Neurologic Music Therapy & Brain Injury

Mind Matters Conference 2018
April 11th, 2018
Music Therapy in Motion, LLC
Emily J. Wangen, MT-BC/L, Owner/Founder
What is Music Therapy?

- Music Therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program.

American Music Therapy Association

What is Neurologic Music Therapy?

- The therapeutic application of music to cognitive, sensory and/or motor dysfunctions due to neurologic disease or trauma to the human nervous system
  - Neurologic rehabilitation,
  - Neuropediatric
  - Neurogeriatric
  - Neurodevelopmental

- Thaut, 1999
NMT is...

• Based on a neuroscience model of music perception and production; as well as the influence of music on functional changes in a nonmusical brain and behavior functions.

• Made up of standardized treatment techniques and applied to therapy as Therapeutic Music Interventions which are adaptable to the patients needs.

• Treatment techniques are based on scientific research and are directed towards functional therapeutic goals.

NMT is Recognized and Reimbursable

• NMT is medically recognized and endorsed under the world federation of Neurorehabilitation

• There are 20 NMT specific Techniques that are identified in the Medical Coding and Records Manual

• NMT is reimbursable (CPT codes/NMT codes)

• There are over 1500 Certified NMT’s and in over 25 countries
Music optimizes…

Sensory Motor NMT Techniques

1. Rhythmic Auditory Stimulation (RAS)
   • Gait

2. Patterned Sensory Enhancement (PSE)
   • Sequential movement or forced cues through music

3. Therapeutic Instrumental Music Performance (TIMP)
   • Uses specific music instruments to stimulate a specific movement.
Rhythmic Auditory Stimulation: RAS

- RAS is used to facilitate the rehab of movements that are intrinsically biologically and rhythmic, referring mostly to gait.

- RAS uses the physiological effect of auditory rhythm on the motor system to improve the control of movement in rehabilitation of functional and adaptive gait patterns in patients with significant gait deficits due to neurological impairment.

RAS can be used in two different ways:

- 1) As an immediate entrainment stimulus providing rhythmical cues during movement

- 2) As a facilitation stimulus for training in order to achieve more functional gait patterns
Patterned Sensory Enhancement: PSE

- PSE uses rhythmic, melodic, harmonic and acoustical elements of music to provide temporal, spatial and force cues for movement which reflect functional exercise of activities of daily living.

- PSE is broader than RAS because it is applied to movements that are not rhythmical by nature (arm/hand movements, functional sequencing such as sit-to-stand transfers or dressing self).

Continued...

- PSE uses musical patterns to assemble single, discrete motions into functional movement patterns and sequences.

- PSE cues movements temporally, spatially and dynamically during training exercises.
Therapeutic Instrumental Music Performance

• TIMP is the playing of musical instruments in order to exercise and stimulate functional movements patterns.

• Appropriate musical instruments are selected in a therapeutic and meaningful way in order to emphasize range of motion, endurance, strength, functional hand movements, finger dexterity and limb coordination.

TIMP

• Instruments are not typically played in the traditional matter but are placed in different locations to facilitate practice of the desired functional movements.
Speech and Language Rehabilitation

- Melodic Intonation Therapy (MIT)
- Musical Speech Stimulation (MUSTIM)
- Rhythmic Speech Cuing (RSC)
- Vocal Intonation Therapy (VIT)
- Therapeutic Singing (TS)
- Oral Motor and Respiratory Exercises (OMREX)
- Developmental Speech and Language Training Through Music (DSLM)
- Symbolic Communication Training Through Music (SYCOM)

Cognitive Rehabilitation

- Musical Sensory Orientation Training (MSOT)
- Musical Neglect Training (MNT)
- Auditory Perception Training (APT)
- Musical Attention Control Training (MACT)
- Musical Mnemonics Training (MMT)
- Associative Mood and Memory Training (AMMT)
- Musical Executive Function Training (MEFT)
On the Road Again....
Bibliography

Sensorimotor

Rhythmic Auditory Stimulation (RAS)


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Pattern Sensory Enhancement (PSE)


**Therapeutic Instrumental Music Performance (TIMP)**


Speech and Language

Melodic Intonation Therapy (MIT)


**Musical Speech Stimulation (MUSTIM)**


**Rhythmic Speech Cueing (RSC)**


**Vocal Intonation Therapy (VIT)**


**Therapeutic Singing (TS)**


**Oral Motor and Respiratory Exercises (OMRAX)**


Developmental Speech and Language Training through Music (DSLM)


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**Cognition**

**Musical Sensory Orientation Training (MSOT)**


**Musical Neglect Training (MNT)**


Auditory Perception Training (APT)


**Musical Attention Control Training (MACT)**


**Musical Mnemonics Training (MMT)**


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**Associative Mood and Memory Training (AMMT)**


**Musical Executive Function Training (MEFT)**


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