



Sounds and The Spectrum

The Benefits of Music Children with Autism

Sounds and the Spectrum:

- The Benefits of Music for Children with Autism

Music is universally recognized as promoting feelings of well-being and improved mental health in people of all ages. For this reason, music therapy is becoming an increasingly popular form of holistic 'healing' and is used in hospices, care homes, residential homes, schools, and rehabilitation centers all over the world to great positive effect. Music can help those who are experiencing loneliness, mental ill-health, and degenerative conditions such as dementia by enabling them to 'reconnect' with the world around them and by encouraging them to communicate with others in a non-verbal way. Playing musical instruments and engaging in music therapy has been proven to significantly improve communication for those living with a wide range of disabilities and health conditions and it should be no surprise that numerous studies have concluded that there is a strong positive correlation between exposure to music and improved well-being for individuals with autism.

What is autism¹?

According to the Autism Society of America, autism is a '*complex developmental disability that typically appears during the first three years of life and affects a person's ability to communicate and interact with others*'². Autism is defined by a certain set of behaviors and is a 'spectrum disorder' which means that it affects individuals differently and to varying degrees. Autism affects the development of the social, verbal, and cognitive abilities of the individual so that someone with autism may find it difficult to communicate with others. Autism is not something that can be outgrown and it is incurable; however, the right support at the right time can make an enormous difference to people's lives.

The number of people diagnosed with autism has rapidly increased over recent years and it is now thought that one in sixty-eight Americans³ and one in one hundred people in the UK⁴ have been identified as being on the autistic spectrum. It is worth remembering that autism does not just affect the lives of the individuals who have the condition, but it also impacts their families. If you take this into account, it means that autism is a part of everyday life for over 4 million people- many more if you include cases of autism worldwide.

The benefits of music for those on the autistic spectrum

Music stimulates both hemispheres of our brain and this is why it is used so effectively in autism therapy. Research indicates that music education and music therapy are linked to improved cognitive function⁵ and increased language development from an early age⁶. Music therapy has also been proven to have a positive effect on an individual's ability to interact positively with those around them⁷. Autism is a condition defined by an individual's inability to communicate and interact with others and it is apparent that for an individual living with autism, music may well be the most effective, as well as one of the most accessible, forms of therapy available to them. This is why musical instruments such as Percussion Play's 'Duo' for example are particularly beneficial for those with autism because the instrument allows for close social interaction but without forcing close physical proximity. The players can interact with each other in a safe space without the need for direct eye contact.

¹ The term 'autism' is used here to describe all diagnostic profiles including Asperger syndrome and Pathological Demand Avoidance

² <http://www.coastmusictherapy.com/how-music-helps/autism-research/>

³ <https://nursejournal.org/community/the-benefits-of-music-therapy-for-autistic-children/>

⁴ <http://www.autism.org.uk/about/what-is/myths-facts-stats.aspx>

⁵ Schellenberg, E. Music and Cognitive Abilities. *Current Directions in Psychological Science* (2005) p317-320.

⁶ Legg, R. Using music to accelerate language learning: an experimental study. *Research in Education*, (2009) p82

⁷ Netherwood, C. Music to your ears. *Australian Parents*, p64 (2007)

Playing musical instruments impacts the brain as a whole, stimulating both the analytical and the artistic hemispheres which according to Yoon (2000) increases an individual's overall intellectual capacity more than any other bilateral activity⁸. For an individual with autism, this is incredibly important as a feature of the autistic condition is that the left and right areas of the brain are 'out of sync', meaning that some areas such as those relating to communication can be underdeveloped. Playing musical instruments stimulates the autistic brain to make new connections and strengthens existing ones; resulting in improved mental health and increased cognitive ability for those with autism.

The benefits of music for children with autism

Children with autism often have great difficulty interacting with others and music encourages reciprocal communicative behavior which can help a child to overcome these difficulties. By introducing an instrument into the child with autism's environment, the child has an opportunity to initially connect with the instrument in a non-threatening, non-pressurized way which means that opening up to others who are also interacting with the instruments becomes part of the organic process of communication that was begun by communicating with the instrument.

Music is a universal language and is very well suited to the needs of autistic children because music captures and maintains their attention in a way that other mediums do not. Playing musical instruments assists the child to participate in socially acceptable ways and helps to reinforce desired responses.

A 2008 study⁹ concluded that children chose to participate in 'reciprocal imitation' of the researcher within the musical play routine and whilst engaged in the activity demonstrated increased attention. This suggests that one of the benefits of playing music for children with autism is increased socialization, in addition to improved communication.

In 2009¹⁰ Wigram and others carried out a randomized study into ten children with autism which compared improvisational music therapy to toy play sessions. The study concluded that music therapy produced '*increased compliance and markedly more and longer events of 'joy', 'emotional synchronicity' and 'initiation of engagement' behaviors compared to toy play*'¹¹. Because playing musical instruments requires turn-taking and playing alongside others, it imparts social skills in a safe and fun environment which is incredibly important in the lives of children with autism.

