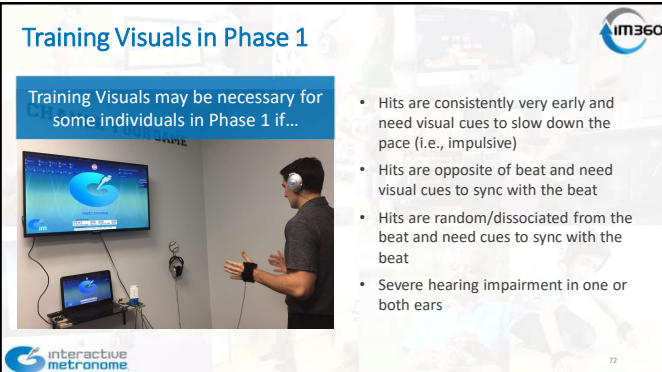


Helping the Person with Dyspraxia

- Stay in Phase 1 longer...auditory ref tone only. NO guide sounds.
- Hand exercises only (**Both Hands, Right Hand, Left Hand**); alternate throughout session
- Increase length of exercises to 10 minutes to capitalize on motor learning (**person often begins to show improvement in motor coordination & rhythm more than 5 min into an individual exercise**)
- Decrease tempo (48-52 bpm) to find just right pace where can make circular, rhythmical movements with greater ease. As rhythm improves, gradually increase tempo by 2 bpm until at 54 bpm. **Do not tell patient you are adjusting tempo.**
- Hand over hand assist, weaning to modeling, then no cues (your timing must be good) to facilitate consistent rhythmical movement. **Make sure your own timing is good (20ms)**
- Avoid verbal cues & praise ... gestures only. Avoid IM training visuals & games.

Move to Phase 2 when making circular movements and good rhythm at 54 bpm ... even if millisecond scores are still not very good ... now ready for guide sounds so can further improve timing & rhythm.

71



Training Visuals in Phase 1


Training Visuals may be necessary for some individuals in Phase 1 if...

- Hits are consistently very early and need visual cues to slow down the pace (i.e., impulsive)
- Hits are opposite of beat and need visual cues to sync with the beat
- Hits are random/dissociated from the beat and need cues to sync with the beat
- Severe hearing impairment in one or both ears

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72

Training Visuals in Phase 1



Stationary backgrounds are better than dynamic games in Phase 1 as they are less distracting ...

Adjust the intensity of feedback for timing so that training is not too hard:

- Difficulty**
 - Default is 100ms
 - Increase to make easier and give more room for error (up to 300ms)
- SRO**
 - Default is 15ms
 - Increase up to 50ms to make easier to achieve SRO hits (green)

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73

Adjusting Difficulty Level

DIFFICULTY RELATES TO THE YELLOW ZONE

DIFF 100 challenging

101+ 16-100 0-15 16-100 101+

DIFF 200 easier

201+ 16-200 0-15 16-200 201+

DIFF 300 easiest

301+ 16-300 0-15 16-300 301+

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74

Recommended Difficulty Settings

Patient's MS Average	Suggested Difficulty Setting
More than 300 ms	300 (easiest setting)
200 ms.....add 100 to range	300
150 ms.....add 100 to range	250
100 ms.....add 50 to range	150
50 ms.....add 50 to range	100
Less than 25 ms	Auto (most challenging)

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75

Adjusting SRO Level

SRO RELATES TO THE GREEN ZONE

SRO 15 challenging

101+ 16-100 0-15 16-100 101+

SRO 30 easier

201+ 30-200 0-30 30-200 201+

SRO 50 easiest

301+ 50-300 0-50 50-300 301+

76

Recommended SRO Settings

Patient's MS Average	Suggested SRO Setting
More than 300 ms	50 (easiest setting)
Between 200 ms and 300 ms	45 - 50
Between 150 ms and 200 ms	30 - 45
Between 100 ms and 150 ms	25 - 35
Under 100 ms	15 - 25
Less than 25 ms	10 - 15

77

Training Visual Settings

- TRAINING VISUALS:** access the Visual Guides at the bottom of the training box
- BACKGROUND SCENES:** sets the screen type:
 - Static (one picture)
 - Interactive (Games)
- VISUAL INDICATOR:** sets the feedback—choose between four types of feedback:
 - Auditory Only
 - Visual Guides With Center Flash
 - Visual Guides Without Center Flash
 - Center Flash Only

78

INSTRUCTOR DEMONSTRATION: Visual Training Options

79

Helping the Person with Hemiplegia

- Learn ref tone with intact hand first – then progress to affected hand with tempo adjustment and self-assist or hands-on assist from provider
- Work on bringing affected hand to midline when clapping during Both Hands exercise
- Gravity-assisted movement

80

Left Hemiparesis

81

Use of adaptive equipment for hemiparesis

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VIDEO

82

Total Hands-On Assist May Be Necessary for Some ...

- If working with a more impaired individual address upper and lower extremities in Phase 1 (Exercises 1-10).
- Adjust approach, positioning and trigger placement as needed (i.e., provider may wear trigger instead of patient)
- Proprioceptive input for good timing & rhythm is POWERFUL!!! Most effective if the IM Provider has good timing (20 MS range)
- Don't worry about your patient's MS scores as they will not reflect his/her performance when you are doing hand over hand...evaluate progress via observations and other assessments (i.e., changes observed in behavior, communication, motor and/or sensory processing skills)
- Look for opportunities to hand over the reins a little and let your client complete IM exercises with less and less assistance as appropriate (i.e., and infant will not be able to do this, but a 5-year-old may)

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83

POSITIONING ...

