

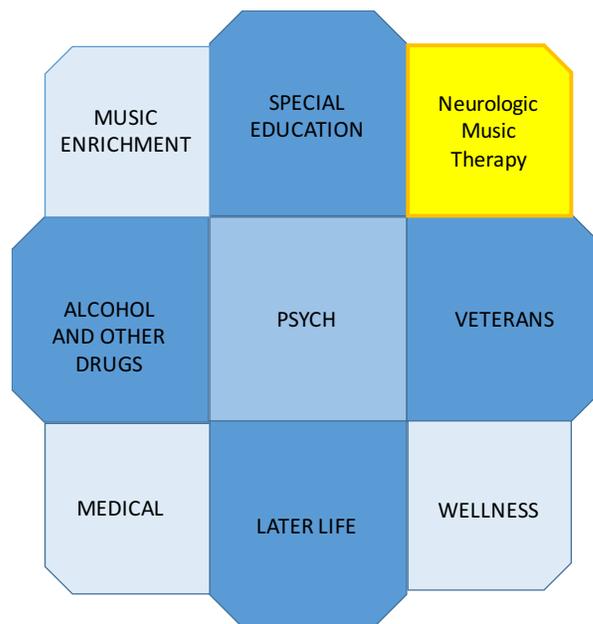
Expressive Therapies LLC

Empowering individuals — those living with social, cognitive, emotional, physical and/or spiritual needs — through music and mental health therapies to improve health and well-being.

Neurologic Music Therapy (NMT)

“About 25 years ago, a group of music therapists, neurologists, and other brain science specialists began research in what is now known as Neurologic Music Therapy. Throughout the years, the research has established standardized techniques that music therapists use to treat clients within a variety of clinical settings. The following information expands on Neurologic Music Therapy; how it is used, how it is held accountable by an academy, how research supports its practice and efficacy, and how it could benefit the community of North East Wisconsin.”

Information obtained from the
“Handbook of Neurologic Music Therapy”



Of the variety of settings Expressive Therapies is involved in, we’re highlighting Neurologic Music Therapy (NMT)

Main Components of NMT

The fundamentals of NMT are defined by six important principles. The practice of NMT uses music to treat cognitive, affective, sensory, language, and motor dysfunctions a client may have due to a disease or injury that effects the human nervous system. Music can change areas of the brain that are non-musical as well as areas of behavioral function. Research in the areas of biology, anatomy, physiology, biochemistry, and molecular biology of nerves within NMT treatment highlight how music affects these areas of study (see research links below). The use of music in NMT has been standardized using 20 techniques. These techniques are adapted to address a client’s needs. By either creating music and/or listening to music, the client is assessed and treated in order to meet non-musical goals. Again, research has been published in a variety of academic journals and publications, highlighting the effects of addressing non-musical therapeutic goals through the use of the 20 techniques over the past 25 years.

It is pertinent that clinicians practicing NMT are educated in the areas of neuroanatomy and physiology, neuropathology, medical terminology, and (re)habilitation of cognitive, motor, speech, and language functions. Due to the wide variety of clinician professions available to clients, NMT embraces being a part of an interdisciplinary treatment teams. Two professionals — one of which is a music therapist — can meaningfully contribute to and enrich the effectiveness of treatment for the client.



Philosophy

Neurologic Music Therapy has four models that are established on the time-based structure of music and its functions to reorganize pathways in the brain. *The Learning and Training Models* use rhythm to help stabilize motor functions in cognition, speech,

language, or physical rehabilitation. *The Cortical Plasticity Model* uses rhythm to challenge a client's ability to focus using complex rhythms. The *Neurological Facilitation Model* uses patterns within rhythm to better the quality physical movements and cognitive abilities. Lastly, the *Neuroscience-Guided Rehabilitation* uses evidence based outcomes from research to validate the practice of NMT and treat clients to address non-musical goals. All of these models use the 20 techniques of NMT to measure research outcomes and provide the best treatment for clients. There are three general categories that the 20 techniques fall into: sensorimotor, speech and language, and cognition. The following information will provide examples of techniques used at Expressive Therapies LLC, as well as highlight populations the technique can be used for.

