Music Therapy in Neurologic Rehabilitation

What is Music Therapy?
Music Therapy is an established, accredited health profession whereby the systematic application of music is utilized in the treatment of behavioral, social, psychological, communicative, sensorimotor, physical, and cognitive needs of an individual. Evidence based techniques display parallels between rhythm and movement, singing and speech production, music as a mnemonic device/tool to aid in learning.

Who Is Qualified to Practice Music Therapy?
Graduates of colleges or universities from more than 70 approved music therapy programs are eligible to take a national examination administered by the Certification Board for Music Therapists (CBMT), an independent, non-profit certifying agency fully accredited by the National Commission for Certifying Agencies. After successful completion of the CBMT examination, graduates are issued the credential necessary for professional practice, Music Therapist-Board Certified (MT-BC). In addition, music therapists must maintain certifications and credentials through continuing education (specifically 100 CEU's per cycle). Any individual who does not have proper training and credentials is not qualified to provide music therapy services.

How does Music Therapy Make a Difference in Neurologic Rehabilitation?
Music therapy has been shown to be an effective and valid treatment option in neurologic rehabilitation, particularly through the implementation of Neurologic Music Therapy (NMT). NMT is a research-based system of standardized clinical techniques for sensorimotor training, speech and language training, as well as cognitive training. Due to plasticity in the brain, NMT is able to address nonmusical goals by utilizing the attributes of music to reroute the neural networking system in the brain. Populations where NMT has proven to be particularly effective include, but are not limited to: stroke, traumatic brain injury, Parkinson’s and Huntington’s disease, cerebral palsy, Alzheimer’s disease, autism, and other neurological disorders affecting cognition, movement, and communication (e.g., MS, Muscular Dystrophy, etc). NMT is an additional training option for music therapists through the Center for Biomedical Research in Music Therapy (ww.colostate.edu/dept/CBRM).

What Do Music Therapists Do?
Frequently functioning as members of an interdisciplinary team, music therapists aid in the development and implementation of a cohesive treatment plan through the provision of assessment, treatment, and ongoing program evaluation. Following a referral and assessment process, music therapists implement music interventions, both instrumental and vocal, designed to facilitate maintenance or increase of skills non-musical in nature which are important for daily life.

Is Music Therapy Reimbursable?
Music Therapy is reimbursable through insurance companies on a case by case basis. Neurologic music therapists are able to use CPT coding specific to goal area address (ie gait training). Please contact for more information to provide you case manager.

What is Hands in Harmony?
Hands in Harmony, LLC was founded in 2005 by Nicole (Boucher) O’Malley MT-BC, NMT. The mission of Hands in Harmony is to provide quality music therapy services while working collaboratively to optimize overall treatment and progress. Long term goals include offering multiple therapeutic services to a variety of clientele (and their families) in one center. Music therapy services are currently offered across Rhode Island and the Southeastern Massachusetts area.
Neurologic Music Therapy (NMT) utilizes techniques geared toward specific nonmusical goals and include:

**Techniques Specific to Sensorimotor Rehabilitation**

- **Rhythmic Auditory Stimulation (RAS)** is a technique which utilizes the physiological effects of auditory rhythm in music on the motor system to improve the control of movement and cue gait parameters including step cadence, stride length, velocity, symmetry of stride length and stride duration, and double and single support time of leg stance.
  - Population: stroke, Parkinson's disease, Traumatic Brain Injury, Multiple Sclerosis, effects of aging, etc.
- **Patterned Sensory Enhancement (PSE)** utilizes the rhythmic, melodic, harmonic, and dynamic-acoustical patterns of music to provide temporal, spatial, and force cues to structure and regulate functional movements such as reaching, grasping, lifting motions, sit-to-stand transfers, etc.
- **Therapeutic Instrumental Music Performance (TIMP)** utilizes the playing of musical instruments to exercise and simulate functional movement patterns.

**Techniques Specific to Speech and Language Rehabilitation**

- **Melodic Intonation Therapy (MIT)** facilitates speech production by accessing clients ability to sing to facilitate speech production by replicating natural speech patterns/intonation.
  - Population: expressive aphasia (there is also some evidence for its use with apraxia)
- **Musical Speech Stimulation (MUSTIM)** stimulates nonpropositional speech through the use of music patterns.
  - Population: aphasia
- **Rhythmic Speech Cuing (RSC)** controls rate of speech and intelligibility as well as initiation of speech through the use of rhythmic cuing.
  - Population: apraxia, dysarthria, and fluency disorders
- **Vocal Intonation Therapy (VIT)** trains elements of vocal control including inflection, prosody (pitch), breath control, tone (timbre), and dynamic level.
  - Population: traumatic brain injury, dysarthria, voice disorders that deal with acoustic/respiratory aspects of voice control.
- **Therapeutic Singing (TS)** is utilized in initiation and development of speech, improves articulation, and increases respiratory function.
- **Oral Motor and Respiratory Exercises (OMREX)** improves motor strengthening with the use of an articulatory apparatus. OMREX improves sound vocalizations and articulations as well as increasing respiratory strength and speech mechanism function.
- **Developmental Speech and Language Training Through Music (DSLM)** develops initial speech and language for habitual learning.
  - Population: children with autism and other developmental disabilities
- **Symbolic Communication Training Through Music (SYCOM)** increase listening, question/answer responses, statements as well as verbal and nonverbal social interactions in habitual learning.

**Techniques Specific to Cognitive Rehabilitation**

- **Musical Sensory Orientation Training (MSOT)** increases sensory stimulation, arousal orientation, and vigilance and attention maintenance.
- **Musical Neglect Training (MNT)** increases focus and attention to a neglected or unattended visual field.
- **Auditory Perception Training (APT)** improves auditory perception and sensory integration.
- **Musical Attention Control Training (MACT)** improves focused, sustained, selective, divided, and alternating attention functions.

**Memory**

- **Musical Mnemonics Training (MMT)** facilitates learning of nonmusical information in the areas of echoic, procedural, and declarative memory.
- **Associative Mood and Memory Training (AMMT)** produces mood-congruent states to facilitate memory recall, accesses associative mood and memory networks to direct specific memory access, enhances learning and memory function through inducing positive emotional states in the learning and recall process.

**Executive Function Training**

- **Musical Executive Function Training (MEFT)** improves executive function skills such as organization, problem-solving, decision-making, reasoning, and comprehension.

**Psychosocial Behavior Training**

- **Music Therapy and Counseling (MPC)** addresses issues of mood control, affective expression, cognitive coherence, reality orientation, and appropriate social interaction to facilitate psychosocial functions.

Reference:

1999 Thaut, Michael Training Manual for Neurologic Music Therapy Center for Biomedical Research in Music Colorado State University. www.colostate.edu/depts/cbrm
Bibliography of Music Therapy in Rehabilitation


