



# Neurologic Music Therapy Services of Arizona

## NMT and Autism

Autism is a neurological disorder characterized by difficulties with communication, cognitive motor control, sensory processing, and social interaction. The brain of an individual with Autism develops connections differently, which affects the way it processes and organizes information. These neurological differences affect the way an individual with autism moves, communicates, and interacts, which limits independence, impairs relationships, and decreases the ability to demonstrate competence.

Neurologic Music Therapy (NMT) is an evidence-based treatment model based on the neuroscience of music perception and performance. NMT treatment uses rhythm and music in order to drive changes in the structure and function of the brain and nervous system, thus optimizing how individuals are able to experience and interact with the world around them.

### Rhythmic Sensory Input

Much of the current evidence indicates not only neurological differences in autism, but also that these differences result in cognitive-motor and sensory processing dysfunctions. When individuals with autism engage in rhythmic movement /sensory integration exercises, their bodies synchronize with the rhythm, organizing sensory feedback in the brain, resulting in improvement in quality and efficiency of movement, as well as decreasing many nonfunctional and extraneous movements.



Drumming exercises develop improved regulation and integration of movement.



Singing and instrument playing improves speech and articulation skills

### Music As Language

Individuals with autism often lack functional speech, language, and/or communication skills. Neurologically, studies have also shown a unique brain response to singing in people with autism compared to responses to spoken language. Because music acts as a useful "language" in these cases, NMT treatment is highly effective for impacting speech and communication in autism.

Rhythmic cues are very important in speech development in autism since speech production requires the timing and coordination of several muscle groups. There are also many natural structures and functions of the music modality that can successfully be harnessed in order to teach and develop speech and communication skills.

### Shifting Focus

Many individuals with autism have excellent sustained attention, but difficulty shifting from one focus to another and selecting important information within the environment. Listening and responding to auditory patterns is an effective way to exercise all types of attention, including selecting a specific auditory cue to change a behavior, sustaining a musical pattern in the midst of distraction, and alternating between two given tasks as directed.

*For more information about services available at NMTSA, contact us at [info@nmtsa.org](mailto:info@nmtsa.org) or on the web at [www.nmtsa.org](http://www.nmtsa.org)*