Post-Concussion: Functional Considerations for Improving Neural Timing with IM

An overview of the neuroscience and clinical application of Interactive Metronome (IM) as part of a concussion rehabilitation program.

Course Description
Concussion injury is a significant cause of physical, cognitive, and emotional challenges for people across all age groups. While many people recover within a few weeks, research suggests up to 33% of individuals suffering a sports related mild traumatic brain injury continue to have persistent concussion symptoms affecting their overall function and quality of life. Therapies that address underlying mechanisms affecting central processing and neural synchronization are important components of an individual's recovery. Interactive Metronome provides an integration of sensory and motor processing for improved neural timing and should be considered as part of a rehabilitation program in people with post-concussion symptoms. This course will provide an overview of the neural circuits involved in central processing and novel approaches for applying Interactive Metronome to improve neural synchronization. **This course is not offered for contact hours/CEUs.*

Target Audience
This course welcomes the following professionals:

- Speech and Language Pathologist
- Speech and Language Pathology Assistant
- Audiologist
- Occupational Therapist
- Occupational Therapy Assistant
- Physical Therapist
- Physical Therapy Assistant
- Athletic Trainer
- Licensed Chiropractic, Medical, Rehabilitation or Mental Health Professional
- Music Therapist
- Educator

Instructional Level
Introductory

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

- Explain the neuroscience associated with IM training
- List at least 3 best practices for introducing IM training into a concussion rehabilitation protocol
- Describe at least 3 methods to individualize IM training for the treatment of post-concussion symptoms.

*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.

Specific Learning Outcomes for Speech-Language Pathologists and Audiologists:
Upon completion of this course, participants will be able to:

- Explain the neuroscience associated with IM training as it pertains to the treatment of speech, language and cognitive-communicative disorders resulting from concussion;
- List at least 3 best practices for introducing IM training into a concussion rehabilitation protocol;
- Describe at least 3 methods to individualize IM training for the treatment cognitive-communicative disorders associated with concussion.

*Note: This course covers information that pertains to licensed therapists and therapy assistants. SLPA professionals must practice IM under the supervision of a licensed SLP.

Instructor
Dr. Carlson is a Board Certified Chiropractic Neurologist who specializes in concussion

recovery and neurological rehabilitation. Her approach is based on functional neurology, a discipline that builds on clinical neuroscience and uses various strategies to help improve or reestablish optimal neurological processes. She focuses on non-invasive therapies including brain-based therapeutic exercises, neuro-musculo-skeletal rehabilitation, and clinical nutrition. Dr. Carlson has over 24 years of experience in private practice and is the owner of the Concussion Center of Massachusetts and ChiroPro Performance Center in Acton, MA. She has served on the faculty of Life Chiropractic College West where she taught in the Diagnosis Department. Currently, she is on faculty of the Carrick Institute of Graduate Studies as an Associate Professor of Clinical Neurology. Dr. Carlson has presented numerous lectures on such topics as Diagnosis and Management of Concussion Injury, Clinical Applications in Chiropractic, Health and Wellness Principles, and Functional Neurology. Dr. Carlson maintains active status with the American Chiropractic Neurology Board as a Certified Chiropractic Neurologist and the American College of Functional Neurology. She is a current member of the ACA Council on Neurology and the American Chiropractic Association.

Disclosures:
Instructor Financial Disclosure(s): Dr, Carlson received an honorarium from Interactive Metronome, Inc. for the development and presentation of this educational offering. She does not receive royalties or any other form of compensation for the continued publication and use of educational materials she has authored/coauthored for Interactive Metronome, Inc. Dr. Carlson does not sell or receive compensation for the sale of Interactive Metronome products.
Instructor Nonfinancial Disclosure(s): Dr. Carlson is owner of the Concussion Center of Massachusetts and the ChiroPro Performance Center where she uses the Interactive Metronome in clinical practice.

Course Content Disclosure:
The Interactive Metronome, Inc. has developed and patented a licensed technology trademarked as the Interactive Metronome®. (U.S. Patents #4,919,030; #5,529,498; #5,743,744; #6,719,690; other U.S. and foreign patents pending) Interactive Metronome, Inc. is the sole source of the following products: Interactive Metronome®, Gait Mate® and IM Home®. The purpose of this course is solely educational. Because there are no other like-kind products available, this course will only cover information that pertains to the effective and safe use of the above-named products and is not intended to promote the business or product in any way.

Course Origination Date*: 8/26/20
*Course content is reviewed annually to make sure it remains current and relevant to the practice of Interactive Metronome.

Agenda (60 minutes):
- Introduction and disclosures
- Review of current concussion definition, statistics, and understanding of neurometabolic affects following concussion
- Neuroscience of sensory-motor entrainment and principles of neuroplasticity
- Metabolic considerations in concussion patients performing IM therapy
- Introducing salience and relevence in IM protocols during stages of progressive rehabilitation
- Applications using Interactive Metronome to improve neural timing in concussed patients
- Benefit of IM Home program for continued training
- Q & A
- Post-Test

Instructional Methods:
LECTURE, PPT

Contact Hours/CEUs:
This course is not offered for contact hours/CEUs.