Balance Ball

Stairs

Wheelchair

Gait Belt

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84

TRIGGER LOGISTICS ...



Therapist wears trigger

and couples patient's hand...


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85

ENGAGING ATTENTION

- Counting
- Word Labeling
- Vocabulary Building
- Melodic Intonation
- STROOP
- Patterning
- Automatic Speech Task
- Alternative Triggers
- Working with a Partner




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86

Phase 1 Examples ...



Phase 1
Learn the Reference Tone

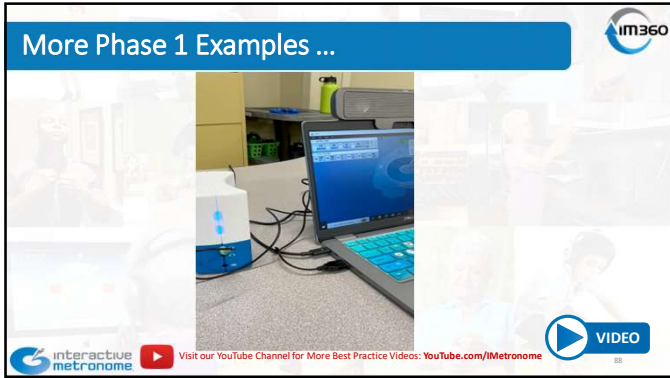
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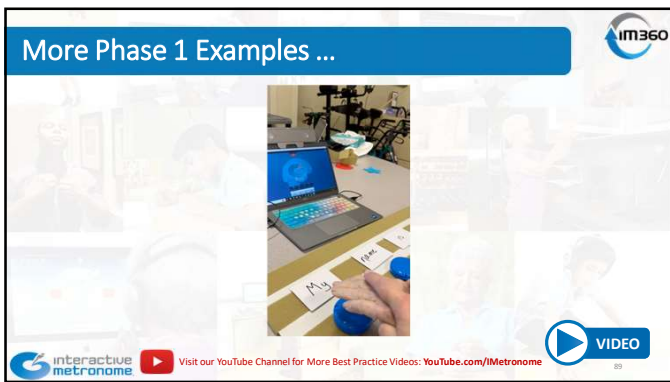
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VIDEO

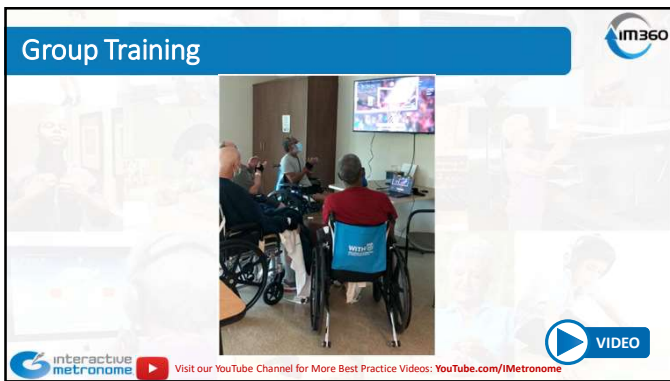
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88



89



90

Group Training with IM Pro 10.0

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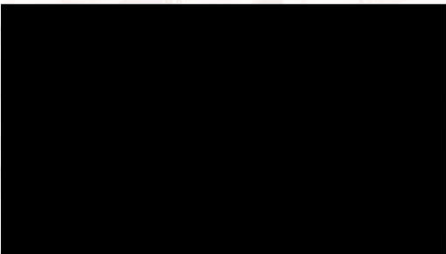



IM Pro 10.0 Games

Logos for interactive metronome, Encompass Health, and im360.

91

IM Group Training Multi Discipline




Logos for interactive metronome and im360.

92

Lab 4 - with Training Visuals Easiest Settings

SOFTWARE SETTINGS:

- Regular Training
- Exercise: Both Hands
- Minutes: 1
- Tempo: 65
- Difficulty: 300
- SRO: 50
- Burst: 2
- Guide sounds OFF (x)
- Visual Indicator: Enriched Score without Center Flash
- Background Scene: Select a static color background (green, white, blue or black)



Does looking at the visual guides help you understand the concept better?
 Do you notice that the feedback settings help you perform better?


Logos for interactive metronome and im360.

93

Lab 5 - Phase 1 with Training Visuals
Slow Tempo

SOFTWARE SETTINGS:

- Regular Training
- Exercise: Right Hand
- Minutes: 1.5
- Tempo: 45
- Difficulty: 300
- SRO: 50
- Burst: 2 (easiest)
- Guide sounds: OFF (x)
- Visual Indicator: Enriched Score without Center Flash
- Background Scene: Select a static background (Kittens, Beach, Baseball etc.)



Is the slower tempo easier or harder for you?
Do the Visual guides help or hurt your performance?


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94

Lab 6 - Phase 1 with Training Visuals
Fast Tempo

SOFTWARE SETTINGS:

- Regular Training
- Exercise: Left Hand
- Minutes: 1.5
- Tempo: 70
- Difficulty: 200
- SRO: 35
- Burst: 5
- Guide sounds OFF (x)
- Visual Indicator: Enriched Score with Center Flash – OR – Center Flash only
- Background Scene: Select a static background (Kittens, Beach, Baseball etc.)