Use of NMT at Expressive Therapies

One of our clients, Payton, has a major traumatic brain injury has benefited from NMT techniques in a large scope this past year. She has had an irregular walking gait along with limited verbal expressive and receptive communication skills due to her injury. Her family has been connected with Expressive Therapies for the last 3 years, in which a variety of NMT techniques have been used to increase her communication, attending, and motor skills.

Expressive Therapies currently works with Payton using the techniques Rhythmic Auditory Stimulation, Musical Speech Stimulation, and Therapeutical Instrumental Music Performance. Therapeutical Instrument Music Performance (TIMP) is one of the three techniques in neurologic music therapy that address motor rehabilitation. Musical instruments are used to help clients exercise impaired motor functions and regain functional patterns of movement. Payton uses a cabasa to stimulate a toe tap, uses a tambourine to motivate kicking, and uses a gathering drum to motivate a heel strike. All motions are exercises geared towards picking up her feet so she does not trip over a dragged toe while

Upcoming Events

- Crescendo Concert: May 11 at 6pm, CopperRock Cafe, Downtown Appleton.
- Summer Group Registration



Are you a board certified creative arts therapist (music, art, etc)? Please contact Expressive Therapies for information about our current job openings!

Spring Vacations

If you are planning on getting away for the spring holiday, please contact your Expressive Therapies therapist to reschedule.

CRESCENDO DATES

We do NOT have practice on the following dates. These dates are also on our website calendar under "Upcoming Events".

- March 16
- March 30
- April 20

“After the accident, we were told by doctors that the brain damage was so severe, she may never regain consciousness. If she did, in their experience, the best we could hope for is that she would have some mobility with a walker, would mumble and be blind. We knew there would be significant deficits.

Recently, we were told that if you see her scans, there is no way she should be able to motor plan walking as well as she does. This makes kicking amazing! The amount of balance, coordination, working between both sides of her brain, accuracy, sight etc that it takes is huge. And she has weights on!! I can't stress enough how much hard work this is for her.

We have been blessed to have extraordinarily people cross her path. From saving her life to helping her continue to push her potential. All the while showing her support and love, thinking outside the box to motivate her. We are so proud of her.”

Parents of Client

*Video Example of TIMP in the Following Link:
www.expressivetherapies.net/P.TIMP.1.mov*

*Physical Therapist:
Christina Keller, DPT and founder of **CK Therapy** in Neenah, WI*

walking. All exercises in TIMP are created by a licensed physical therapist to focus on certain muscles, while the music therapist creates music and uses specific instruments to motivate Payton to practice the exercise. We had to work on heel and toe movements before working on actual walking.



Rhythmic Auditory Stimulation (RAS) is the application of rhythmical (temporal) auditory stimuli to serve as a reference for a client and cues them how steady to walk within the provided beat. This reference is usually disguised by favorite songs, which makes the tune more motivating. In the case of Patyon, she has a preference for Darth Vader's theme song from Star Wars. It is convenient that the song is a march because the defined beats helped support a steady walking pace during therapy.

Another technique used is called Musical Speech Stimulation

Research: Major Articles and Publications

For all you research junkies out there — music therapists, medical and rehabilitation specialists, and enthusiasts — check out the following research articles on NMT and its effectiveness in treating sensorimotor, speech and language, and cognitive areas of rehabilitation.

SENSORIMOTOR BASIC SCIENCE RESEARCH

<https://nmtacademy.files.wordpress.com/2015/09/sensorimotorbasic.pdf>

SPEECH AND LANGUAGE BASIC SCIENCE RESEARCH:

<https://nmtacademy.files.wordpress.com/2015/09/speechbasic.pdf>

COGNITIVE BASIC SCIENCE RESEARCH

<https://nmtacademy.files.wordpress.com/2015/09/sensorimotorbasic.pdf>

(MUSTIM). This technique motivates clients to vocalize and/or say the last word of a sentence in a song. For example, “You are my sunshine, my only... _____”. In this example the client would say sunshine, or vocalize to complete the phrase. This increases attention and stimulates spontaneous speech. A similar technique that is used by speech language therapists and music therapists is Melodic Intonation Therapy (MIT). This technique makes common phrases into short sing-song tunes, emphasizing the melody and rhythmic elements of a phrase to assist in speech recovery. Singing common phrases helps the brain recall and produce everyday phrases (example: how are you) so that clients can communicate

Academy of Neurologic Music Therapy and its Certificate

“The Academy of Neurologic Music Therapy was established in 2002 to advance the professional education and understanding of the scientific, evidence-based practice of Neurologic Music Therapy, and to facilitate the coordinated and cooperative efforts of NMTs throughout the world.”

