

DIR® and DIRFloortime®

Evidence-Base Quick Facts



The following is a brief sample of the evidence-base supporting DIR and DIRFloortime (Floortime). The research includes the highest levels of evidence and includes case studies, group design studies, randomized controlled trial studies, and systematic reviews. Unlike behavioral approaches which narrowly focus on specific behaviors, DIR is an interdisciplinary, individualized, whole-child, developmental approach that is broad in both its approach and its impact.

Multiple randomized-controlled studies were published since 2011 identifying statistically significant improvements for children with autism who used Floortime versus traditional behavioral approaches (Solomon, et. al., 2014; Casenheiser, et al., 2011; Lal & Chhabria, 2013; Pajareya & Kopmaneejumruslers, 2011, Pajareya et. al., 2019). Most of these RCT studies also examined parental stress and found that parental stress actually decreased using DIRFloortime.

Solomon, Necheles, Ferch, and Bruckman (2007) conducted a pre-post survey of the Play and Language for Autistic Youngsters (PLAY) Project Home Consultation program. This program is a Floortime program. Results indicated statistically significant improvement in the children's Functional Developmental Capacities and 100% of the parents reported satisfaction in participating.

The cost associated with the DIRFloortime-based weekly intervention program as described in Casenheiser et al. (2012) is approximately \$5000 per child per year, which is considerably less than the estimates of therapy for most therapist-delivered programs that typically provide 20–30 weekly hours of treatment (Flanders et al., 2005; Motiwala et al., 2006).

Case studies have been effective in supporting the use of DIRFloortime with children with autism. Dionne and Martini (2011) demonstrated statistically significant improvement in communication between parent and child. Wieder and Greenspan (1997, 2005) did comprehensive case studies that spanned from 8-15 years. These studies supported the long-lasting results DIRFloortime had on individual child skills, as well as the emotional connections the families were able to develop over time using this approach.

There are also systematic reviews that support the effectiveness of DIRFloortime. (Binns and Cardy, 2019; Boshoff, K. et al., 2020; Cheng, W.M. et al., 2022; Divya, K.Y., et al., 2023; Smith & Iadarola, 2015).

Not only is the research supporting Floortime expanding, there is increasing research, analysis, and reviews that are raising questions about the research on ABA and behavioral approaches. In the recent 2020 Project AIM: Autism intervention meta-analysis for studies of young children published in the American Psychological Association's Psychological Bulletin, they found that developmental approaches had stronger evidence to support effectiveness than behavioral approaches when effect size is considered. Also, in a recent report by the US Department of Defense on the TRICARE Autism Care Demonstration (this is an

ABA benefit that was provided to children covered under the benefit), they reported that 76% of those that received the services had little to no change and 9% actually worsened. (TRICARE is the health insurance coverage for many in the US military and Department of Defense.)

In a January, 2020 report by the Council on Children with Disabilities, Section on Developmental and Behavioral Pediatrics of the American Academy of Pediatrics entitled "Identification, Evaluation, and Management of Children with Autism Spectrum Disorder", they stated, "Intervention for young children also may be derived from developmental theory, which is focused on the relationship between the caregiver's level of responsiveness and the child's development of social communication. Through interaction with others, children learn to communicate, regulate emotions, and establish a foundation for increasingly complex thinking and social interaction. Therefore, developmental models designed to promote social development in children with ASD are focused on the relationship between the child with ASD and his or her caregiver through coaching to help increase responsiveness to the adult (ie, the interventionist or parent or caregiver) through imitating, expanding on, or joining into child-initiated play activities. This approach may address core symptoms of ASD, such as joint attention, imitation, and affective social engagement. Developmental models for intervention are focused on teaching adults to engage in nondirective interactive strategies to foster interaction and development of communication in the context of play. One such approach is known as DIRFloortime (The Developmental, Individual Differences, and Relationship-Based model)." (Hyman et. al., 2020)

