

# 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. *\*Contact hours/ASHA and 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:

- 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:**

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**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 relevance 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/ASHA and AOTA CEUs:**

0.1 ASHA (1 contact hour)

0.1 AOTA/ 1.25 NBCOT PDUs (1 contact hour)

*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 is approved by the Continuing Education Board of the American Speech-Language-Hearing Association (ASHA) to provide continuing education activities in speech-language pathology and audiology. See course information for number of ASHA CEUs, instructional level and content area. ASHA CE Provider approval does not imply endorsement of course content, specific products or clinical procedures.

This course is offered for 0.1 ASHA CEU (Introductory level, Professional area).

Effective July 1, 2011, individuals must meet at least one of the following conditions in order to be eligible to earn ASHA CEUs.

- ASHA Member (includes Life member and International affiliates)
- ASHA Certificate of Clinical Competence (CCC) Holder
- Licensed by a state or provincial regulatory agency to practice speech-language pathology (SLP) or audiology
- Credentialed by a state regulatory agency to practice SLP or audiology
- Credentialed by a national regulatory agency to practice SLP or audiology
- Currently enrolled in a masters or doctoral program in SLP or audiology



Interactive Metronome, Inc is an AOTA Approved Provider (#4683). This introductory course is offered for 1 contact hour/ .1 AOTA CEU (Classification Codes - Domain of OT-ACTIVITY DEMANDS, OT Process-EVALUATION, INTERVENTION). The assignment of AOTA CEUs does not imply endorsement of specific course content, products, or clinical procedures by AOTA.