Is the faster tempo easier or harder for you?
Do the Visual Guides help or hurt your performance?

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95

IM Training: Phase 2

LEARN GUIDE SOUNDS

- Goal: Learn to process the guide sounds and respond to them.
- Demonstrate emerging improvement in timing & rhythm with hand exercises as MS Task Average scores begin to improve.



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96



Explanation of Guide Sounds

A buzzer in the LEFT ear means you are WAY too early.
A buzzer in the RIGHT ear means you are WAY too late.

A rubber band bong sound in the LEFT ear means you close to the beat but are a LITTLE too early.
A rubber band bong sound in the RIGHT ear means you are close to the beat but are LITTLE too late.

A high pitch reward tone in BOTH EARS occurs when you are right exactly on the beat.



Your goal is to hear the high pitch reward tone in both ears as much as possible.

97

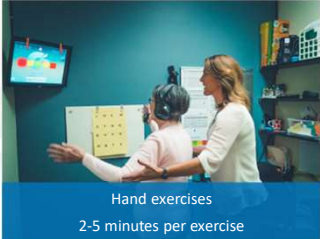
Adjust Settings to Aid Processing

Better MS scores with guide sounds	Worse MS scores with guide sounds
DIFFICULTY → Keep at default 100	DIFFICULTY → Increase to easier setting
SRO → Keep at default 15	SRO → Increase to easier setting
BURST THRESHOLD → Keep at default 4	BURST THRESHOLD → Decrease to easier setting
VOLUME → No change	VOLUME → Decrease volume of guide sounds compared to Ref Tone so Ref Tone stands out more.
TRAINING VISUALS → Optional. See if MS scores improve further when looks at computer screen vs just listening to ref tone & guide sounds.	TRAINING VISUALS → Turn on simple Training Visuals to see if they aid processing of guide sounds (choose plain or still backgrounds...avoid dynamic displays and games for now).



98

IM Training: Phase 2



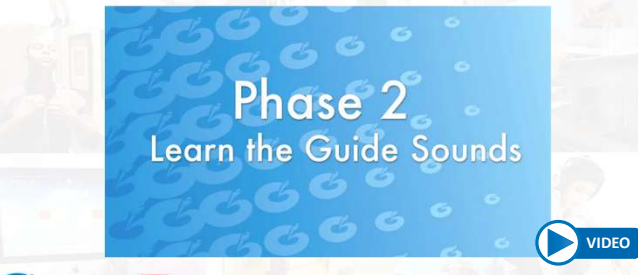
Hand exercises
2-5 minutes per exercise

- Aim for 30 min of active training per session (**1400-1600 reps per session as tolerated**)
- Adjust IM settings & go with those that facilitate best performance
 - Difficulty
 - SRO
 - Auditory only or with Training Visuals
- Cue as needed (verbal, hands-on)

99

Some Phase 2 Examples ...



Phase 2
Learn the Guide Sounds

VIDEO

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100

Lab 7 - Phase 2 with Default Settings

A sample of AUDITORY IM without adjusting to make training easier...

SELECT:

- Regular Training
- Both Hands
- 2 minutes
- Tempo 54
- Difficulty 100
- SRO 15
- Burst threshold 4
- Guide sounds ON ✓
- Visual Indicator Selection: Auditory
- Background: Default
- Complete the exercise without looking at the computer screen.



Compare Task Average (MS) to Indicator Table
What is your timing tendency?

101


Lab 8 - Phase 2 with Training Visuals
Diff 100 & SRO 15

A sample of AUDITORY-VISUAL IM without adjusting to make training easier ...

SELECT:

- Regular Training
- Both Hands
- 2 minutes
- Tempo 54
- Difficulty 100
- SRO 15
- Burst threshold 4
- Guide sounds ON ✓
- Visual Indicator Selection: Enriched Score without Center Flash
- Background: Select a stationary background (shown in white font)

Guide Sound Settings
Ref: 100
Guide: 90
RO: 0
SRO: 0



Complete the exercise while looking at the computer screen.
Compare Task Average (MS) score to Indicator Table
What is your timing tendency?

102

Lab 9 - Phase 2 with Training Visuals
Diff 200 & SRO 30

A sample of AUDITORY-VISUAL IM training with adjustment to the easiest settings...

SELECT:



- Regular Training
- Both Hands
- 1 minute
- Tempo 54
- Difficulty 200
- SRO 30

Guide Sound Settings

Ref: 100
Guide: 100
RO: 90
SRO: 0

- Burst threshold 3
- Guide sounds ON ✓
- Visual Indicator Selection: Enriched Score without Center Flash
- Background: Select a stationary background (shown in white font)

Complete the exercise while looking at the computer screen
Compare Task Average (MS) score to Indicator Table

103

IM Training: Phase 3

DEVELOP BASIC TIMING

- Goal: Now that your patient has learned how to respond to the guide sounds, continue to work on hand exercises to bring MS Task Average scores down further.
- Mastery with the hands will facilitate improvement in the lower extremities when you transition to Phase 4.