In an article published in the Journal of the American Medical Association in November, 2020 entitled, "Intervention Recommendations for Children with Autism in Light of a Changing Evidence Base" they recommended that pediatricians need to consider recommending a wider range of options to parents. In regards to the changing evidence base, they reported, "There has been a recent precipitous increase in both the quantity and quality of research examining interventions for young children with autism. From 2011 to 2018, the reported number of randomized clinical trials (RCTs) of interventions for young children with autism increased from 2 to 48. To summarize this transforming evidence base, we systematically reviewed and meta-analyzed 150 reports of 130 studies, 87 of which were RCTs, which collectively reported effect sizes for 1,615 outcomes, representing 6,240 young children with autism. Several findings emerged from this research, but two are of direct relevance to pediatricians directing families to services and supports following diagnosis. First, three intervention approaches that, at present, are not commonly recommended have garnered more substantial empirical support from RCTs relative to behavioral interventions. These are naturalistic developmental behavioral interventions (NDBIs) and developmental interventions. Although distinct from one another, these interventions are alike in that they are provided in children's natural contexts (eg, everyday interactions with caregivers) and their learning targets are guided by early developmental sequences. These attributes may make them preferable to families, since they are less likely to disrupt and separate children from family routines than more structured clinician-led interventions." (Sandbank et. al., 2020)

The evidence is strong and building – DIRFloortime works! Learn more at www.icdl.com/research.

