



Q & A

Autism Spectrum Disorders: Treatment Methodology Debates

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- Q. Are there professionally accepted treatments for children with Autism Spectrum Disorder (ASD)?
- A. There are several professionally accepted treatments for ASD, but much debate about which is the most effective. Some of the most popular treatment modalities for children with ASD are described in this Q & A.

Introduction

There is no known “cure” for ASD. There are a number of interventions that are accepted in the professional literature, although there is no agreement as to which is the most efficacious. Indeed, the matter is hotly debated.¹

Generally, ASD treatment approaches are described as belonging to one or more of several general approaches. These include behavioral interventions; developmental approaches; behavioral and developmental hybrids; skills-based approaches, and psychosocial treatments.² Some of the treatments within these categories are considered “comprehensive” because they address a range of symptoms of ASD. Others are considered “specific” because they address

¹ Zachary Warren, Melissa McpHeeters, Nila Saithe, Jennifer H. Foss-Feig, Allison Glasser, and Jeremy Veenstra, VaderWeele, *A Systemic Review of Early Intensive Intervention for Autism Spectrum Disorders*, 127 PEDIATRICS e1303, e1304 (2011).

² See Laurie A. Vismara and Sally J. Rogers, *Behavioral Treatments in Autism Spectrum Disorder: What do We Know?* 6 ANNU. REV. CLIN. PSYCHOL. 447 (2010).

certain “target” symptoms.³ Descriptions of some of the frequently used interventions are set forth below.⁴

Frequently Used Interventions

1. Applied Behavior Analysis

One of the best known and most widely used comprehensive treatment interventions for ASD is Applied Behavioral Analysis (ABA).⁵ ABA is a behavioral intervention that focuses on

a careful assessment of how environmental events interact to influence an individual’s behavior. The assessment consists of contextual factors such as the setting in which a behavior occurs; motivational variables such as the need to attain something; antecedent events leading to the occurrence of a behavior, such as a request to do something or a question from another person; and consequences or events following the behavior that dictate whether the behavior is likely to occur again.⁶

There are a number of different ABA-based models, some of which are discussed below.

a) *DTT & EIBI*

One well known ABA-based treatment modality for children under the age of five is Early Intensive Behavioral Intervention (EIBI).⁷ EIBI is a version of Discrete

³ Samuel L. Odom, Brian A. Boyd, Laura J. Hall, and Kara Hume, *Evaluation of Comprehensive Treatment Models for Individuals with Autism Spectrum Disorders*, 40 J. AUTISM DEV. DISORD 425, 429.

⁴ This is not an exhaustive list as there are a number of different treatment intervention models that have been proven effective and supported in the professional literature. Furthermore, this list does not possible medical treatments (e.g., medications). For a more expansive detailed list, see “Evidence-Based Practices Comparison Chart” developed by Brenda Smyth Miles, Ph.D. which is attached to “Education Services for Military Dependent Children with Autism,” a report by the Ohio State University Project Team (comparing evidence-based practices to treat ASD that have been developed by the Centers for Medicare & Medicaid Services, the National Autism Center, and the National Professional Development Center on ASD) available at <http://www.autism-society.org/living-with-autism/treatment-options/ebp-comparison-chart-o.pdf> (last visited February 9, 2013); see generally Vismara & Rogers, *supra* note 2 (review of selected ASD treatment interventions); see also Odom & Boyd, *et al.*, *supra* note 3. at 429.

⁵ Vismara & Rogers, *supra* note 2, at 449. Odom & Boyd, *et al.*, *supra* note 3, at 429.

⁶ *Id.*

⁷ Vismara & Rogers, *supra* note 2, at 449.

Trial Training (DTT) which is a behavioral intervention that:

involves breaking down complex skills and teaching each subskill through a series of highly adult-structured, massed teaching trials. Each trial or learning opportunity consists of a concise and consistent instruction for a response, typically the imitation of the therapist's model or compliance with a verbal request, and acquisition occurs through the use of explicit prompting and shaping techniques with systematic reinforcement contingent upon the child's production of the target response. Teaching trials are typically delivered in blocks over the course of 20–40 hours per week for two or more years, with skill emphasis in communication, social skills, cognition, and pre-academic skills (e.g., letter and number concepts, matching).⁸

DTT/EIBI is highly regarded by many ABS professionals.⁹ Studies have found EIBI to be effective, particularly in improving language and cognitive skills for young children when it is delivered in high levels of intensity.¹⁰

DTT/EIBI, however, is not without its critics. Some criticize DTT/EIBI because it is “adult-directed instruction,” requires a “highly structured teaching environment, and uses “artificial or unrelated reinforcers that can prevent generalization to the natural environment and lead to cue dependency and rote responding.”¹¹ It has also been criticized for requiring that providers have a high level of training and expertise.¹² There are also concerns about the use of punitive measures when the child responds inaccurately.¹³ In a 2008 comparative synthesis of studies of

⁸ *Id.* at 449 *citing* (Leaf & McEachin 1999). Vismara & Rogers, *supra* note 2, at 449. DTT is often also referred to as “Lovaas therapy” or the “UCLA model behavior treatment.”

