

## IM Adult Rehabilitation Best Practices: Motor Skills



### Course Description:

Interactive Metronome (IM) is a performance-based feedback system that was initially developed as a tool to facilitate learning, sensory processing and attention in children. Early on, researchers and clinicians realized the potential of IM to also facilitate learning and neuro-muscular control in adults, especially for patients suffering from neurological conditions. The “Golf Study” performed by Terry M. Libkuman and Hajime Otani was the first study performed on adults which showed that IM was appropriate for this age group and possibly for persons suffering from orthopedic conditions. This study showed that IM improved the shot accuracy of golfers up to 35% by improving core skills. The case of Brenda Canup is a prime example of IM’s potential place in orthopedic rehabilitation. Mrs. Canup opted for a below-the-knee amputation after struggling with a foot deformity all of her life. After surgery, she became frustrated with her lack of progress and was still ambulating with a walker. Later in her treatment, after she’d lost virtually all hope of ever ambulating with her new prosthetic limb, she started the IM program and was finally able to make a full recovery and run the Disney Marathon. After further reports of good treatment outcomes with IM in this age group, clinicians began to incorporate IM more and more into treatment of the adult ortho and neuro patient. IM is now a standard of care in many adult outpatient clinics, rehabilitation hospitals, nursing homes, assisted living centers, home health agencies and acute hospital settings.

Until now clinicians have adapted IM technology for adult patients based upon knowledge, research and evidence-based practices employed in the pediatric populations. It has therefore become clear that there is a need in the Interactive Metronome (IM) community to develop “Best Practice Guidelines” to provide the clinician with proven techniques that will enhance their clinical practice and understanding of the Interactive Metronome as a tool for adult orthopedic and neurological rehabilitation.

This course is designed to provide the certified IM provider with advanced practice guidelines and techniques for the adult patient based upon sound clinical evidence and the skills of advanced IM practitioners. The material for this manual is therefore provided.

*\*Contact hours/AOTA CEUs are offered pending successful completion of a written exam at the end of the course.*

### Target Audience:

This course welcomes the following professionals who have completed the Interactive Metronome Certification Course.

- Occupational Therapist
- Occupational Therapy Assistant
- Physical Therapist
- Physical Therapy Assistant
- Athletic Trainer
- Licensed Medical Professional

### Instructional Level:

Advanced

### Learning Outcomes:

Upon completion of this course, participants will be able to:

- Demonstrate an overall understanding of the anatomy of stroke and traumatic brain injury (TBI) and how these conditions affect muscle tone and neuromuscular coordination;
- Demonstrate an overall understanding of the anatomy and kinesiology of the shoulder, elbow, and hand, how this neuromuscular balance can be disrupted, and how IM may positively impact this balance;
- Demonstrate an overall understanding of lower motor neuron nerve damage and the healing process;
- Determine the candidacy of a patient for the IM assessment and training, and apply principles of motor learning in order to modify the application of Interactive Metronome (IM) based on the patient’s functional and baseline impairments related to stroke, TBI, lower motor neuron damage, Parkinson’s Disease, and other neurological disorders;
- Determine the candidacy of a patient for the IM assessment and training, and modify the application of IM based on the patient’s functional and baseline impairments related to general orthopedic or post surgical conditions of the shoulder, elbow, and hand;

- Establish home exercise programs, including measures to self-monitor progress and changes in function;
- Evaluate patient success, and establish discharge recommendations.

**\*Note: This course covers information that pertains to licensed therapists and therapy assistants. OTA and PTA professionals must practice IM under the supervision of a licensed OT or PT.**

#### **Authors:**

**Karen Farron, MHS, OTR/L** graduated with a Bachelor's Degree in Occupational Therapy from the University of Missouri-Columbia in 1984 and Master's Degree in Health Services from Washington University-St. Louis in 1990. She has worked as an Occupational Therapist for 23 years and as a Clinical Director for more than 15 of those years. She was recently appointed by Kansas Governor Kathleen Sebelius to the Kansas Board of Healing Arts on the Occupational Therapist Council. Karen is a Senior OT at Kansas Rehabilitation Hospital working with patients whose diagnoses include multiple trauma, stroke, brain injury, surgical amputations, MS, and pulmonary disease.