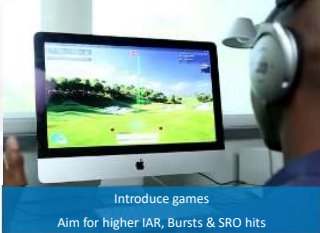




104

IM Training: Phase 3

Introduce games
Aim for higher IAR, Bursts & SRO hits

- Continue with hand exercises to further refine timing & rhythm
- 3-5 minutes per exercise
- Aim for 30 min of active training per session (1400-1600 reps)
- Guide sounds remain ON
- Adjust IM settings to leverage performance (i.e., give more feedback as tolerated by adjusting Difficulty, SRO range to more challenging levels)
- Aim for best MS Task Average

105

Introduce Games




- Use your judgment to determine when to introduce games
- Games facilitate
 - Higher IAR
 - More bursts
 - Better MS scores
- Games are engaging and encourage completion of more reps leading to better outcomes.
- Games can be used as a reward for effort during IM sessions
- All games have POSITIVE reinforcement
- A few have NEGATIVE reinforcement (**consequence for very early or late hits**) – see Appendix for more info

**View Games Appendix Page A-14*

106

10.0 New Games



Beat Blocks

- Beat Blocks is a pure Go/No Go Tetris-style music game. Where the block shape drops when the player claps the trigger. If the trigger is not activated, the block moves across the top of the screen, one column to the right each beat. The player waits until the shape is in the column, they want it and then activates the trigger to drop it. When a row of blocks is complete that row is destroyed. Music is layered and based on how often shape rows are destroyed. Music is diminished when time passes, and no rows are destroyed.

Drum Master

- You are the drum master. All the other drummers follow your lead. Together you create happiness through positive, magical energy.
- The energy is formed from an ancient source of magic that responds to the tribal rhythms.

Dungeons and Dance


- D&D comes to IM Pro...Dungeons and Dance that is! Dance battle your way through dungeons filled with stomping skeletons, grooving goblins, and disco demons.
- Why do you do it? Besides your love of a good dance battle, you also love treasure, and these dungeons are full of it!

Ghost Night

- The sun has set, and you get an emergency call from the police chief! Ghosts have been reported and verified at the Metro cemetery. You grab your ghost trapping gear, jump into your ghost catcher truck, and drive as fast as you can to the cemetery to contain the ghosts before they get out and into the city. This begins the longest night of your life. Ghost night!

107

10.0 New Games



Glow Dance Fever

- You are in control of an amorphous animal dancer. The dancer will follow your lead as you clap along to the beat. As you keep up with your hits, the dancer will get more responsive to the music and additional effects will trigger. Eventually, the dancer will fill their "fever meter" and will trigger a "Dance Fever" in which the camera angle becomes more front and center, and the music is enhanced! The meter is constantly filling as gameplay moves along and is enhanced with better hits such as SROs.

Home Run Derby

- Home Run Derby (HRD) is a minigame played with an IM trigger. HRD brings the excitement of the annual Major League Baseball home run competition to the IM platform.
- As the batter, the player's success is based on the performance of consecutive trigger hits. In addition to home runs, the batter is also rewarded with singles, doubles, and triples. This keeps the player motivated by providing encouragement to continue playing for home runs.

Quarterback Passing Pro


- Quarterback Passing Pro is a minigame played with an IM trigger. QB Passing Pro simulates the excitement of passing a football down the field to score as many touchdowns as possible.
- As the quarterback, the player is positioned at the 50-yard line. Receivers are positioned at the 35-yard line, 15-yard line, and the end zone. Passing performance is based on the player's consecutive millisecond timing scores.

Salad Samurai

- Step into the Dojo and get ready to prep! You are a Samurai Chef chopping up veggies to make the perfect salad. Veggies will come flying up for the player to slice. Clap to slice up your veggies as they appear. The better the trigger hit, the more veggies that will appear for slashing!

108

Introduce Games




- Use your judgment to determine when to introduce games
- Games facilitate
 - Higher IAR
 - More bursts
 - ... and better MS scores
- Games are engaging and encourage completion of more reps leading to better outcomes.
- Games can be used as a reward for effort during IM sessions
- All IM games have POSITIVE reinforcement
- A few have NEGATIVE reinforcement (**consequence for very early or late hits**) – see Appendix for more info

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109

10.0 Music Games



im360 VIDEO

im IM PRO 10.0


Music Meets Rhythm & Timing

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110

Counteract Timing Tendency

If your patient is able to do this it will accelerate outcomes ...



- If hitting too fast (or ahead of the beat) ...purposely maintain a slightly slower pace.
- If hitting too slowly (or after the beat) ... purposely maintain a slightly faster pace.

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Phase 3 – The Interesting Thing about Neuroplasticity!




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112

Lab 10 - Phase 3 Select Your Own Settings

Based on your performance thus far, select your own software settings to facilitate even better scores ...

- Regular Training
- SELECT Exercise
- Minutes: 2
- SELECT Tempo
- SELECT Difficulty
- SELECT Burst
- SELECT SRO
- SELECT Background Scene or Game
- SELECT Visual Indicator
- Guide Sounds: ON ✓



What is your performance using Games vs. Static background?
Do the Games help you stay engaged?


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113

Lab 11 - Phase 3 Games with Positive Reinforcement

SOFTWARE SETTINGS:

- Regular Training
- Exercise: Right Hand
- Minutes: 2
- Tempo: 60
- Difficulty: 200
- SRO: 50
- Burst: 4
- SELECT Game with Positive Reinforcement
- SELECT Visual Guides Without Center Flash
- Guide sounds ON ✓



What happens when you set feedback to the easiest settings while playing the games?
Does it help or hurt you to have visual feedback while playing the games?


