



# American Music Therapy Association

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## Autism Spectrum Disorders: Music Therapy Research and Evidence Based Practice Support

### STATEMENT OF PURPOSE

Music therapy is a well-established professional health discipline that uses music as the therapeutic stimulus to achieve non-musical treatment goals.

Research supports connections between speech and singing, rhythm and motor behavior, memory for song and memory for academic material, and overall ability of preferred music to enhance mood, attention, and behavior to optimize the student's ability to learn and interact. Therefore, one of the purposes of music therapy for persons with autism is to provide the individual with an initial assist using melodic and rhythmic strategies, followed by fading of musical cues to aid in generalization and transfer to other environments.

Recognized as a related service, music therapy serves as an integral component in helping the child with special needs attain educational goals either through direct or consultant services. The strength of evidence is growing and music therapy interventions were reviewed for quality of evidence by the Cochrane Collaborative with favorable results.

**STANDARDIZATION:** Music therapy sessions are documented in a treatment plan and delivered in accordance with standards of practice. Music selections and certain active music making activities are modified for client preferences and individualized needs (i.e., song selection and music may vary).

**REPLICATION:** Yes; has been used with different providers and populations also.

### OUTCOMES:

Increased attention	Improved behavior
Decreased self-stimulation	Enhanced auditory processing
Improved cognitive functioning	Decreased agitation
Increased socialization	Improved verbal skills
Successful and safe self-expression	Enhanced sensory-motor skills

\* The Individuals with Disabilities Education Act (IDEA) 20 U.S.C. §1400, provides that eligible children and youth with disabilities shall receive special education and related services. The law includes a definition of related services that the U.S. Department of Education notes is not exhaustive. In addition, in June 2010, the U.S. Department of Education issued a Questions and Answers document on Individualized Education Programs (IEPs), Evaluations, and Reevaluations. This document provides guidance representing the interpretation of the Department and clarifies the recognition of music therapy as a related service under IDEA.

## OVERVIEW OF RESEARCH

- ❖ **Trends regarding evidence-based review and recommendations regarding assessment and referral criteria based on current research and clinical evidence are emerging. Music therapy is a particularly important intervention for children with autism spectrum disorders to engage and foster their capacity for flexibility, creativity, variability and tolerance of change, in order to balance the more structured and behaviorally driven education required in school settings. One review protocol published in the Cochrane Collaborative of Systematic Reviews concluded music therapy was superior to 'placebo' therapy with respect to verbal and gestural communicative skills (verbal: 2 RCTs, n = 20, SMD 0.36 CI 0.15 to 0.57; gestural: 2 RCTs, n = 20, SMD 0.50 CI 0.22 to 0.79). The addition of music therapy intervention to a child's treatment program can have positive outcomes and may be an effective method for increasing joint attention skills in some children with autism.**
  - Gold, C. & Wigram, T. (2006). Music therapy for autistic spectrum disorder. Cochrane Database of Systematic Reviews. Issue 1
  - Reitman, M.R. (2005) Effectiveness of music therapy interventions on joint attention in children diagnosed with autism: a pilot study. Psy.D. 169 p.
  - Wigram, T. (2002). Indications in music therapy. British Journal of Music Therapy, 16(1):11-28.
  
- ❖ **An overall positive direction is noted in meta-analytic reviews of the literature on the subject of music therapy and autism in terms of an array of outcomes related to both therapeutic and specific educational goals. Variations for effect size occur within the broad category of the autism spectrum disorders and tend to reflect the idiosyncratic nature of the disorders between individuals. This is typical across disciplines.**
  - Whipple, J. (2004). Music in intervention for children and adolescents with autism: a meta-analysis. Journal of Music Therapy. 41(2):90-106. (Listed as accepted in Database of Abstracts of Reviews of Effects Centre for Reviews and Dissemination, 2007.)
  - Standley, J.M. (1996). A meta-analysis on the effects of music as reinforcement for education/therapy objectives. Journal of Research in Music Education. 44(2), 105-133.
  
- ❖ **Survey research indicates goal areas typically addressed by music therapists among persons with autism include language/communication, behavioral/psychosocial, cognitive, and musical, to perceptual/motor. Goal attainment was found to be high within one year; and, parents and caregivers surveyed indicated subjects generalized skills/responses acquired in music therapy to non-music therapy environments.**
  - Kaplan, R.S., & Steele, A.L. (2005). An analysis of music therapy program goals and outcomes for clients with diagnoses on the autism spectrum. Journal of Music Therapy. 42(1):2-19.
  
