

# Neurodiversity and the recent emergence of music therapy



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## What is music therapy?

Music therapy, also known as neurologic music therapy (NMT), is a form of psychological and physical therapy surrounding music, including songwriting, improvisation, music improvisation, etc. Engaging in musical intervention can help accomplish individual non-musical goals. People can use music therapy as a form of emotional expression and communication.

Currently, professionals use music therapy in various medical conditions— aiding traumatic brain injuries, stroke, autism, Alzheimer's, and Parkinson's disease are some of the many applications. Research on music therapy shows that it can activate various parts of the brain, specifically cognitive, motor, and speech centers.

For cognitive treatments, music therapy stimulates the brain, introducing timing, grouping, and better organization, ultimately improving attention, memory, auditory perception, and executive function. In speech and language NMT treatments, it influences fluency, vocalization, oral motor control, and comprehension. A common method for speech and language is singing. For motor treatments, auditory rhythm improves balance, coordination, and dexterity. In most cases, musical instruments are the most widely used form of therapy to accomplish motor rehabilitation.

## How is music therapy utilized for neurodivergent individuals?

Music therapy mainly activates the parts of the brain in charge of sensory and auditory functions. This form of therapy may benefit those with difficulties with sensory processing, communication, non-verbal expression, etc. Among those who struggle with motor movement, the entertainment and immersion of music encourage movement in accordance with the tempos and rhythms of the song.

Marching, walking, or even jumping to the beat helps the physical body feel more organized and confident.

With neurodiverse individuals who struggle more with dexterity and coordination of the left hand and right hand, a music therapist may suggest using mallets, sticks, piano, or other two-handed instruments. By practicing these instruments repeatedly, continuous rehearsal would result in greater motor control and body dexterity in general.

Singing would be a highly effective form of musical therapy and treatment for individuals who struggle with verbal communication or reciprocating conversation. Because singing requires both hemispheres of the brain, it can help nonverbal individuals and those struggling with stuttering, aphasia, or apraxia. The initial steps to this music therapy would start with a hum of one or two notes followed by free-flowing vocal sounds. Gradually, the music therapist would increase the tempo to match the tempo to the speed of a normal conversation.

Another form of vocal music therapy is musical conversation, which is to help develop reciprocal communication. Singing back and forth in melodic hums teaches when to speak and when to wait, mimicking a conversation.

Neurodivergent individuals have increasingly used music therapy due to its significant benefits. The various forms of musical engagement, ranging from singing to playing an instrument, can help individuals accomplish their goals. With increasing encouragement to try music therapy, it is always best to consult one's primary doctor to see whether it would be the right path.