

# MUSIC THERAPY

## CHARACTERISTICS OVERVIEW CHART

Verbal Skills	Grade Levels	Cognitive Level	Areas Addressed
<input checked="" type="checkbox"/> Nonverbal <input checked="" type="checkbox"/> Mixed <input checked="" type="checkbox"/> Verbal	<input checked="" type="checkbox"/> PK <input checked="" type="checkbox"/> Elementary <input checked="" type="checkbox"/> Middle/High	<input checked="" type="checkbox"/> Classic <input checked="" type="checkbox"/> High Functioning	<input checked="" type="checkbox"/> (Pre)Academic/Cognitive/Academic <input checked="" type="checkbox"/> Adaptive Behavior/Daily Living <input checked="" type="checkbox"/> Behavior <input checked="" type="checkbox"/> Communication/Speech <input type="checkbox"/> Social/Emotional

## BRIEF INTRODUCTION

In his early work on autism (AU), Kanner (1943a, 1943b) identified music as a special interest of many of the individuals he worked with and studied. His perspective was echoed by Rimland (1964), who posited that music may serve as an intervention as well as a diagnostic tool.

## DESCRIPTION

Music therapy is designed to impact the auditory, proprioceptive, and visual sensory systems and can also serve as a motivational tool (Brownell, 2002; Thaut, 1999). According to Griggs-Drane and Wheeler (1997), music therapists use functional behavior assessment procedures to identify individual needs and preferences to develop interventions. These interventions include

- Using music as a calming medium;
- Providing music as a reinforcer; and
- Implementing music therapy to teach and encourage communication, behavior, adaptive behavior, and social skills (Brownell, 2000).

## TIPS FOR MODIFICATIONS

Certified music therapists provide music therapy for students with autism as well as students with other exceptionalities. In doing so, they are held to National Standards of Practice (American Music Therapy Association, 2006) for assessment, treatment planning, documentation, evaluation, and termination. Beyond these specific purposes, music can be used across settings by music instructors and classroom teachers with all students, including those with autism.

## SUMMARY

Music therapy offers a motivating way of teaching skills to students with AU, including imitation of signed and spoken words and decreased frequency of inappropriate vocalizations and movements. It is a flexible intervention that can be tailored to meet individual needs (Wigram & Gold, 2006).

## RESEARCH TABLE

Number of Studies	Ages (year)	Sample Size	Area(s) Addressed	Outcome
20*	3-21	174	Social, attribution, joint attention, imitation, behavior, academic, communication, vocalizations, motor, cognitive	Mixed

\*Note: Includes an integrated review of literature by Whipple (2004).

## STUDIES CITED IN RESEARCH TABLE

1. Finnigan, E. & Starr, E. (2010). Increasing social responsiveness in a child with autism. *Autism, 14(4)*, 321-348.

This study evaluated the effect on social behaviors of integrating musical activities into structured toy play activities for a 3-yr old girl with ASD. In an alternating treatment design, the girl engaged in more social responsive behaviors (eye contact, imitation, and turn taking) and no socially avoided behaviors (looking away, pushing toy or teacher away, or attempting to walk away) during the toy play sessions in which the therapist integrated musical instruments and singing than when the therapist engaged in equivalent toy play activities without singing or instruments.

2. Simpson, K. & Keen, D. (2010). Teaching young children with autism graphic symbols embedded within an interactive song. *Journal of Developmental Physical Disabilities, 22*, 165-177.

This study compared the ability of three children with ASD to learn 5 receptive animal labels across two conditions: a music condition where songs were integrated into instructional trials, and a non-music condition where trials were conducted without music. In a multiple-baseline-across-participants design all three children learned to more accurately label the animal pictures, and two of the three made more correct responses during the music condition than the non-music condition. Generalization of responding outside of teaching sessions was poor.

3. Carnahan, C., Musti-Rao, S., & Bailey, J. (2009). Promoting active engagement in small group learning experiences for students with autism and significant learning needs. *Education and Treatment of Children, 32*(1), 37-61.

This study evaluated the effects of interactive reading materials using visual cues and music on the engagement behavior of six students with autism ranging in age from 6 to 11. Results indicated an increase in students' engagement with the use of interactive reading materials in comparison to traditional read-aloud materials.