*Instructor Financial Disclosure(s): Karen is the author of course materials that focus on the clinical application of Interactive Metronome technology, for which she has received honoraria from Interactive Metronome, Inc. She does not receive royalties or any other form of compensation for the continued publication and use of educational materials she has authored. Nicole does not sell or receive compensation for the sale of Interactive Metronome products.*

*Instructor Nonfinancial Disclosure(s): Karen uses the Interactive Metronome in clinical practice at Kansas Rehabilitation Hospital.*

**Andrew Dillen Hartley, OTR/L** graduated from the University of Pretoria, South Africa, school of Occupational Therapy in 1995 and moved to the USA in 1996. He is co-owner of Advanced Therapy Solutions, Inc, an outpatient Physical and Occupational Therapy practice serving clients of all ages in five locations. Mr. Hartley has 14 years of clinical experience and is trained in multiple treatment approaches with both adults and pediatrics. His interests include the treatment of deficits related to stroke, traumatic brain injury, Autism, development disorders, sensory processing disorders, ADHD, ADD and learning disabilities in infants, children and adults. His experience with sensory integration, neuromuscular re-education, brain gym, vision therapy, environmental adaptation, Tai-Chi, yoga and technology based treatment approaches for all ages has served him well as a presenter of certification courses, webinars and professional seminars. Mr. Hartley serves as a clinical advisor for Interactive Metronome and other "Therapy based" companies in research, protocol and practice development areas.

*Instructor Financial Disclosure(s): Dillen is an active member of Interactive Metronome's Clinical Advisory Board, for which he receives an annual honorarium from Interactive Metronome, Inc. He is the author/co-author of numerous courses that focus on the clinical application of Interactive Metronome technology, for which he has received honoraria from Interactive Metronome, Inc. Dillen does not receive royalties or any other form of compensation for the continued publication and use of educational materials he has authored/coauthored. Dillen is also an instructor for Interactive Metronome, for which he receives a fee for teaching each course and reimbursement of travel expenses from Interactive Metronome, Inc. Dillen does not sell or receive compensation for the sale of Interactive Metronome products.*

*Instructor Nonfinancial Disclosure(s): Dillen uses the Interactive Metronome in clinical practice at Advanced Therapy Solutions.*

**Mary Jones, OTR/L, LMT, CIMT** graduated from St. Loe's School of Occupational Therapy (UK) in 1986. Has been an Occupational Therapist for 20 (+) years and has been practicing in the USA since 1993. Additional training has included a BS in Healthcare and Social Welfare from Manchester University in 1992, Massage Therapy License in 1996, NDT certification in 1994. Mary has worked in a variety of healthcare settings in both the USA and the UK. These include home health in the inner-city (London), orthopedics, geriatric psychiatry, outpatient rehab, brain injury specialty (adult and pediatric) and pediatric outpatient therapy. Clinical advanced training includes NDT advanced courses, infant massage certification, cranio-sacral therapy, myofascial release techniques, motor control and the development of motor learning, Therapeutic Listening Program, Integrated Listening Systems, Brain Gym, Pilates, Active Isolated Stretching Techniques, Visual-motor Training, Vestibular Training, Beckman Oral Motor Assessment and Intervention, Handwriting Without Tears, ADHD and Nutrition Interventions, Aromatherapy, Aquatic Therapy, Sensory Integration assessment and interventions, Autism assessment and interventions, Interactive Metronome Certification and Development of Best Practice Strategies with IM. Mary owns her own pediatric practice "Sensational Kids LLC", based out of Bradenton, FL. Mary has lectured extensively in her field at a local and national level.

*Instructor Financial Disclosure(s): Mary is an active member of Interactive Metronome's Clinical Advisory Board and is Interactive Metronome's Occupational Therapy Consultant for the American Occupational Therapy Association (AOTA), for which she receives an annual honorarium from Interactive Metronome, Inc. She is the author/co-author of numerous courses & publications that focus on the clinical application of Interactive Metronome technology, for which she has received honoraria from Interactive Metronome, Inc. Mary does not receive royalties or any other form of compensation for the continued publication and use of educational materials she has authored/coauthored. Mary is an instructor for Interactive Metronome. She receives a fee for teaching each course and reimbursement of travel expenses from Interactive Metronome, Inc. Mary does not sell or receive compensation for the sale of Interactive Metronome products.*

*Instructor Nonfinancial Disclosure(s): Mary periodically contributes blog posts to [www.interactivemetronome.com](http://www.interactivemetronome.com) that are clinical in nature. She does not receive compensation for this. Mary uses the Interactive Metronome in clinical practice at Sensational Kids, LLC.*

**Linda Heifetz Rubin, OTR/L** graduated with a degree in Occupational Therapy from the University of Wisconsin-Milwaukee in 1977. She has been the Senior OT for HealthSouth Largo, FL since 1994 and received HealthSouth's National Special Achievement Award for Clinical Excellence in 2003. In addition to using Interactive Metronome, Linda specializes in industrial rehabilitation and ergonomics, orthopedic upper extremity injuries, and neurological outpatients. Since her certification with Interactive Metronome in January of 2003, Linda enjoys using IM for Peds and adults, with diagnoses including ADHD/ADD, dysgraphia, developmental delays, CP, MS, TBI, RSD, Parkinson's, CVA, CA, SCI, brain tumors, and degenerative neurological disorders.