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114

Lab 12 - Phase 3 Games with Negative Reinforcement

SOFTWARE SETTINGS:

- Regular Training
- Exercise: Left Hand
- Minutes: 2
- SELECT Tempo
- Difficulty 100
- SRO 15
- Burst: 3
- SELECT Game with Negative Reinforcement
- SELECT Visual Guides With Center Flash or Center Flash Only
- Guide sounds ON ✓



What happens when you set feedback to the default settings while playing the games?
Does it help or hurt you to have Center Flash visual feedback while playing the games?

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115

Lab 13 - Phase 3 Create a Custom Exercise

Think of a therapeutic goal. Create a Custom IM exercise to address that goal.

SOFTWARE SETTINGS:

- Regular Training
- CREATE A CUSTOM EXERCISE
- Minutes: 2
- SELECT Tempo
- SELECT Difficulty
- SELECT SRO
- SELECT Burst
- SELECT Guide sounds ON or OFF
- SELECT Auditory Only or Training Visuals




Some custom goal ideas: Crossing midline, sitting on a therapy ball, standing on a dynamic surface, completing a 3-step sequence, prone or supine positioning...

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116

Training Tip

low battery



An "off" session or two can be expected at some point in the training ...

- Don't change plans just yet
- Some clients have a few poor scores right before they make a big gain in their timing
- Explore environmental and family changes that could be affecting overall behavior
- If lack of progress persists, it is time to reassess




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117

IM Training: Phase 4

Transition to Address More Advanced Skills
GENERALIZE TIMING SKILLS

Now that good timing has been established with hands, it's all about generalizing good timing to the rest of the body. At the same time, work on more complex processing, sustained attention, concentration and discipline specific task.

118

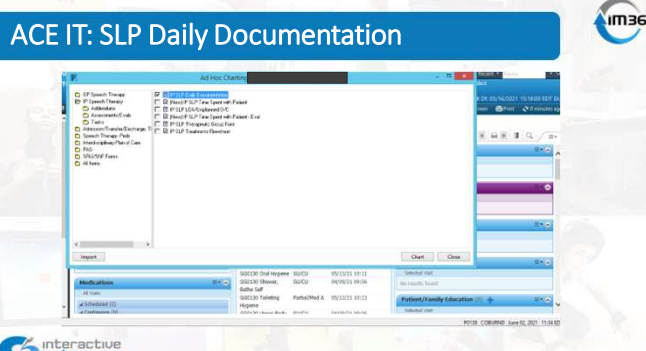


Speech & Language Activities

- Visual Attention
- Impulse Control
- Working Memory
- Bilateral Integration
- Sequencing
- Naming
- Word Finding
- Automatic Speech Task
- Verbal Fluency