- ❖ **Survey research examining therapy trends of inpatient and habilitation care of autistic children revealed the most common therapies were physical therapy, speech, occupational and music therapy. One hundred and seventy-eight subjects out of 187 showed some improvement on the Childhood Autism Rating Scale (CARS). All modes**

**of therapy were found to be useful. Active music therapy sessions aids in improving autistic symptoms, as well as personal musical skills in young adults with severe autism.**

- Kielinen, M., Linna, S.L., Moilanen, I. (2002). Some aspects of treatment and habilitation of children and adolescents with autistic disorder in Northern-Finland. International Journal of Circumpolar Health. 61 Suppl 2:69-79.
- Boso, M., Emanuele, E., Minazzi, V., Abbamonte, M., Politi P. (2007). Effect of long-term interactive music therapy on behavior profile and musical skills in young adults with severe autism. Journal of Alternative and Complementary Medicine. 13(7), 709-712.

❖ **Observational study of the effect of music therapy on communication skills revealed significant gains in autistic childrens' communication behaviors as measured by Checklist of Communicative Responses/Acts Score Sheet (CRASS). Commensurate decreases in scores were noted when music therapy intervention was removed.**

- Edgerton, C. (1994). The effect of improvisational music therapy on the communicative behaviors of autistic children. Journal of Music Therapy. 21(1):31-62.

❖ **Preschool children in an early intervention music therapy program show high on-task behavior during sessions and a high success rate in language development, social skills, cognitive concepts, motor skills, and music knowledge.**

- Standley, J.M., & J.E. Hughes (1996). Documenting developmentally appropriate objectives and benefits of a music therapy program for early intervention: A behavioral analysis. Music Therapy Perspectives. 14 (2), 87-94.

❖ **Research demonstrates the efficacy of music used in the curriculum to enhance literacy skills. Musical cueing is effective to improve word recognition, logo identification, print concepts and prewriting skills of children in early intervention programs. Shared reading paired with song rehearsal of text facilitates greater text accuracy than spoken rehearsal with kindergarten students.**

- Register, D. (2001). The effects of an early intervention music curriculum on pre-reading/writing. Journal of Music Therapy. 38(3), 239-248.
- Standley, J., & Hughes, J. (1997). Evaluation of an early intervention music curriculum for enhancing pre-reading/writing skills. Music Therapy Perspectives. 15, 79-86.
- Colwell, CM. (1994). Therapeutic applications of music in the whole language kindergarten. Journal of Music Therapy. 31(4), 238-247.

❖ **Selected verbal language and speech skills are enhanced through music activities in special education populations. Musical presentation of new vocabulary words results in an increased number of words learned and transferred in elementary school-age children. Music is effective as a prompt and reinforcer to increase verbal response in preschool-age children with limited verbal communication.**

- Braithwaite, M. & J. Sigafos (1998). Effects of social versus musical antecedents on communication responsiveness in five children with developmental disabilities. Journal of Music Therapy. 35(2), 88-104.

- Buday, E.M. (1995). The effects of signed and spoken words taught with music on sign and speech imitation by children with autism. Journal of Music Therapy. 32(3), 189-202.
- ❖ **Research supports the use of music to structure and organize information in order to increase learning and retention of number concepts. Sequential verbal information, such as telephone numbers and multiplication tables, set to melodic and rhythmic patterns are more effectively memorized and recalled than through non-music presentation.**
- Claussen, D., & Thaut, M. (1997). Music as a mnemonic device for children with learning disabilities. Canadian Journal of Music Therapy. 5, 55-66.
  - Wolfe, D., & Hom, C. (1993). Use of melodies as structural prompts for learning and retention of sequential verbal information by preschool students. Journal of Music Therapy. 30(2), 100-118.
- ❖ **Music-facilitated interactions and structured instrument playing are effective to improve social skills in school-age populations. Social problem solving skills in 5-year-old students are increased on a long-term basis through creative musical activities. Positive affect induced by music helps to improve social problem solving skills in middle school students. Songs assisted children with ASD in entering the classroom, greeting the teacher and/or peers, and engaging in play.**
- Ulfarsdottir, L., & Erwin, P. (1999). The influence of music on social cognitive skills. The Arts in Psychotherapy. 26(2), 81-84.
  - Bryan, T., Sullivan-Burstein, K., & Mathur, S. (1998). The influence of affect on social-information processing. Journal of Learning Disabilities. 31(5), 418-426.
  - Kern, Petra. Wolery, Mark. Aldridge, David. (2007). Use of Songs to Promote Independence in Morning Greeting Routines for Young Children with Autism. Journal of Autism and Developmental Disorders. 37(7), 1264-1271.
- ❖ **The SCERTS model is a newer, comprehensive curriculum designed to assess and identify treatment goals and objectives within a multidisciplinary team of clinicians and educators for children with Autism Spectrum Disorders (ASD). A national survey of music therapists working with clients at risk or diagnosed with ASD was conducted to: (a) identify the areas of SCERTS assessment model that music therapists are currently addressing within their written goals for clients with ASD, (b) identify current music therapy activities that address various SCERTS goals and objectives, and (c) provide demographic information about settings, length, and tools used in music therapy interventions for clients with ASD.**
- Walworth, D.D. (2007). The use of music therapy within the SCERTS model for children with Autism Spectrum Disorder. Journal of Music Therapy. 44(1):2-22.