

# Antecedent-Based Intervention Fact Sheet

## Brief Description

Antecedent-based interventions (ABI) include a variety of modifications that are made to the environment/context in an attempt to change or shape a student's behavior. ABI are typically implemented after conducting a functional behavior assessment which can assist in identifying both the function of an interfering behavior, along with environmental conditions that may have become linked to a behavior over time. Once factors in the environment that may be reinforcing interfering behavior have been identified, ABI are implemented to modify the environment or activity so that the factor no longer elicits the interfering behavior. Common ABI procedures include: 1) modifying educational activities, materials, or schedule (e.g., incorporating student interest), 2) incorporating student choice in educational activities/materials, 3) preparing students ahead of time for upcoming activities (e.g., priming), 4) varying the format, level of difficulty, or order of instruction during educational activities (e.g., varying high and low demand requests), 5) enriching the environment to provide additional cues or access to additional materials (e.g., visual cues, access to sensory stimuli), and 6) modifying prompting and reinforcement schedules and delivery (e.g., varying access to reinforcement prior to educational activities). ABI strategies often are used in conjunction with other evidence-based practices such as functional communication training, extinction, and reinforcement.

## Qualifying Evidence

ABI meets evidence-based criteria with 32 single case design studies.

## Ages

According to the evidence-based studies, this intervention has been effective for toddlers (0-2 years) to young adults (19-22 years) with ASD.

## Outcomes

ABI can be used effectively to address social, communication, behavior, play, school-readiness, academic, motor, and adaptive skills.

## Research Studies Providing Evidence

Adcock, J., & Cuvo, A. J. (2009). Enhancing learning for children with autism spectrum disorders in regular education by instructional modifications. *Research in Autism Spectrum Disorders*, 3(2), 319-328.  
doi: 10.1016/j.rasd.2008.07.004

- Ahearn, W. H. (2003). Using simultaneous presentation to increase vegetable consumption in a mildly selective child with autism. *Journal of Applied Behavior Analysis, 36*(3), 361-365. doi: 10.1901/jaba.2003.36-361
- Butler, L. R., & Luiselli, J. K. (2007). Escape-maintained problem behavior in a child with autism antecedent functional analysis and intervention evaluation of noncontingent escape and instructional fading. *Journal of Positive Behavior Interventions, 9*(4), 195-202. doi: 10.1177/10983007070090040201
- Cale, S. I., Carr, E. G., Blakeley-Smith, A., & Owen-DeSchryver, J. S. (2009). Context-based assessment and intervention for problem behavior in children with autism spectrum disorder. *Behavior modification, 33*(6), 707-742. doi: 10.1177/0145445509340775
- Carter, C. M. (2001). Using choice with game play to increase language skills and interactive behaviors in children with autism. *Journal of Positive Behavior Interventions, 3*(3), 131-151. doi: 10.1177/109830070100300302
- Conroy, M. A., Asmus, J. M., Sellers, J. A., & Ladwig, C. N. (2005). The use of an antecedent-based intervention to decrease stereotypic behavior in a general education classroom: A case study. *Focus on Autism and Other Developmental Disabilities, 20*(4), 223-230. doi: 10.1177/10883576050200040401
- Dudley, L. L., Johnson, C., & Barnes, R. S. (2002). Decreasing rumination using a starchy food satiation procedure. *Behavioral Interventions, 17*(1), 21-29. doi: 10.1002/bin.104
- Dunlap, G., & Plienis, A. J. (1991). The influence of task size on the unsupervised task performance of students with developmental disabilities. *Education and Treatment of Children, 14*(2), 85-95.
- Dyer, K., Dunlap, G., & Winterling, V. (1990). Effects of choice making on the serious problem behaviors of students with severe handicaps. *Journal of Applied Behavior Analysis, 23*(4), 515-524. doi: 10.1901/jaba.1990.23-515
- Ebanks, M. E., & Fisher, W. W. (2003). Altering the timing of academic prompts to treat destructive behavior maintained by escape. *Journal of Applied Behavior Analysis, 36*(3), 355-359. doi: 10.1901/jaba.2003.36-355
- Graff, R. B., & Green, G. (2004). Two methods for teaching simple visual discriminations to learners with severe disabilities. *Research in Developmental Disabilities, 25*(3), 295-307. doi: 10.1016/j.ridd.2003.08.002
- Hagopian, L. P., & Toole, L. M. (2009). Effects of response blocking and competing stimuli on stereotypic behavior. *Behavioral Interventions, 24*(2), 117-125. doi: 10.1002/bin.278
- Haley, J. L., Heick, P. F., & Luiselli, J. K. (2010). Use of an antecedent intervention to decrease vocal stereotypy of a student with autism in the general education classroom. *Child & Family Behavior Therapy, 32*(4), 311-321. doi: 10.1080/07317107.2010.515527
- Kennedy, C. H. (1994). Manipulating antecedent conditions to alter the stimulus control of problem behavior. *Journal of Applied Behavior Analysis, 27*(1), 161-170. doi: 10.1901/jaba.1994.27-161
- Kliebert, M. L., & Tiger, J. H. (2011). Direct and distal effects of noncontingent juice on rumination exhibited by a child with autism. *Journal of Applied Behavior Analysis, 44*(4), 955-959. doi: 10.1901/jaba.2011.44-955
- Koegel, L. K., Koegel, R. L., Frea, W., & Green-Hopkins, I. (2003). Priming as a method of coordinating educational services for students with autism. *Language, Speech, and Hearing Services in Schools, 34*(3), 228-235. doi: 10.1044/0161-1461(2003)019
- Ladd, M. V., Luiselli, J. K., & Baker, L. (2009). Continuous access to competing stimulation as intervention for self-injurious skin picking in a child with autism. *Child & Family Behavior Therapy, 31*(1), 54-60. doi: 10.1080/07317100802701400
- Mason, S. A., & Newsom, C. D. (1990). The application of sensory change to reduce stereotyped behavior. *Research in Developmental Disabilities, 11*(3), 257-271. doi: 10.1016/0891-4222(90)90012-W