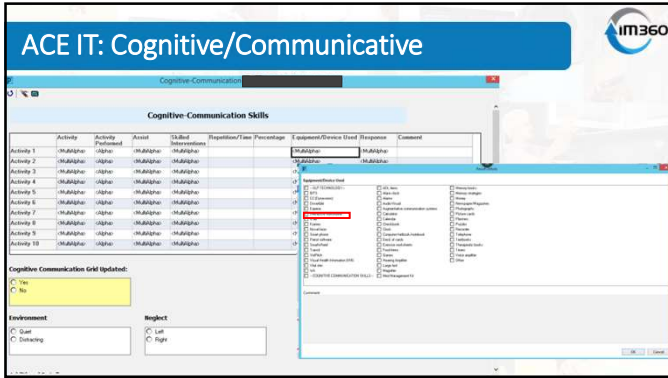



119

ACE IT: SLP Daily Documentation

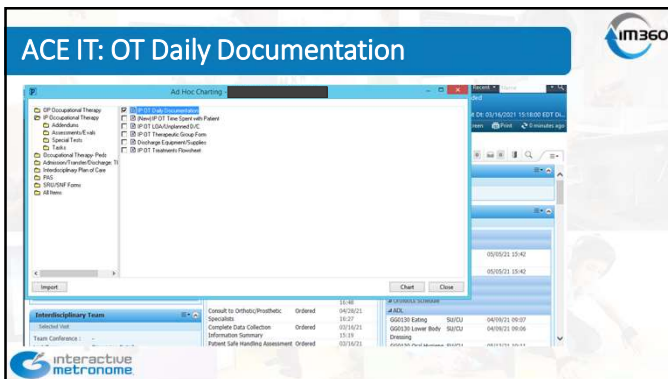
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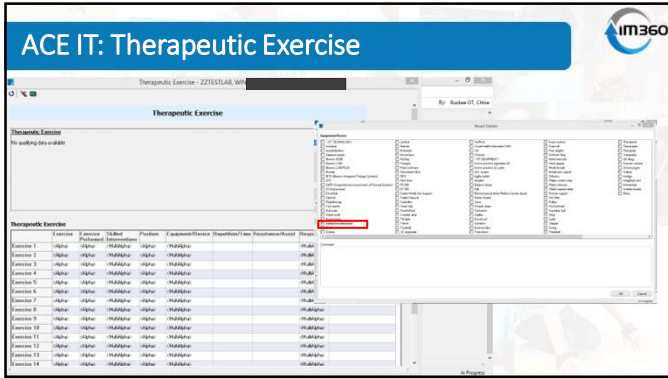
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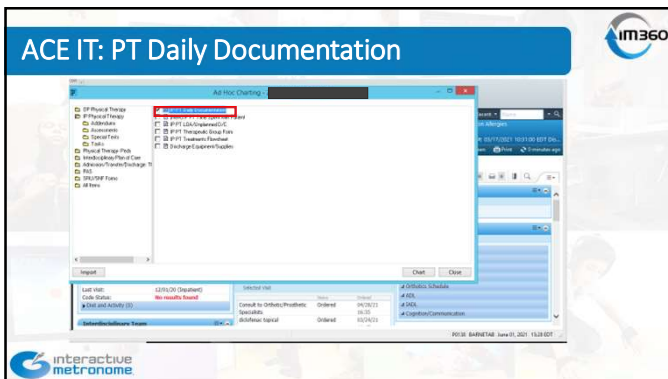
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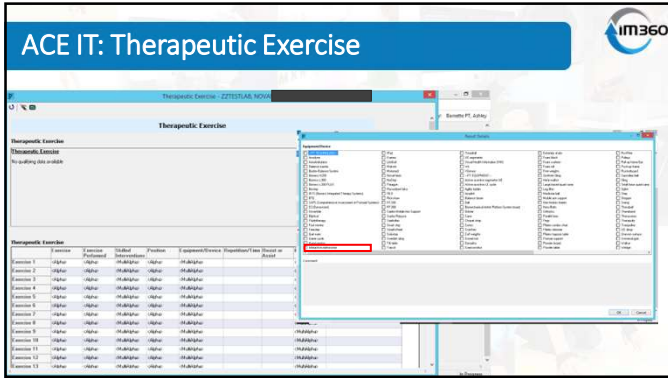
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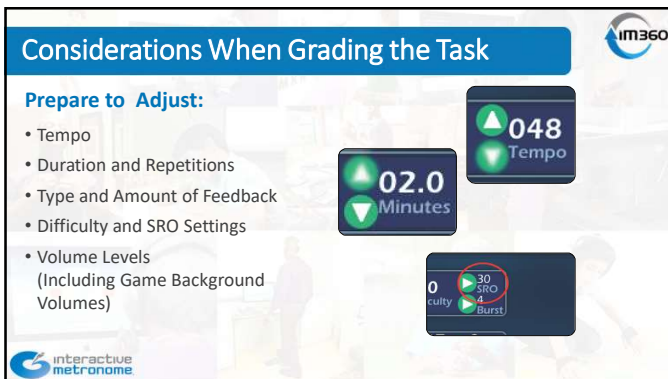
126



127



128




129

Treatment



- Weight bearing on foot trigger (sitting and standing)
- Adapted Side hit: Wrist
- Shoulder Shrug
- Synergy Hit
- Elbow Hit
- Table Slide
- Lower Extremity Weight Shift
- Balance With Affected Side Stomp
- Functional Reach

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Use of Adaptive Equipment



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Treatment Ideas for Parkinson's



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132

Balance & Gait

The only true way to practice walking is to walk...

The smooth transition between phases of the gait cycle is an integrated activity that is difficult to learn through practice of individual parts.

- Goals for gait training with IM in-motion trigger:
 - improve biomechanics
 - alter gait speed
 - increase stride length...



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133

Treatment with In-Motion Trigger

IM for Gait Training with In-Motion Triggers



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134

Balance on Bosu



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135

Crossing Midline

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VIDEO

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UE and Grasp Activity

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VIDEO

137

Shoulder External Rotation

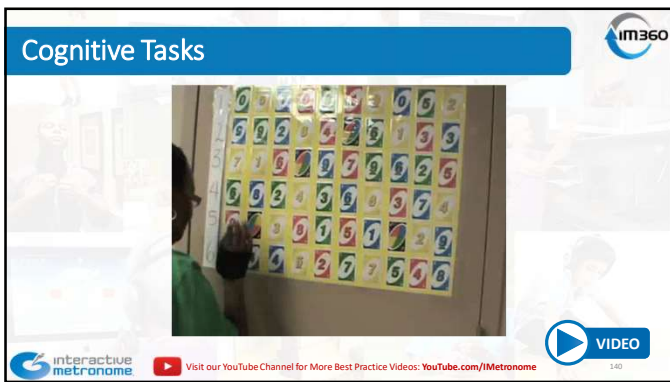
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VIDEO

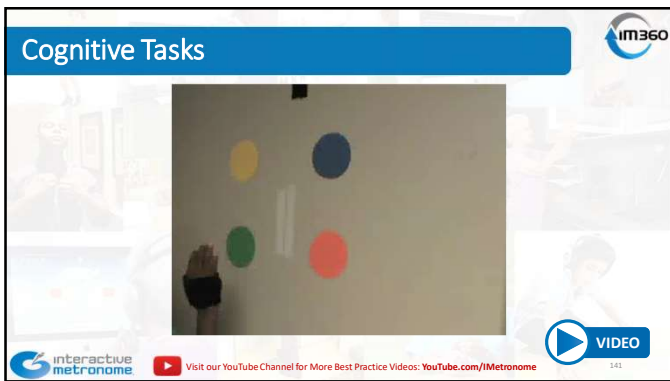
138



139



140




141

Lab 14 - Phase 4 Lower Extremity

SOFTWARE SETTINGS:

- Regular Training
- Exercise: Both Toes
- Minutes: 1.5
- Tempo: 50
- Difficulty: 200
- SRO: 50
- Burst: 2
- Visual Indicator – Auditory Only
- Guide sounds ON ✓



*What happens when you slow the tempo down while completing Lower Extremity Exercises?
Do you think the Visual Feedback Cues might help or hurt your performance?*

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142

Lab 15 - Phase 4 Games with Music

Rhythm IM training...