FACTS ABOUT CERTIFICATION THROUGH UNKEFER ACADEMY FOR NEUROLOGIC MUSIC THERAPY

- *3000 NMTs Trained since 1999
- *1500 Current NMTs – 250 Fellows
- *200 Trainees from Other Disciplines
- *NMTs practicing in 23 Countries
- *10 Universities have NMT Fellows on Faculty”

through singing until their speech rehabilitation progresses to speech without singing.

NMT is optimal to address improving skills affected by ADHD and other attention disorders: developmental delays, cognitive delays, hearing impairments, auditory processing disorders, Down Syndrome, Autism Spectrum Disorders, Stroke, and Traumatic Brain Injuries. One technique often used by Expressive Therapies NMT therapists is titled Auditory Perception Training (APT). This technique is composed of musical exercises that help the client to identify and discriminate between different components of sound, such as time, tempo, duration, pitch rhythmic, patterns, and speech through visual tactile and kinesthetic active musical exercises. These exercises aim to improve the ability to understand speech and distinguish environmental sounds. Exercises also aim to encourage basic cognitive functions as well as receptive language (listening, and understanding signs and gestures,) and expressive language (singing and speaking). (*Handbook: pg. 229-231*).

Another commonly used NMT technique is Musical Attention Control Training (MACT). This has structured music exercises that require the client to be either active or receptive to the exercise. It involves pre-composed music or improvisation in which musical elements cue certain actions to be made by the client in order to practice maintaining attention. (*Handbook, pg 257*) An example is having a client STOP moving or playing an instrument when they hear a drum play and START moving or playing an instrument when they hear a piano. This attention

exercise not only requires attending, but impulse control, which is a skill client who has one of the aforementioned diagnoses may struggle with but may be highly motivated by the music to practice.

Our last highlighted technique Expressive Therapies often uses is Musical Executive Functioning Training (MEFT). “*Executive functioning is understood as the ability to **create new aspirations, set goals, plan** to accomplish those goals, **become motivated** to act, **organize** your efforts, **impulse control, initiate** and **execute** your plans, **monitor the outcomes** of your efforts and when necessary, **make adjustments** in order to guide your plans to their completion.* This technique is highly beneficial for clients who are affected by neurological illnesses (e.g. dementia) and frontal lobe injuries (e.g. traumatic brain injuries) or have difficulties with attention (e.g. ADHD) and memory. This technique includes ‘improvisation and composition exercises in a group or individually to practice executive function skills.’” (*Handbook, pg 279*). At Expressive Therapies, we enjoy using rhythmic patterns to increase executive functioning skills, as well as playing certain



instruments in specific sequences to execute MEFT while having fun with 5-year-olds, 89-year-olds, and everyone in-between!

Settings: Applicable and Currently Active Sites facilitated by Expressive Therapies

A board certified music therapist with an NMT certificate can practice Neurologic Music Therapy and its techniques in any setting with the aforementioned diagnoses. Settings typically are private practices (Expressive Therapies), community day centers, hospitals (rehab, trauma, oncology, end of life), rehabilitation centers, schools, and assisted living sites. We would love to hear any inquiries you have about NMT as a study or as a potential service for your environment. Expressive Therapies currently uses NMT in its private practice as well as through contracts at local hospitals and in clients' home environment.

THANK YOU FOR SUBSCRIBING TO OUR NEWSLETTER!

We appreciate connecting with the community by sharing the specifics of music therapy. If you have further inquiries, we highly recommend visiting our website at www.expressivetherapies.net, look-up our Facebook page by typing *Expressive Therapies* into the Facebook search bar, check out the American Music Therapy Association's website at www.musictherapy.org, or email us at info@expressivetherapies.net.

Take care and Be Well!

Sincerely, Expressive Therapies LLC

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