4. Bhatara, A. K., Quintin, E. Heaton, P., Fombonne, & Levitin, D. J. (2008). The effect of music on social attribution in adolescents with autism spectrum disorders. *Child Neuropsychology, 15*, 375-396.

Twenty-six individuals with high-functioning autism ranging in age from 10 to 19, and matched controls were presented with animations that contained varying levels of social interaction and were either accompanied by music or silent. Participants described the events of the animation, and we scored responses for intentionality, appropriateness, and length of description. Adolescents with autism were less likely to make social attributions, especially for those animations with the most complex social interactions. The use of music with the animation did not impact student's ability to understand social interactions.

5. Kim, J., Wigram, T., & Gold, C. (2008). The effects of improvisational music therapy on joint attention behaviors in autistic children: A randomized controlled study. *Journal of Autism and Developmental Disorders, 28*, 1758-1766.

The purpose of this study was to investigate the effects of improvisational music therapy on joint attention behaviors in 10 pre-school children with autism – five of whom were nonverbal and five of whom had varying degrees of language. Children ranged in age from 3- to 6-years-old. Improvisational music therapy was more effective at facilitating joint attention and non-verbal social communication skills in children than therapist-supported play.

6. Stephens, C. E. (2008). Spontaneous imitation by children with autism during a repetitive musical play routine. *Autism, 12*, 645-675.

The current study expands on this research by establishing a musical social milieu using repetitive imitation routines for four children (ages 5- to 8-years-old) with autism. Children

increased spontaneous imitation of the researcher's models after being imitated or words and action with only social reinforcement.

7. Kern, P., & Alridge, D. (2006). Using embedded music therapy interventions to support outdoor play of young children with autism in an inclusive community-based child care program. *Journal of Music Therapy, 43*(4), 270-294.  
The intervention did not result in improved social skills for the four participants with autism (ages 3 to 5). However, the authors reported that music facilitated play and peer involvement, as peers wanted access to the music.
8. Whipple, J. (2004). Music in intervention for children and adolescents with autism: A meta-analysis. *Journal of Music Therapy, 41*, 90-106.  
This author reviewed nine studies on the use of music therapy with 97 students with autism who ranged in age from 3 to 21. A meta-analysis was conducted on studies that (a) used group or individual subject experimental treatment designs; (b) incorporated music and a no-music control condition; and (c) were refereed papers and publications. Overall, results showed that interventions involving music were more effective than those that did not incorporate music. However, the author cautions that because the studies were so diverse, limited conclusions can be drawn about the effectiveness of music therapy.
9. Orr, T. J., Myles, B. S., & Carlson, J. K. (1998). The impact of rhythmic entrainment on a person with autism. *Focus on Autism and Other Developmental Disabilities, 13*(3), 163-166.  
This study sought to teach an 11-year-old girl with autism to relax (defined as decreasing excessive movement and screaming) using metered music, also known as rhythmic entrainment (Hoffman, 1995). The intervention was successful in that following the use of music, the girl's negative behaviors decreased.
10. 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*, 189-202.  
Ten students with autism, ranging in age from 4 to 9, reported that their imitation of signed and spoken words increased during the use of music compared to rhythmic speech.
11. Edgerton, C. L. (1994). The effect of improvisational music therapy on the communicative behaviors of autistic children. *Journal of Music Therapy, 31*, 31-62.  
Eleven students with autism ranging in age from 6 to 9 years participated in this study, which investigated the role of music therapy in increasing communication. The study found that music increased this variable.
12. Gunter, P. L., Fox, J. J, McEvoy, M. A., Shores, R. E., & Denny, R. K. (1993). A case study of the reduction of aberrant, repetitive responses of an adolescent with autism. *Education and Treatment of Children, 16*, 187-197.  
This study found that music therapy (music played through headphones) used with a 14-year-old student with autism resulted in decreases in inappropriate vocalizations.