References

- Binns, A & Cardy, J.O. (2019). Developmental social pragmatic interventions for preschoolers with autism spectrum disorder: A systematic review. *Autism and Developmental Language Impairments*, 4(1): 1–18. <https://journals.sagepub.com/doi/10.1177/2396941518824497>
- Casenhiser, D. M., Shanker, S., & Stieben, J. (2011). Learning through interaction in children with autism: Preliminary data from a social-communication-based intervention. *Autism*, 1-22. <http://dx.doi.org/10.1177/1362361311422052>.
- Cheng, W.M., Smith, T.B., Butler, M. et al. (2022). Effects of Parent-Implemented Interventions on Outcomes of Children with Autism: A Meta-Analysis. *J Autism Dev Disord*. <https://doi.org/10.1007/s10803-022-05688-8>.
- Divya, K.Y., Begum, Farzana; John, Sheeba Elizabeth; Francis, Frincy. (2023). DIR/Floor Time in Engaging Autism: A Systematic Review. *Iranian Journal of Nursing and Midwifery Research* 28(2):p 132-138
- Dionne, M., & Martini, R. (2011). Floor Time Play with a child with autism: A single-subject study. *Canadian Journal of Occupational Therapy*, 78, 196-203. <http://dx.doi.org/10.2182/cjot.2011.78.3.8>
- Greenspan, S. I., Brazelton, T. B., Cordero, J., Solomon, R., Bauman, M. L., Robinson, R., ... Breinbauer, C. (2008). Guidelines for early identification, screening, and clinical management of children with autism spectrum disorders. *Pediatrics*, 121(4), 828-830. <http://dx.doi.org/10.1542/peds.2007-3833>
- Greenspan, S., & Wieder, S. (1997). Developmental patterns and outcomes in infants and children with disorders in relating and communicating: A chart review of 200 cases of children with autistic spectrum diagnoses. *Journal of Developmental and Learning Disorders*, 1, 87-141. Retrieved from <http://www.playworks.cc/articles/200casechartreview.pdf>
- Hess, E. (2013). DIR®/Floortime™: Evidence based practice towards the treatment of autism and sensory processing disorder in children and adolescents. *International Journal of Child Health and Human Development*, 6(3). Retrieved from <http://www.centerforthedevelopingmind.com/sites/default/files/IJCHD-2013-6-Hess-Floortime.pdf>
- Hyman, S.L., Levy, S.E., Myers, S.M. and COUNCIL ON CHILDREN WITH DISABILITIES, SECTION ON DEVELOPMENTAL AND BEHAVIORAL PEDIATRICS (2020) Identification, Evaluation, and Management of Children With Autism Spectrum Disorder, *Pediatrics* January 2020, 145 (1) e20193447; DOI: <https://doi.org/10.1542/peds.2019-3447>
- Lal, R., & Chhabria, R. (2013). Early intervention of autism: A case for Floor Time approach. *Recent Advances in Autism Spectrum Disorders*, 1. <http://dx.doi.org/10.5772/54378>
- Nikolopoulos, C., Keuster, D., Sheehan, M., Dhanya, S., Herring, W., Becker, A., & Bogart, L. (2010). Socially Assistive Robots and Autism. *Solid State Phenomena*, 166-167, 315-320. <http://dx.doi.org/10.4028/www.scientific.net/SSP.166-167.315>
- Pajareya, K., & Kopmaneejumruslers, K. (2011). A pilot randomized controlled trial of DIR/Floortime™ parent training intervention for pre-school children with autistic spectrum disorders. *Autism*, 15(2), 1-15. <http://dx.doi.org/10.1177/1362361310386502>
- Pajareya, K., & Nopmaneejumruslers, K. (2012). A one-year prospective follow-up study of a DIR/Floortime™ parent training intervention for pre-school children with Autistic Spectrum Disorders. *Journal of the Medical Association of Thailand*, 95(9), 1184-1193. Retrieved from <http://www.floortimethailand.com/images/info/interesting%20ari/2063.pdf>
- Pajareya, K, Sutthritpongsa, S, Kongkasuwan, R. (2019) DIR/Floortime® Parent Training Intervention for Children with Developmental Disabilities: a Randomized Controlled Trial. *Siriraj Medical Journal*. 2019. 71(5), 331-338.
- Sandbank, M., Bottema-Beutel, K., Crowley, S., Cassidy, M., Dunham, K., Feldman, J. I., Crank, J., Albarran, S. A., Raj, S., Mahbub, P., & Woynaroski, T. G. (2020). Project AIM: Autism intervention meta-analysis for studies of young children. *Psychological Bulletin*, 146(1), 1–29. <https://doi.org/10.1037/bul0000215>
- Smith, Tristram & Iadarola, Suzannah (2015) Evidence Base Update for Autism Spectrum Disorder, *Journal of Clinical Child & Adolescent Psychology*, 44:6, 897-922
- Solomon, R., Necheles, J., Ferch, C., & Bruckman, D. (2007). Pilot study of a parent training program for young children with autism: The PLAY Project Home Consultation program. *Autism*, 11(3), 205-224. <http://dx.doi.org/10.1177/1362361307076842>
- Solomon, R., Van Egeren, L., Mahoney, G., Quon Huber, M., Zimmerman, P. (2014). PLAY Project Home Consultation Intervention Program for Young Children With Autism Spectrum Disorders: A Randomized Controlled Trial. *Journal of Developmental and Behavioral Pediatrics*, 35(8), 475-485. http://www.playproject.org/assets/PLAY_Project_Home_Consultation_Intervention.1.pdf
- Weeks, K. (2009). Musical gold: The partner's singing voice in DIR®/Floortime™. *Growing and Maturing*, 15, 22-23. Retrieved from www.imagine.musictherapy.biz/Imagine/archive_files/Early%20Childhood%20News%20letter%202009.pdf#page=22
- Wieder, S., & Greenspan, S. I. (2005). Can children with autism master the core deficits and become empathetic, creative and reflective? A ten to fifteen year follow-up of a subgroup of children with autism spectrum disorders (ASD) who received a comprehensive developmental, individual-difference, relationship-based (DIR) approach. *The Journal of Developmental and Learning Disorders*, 9, 39-60. Retrieved from <http://playworks.cc/articles/DIRstudy--10yearfollowup.pdf>