*Instructor Financial Disclosure(s): Linda has been a member of Interactive Metronome's Clinical Advisory Board, for which she received an annual honorarium from Interactive Metronome, Inc. She has authored/co-authored courses that focus on the clinical application of Interactive Metronome technology, for which she has received honoraria from Interactive Metronome, Inc. She does not receive royalties or any other form of compensation for the continued publication and use of educational materials she has authored/coauthored. Linda does not sell or receive compensation for the sale of Interactive Metronome products.*

*Instructor Nonfinancial Disclosure(s): Linda uses the Interactive Metronome in clinical practice.*

**Shelley Thomas, MPT** received her physical therapy degree from the Mayo Clinic in 1999 and is currently the Director of Rehabilitation at Idaho Elks Rehabilitation Hospital in Boise, Idaho. She has worked primarily adults with neurological and general medical issues and has embraced incorporating Interactive Metronome and Gait Mate into treatment sessions. She serves as the lead therapist at her facility working with physical, occupational, speech, and recreational therapists to educate them about how to incorporate IM and Gait Mate into their treatments to improve functional outcomes. Shelley has been teaching IM Certification Courses since 2008 and has contributed to the development of the Gait Mate Certification Course.

*Instructor Financial Disclosure(s): Shelley has been a member of Interactive Metronome's Clinical Advisory Board, for which she has received an annual honorarium from Interactive Metronome. She is the author/co-author of courses that focus on the clinical application of Interactive Metronome technology, for which she has received honoraria from Interactive Metronome, Inc. She does not receive royalties or any other form of compensation for the continued publication and use of educational materials she has authored/coauthored. Shelley has also been an instructor for Interactive Metronome, for which she has received a fee for teaching each course and reimbursement of travel expenses from Interactive Metronome, Inc. Shelley does not sell or receive compensation for the sale of Interactive Metronome products.*

*Instructor Nonfinancial Disclosure(s): Shelley is the Director of Rehabilitation at Idaho Elks Rehabilitation Hospital in Boise, Idaho where Interactive Metronome is used in clinical practice.*

**Course Content Disclosure:**

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**Course Origination Date\*:** 3/16/2010

\*Course content is reviewed annually to make sure it remains current and relevant to the practice of Interactive Metronome.

**Agenda (total time 4 hours, including post-test)**

CHAPTER 1: Course Outline	
CHAPTER 2: Introduction	5 minutes
CHAPTER 3: IM for Stroke & TBI	80 minutes
CHAPTER 4: IM for Lower Motor Neuron Damage	40 minutes
CHAPTER 5: IM and Workers Compensation	45 minutes
CHAPTER 6: IM for the Hand	50 minutes
CHAPTER 7: IM for the Elbow	35 minutes
CHAPTER 8: IM for the Shoulder	55 minutes
CHAPTER 9: IM in the Application of Motor Learning Theory to Rehabilitate Functional Movement	30 minutes
CHAPTER 10: Best Practices for Treatment of Neurological Conditions with IM	120 minutes
CHAPTER 11: Strategies to Preserve Function & Independence: Parkinson's Disease & IM	60 minutes
Review	
Post-Test	

**Instructional Methods:**

MANUAL, CD ROM & ONLINE RESOURCES, VIDEOS, PHOTOS

**Contact Hours/AOTA CEUs:**

0.4 AOTA / 5 NBCOT PDUs (4.0 contact hours)

PT/PTA & Other Disciplines Not Listed Above: If your discipline or state is not listed above, you may submit paperwork to your state board or association for CEUs if they allow you to do so. Please check with your state board/association prior to registering for this course.

This is not a co-sponsored or cooperative course offering. Interactive Metronome, Inc. is the organization responsible for creating the content & awarding AOTA CEUs.



Interactive Metronome, Inc is an AOTA Approved Provider (#4683). This advanced course is offered for 4 contact hours/ 0.4 AOTA CEUs (Classification Codes - Domain of OT-ACTIVITY DEMANDS, Domain of OT-PERFORMANCE SKILLS, OT Process-INTERVENTION). The assignment of AOTA CEUs does not imply endorsement of specific course content, products, or clinical procedures by AOTA.