## REFERENCES

- American Music Therapy Association. (2006). *Autism spectrum disorders: Music therapy research and evidence based practice support*. Retrieved November 1, 2008, from [http://www.musictherapy.org/factsheets/bib\\_autism.pdf](http://www.musictherapy.org/factsheets/bib_autism.pdf).
- Bhatara, A. K., Quintin, E. Heaton, P., Fombonne, & Levitin, D. J. (2008). The effect of music on social attribution in adolescents with autism spectrum disorders. *Child Neuropsychology, 15*, 375-396.
- Brownell, M. D. (2002). Music adapted social stories to modify behaviors in students with autism: Four case studies. *Journal of Music Therapy, 39*, 117-124.
- 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*, 189-202.
- Carnahan, C., Musti-Rao, S., & Bailey, J. (2009). Promoting active engagement in small group learning experiences for students with autism and significant learning needs. *Education and Treatment of Children, 32*(1), 37-61.
- Edgerton, C. L. (1994). The effect of improvisational music therapy on the communicative behaviors of autistic children. *Journal of Music Therapy, 31*, 31-62.
- Finnigan, E. & Starr, E. (2010). Increasing social responsiveness in a child with autism. *Autism, 14*(4), 321-348.
- Griggs-Drane, E. R., & Wheeler, J. J. (1997). The use of functional assessment procedures and individualized schedules in the treatment of autism: Recommendations for music therapists. *Music Therapy Perspectives, 13*, 87-93.
- Gunter, P. L., Fox, J. J., McEvoy, M. A., Shores, R. E., & Denny, R. K. (1993). A case study of the reduction of aberrant, repetitive responses of an adolescent with autism. *Education and Treatment of Children, 16*, 187-197.
- Hoffman, J. (1995) *Rhythmic medicine: Music with a purpose*. Leawood, KS: Jamillan Press.
- Kanner, L. (1943a). Autistic disturbances of affective contact. *Nervous Child, 2*, 217-250.
- Kanner, L. (1943b). Early infantile autism. *Journal of Pediatrics, 25*, 211-217.
- Kern, P., & Alridge, D. (2006). Using embedded music therapy interventions to support outdoor play of young children with autism in an inclusive community-based child care program. *Journal of Music Therapy, 43*(4), 270-294.

- Kim, J., Wigram, T., & Gold, C. (2008). The effects of improvisational music therapy on joint attention behaviors in autistic children: A randomized controlled study. *Journal of Autism and Developmental Disorders*, 28, 1758-1766.
- Orr, T. J., Myles, B. S., & Carlson, J. K. (1998). The impact of rhythmic entrainment on a person with autism. *Focus on Autism and Other Developmental Disabilities*, 13(3), 163-166.
- Rimland, B. (1964). *Infantile autism*. New York: Appleton-Century-Crofts.
- Simpson, K. & Keen, D. (2010). Teaching young children with autism graphic symbols embedded within an interactive song. *Journal of Developmental Physical Disabilities*, 22, 165-177.
- Stephens, C. E. (2008). Spontaneous imitation by children with autism during a repetitive musical play routine. *Autism*, 12, 645-675.
- Thaut, M. H. (1999). Music therapy with autistic children. In W. B. Davis, K. E. Geller, & M. H. Thaut (Eds.), *An introduction to music therapy: Theory and practice* (2nd ed., pp. 163-178). Dubuque, IA: McGraw-Hill.
- Whipple, J. (2004). Music in intervention for children and adolescents with autism: A meta-analysis. *Journal of Music Therapy*, 41, 90-106.
- Wigram, R., & Gold, C. (2006). Music therapy in the assessment and treatment of autistic spectrum disorders: Clinical application and research evidence. *Child: Care, Health and Development*, 32(5), 535-542.

## RESOURCES AND MATERIALS

- Association for Science in Autism Treatment (ASAT): Music Therapy: <http://www.asatonline.org/intervention/treatments/music.htm>
- Center for Music Therapy: <http://www.centerformusictherapy.com/>  
This site provides suggestions on how to make music therapy accessible.
- Music Therapy Association: <http://www.musictherapy.org/>  
This website is designed to increase access to quality music therapy services and increase public awareness of the benefits of music therapy.
- National Autistic Society: <http://www.autism.org.uk/living-with-autism/approaches-therapies-and-interventions/standard-therapies/music-therapy.aspx>  
This website provides a fact sheet on music therapy.