SOFTWARE SETTINGS:

- Regular Training
- Exercise: Both Hands
- Minutes: 1.5
- Tempo: 54
- Difficulty: 100
- SRO: 30
- Burst: 2
- Visual Indicator: Auditory Only
- Game: Rhythm Master
- Game volume ON ✓
- Guide sounds ON ✓



*Does the music help or hurt your performance? Can you find the rhythm in the background music?
Do you think the Visual Feedback Cues might help or hurt your performance?*

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143


Lab 16 - Phase 4 AUTO Difficulty

This Lab demonstrates IM training at the most challenging level

AUTO Difficulty is found in the upper right 'Training' box

SOFTWARE SETTINGS:

- Regular Training
- Both Hands
- Minutes: 1.5
- Tempo: 54
- Difficulty: AUTO ✓
- SRO 15
- Burst: 4
- Guide Sounds ON ✓
- Visual Indicator: Enriched Score without Center Flash
- Background: Select a stationary background



NOTICE HOW DIFFICULTY LEVEL AUTOMATICALLY ADJUSTS TO YOUR BEST PERFORMANCE

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144

IM General Training Reports

Click on **Reports** then **General Reports** and select from...

- **Session Data Report**
 - IM settings and performance data for each exercise for each assessment & training session
Sample Session Data Report Appendix Page A-24
- **Session Calendar Report**
 - Calendar with total minutes of completed each session
Sample Session Calendar Report Page A-28
- **Total Minutes/Repetitions**
 - Number of minutes of IM training completed each session and cumulative total over consecutive sessions
 - Number of reps completed per session and cumulative total over consecutive sessions
Sample Total Minutes/Repetitions Report Page A-27




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145

IM Training Reports

Click on **Reports** then **Regular Training** for graphs...

- **Highest IAR Graph**
 - Ability to stay in the SRO zone for more consecutive hits, signaling improved synchronization
Sample Session IAR Graph Appendix Page A-25
- **Burst Graph**
 - Ability to repeatedly adjust timing target the SRO zone, showing improved synchronization
Sample Session Burst Graph Page A-25
- **SRO % Graph**
 - Improved ability to target SRO zone
Sample Session SRO% Graph Page A-26
- **Best Task Average Graph**
 - Best Task Average of each training session over consecutive dates, a reflection of improved synchronization over subsequent training sessions
Sample Best Task Average Graph Page A-26
- **Variability Average Graph**
 - Improvement in rhythm over subsequent training sessions
Sample Variability Average Graph Page A-27



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146

Complete Review of Appendix

APPENDIX

Contains:

- IM Equipment Setup **A-3**
- IMC Virtual Course Technical FAQs **A-4**
- IM Settings & Conditions **A-6**
- On-Screen View **A-6**
- IM Program Features **A-7**
- Games **A-11**
- Visual Screen & Guide Sounds **A-13**
- IM Indicator Table **A-14**
- IM Quick Reference Guide **A-15**

Sample Reports:

- Sample SPT Performance Analysis Report **A-18**
- Sample SPT Task Average Graph **A-18**
- Sample SRO% Graph **A-19**
- Sample Pre-LFA Calculations Report **A-20**
- Sample Post-LFA Calculations Report **A-21**
- Sample LFA Comparison Report **A-22**
- Sample ADT Task W/Average Graph **A-22**
- Sample ADT Variability Average Graph **A-23**
- Sample Session Data Report **A-24**
- Sample Session IAR Graph **A-25**
- Sample Session Burst Graph **A-25**
- Sample Session SRO% Graph **A-26**
- Sample Best Task Average Graph **A-26**
- Sample Variability Average Graph **A-27**
- Sample Total Minutes/Repetitions Report **A-27**
- Sample Session Calendar Report **A-28**

• IM Practice Resources **A-29**
• IM Training Check **A-31**
• Contact Map **A-32**

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147

Next Level of Care using IM-Home & the eClinic

- Learn how to use the eClinic when you attend the IM-Home Certification Course
 - Quick Start
 - Create Templates
 - Assign Training Plans
 - Create Custom Exercises
 - Send Messages
 - View Reports
- Refer clients to the IM locator board to find an IM-Home Certified Provider

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148

IM Educational Offerings

- IM Certification
- IM Refresher Course
**Created specifically for EH*
- IM-Home Certification
- Educational Webinar Library
- Specialization Courses
 - Pediatric Therapy
 - Adult Rehabilitation
 - Fall Risk Reduction

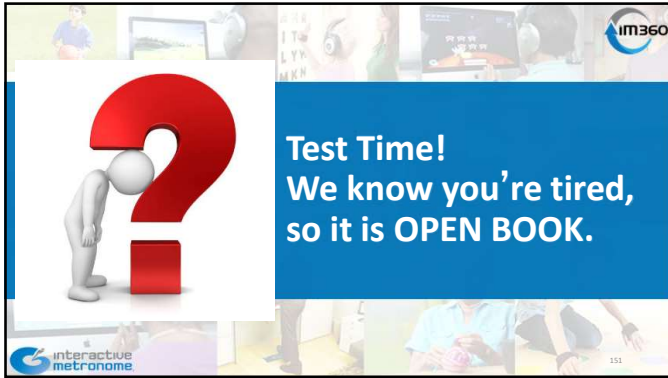
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149

More Cowbell!