The reason why music therapy is used so effectively to help very young children with autism is that it helps the child to learn how to relate to others. Other family members can participate and in addition to the sensory stimulation of the music, the child is also able to experience dance, the social dynamic of learning an instrument and explore rhythm. All this can help to motivate the child to follow more impulsive play patterns that will engage the whole of their brain and body. Impulsiveness and spontaneity are often missing from the lives of children with autism and so playing musical instruments such as those produced by Percussion Play often opens a gateway into a whole new way of becoming a more well-rounded individual.

The benefits of music for improved communication

⁸ Yoon, J. Music in the Classroom: Its Influence on Children's Brain Development, Academic Performance, and Practical Life Skills (2000)

⁹ Stephens, C. E. Autism (2008) 12(6), 645-671

¹⁰ Kim, Wigram, Gold Autism (2009) 13(4), 398-409

¹¹ *ibid*

There are many proven ways¹² in which exposure to music and musical instruments benefits children with autism, including:

- Improved communication.
- Development of social skills such as greetings, turn-taking, shared attention, and eye contact.
- Self-expression - particularly powerful with a child who is non-verbal.
- Behavioral Skills – learning to participate and take turns and copying the behavior of others.

In non-verbal children, music therapy and playing musical instruments allow communication without language and foster creative self-expression. This in turn leads to the development of verbal communication and improved language skills.

There have been many studies that support the view that exposure to music helps develop language skills in children with autism. For example, in 2010 *The Journal of Music Therapy* published research by A.H. Lim¹³ that proved that music training was as effective as speech training for improving the vocabulary and speech production of children with autism. Lim's study then went on to demonstrate that a greater benefit was seen in the lower functioning children in particular after participation in the music training.

In 2014 a review of the effects of music therapy for those on the autistic spectrum emphatically concluded that music therapy can '*help to enhance non-verbal communication skills*' and '*can contribute to increasing social adaptation skills in children with ASD*'¹⁴.

Other ways that music therapy benefits children with autism include¹⁵:

- Motor Skill Development - both fine and gross motor skills.
- Sensory Regulation - the use of rhythm and instrument play can help a child feel organized and grounded.

It is clear therefore that music can play a significant role in improving the communication skills of children with autism and this is why outdoor musical instruments such as those produced by Percussion Play are so valuable to both the individual child, their family, and the setting in which they are placed.

The benefits of music for early intervention

There is a widespread belief that if autism is diagnosed early in childhood, interventions that can be put into place are more effective in the long term for that individual and their families. This is because early intervention can impact many areas of a

¹² <https://www.therhythmtree.com/video-blog/entry/how-does-music-therapy-benefit-children-with-autism>

¹³ Lim, A. H. *Journal of Music Therapy* (2010) 47(1), 2-26

¹⁴ Geretsegger *et al* *Cochrane Database of Systematic Reviews* 2014 Jun 17;6:CD004381

¹⁵ <https://www.therhythmtree.com/video-blog/entry/how-does-music-therapy-benefit-children-with-autism>

child's life including communication skills and academic success. According to Koegel¹⁶, nonverbal children with autism are more likely to gain speech skills the earlier intervention begins. Koegel's study goes even further and states that "*children who are completely nonverbal who begin intervention in the early preschool years are far more likely to become verbal than children who begin intervention over the age of 5 years*"¹⁷.

Research into early interventions has shown that if very young children with autism are exposed to gentle play, musical activities, and non-invasive games then a supportive environment where children and parents can bond in a healthy way can be established¹⁸. Incredibly, The National Institute of Child Health states that: "*With early intervention, between 3% and 25% of children with autism make so much progress that they are no longer on the autism spectrum when they are older*"¹⁹.

Research also proves that children with autism benefit from the earliest interventions possible²⁰ and Louise Kaczmarek from the University of Pittsburgh School of Education states that the most successful intervention strategies are those that integrate "*developmental and/or relationship-based techniques with those of applied behavior analysis*"²¹. These types of interventions are usually play-based and parent-facilitated and music therapy is often used because of its proven benefits to communication and social interaction and the ease with which it can be accessed by even very young children.

A more recent 2015 study²² found that when very young children with autism were given the opportunity to access music within their kindergarten setting, all of the children showed improvement in their attention and social engagement.

The positive impact of music on families of children with autism

For those families who have access to them, outdoor musical instruments such as the ones created by Percussion Play hold a very special place. The instruments provide a way for families to have fun together whilst strengthening the bonds of communication between parents, grandparents, siblings, and the child with autism. In *Music Therapy Perspectives* (2005) Allgood²³ reported that parents responded positively to family-based music therapy intervention and reported new insights about themselves and their children. In fact, in a 2012 study²⁴, music therapy resulted in the highest parent social validity rating of all the treatments offered and was also the treatment most preferred by parents.

Music therapy is especially suited to families because everyone, regardless of age or musical ability, can play instruments and have fun whilst doing so. For the child with autism, the pressure and expectations are lifted, and new ways can be found for the child to respond to their family meaningfully. There are no boundaries with music and no rules which means that there is no 'right' or 'wrong' way to access the instruments. For these reasons, each family can use music and musical instruments in a way that suits their individual needs and preferences.

