

# **Music Therapy by Vivian Hong**

## **Why Music Therapy Makes Sense**

When even our own vocal chords and bodies can become instruments, music is an almost universal experience to man that communicates and touches a deeper part of us than words can express. With its incredible appeal, moving power, and emotional and chemical effects on the human brain, it is not surprising that scientists have heavily studied the healing power of music and found some conclusive evidence of its aptitude. However, even before formal scientific study began, music was prevalent in human communities as entertainment, and utilized in treatment of disease.

The question has been perfectly phrased by Josie Glausiusz in an article she wrote for Discover regarding the genetic mystery of music. “If the ability to appreciate music is ingrained in the human brain, could music making have evolved to help us survive and reproduce? Is it akin to language and the ability to solve complicated problems, attributes that have enhanced human survival? ... Why? Why has music spread to every country and every people in the world? Why is music used to rouse armies, praise God, and bury the dead?” She discusses studies that could point to even the most rudimentary bits of music that could benefit humans, for example, a mother’s lullaby increasing infants’ survival rate and ability. There is also an incredible amount of evidence pointing to a correlation between music listening/making and alleviating stress by signaling a decreased production of cortisol, a stress hormone. This decrease in cortisol is also linked to a heightened immune response.

Music also has been documented as assisting greatly in drawing people out of comas and catatonic states as well as aiding them in performing other seemingly impossible feats such as non-speaking stroke patients who become able to sing and thus communicate again. MRI’s show that healthy areas of the brain compensate for injured parts and music is the facilitating conduit that helps the brain find this path. Undamaged areas of the brain, such as the regions that moderate the rhythmic and tonal aspects of language, can be accessed through music to reach communication, and bypass damaged speech pathways. This same method can be tailored to different disorders and different damaged areas of the brain as the effect of music on cognitive and motor functions and mental states is further studied.

People in different cultures and in different time periods have used music making and music listening to treat mental and physical disorders. Everything from the melody and rhythm of music to its emotional and social impact have been used medicinally in civilizations from fourth millennium B.C. Egypt to Shamans in Peru to the Ashanti people of Ghana. An article in the *Scientific American Mind* listed helpful attributes of music as follows: physical, emotional, engaging, permits synchronization, social, persuasive, and personal. Music can improve a large range of issues including memory, speech skills, and motor functions. Because music can help the brain discover alternate pathways around the damaged areas of the brain, it is incredibly helpful in assisting treatment of autism where there is a range of complex neurodevelopmental

disorders. Everything from physical coordination to verbal speech to emotional and mental well-being can be helped by music therapy.

### **Music Therapy in Treating Autism**

In people diagnosed with autism, there are marked issues with the frontal lobe and absence of certain mirror neurons causing a decrease in ability to interact socially and communicate effectively. The frontal lobe (emotional center) can be imprinted upon more with music than with thinking because of the inherent emotional, cognitive, and sensory nature of music. Music can be used as a vehicle to get to an inner unconscious place that words cannot reach and create a bond that words cannot form. Melody, harmony, tone, vibration and rhythm circumvent the issues that autistic people have with perceiving meaning from facial and verbal cues and act together as a different, more emotional language that increases access to true feelings, reactions, and communication potential.

Additionally, there is an overdevelopment of short-range brain connections present in those diagnosed with autism that often causes autistic children to focus with extreme detail on sensory experiences. This particularity might be the cause of why many autistic children enjoy making and learning music and have incredible abilities relating to music, such as absolute pitch. This positive response to music can be capitalized on to open children with autism up to treatments that assist in engagement in social activities, helping them to acquire social, language, and motor skills. Music has also been found to activate areas of the brain relating to social ways of thinking. This helps those diagnosed with autism to imagine the emotions of the musician playing the music and then in turn imagine how other might feel as well. These music treatments help counteract any dysfunction by inducing changes in neural circuitry.