⁹ Linda A. LeBlanc, Ph.D., BCBA-D*, Jennifer M. Gillis, Ph.D., BCBA-D, *Behavioral Interventions for Children with Autism Spectrum Disorders*, in “Autism Spectrum Disorders: Practical Overview for Pediatricians,” Guest eds. Dilip R. Patel, M.D. & Donald E. Greydanus, M.D., 59 PEDIATRIC CLINICS OF NORTH AMERICA 147, 152 (2012).

¹⁰ Vismara & Rogers, *supra* note 2, at 449; see also LeBlanc & Gillis, *supra* note 9, at 150, and Mathew D. Lerner, M.A., Ph.D, Susan W. White, Ph.D, James C. McPartland, Ph.D. *Mechanisms of change in psychosocial interventions for autism spectrum disorders*, 14 DIALOGUES CLIN NEUROSCI. 307 (2012).

¹¹ Vismara & Rogers, *supra* note 2 at 450 (*internal citations omitted*); see also discussion at note 13, *infra*.

¹² *Id.* at 449

¹³ *Id.* Vismara & Rogers report that these and the other criticisms of DTT, as described herein, have led to the adoption of some new behavioral interventions such as “incidental teaching,” “pivotal response training,” and “milieu training” — all of which include “imbedding teaching opportunities within naturally occurring events (e.g., play routines, mealtime, dressing, bath time), following the child’s lead in initiating learning events, explicit prompting, reinforcing attempts, and natural reinforcement.” *Id.* However, the current research on the effectiveness of these interventions or whether they are better than DT is inconsistent. *Id.*

EIBI, researchers found that EIBI was effective for many, but not all, children with autism and that more research was needed.¹⁴

b) *Learning Experiences: An Alternative Program for Preschoolers and Parents (LEAP)*

LEAP is a program for children with autism that focuses on “systemic integration of social interventions within a comprehensive and long-term context of high quality interventions for all developmental needs.”¹⁵ The interventions that are used in this program are based on data and include: highly individualized curricula that identify and address each child’s individual needs; development of skills by teaching “across multiple exemplars, settings, and social partners;” significant use of naturally occurring teaching opportunities; peer mediations to improve social skills; and extensive parent training.¹⁶ The effectiveness of this intervention has not been sufficiently measured in the professional literature.

2. Developmental Models

Developmental models focus on improving the child’s social and communication skills using a positive behavioral support model.¹⁷ Developmental interventions include: teaching by following the child’s lead; responding to all communication by the child as if it is intentional and purposeful; emphasizing emotional expressions by the adult interacting with the child; and modifying language and social interaction to improve skills.¹⁸

a. *Early Start Denver Model (ESDM)*

One evidenced-based developmental model is the Early Start Denver Model (ESDM). This approach is for young children in the toddler age. It combines ABA with developmental interventions.¹⁹ This intervention integrates play and

¹⁴ Brian Reichow & Mark Worlery, *Comprehensive Synthesis of Early Intensive Behavioral Interventions for Young Children with Autism Based on the UCLA Young Autism Project Model*, 39 J. AUTISM DEV. DISORD. 23, 38-39; see also Warren, et al., *supra* note 1, at e1309. (finding that overall, DTT/EIBI have been shown to improve cognitive ability, language and adaptive skills, as well as educational outcomes but that more research is needed).

¹⁵ Vismara & Rogers, *supra* note 2, at 451.

¹⁶ *Id.* at 452.

¹⁷ Brooke R. Ingersoll, *Teaching Social Communication: A Comparison of Naturalistic Behavioral and Development, Social Pragmatic Approaches for Children with Autism Spectrum Disorders*, 12 Journal of Positive Behavioral Support 33, 35 (2010).

¹⁸ *Id.* at 35.

¹⁹ Geraldine Dawson, Sally Rogers, Jeffery Munson, Milani Smith, Jamie Winter, Jessica Greenson, Amy Donaldson, and Jennifer Varley, *Randomized Controlled Trial of an Intervention*

teaching opportunities as well as using everyday life activities to teach skills.²⁰ Research shows that this model has been effective, particularly in the improvement of language skills and decreasing symptoms of ASD, but that more research is needed.²¹

b. *Developmental Individual-Difference, Relationship-Based Model/ Floor Time*

Another developmental-based intervention that has been successful and increasingly adopted by clinicians is the Developmental Individual-Difference, Relationship-Based Model, also known as Floor Time (DIR/ Floor Time). This intervention attempts to support children to become intentionally interactive and also develop cognitive, language, and social skills.²² DIR/Floortime uses play to teach skills to the child. The core element of this model is the adult playing with the child on the floor and following the child's lead to develop the child's capacities and skills.²³ It also incorporates other therapies such as occupational, physical and speech and language therapy.²⁴ DIR/Floortime is not as well known or accepted as ABA. It has, however, been found to be an important effective intervention.²⁵

3. Skills-Based Interventions & Psychosocial Therapies: Cognitive Behavioral Therapies

Skill-based and psychosocial interventions are also increasingly gaining acceptance as effective treatment interventions.²⁶ These interventions are not

for *Toddlers with Autism: The Early Start Denver Model*," 125 PEDIATRICS e17-e23.; Warren, et al., *supra* note 1.

