

How is music a form of therapy for people with neuro-disabilities?



Yehudi Menuhin once said: “Music is a therapy. It is a communication far more powerful than words, far more immediate, far more efficient.”

The way the brain reacts to music is totally unique. Unlike talking and general background noise, the brain responds differently emotionally and physiologically to music and singing. When music is played, several areas of the brain are active as they process the sounds and rhythmic patterns. We have some parts of our brain, which only become activated through the use of music.

The best thing about music as a treatment is that it can be accessed by all ages and abilities. Even people who have limited mobility and communication skills can participate in music therapy sessions even if it's only with finger movement or eye gaze. All the different elements of music, such as tempo, pitch and harmony can be adapted to utilise new ways of developing skills or communicating our emotions in ways that words cannot.

In a music therapy session the client is encouraged to explore sound and communicate to the therapist through music. This can help them to: express themselves, become aware of their feelings, create their own ways of relating to others, bring positive change to their lives and interact with people more confidently.

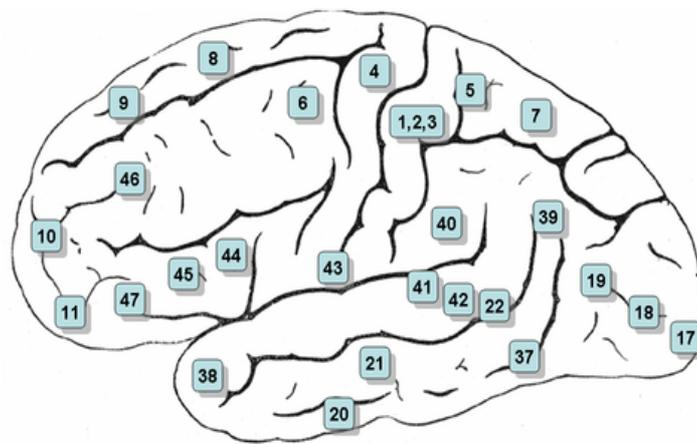
As music is processed in many parts of the brain, it is an excellent tool for people with an acquired brain injury or neurodegenerative condition.

Neurologic Music Therapy focuses directly on music's physical effect on the connections in the brain. People helped by NMT include: stroke, traumatic brain injury, Parkinson's disease, cerebral palsy, Alzheimer's disease, autism and other neurological diseases affecting cognition, movement and communication.

The fact that music and rhythm are processed in many different areas of the brain means that it is in a unique position to restore function in place of those damaged areas. NMT uses music to build connections and stimulate the brain to reach functional goals; therefore changing the brain in the process. The music bypasses the injury or damaged area to recover function elsewhere. For example, if a client had damaged their temporal lobe, they may have difficulty in remembering or carrying out cognitive processes, like getting dressed. Re-

learning this task through music or song means that different parts of the brain are used and the activity can be successfully performed.

All of the neurologic disabilities are divided into one of four domains: motor, sensory, cognitive and communicational dysfunctions. For each dysfunction certain parts of the brain are impaired; the corresponding locations of the damaged part of the brain are indicated with Brodmann area numbers. In neuroscience the Brodmann area is used to express different regions of the outer brain where damage could have occurred.



Motor

Motor dysfunction involves malfunctioning in the nervous system and problems with movement. The most common motor dysfunctions to which NMT can be applied include stroke, Parkinson's disease and Huntington's disease.

Music for Parkinson's disease

When a patient has Parkinson's, performing a sequence of movements often becomes increasingly difficult. Rhythm is used to stimulate an impulse or will in the patient, which will hopefully encourage them to move. The music therapist may play many different types of music and various rhythmic patterns to see which the patient responds to most. When this has been established, the therapist can see which patterns will help with walking, balance and movement best. People with Parkinson's do not only struggle with initiating movement but also with controlling their tremors. The therapist can play slow rhythmic music to calm down overactive body rhythms and stimulate relaxation.

Sensory

Sensory dysfunction involves difficulties with handling messages received through sensory receptors. Senses include vision, hearing, smell, taste and touch. Music therapy is mainly applied for impaired hearing and touch.

