

## **Module: Antecedent-Based Interventions (ABI)**

### **Overview of Antecedent-Based Interventions (ABI)**

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

Antecedent-based interventions (ABI) is an evidence-based practice used to address both interfering and on-task behaviors. This practice is most often used after a functional behavior assessment (FBA) has been conducted to identify the function of the interfering behavior. Most of the studies in the evidence base focused on determining the effectiveness of ABI procedures to reduce repetitive, stereotypical, self-stimulatory, and self-injurious behaviors in learners with ASD. In one study, researchers also analyzed the effects of ABI strategies on engagement and on-task behavior. ABI are a collection of strategies in which environmental modifications are used to change the conditions in the setting that prompt a learner with ASD to engage in an interfering behavior. For example, many interfering behaviors continue to occur because the environmental conditions in a particular setting have become linked to the behavior over time. The goal of ABI is to identify factors that are reinforcing the interfering behavior and then modify the environment or activity so that the factor no longer elicits the interfering behavior. Common ABI procedures include 1) using highly preferred activities/items to increase interest level, 2) changing the schedule/routine, 3) implementing pre-activity interventions (e.g., providing a warning about the next activity, providing information about schedule changes), 4) offering choices, 5) altering the manner in which instruction is provided, and 6) enriching the environment so that learners with ASD have access to sensory stimuli that serve the same function as the interfering behavior (e.g., clay to play with during class, toys/objects that require motor manipulation). ABI strategies often are used in conjunction with other evidence-based practices such as functional communication training (FCT), extinction, and reinforcement.

#### **Evidence**

ABI meets evidence-based criteria with three single-subject and two group design studies across the preschool, elementary, and middle/high school age groups. It is particularly effective at reducing interfering behaviors including self-injurious, stereotypical, and self-stimulatory behaviors. ABI also have been shown to be effective in increasing engagement and on-task behavior in learners with ASD.

#### **With what ages are ABI effective?**

According to the evidence-based studies, this intervention has been effective for learners with ASD who ranged in age from 3 to 16 years.

#### **What skills or intervention goals can be addressed by ABI?**

ABI are most often used with learners with ASD who exhibit interfering behaviors, especially self-injurious, repetitive, and stereotypical behaviors. The studies in the evidence base also focused on promoting engagement and on-task behaviors in learners with ASD.

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### **In what settings can ABI be effectively used?**

The evidence-based studies were conducted mainly in clinic-based settings or in one-to-one teaching sessions with learners with ASD. However, in one study, ABI procedures were implemented in a combination of settings (i.e., regular classroom, resource room). Although most of the research did not demonstrate the use of ABI strategies in more naturalistic settings (e.g., during ongoing classroom routines and activities, in the home, in community-based settings), the results of the one study conducted in a regular classroom suggest that ABI procedures could be effectively implemented in more naturalistic settings as well.

### **Evidence Base**

The studies cited in this section document that this practice meets the NPDC on ASD's criteria for an evidence-based practice. This list is not exhaustive; other quality studies may exist that were not included.

#### **Preschool**

Dadds, M., Schwartz, S., Adams, T., & Rose, S. (1988). The effects of social context and verbal skill on the stereotypic and task-involved behaviour of autistic children. *Journal of Child Psychology & Psychiatry*, 29(5), 669-676.

Runco, M. A., Charlop, M. H., & Schreibman, L. (1986). The occurrence of autistic children's self-stimulation as a function of familiar versus unfamiliar stimulus conditions. *Journal of Autism & Developmental Disorders*, 16(1), 31-44.

Schilling, D. L., & Schwartz, I. S. (2004). Alternative seating for young children with autism spectrum disorder: Effects on classroom behavior. *Journal of Autism & Developmental Disorders*, 34(4), 423-432.

#### **Elementary**

Dadds, M., Schwartz, S., Adams, T., & Rose, S. (1988). The effects of social context and verbal skill on the stereotypic and task-involved behaviour of autistic children. *Journal of Child Psychology & Psychiatry*, 29(5), 669-676.

Runco, M. A., Charlop, M. H., & Schreibman, L. (1986). The occurrence of autistic children's self-stimulation as a function of familiar versus unfamiliar stimulus conditions. *Journal of Autism & Developmental Disorders*, 16(1), 31-44.

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### **Middle/High School**

Ahearn, W. H., Clark, K. M., DeBar, R., & Florentino, C. (2005). On the role of preference in response competition. *Journal of Applied Behavior Analysis, 38*(2), 247-250.

Moore, J., Fisher, W., & Pennington, A. (2004). Systematic application and removal of protective equipment in the assessment of multiple topographies of self-injury. *Journal of Applied Behavior Analysis, 37*(1), 73-77.

### **Selected Additional References**

Charlop, M. H. (1986). Setting effects on the occurrence of autistic children's immediate echolalia. *Journal of Autism & Developmental Disorders, 16*(4), 473-483.

Dunlap, G., Dyer, K., & Koegel, R. L. (1983). Autistic self-stimulation and intertrial interval duration. *American Journal of Mental Retardation, 88*, 194-202.

Gerdtz, J. (2000). Evaluating behavioral treatment of disruptive classroom behaviors of an adolescent with autism. *Research on Social Work Practice, 10*(1), 198-211.

Van Camp, C. M., Vollmer, T. R., & Daniel, D. (2001). A systematic evaluation of stimulus preference, response effort, and ABI in the treatment of automatically reinforced self-injury. *Behavior Therapy, 32*(3), 603-614.