Music also helps to strengthen connections between the two hemispheres of the brain, especially in children as shown in multiple studies. Additional to the physical stimulation of the sensory and emotional systems, music is processed by both brain hemispheres. A 2013 study found that Albert Einstein's brilliance may be attributed the extremely well-connected nature of his brain hemispheres. The ability to use both left brain logic and right brain creativity is extremely important in normal functioning. Einstein was also a master violinist and the findings of numerous studies linking musical training and improved cognitive function are extremely intuitive. A strong connection between hemispheres helps foster communication between them, increasing many emotional, physical and mental functions of the brain.

Aside from these neurological benefits, music therapy can also cause benefits in regulating emotion, increasing confidence, engaging in a social activity, increasing memory, and boosting concentration. In terms of the social aspect of music aside from its effect on neurons, it helps foster inclusion and can increase self-confidence and willingness to engage. Additionally, when non-verbal children are able to create music with their voices, the feedback they receive gives them insight into communicating with language, in this case, the language of music. Music helps to express feelings in a way that involves various parts of the brain that circumvent the normal verbal paths and allow autistic children to communicate their emotions in a way others can understand. Music is a space of creativity and expression that also allows for discovery of

personality and sense of self in a way that might be previously foreign to those diagnosed with autism. Self-awareness is an extremely important step forward for those diagnosed with autism. There is also a certain comfort to music because it is consistently at the level of the musician so there is no fear or anxiety in this form of therapy. Both the new patterns of learning and neurological processes introduced by music therapy and the social and self-confidence benefits of music therapy help stimulate sensory, cognitive and emotional development.

### **Where Can I Find Music Therapy?**

For CT residents, a great resource is Arts for Healing located in New Canaan. On their website: <http://www.artsforhealing.org/>, there is further information on music therapy and its benefits. This organization focuses on integrated art and music therapy and is run by certified therapists who have helped many reach their therapeutic goals using music throughout the years. Another great resource is the Nordoff-Robbins Center for Music Therapy, an organization affiliated with NYU that serves as a treatment, training, and research facility specializing in music therapy. Their website: <http://steinhardt.nyu.edu/music/nordoff>, is another great resource for information. If neither of these facilities are easily accessible, the American Music Therapy Association offers both additional information and a way to find music therapists in your local area if you are located in the US through this link: <http://www.musictherapy.org/about/find/>.

### Works Cited

- Bergland, Christopher. "Einstein's Genius Linked to Well-Connected Brain Hemispheres." *Psychology Today*. N.p., n.d. Web.
- Farrell Leontiou, Janet, Ph.D. "Why Do We Have to Be Anything But Beautiful." *Cerebral Palsy Magazine*. N.p., Mar. 2010. Web.
- Fields, Helen. "Music Therapy Gives Voice to the Voiceless." *Science Now* (2010): 6. *Science Reference Center [EBSCO]*. Web.
- Glausiusz, Josie. "The Genetic Mystery of Music." *Discover* 22.8 (2001): 70. *Science Reference Center [EBSCO]*. Web.
- Kolman, Barry. "Easing Autism with Music." *Education Digest* 78.8 (2013): 66. *Science Reference Center [EBSCO]*. Web.
- Miller, Greg. "Music Builds Bridges in the Brain." *Science Now* 2008.698 (2008): 3. *Science Reference Center [EBSCO]*. Web.
- "Music Stimulates Visual Centers." *BioScience* 44.8 (1994): 575. *GreenFILE [EBSCO]*. Web.
- Nisenson, Karen, M.M., M.A., M.T.B.C. "Karen Nisenson, Music Therapist: Discusses Adaptive Piano Lessons Developing Self Expression and Targeting Sensory Motor Issues." *The Motor Story*. N.p., n.d. Web.

Nisenson, Karen, M.M., M.A., M.T.B.C. "The Importance of Integrated Music and Art in Therapy and Special Education." Arts For Healing - Integrated Music Therapy and Art Therapy. N.p., Mar. 2008. Web.

Thompson, Willaim Forde, and Gottfried Schlaug. "The Healing Power of Music." *Scientific American Mind* 26.2 (2015): 32-41. *Science Reference Center [EBSCO]*. Web.