- O'Connor, A. S., Prieto, J., Hoffmann, B., DeQuinzio, J. A., & Taylor, B. A. (2011). A stimulus control procedure to decrease motor and vocal stereotypy. *Behavioral Interventions*, 26(3), 231-242. doi: 10.1002/bin.335
- Piazza, C. C., Hanley, G. P., & Fisher, W. W. (1996). Functional analysis and treatment of cigarette pica. *Journal of Applied Behavior Analysis*, 29(4), 437-450. doi: 10.1901/jaba.1996.29-437
- Rapp, J. T., Vollmer, T. R., Peter, C., Dozier, C. L., & Cotnoir, N. M. (2004). Analysis of response allocation in individuals with multiple forms of stereotyped behavior. *Journal of Applied Behavior Analysis*, 37(4), 481-501. doi: 10.1901/jaba.2004.37-481
- Reinhartsen, D. B., Garfinkle, A. N., & Wolery, M. (2002). Engagement with toys in two-year-old children with autism: Teacher selection versus child choice. *Research and Practice for Persons with Severe Disabilities*, 27(3), 175-187. doi: 10.2511/rpsd.27.3.175
- Rispoli, M. J., O'Reilly, M. F., Sigafoos, J., Lang, R., Kang, S., Lancioni, G., & Parker, R. (2011). Effects of pre-session satiation on challenging behavior and academic engagement for children with autism during classroom instruction. *Education and Training in Autism and Developmental Disabilities*, 46(4), 607-618.
- Rispoli, M., O'Reilly, M., Lang, R., Machalicek, W., Davis, T., Lancioni, G., & Sigafoos, J. (2011). Effects of motivating operations on problem and academic behavior in classrooms. *Journal of Applied Behavior Analysis*, 44(1), 187-192. doi: 10.1901/jaba.2011.44-187
- Roane, H. S., Kelly, M. L., & Fisher, W. W. (2003). The effects of noncontingent access to food on the rate of object mouthing across three settings. *Journal of Applied Behavior Analysis*, 36(4), 579-582. doi: 10.1901/jaba.2003.36-579
- Rosales, R., Worsdell, A., & Trahan, M. (2010). Comparison of methods for varying item presentation during noncontingent reinforcement. *Research in Autism Spectrum Disorders*, 4(3), 367-376. doi: 10.1016/j.rasd.2009.10.004
- Schreibman, L., Whalen, C., & Stahmer, A. C. (2000). The use of video priming to reduce disruptive transition behavior in children with autism. *Journal of Positive Behavior Interventions*, 2(1), 3-11. doi: 10.1177/109830070000200102
- Sigafoos, J., Green, V. A., Payne, D., O'Reilly, M. F., & Lancioni, G. E. (2009). A classroom-based antecedent intervention reduces obsessive-repetitive behavior in an adolescent with autism. *Clinical Case Studies*, 8(1), 3-13. doi: 10.1177/1534650108327475
- Stichter, J. P., Randolph, J. K., Kay, D., & Gage, N. (2009). The use of structural analysis to develop antecedent-based interventions for students with autism. *Journal of Autism and Developmental Disorders*, 39(6), 883-896. doi: 10.1007/s10803-009-0693-8
- Taylor, B. A., Hoch, H., Potter, B., Rodriguez, A., Spinnato, D., & Kalaigian, M. (2005). Manipulating establishing operations to promote initiations toward peers in children with autism. *Research in Developmental Disabilities*, 26(4), 385-392. doi: 10.1016/j.ridd.2004.11.003
- Tiger, J. H., Fisher, W. W., Toussaint, K. A., & Kodak, T. (2009). Progressing from initially ambiguous functional analyses: Three case examples. *Research in developmental disabilities*, 30(5), 910-926. doi: 10.1016/j.ridd.2009.01.005
- Walpole, C. W., Roscoe, E. M., & Dube, W. V. (2007). Use of a differential observing response to expand restricted stimulus control. *Journal of Applied Behavior Analysis*, 40(4), 707-712. doi: 10.1901/jaba.2007.707-712

#### **ANTICIPATED BASED INTERVENTION FACT SHEET—SUGGESTED CITATION**

Hume, K. (2013). *Antecedent-based intervention (ABI) fact sheet*. Chapel Hill: The University of North Carolina, Frank Porter Graham Child Development Institute, The National Professional Development Center on Autism Spectrum Disorders.

Adapted from:

Neitzel, J. (2009). *Overview of antecedent-based interventions*. Chapel Hill: The University of North Carolina, Frank Porter Graham Child Development Institute, The National Professional Development Center on Autism Spectrum Disorders.