Music for hearing loss

Very few people with a hearing impairment are completely deaf. Most people with little or no hearing are able to perceive rhythmic vibration of sound. Music therapy for these patients helps stimulate listening abilities by using certain frequencies and timbres, which can be accessed by the patient. Individuals with hearing loss can recognise musical vibrations, rhythms and other people's movements and expressions.

Communicational

Communicational dysfunctions involve problems with handling communication abilities such as speech, language and auditory processing. A few examples are aphasia, and auditory perception problems.

Music therapy for aphasia

There are two types of aphasia: expressive aphasia and receptive aphasia. Expressive is the loss of spoken language as a result of frontal lobe damage and receptive aphasia is the difficulty of understanding conversations. It is interesting to note that whilst aphasia patients are unable to say phrases; they can actually sing familiar tunes. Because of this the Melodic Intonation Therapy process was invented. This method uses singing and rhythmic pacing to stimulate the brain's right hemisphere (rather than the damaged left side) to facilitate speech recovery. The therapist rhythmically taps the syllables of the word, to help initiate speech. Another method is when the patient starts by singing short intoned phrases before trying to speak at a normal level.

Cognitive

Cognitive dysfunctions involve problems with the nervous system that manages functions such as thinking, planning, reasoning and remembering. Examples of cognitive disabilities include dyslexia, dementia and ADHD.



Music Therapy and Dementia

When a person suffers with dementia they may have problems remembering things and also suffer with loss of language skills. Music therapy can help to break down the isolation patients may feel by using non-verbal communication and interaction. Even patients with extreme dementia are still able to respond to music and familiar songs also. In a session some of the musical experiences that take place include singing, freely playing percussion instruments and moving freely. For many patients, active involvement can help them to relieve anxiety and distress and enhance emotional well-being. Another way to help patients interact is by playing songs from their childhood, which can enable them to discuss past life events and lead to reminiscences.

Whilst researching for this essay I came across some stories of patients who have been helped by music therapy. Here are two I've selected to share:

British Association For Music Therapy

"William is an elderly gentleman with a diagnosis of frontal temporal dementia. He is often seen pacing around the room. William was sometimes unable to judge the volume of his speaking voice, which made it difficult to engage with others. The music therapist used techniques to meet William's blunt, loud vocalisations. The therapist played songs on the piano in a low register, close to William's natural speaking/singing voice, meaning he did not have to use as much strength and breath to sing. William responded to these by singing in a quieter voice and swaying in sync with the beat. The therapist slowed the pulse of the music, which reduced William's agitation and allowed him to become more relaxed following music therapy sessions, enhancing a positive mood and behaviour. The therapist worked alongside William's support staff who found that continuing with a calm and gentle approach after William's session prolonged the positive effects of the session."

"Mr. J, a man in his 50s, sustained an acquired brain injury through an infection. He was referred to music therapy to help with managing his anxiety, which was preventing him from engaging in rehabilitation. Following four assessment sessions, it was found that Mr. J experienced a reduction in anxiety in response to listening to live guitar and vocal improvisation, paired with guided imagery. This was shown through an increase in ratings of relaxation on a scale from one to ten at the end of each session. It was also evident that his breathing rate decreased during sessions. In addition, it was found that Mr. J was highly

motivated to play instruments, which improved when a clear rhythmic cue was provided. Through using an NMT technique, Mr. J was able to regain some strength, co- ordination and function in his weaker left hand during joint occupational therapy sessions"

In conclusion, I have thoroughly enjoyed researching for this essay. I have learnt so much about music therapy and it has further encouraged me to consider this as a career. During the holidays I emailed Claire Flower, who is a Music Therapist in the UK. Claire was previously Chairperson of the British Society for Music Therapy and now works for the Cheyne Child Development Service based at Chelsea and Westminster Hospital in London. At the time of writing this I await her response and hope our correspondence will give me further insight in a career as a Music Therapist. I have also been in contact with Allison Gross, a Music Therapist in America who has agreed to answer any questions I may have in the future and she has also suggested other websites that I could visit that could be of interest to me. Her mantra is "Every brain, especially those with missing links or jumbled pieces, can be changed by music."