

## QUESTION 5: WHERE CAN I TURN FOR SERVICES?

**Comparing cognitive outcomes among children with autism spectrum disorders receiving community-based early intervention in one of three placements**

Nahmias AS, Kase C, Mandell DS. *Autism Int J Res Pract.* 2014 Apr;18(3):311-320. [PMID: 23188885]

The Individuals with Disabilities Educational Act (IDEA) requires that, to the maximum extent possible and appropriate, children with disabilities should receive a free public education in the “least restrictive environment” (i.e., in a “regular classroom” with non-disabled peers). Several studies on treatment models for preschool aged children with ASD have observed that inclusion of children with ASD in classroom settings alongside their typically developing peers have resulted in cognitive gains for children with ASD. However, such studies are few and often not generalizable to broader populations as they were not implemented by community providers, lacked comparison groups, or contained insufficient sample sizes. In addition, researchers continue to debate the feasibility of employing ASD intervention strategies in inclusive classroom settings, with some researchers arguing that children with ASD may experience social rejection from their peers. Researchers in this study thus sought to comparatively examine the impact of community-based early intervention. They reviewed the preschool educational records of 98 preschool aged children with ASD placed in one of three settings: inclusive classrooms (with typically developing peers), mixed disability classrooms, and autism-only classrooms. Children in inclusive groups received intervention services (typically 3 hours a day, 3 days a week) from early childhood or special education teachers in classrooms for typically developing children. Children in mixed disability classrooms in center-based preschools received early intervention (typically 2-3 hours a day, 3 days a week) from early childhood or special education teachers in classrooms with children with developmental or other disabilities. Children in autism-only groups received early intervention in center-based autism support preschools (typically 5 hours a day, 5 days a week) via one or a combination of the following interventions: Applied Behavioral Analysis (ABA); Training and Education of Autistic and Related Communication Handicapped Children (TEACCH); Developmental, Individual Difference, Relationship-based (DIR)/Floortime model; visual supports; sensory integration; and creative art therapies. Most programs in all groups included instruction based a curriculum aligned with early learning standards (e.g. Creative Curriculum, HighScope). Children in all groups also received speech, occupational, and physical therapies in addition to their weekly early intervention services.

Investigators noted that gender, type of household and previous history of intervention did not differ significantly among the three placement groups. Researchers controlled all analyses for participants’ age, ethnicity, and baseline communication ability (collected at the start of preschool early intervention), which did differ significantly between placement groups. Researchers also controlled all analyses for all other baseline measures of children’s abilities, even though they did not differ significantly among the groups. Baseline measures of children’s abilities were determined by a multidisciplinary evaluation team using the Developmental Assessment of Young Children (DAYC), which measures cognition, communication, social-emotional development, physical development, and adaptive behavior in children from birth through age 5 years, 11 months. Children’s progress over an average

period of 2 years was assessed by trained master's level research staff using a cognitive abilities test called the Differential Abilities Scales (DAS), designed for use in children between the ages of 2 and 17 across a broad range of developmental levels. Investigators determined that children undergoing early intervention in inclusive settings resulted in significantly higher DAS-based cognitive scores compared to children with ASD in mixed disability placements and autism-only placements, though the difference in the latter case was not statistically significant. Cognitive scores between children in mixed classrooms and autism-only placements did not significantly differ. Strikingly, relative improvement following early intervention in inclusive settings versus that seen in mixed disability settings was greatest in children with more severe social impairments (lower social-emotional baseline scores), decreased adaptive behaviors (lower adaptive behavior baseline scores), and with at least some expressive or receptive communication. The researchers hypothesize that children with ASD in inclusive classroom settings may benefit from observing and imitating social engagement, social behaviors, and cognitive skills shown by their typically developing peers. While this research highlighted intriguing outcomes related to the incorporation of early intervention in inclusive community settings, prospective studies examining cognitive development over time and randomized intervention trials are needed to further elucidate the effects of peer interactions so that future learning environments may be designed to best serve children with ASD.