Neurologic Music Therapy
&
Functional Rehab Goals

Cheryl Jones MMT, NMT-F, MTA
PhD Candidate University of Toronto: Music and Health Sciences
Con Brio Music Therapy

CON BRIO
Music Therapy

What is Neurologic Music Therapy?

Neurologic Music Therapy (NMT) is the therapeutic application of music to cognitive, sensory, and motor dysfunction.

NMT is based on a neuroscience model of music perception and production and the influence of music on non-musical functional changes.

Treatments are standardized.

NMT is endorsed by the World Federation of Neurologic Rehabilitation (WFNR), the European Federation of Neurorehabilitation Societies (EFNS) and the International Society for Clinical Neuromusicology (CNM).

NMT is based on the fact that "music can access control processes in the brain related to control of movement, attention, speech production, learning and memory". Music can therefore help to retrain and recover functions lost to injury or disease. (Thaut & Hoemberg, 2013)

Music DOES influence the brain.

How can we harness this neural stimulus for therapeutic purposes?

Literature support for music and motor rehab. and speech rehab.

Emerging literature support for cognitive rehab.

Goal Areas for NMT

1. Speech and Language

2. Motor skills

3. Cognition

4. Psychosocial

Goal 1: Speech

Why use music?

1. Shared neural networks between speech and singing

2. Role of melody

3. Role of rhythm

Case study example 1: Melody-supported speech

NMT Intervention: Melodic Intonation Therapy (MIT)

Case Study example 2: Rhythm supported speech

NMT Intervention: Rhythmic Speech Cueing (RSC)

Goal 2: Motor Skills

Why use music?

1. Role of *rhythm*: auditory-motor coupling
   A. Rhythmic Entrainment
   B. Priming

2. The role of music components: *melody, harmony, dynamics* → the sonification of movement

sonification = *musical representation* of sound to influence

      action perception.

Why use music?

The components of music can be used to represent various aspects of a movement: spatial, temporal, velocity

NMT: Patterned Sensory Enhancement (PSE)

Case study example 1: Sonification of movement

NMT: Patterned Sensory Enhancement (PSE)

Case study example 2: Sonification of movement and rhythm support

NMT intervention: PSE

Goal 3: Cognition

Why music?

1. Music can arouse and engage attention

2. Music can stimulate memory recall → orientation

3. Music is multi-sensory (greater distribution of potential attention arousal)

Case study example: Musical memory arousal ->
autobiographical memory arousal

NMT Intervention: Musical Sensory Orientation Training
(MSOT)

Goal 4: Psychosocial

Why music?

1. Music is expressive

    1. verbal
    2. non-verbal

2. Sharing musically with another can be: 1. validating

    2. empowering

Case study example: self-expression

Conclusion

Music is an effective neural stimulus for speech, motor, and cognitive functioning. This is well supported in the literature.

Music can be applied therapeutically to address rehabilitation goals in speech, motor, and cognitive function.

Neurologic Music Therapy is a medical music therapy model, based on the neuroscience of music perception and production. NMT has developed standardized interventions to address goals in the above areas.

Thank you

Thank you for your interest in the use of Neurologic Music Therapy to support rehabilitation goals following an ABI.

Cheryl Jones MMT, NMT-F, MTA

con.brio.piano@gmail.com

www.conbriomusictherapy.com