interactive metronome YouTube <https://youtu.be/cVsQLIK-T0s>

150



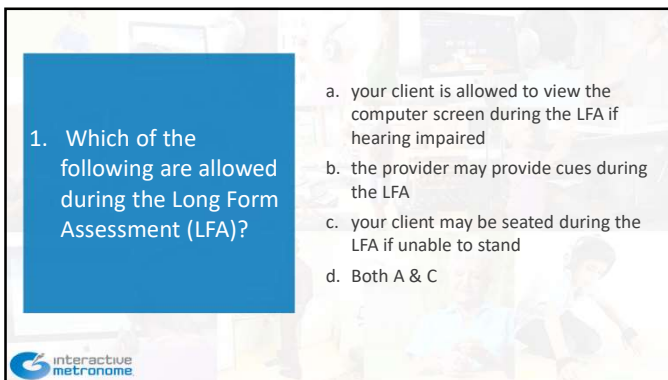
im360

Test Time!
We know you're tired,
so it is **OPEN BOOK.**

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151

151



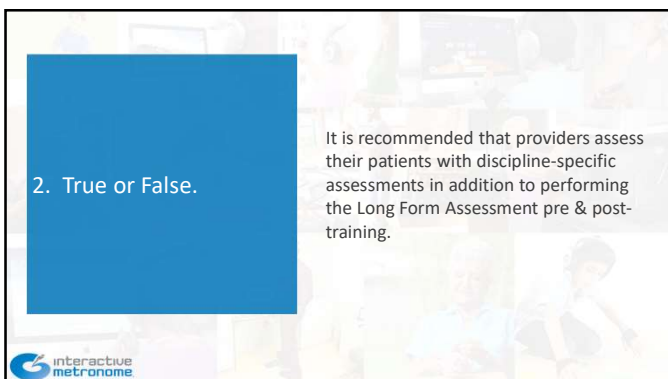
1. Which of the following are allowed during the Long Form Assessment (LFA)?

- a. your client is allowed to view the computer screen during the LFA if hearing impaired
- b. the provider may provide cues during the LFA
- c. your client may be seated during the LFA if unable to stand
- d. Both A & C

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152

152



2. True or False.

It is recommended that providers assess their patients with discipline-specific assessments in addition to performing the Long Form Assessment pre & post-training.


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153

153

3. What are usually the easiest IM tasks to introduce in Phase 1 of IM Training?


- a. Both Hands, Right Hand, and/or Left Hand depending upon physical capabilities
- b. Bilateral Tasks: Right Hand/Left Toe and Left Hand/Right Toe
- c. Both Heels, Right Heel, and/or Left Heel depending upon physical capabilities
- d. Each of the 13 IM tasks should be introduced in Phase One



154

4. What is the goal of Phase 2 of IM Training?


- a. To begin improving rhythm and timing
- b. To generalize rhythm and timing skills
- c. To learn the reference tone
- d. To learn the guide sounds



155

5. What IM feature should be adjusted if the metronome beat seems to be too fast for your client?


- a. Tempo should be decreased
- b. Volume of the guide sounds should be adjusted
- c. Repetitions should be increased
- d. Tempo should be increased



156

6. What IM feature should be adjusted if your client is hypersensitive to sound?


- a. Volume of the metronome and guide sounds should be increased
- b. Volume of the metronome and guide sounds should be decreased
- c. Tempo should be increased
- d. Task duration should be increased



157

7. What is the goal of Phase 4 of IM Training?


- a. Learn the reference tone
- b. Change the tempo
- c. Generalize rhythm and timing skills
- d. Learn the guide sounds



158

8. The very early/very late guide sounds like

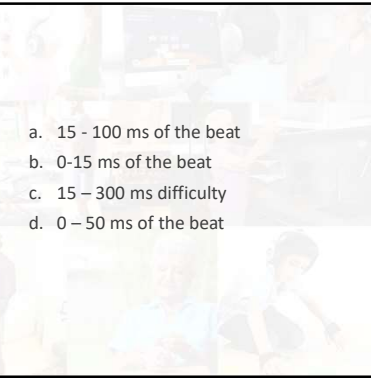
- a. a rubber band twang
- b. a high pitch heard in both ears at the same time
- c. a cowbell
- d. a buzzer



159

9. At the default SRO setting, the high pitch reward guide sound is heard when your client just clapped or tapped within

- a. 15 - 100 ms of the beat
- b. 0-15 ms of the beat
- c. 15 – 300 ms difficulty
- d. 0 – 50 ms of the beat

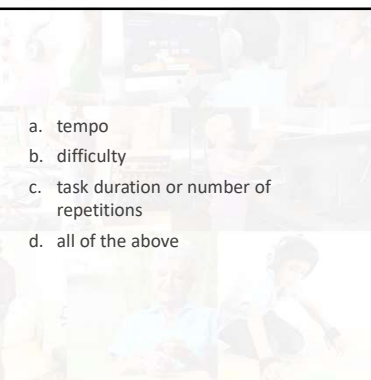


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160

10. To make IM exercises easier or more challenging, the provider may adjust the following:

- a. tempo
- b. difficulty
- c. task duration or number of repetitions
- d. all of the above



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161

Contact Us

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Sunrise FL 33323

Dial **(954) 385-4660**,
then press desired option

Department and Option	
Sales	1
Technical Support Education Support Hours Authorization	5
Clinical Support	6
Marketing	7
Accounting	8



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162



163