²⁰ Sally J. Rogers, Ph.D., Sally Ozonoff, Ph.D., Robin L. Hansen, "Autism Spectrum Disorders," in *Autism and other Neurodevelopmental Disorders*, eds. Robin L. Hansen, Sally J. Rogers, Ph.D. (American Psychiatric Pub. 2012) at 10; see also Visamara & Rogers, *supra* note 2 at 452.

²¹ Visamara & Rogers, *supra* note 2, at 451.

²² Visamara & Rogers, *supra* note 2, at 454.

²³ See Ester B. Hess, Ph.D., *DIR@Floortime™: Evidence based practices towards the treatment of autism and sensory processing in children and adolescents*, 6 INT. J. CHILD HEALTH HUM. DEV. (2013).

²⁴ *Id.*

²⁵ Rubina Lal & Rakhee Chhabria, *Early Intervention of Autism: A Case for Floor Time Approach*, in RECENT ADVANCES IN AUTISM SPECTRUM DISORDERS, Vol. 1, Chapt. 29 (2013), available at http://cdn.intechopen.com/pdfs/43407/inTech-Early_intervention_of_autism_a_case_for_floor_time_approach.pdf (last visited May 27, 2013).

²⁶ Lerner, et al., *supra* note 10.

part of comprehensive programs. Rather, they are specific interventions used to address behavioral problems and improve skills of children with ASD.

a. *Picture Exchange Communication System*

The Picture Exchange Communication System (PECS) is an “icon-based form of augmentative alternative form of communication.”²⁷ Implementation of this approach involves the use of pictures in combination of language to allow the child to learn to better spontaneous communication.²⁸ Studies on the effectiveness of this intervention have varied.²⁹ It appears that PECS is a more effective form of communication than manual signing but not necessarily better for increasing speech.³⁰

b. *Positive Behavior Support*

Positive Behavioral Support (PBS) is another skill-based ABA intervention used to treat ASD. PBS is a “collaborative, assessment-based approach to addressing problem behavior that integrates the procedural tools of behavioral science with person-centered values and a system of perspective.”³¹ PBS attempts to prevent behavioral problems from occurring by teaching positive alternatives to the negative behavior.³² PBS is familiar to many P&A staff who have advocated for its use in schools and juvenile justice facilities.

c. *Cognitive Behavioral Therapy*

Cognitive Behavioral Therapy (CBT) is another familiar intervention and has also been documented by some as an efficacious treatment intervention for ASD.³³

²⁷ Jennifer Ganz, Richard & Emily M. Lund, *The Picture Exchange Communication System (PECS): A promising method for Improving Communication Skills for Learners with Autism Spectrum Disorders*, 47 EDUC. & TRAINING IN AUTISM & DEVELOP. DIS. 176 (2012).

²⁸ *Id.*; see also Visamara & Rogers, *supra* note 2, at 455.

²⁹ Visamar & Rogers, *supra* note 2, at 456 (overall, the results of the studies done have demonstrated that it more effective than manual signing but not necessarily better for increasing speech.); Ganz, *et al.*, *supra* note 28, at 184 (same); Margaret A. Maglione, M.P.P., Daphna Gans, Ph.D., *et al.*, *Nonmedical Interventions for Children with ASD: Recommended Guidelines and Future Research Needs*, 130 PEDIATRICS 169 (November 2012)(finding that there was “moderate evidence” demonstrating that PECS was efficacious).

³⁰ Visamar & Rogers , *supra* note 2, at 456; Ganz, *et al.*, *supra* note 28, at 184.

³¹ Vismara & Rogers , *supra* note 2, at 457.

³² *Id.*

³³ See “Evidence-Based Practices Comparison Chart” listing CBT has an evidence-based practice to treatment ASD, *supra* note 4.

Among the various psychosocial interventions used to treat ASD, CBT is the most commonly utilized.³⁴ In the context of ASD, CBT is often used as a treatment intervention to address problems with social communication for older children who have at least average cognitive abilities.³⁵

Conclusion

It is difficult, if not impossible, to determine which treatment modality is the “best” or most “efficacious” because there is no true consensus on this issue. Although ABA is the most widely used type of intervention, it is not always effective for all children. It may, therefore, be best to focus on ensuring that an array of services are made available to meet the individualized needs of the child without advocating for the adoption of a particular methodology.

³⁴ Lerner, *et al.*, *supra* note 10.

³⁵ *Id.*