



Music Therapy with Acquired Brain Injury (ABI)

WHAT IS MUSIC THERAPY WITH ACQUIRED BRAIN INJURY

“Acquired brain injury (ABI) is brain damage through accident or illness...that is unlikely to degenerate further” (Magee, W.L. et al., 2017, p. 2). People with ABI include those who have experienced stroke, head trauma, cerebral infection or anoxia. Treatment for ABI usually involves a program of neurologic rehabilitation addressing difficulties in motor, cognition, communication, sensory, and emotional functioning stemming from damage to areas of the brain. Music interventions demonstrate promising improvement in patient outcomes in rehabilitation, and these effects can be enhanced when facilitated by credentialed music therapists (Magee, W.L. et al., 2017).

Music therapists are uniquely trained in the application of music to facilitate engagement in non-music behaviors (Tamplin & Baker, 2006). For example, moving, speaking, and expression of emotion. Music therapists work as part of interdisciplinary teams to design treatment aimed at facilitating experience-driven neuroplasticity and psychosocial well-being. This is accomplished through the intentionally, and often live, delivery of music. Clinicians adjust music elements (i.e. rhythm, melody, dynamics) in real time to maximize benefits due to the wide-spread neural networks involved in music processing (Stegemöller, 2014; Thaut & Hoemberg, 2014). For example, auditory-motor pathways, reward, arousal, affect regulation, and sensory processing networks. The theoretical rationale for using music in the treatment of ABI stems from neuroscience and the largest body of evidence for music therapy with ABI exists in relation to stroke.

COMMON INTERVENTIONS

- ◆ Rhythm-based interventions: rhythmic auditory stimulation or cueing, and rhythmic speech cueing
- ◆ Singing or vocal interventions: song-singing interventions, melodic intonation therapy (MIT) or modified MIT, vocal intonation therapy, rhythmic speech cueing, therapeutic singing, music-based speech and language tasks, and therapeutic choirs
- ◆ Song-writing: in which the patient creates lyrics and/or music supported by the therapist
- ◆ Playing musical instruments: Therapeutic Instrumental Musical Performance, improvisation, cognitive training
- ◆ Listening to patient preferred music (live or recorded), using song choice or lyric discussion

BENEFITS OF MUSIC THERAPY

Music interventions with people with ABI have been demonstrated to improve:

Negative mood states and quality of life

Cognitive recovery

Physical performance, including walking, upper limb function and talking

Communication outcomes, including voice, speech and language



GOALS

To support cognitive functioning (Särkämö et al., 2008; Siponkoski et al., 2020)

- ◆ To decrease confusion
- ◆ To enhance executive functioning (planning and executing tasks?)
- ◆ To improve verbal memory
- ◆ To increase focused attention

To improve motor functioning (Magee, W.L. et al., 2017; Nascimento et al., 2015; Yoo et al., 2016)

- ◆ To improve fine motor dexterity and gross motor function (e.g. gait, upper extremity)
- ◆ To improve gait parameters of velocity, stride length, and cadence
- ◆ To improve the timing and range of movements

To improve communication (Hurkmans et al., 2012; Magee, W.L. et al., 2017)

- ◆ To improve expressive language (e.g. naming and repetition given aphasia)
- ◆ To improve voice functioning (e.g. quality and volume)

To improve emotional well-being (Magee, W.L. et al., 2017; Särkämö et al., 2008)

- ◆ To decrease depression
- ◆ To improve mood
- ◆ To increase quality of life

CONTRAINDICATIONS

- ◆ Some people with ABI may have acquired an auditory processing disorder known as “amusia” in which the patient does not recognize previously meaningful music or may experience it as unpleasant “noise”
- ◆ Fatigue, which is common after ABI, may limit a person’s tolerance or ability to engage in active tasks



References

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What is AMTA?

The American Music Therapy Association (AMTA) represents 10,000 music therapists, corporate members, and related associations worldwide. AMTA is committed to the advancement of education, training, professional standards, and research in support of the music therapy profession. AMTA establishes criteria for the education and clinical training of music therapists. Professional members of AMTA adhere to a Code of Ethics and Standards of Practice in the delivery of music therapy services. AMTA's mission is to advance public knowledge of music therapy benefits and increase access to quality music therapy services. Learn more at www.musictherapy.org.