A report in 'Child: Care, Health and Development'²⁵ concludes that the results of research into family-centered music therapy are truly astounding and indicate a significant positive effect on social interaction and the parent-child relationship, especially when offered to the families of severely autistic children aged between 3-5 years old.

¹⁶ Koegel L K, *Interventions to facilitate communication in autism* (2000) 383-91

¹⁷ *ibid*

¹⁸ <https://nursejournal.org/community/the-benefits-of-music-therapy-for-autistic-children/>

¹⁹ Helt *et al* *Can children with autism recover? If so, how?* *Neuropsychological Review* (2008) 18(4):339-66

²⁰ The National Research Council *Educating Children with Autism* (2001)

²¹ Kaczmarek, L. *The Benefits of Early Intervention for Children with Autism* (2014)

²² Vaiouli *et al* *Autism* (2015) 19(1), 73-83

²³ Allgood, N *Music Therapy Perspectives* (2005); 23(2), 92-99

²⁴ Saylor, S *et al* *Journal of Applied Behavior Analysis* (2012); 45(1), 185-90

²⁵ Thompson, G.A *et al* *Child: Care, Health and Development*; (2013)

The benefits of being outside for those with autism

Being outside, even if only for a short time, has benefits for both our mental and physical health, and in the case of children with autism, the positive effects of being outdoors can be significant. One study into the type of community-based inclusive playgrounds that Percussion Play create concluded that embedded music therapy sessions in an outdoor environment can *"improve children's peer interaction"*²⁶.

Additional research from the journal *'Frontiers in Integrative Neuroscience'* concludes that movement is critical to many areas of functioning and so providing an environment where an individual can move in an unrestricted and unselfconscious way, such as in an outdoor playground, can stimulate overall growth in areas such as cognition, behavior, social skills, and communication²⁷, which would be very beneficial for individuals with autism.

The power of Percussion Play

The outdoor musical instruments created by Percussion Play are diverse and accessible to everyone and make perfect additions to any setting, particularly gardens and social spaces in schools, nurseries, care homes, nursing homes, hospices, and hospitals, where they can be used and enjoyed by all who encounter them. The instruments created by Percussion Play encourage interaction and communication and some of the instruments, such as *The Duo*, have been specially designed to enable those on the autistic spectrum to engage with the instruments in their way. The benefits of playing these beautiful instruments are not limited to those living with disabilities or conditions like autism, though; anyone and everyone can access the mental health benefits that playing these wonderful instruments provides and Percussion Play instruments are currently being installed in a variety of settings all over the world.

²⁶ Kern, P., Aldridge, D. *Journal of Music Therapy* (2006); 43(4), 270-294

²⁷ <http://www.coastmusictherapy.com/how-music-helps/autism-research/>

References

Allgood, N Music Therapy Perspectives (2005)

Coast Music Therapy website - Accessed 25/02/2018

<http://www.coastmusictherapy.com/how-music-helps/autism-research/>

Geretsegger, M., Elefant, C., Mossler, K.A., & Gold, C Cochrane Database of Systematic Reviews 2014 Jun 17;6:CD004381

Helt, M., Kelley, E., e, M., Pandey, J., Boorstein, H., Herbert, M., et al. *Can children with autism recover? If so, how?* Neuropsychological Review (2008)

Kaczmarek, L. The Benefits of Early Intervention for Children with Autism (2014)

Kern, P., Aldridge, D. Journal of Music Therapy (2006)

Kim, J., Wigram, T., Gold, C. Kim, J., Autism (2009)

Koegel L K, *Interventions to facilitate communication in autism* Autism Development Disorder (2000) pg383-91

Legg, R. (2009). Using music to accelerate language learning: an experimental study. Research in Education, Retrieved from the Professional Development Collection database.

Lim, A. H. Journal of Music Therapy (2010) 47(1), 2-26

Netherwood, C. (2007). *Music to your ears*. Australian Parents, 64.

Nurse Journal Website - Accessed 25/02/2018

<https://nursejournal.org/community/the-benefits-of-music-therapy-for-autistic-children/>

Saylor, S., Sidener, T., Reeve, S., Fetherston, A., Progar, P. Journal of Applied Behavior Analysis (2012)

Schellenberg, E. (2005). Music and Cognitive Abilities. *Current Directions in Psychological Science* (Wiley-Blackwell).

Stephens, C. E. Autism (2008)

The National Autistic Society website - Accessed 25/02/2018

<http://www.autism.org.uk/about/what-is/myths-facts-stats.aspx>

The National Research Council Educating Children with Autism (2001)

The Rhythm Tree website- Accessed 25/02/2018

<https://www.therhythmtree.com/video-blog/entry/how-does-music-therapy-benefit-children-with-autism>

Thompson, G.A., McFerran, K.S., & Gold, C. Child: Care, Health and Development; (2013) ePub ahead of print

Vaiouli, P., Grimmet, K., & Ruich, L.J. Autism (2015)

Yoon, J. Music in the Classroom: Its Influence on Children's Brain Development, Academic Performance, and Practical Life Skills (2000)

