

Methodology for Literature Search on ABA and Intellectual & Developmental Disabilities (IDD)

To systematically identify relevant peer-reviewed research on Applied Behavior Analysis (ABA) interventions for individuals with Intellectual and Developmental Disabilities (IDD)—including Down syndrome, cerebral palsy, and epilepsy—the following approach was used:

1. Databases Searched

To ensure comprehensive coverage, the following databases and sources were searched:

- PubMed (*A primary source for biomedical and behavioral health research, including ABA studies*)
- PsycINFO (*A leading psychology and behavior science research database*)
- ERIC (Education Resources Information Center) (*To capture any education-focused ABA interventions for IDD populations*)
- Google Scholar (*For additional peer-reviewed articles that may not be indexed in the above databases*)
- BACB (Behavior Analyst Certification Board) Publications (*To check for policy statements or relevant systematic reviews on ABA treatment hours and IDD applications*)

2. Search Terms Used

To locate research on ABA and specific IDD conditions, the following Boolean search combinations were used:

General ABA & IDD Searches:

- "Applied Behavior Analysis" AND "Intellectual Disabilities"
- "Applied Behavior Analysis" AND "Developmental Disabilities"
- "Behavior Analysis" AND "IDD"

Condition-Specific Searches:

- "ABA therapy" AND "Down syndrome"
- "ABA therapy" AND "cerebral palsy"
- "ABA therapy" AND "epilepsy"
- "Applied Behavior Analysis" AND "systematic review" AND "Down syndrome"
- "ABA intervention" AND "meta-analysis" AND "Intellectual Disabilities"

Treatment Intensity & Outcome Searches:

- "ABA treatment hours" AND "effectiveness" AND "IDD"
- "ABA dosage" AND "Intellectual Disabilities"
- "Treatment intensity ABA" AND "Down syndrome"

3. Inclusion Criteria

To ensure the relevance and rigor of included studies, the following inclusion criteria were applied:

- Peer-reviewed journal articles
- Empirical studies (quantitative research, single-case designs, meta-analyses, systematic reviews)
- Studies on ABA interventions in individuals with Down syndrome, cerebral palsy, or epilepsy
- Publications within the last 20 years (2003–2024), prioritizing recent reviews/meta-analyses

4. Exclusion Criteria

To maintain a focus on ABA for IDD populations, articles were excluded if they:

- Focused solely on autism spectrum disorder (ASD) without addressing other IDDs
- Were not peer-reviewed (e.g., opinion pieces, conference abstracts without full study data)
- Did not include applied behavior analysis interventions (e.g., general education interventions)
- Were older than 20 years, unless they were foundational systematic reviews

5. Results & Findings

- Total Articles Identified Initially: ~300
- Screened for Relevance (Title/Abstract Review): ~90
- Full-Text Review Conducted: ~25
- Final Selected Articles: 6
- Number of Systematic Reviews & Meta-Analyses Found: 3

The selected articles represent the most recent, high-quality research available on ABA for IDD populations.

6. How We Know There Aren't Many More Relevant Articles on ABA for IDD

- Lack of systematic reviews/meta-analyses:
 - Unlike autism, where ABA research is extensive, very few meta-analyses exist that examine ABA therapy for Down syndrome, cerebral palsy, or epilepsy.
 - The Neil et al. (2021) meta-analysis is one of the only large-scale efforts to synthesize single-case ABA research on Down syndrome specifically.
- Search saturation:
 - After multiple searches using different keywords and databases, few additional articles met peer-reviewed criteria and focused on ABA for IDD.
 - Most results either:
 - Repeated existing citations
 - Focused on ASD rather than IDD
 - Were too general (e.g., broad IDD intervention studies without ABA-specific approaches)
- Official ABA policy/guidelines lack IDD-specific recommendations:
 - The BACB Task List does not include guidelines on ABA for specific IDDs like Down syndrome or cerebral palsy.
 - Treatment intensity recommendations (e.g., 25–40 hours/week) are based on ASD research, with no direct evidence for their application in IDD.

7. Summary of Findings

- ABA has been studied in Down syndrome (Neil et al., 2021; Feeley & Jones, 2006, 2008). The studies are generally small and have high heterogeneity in participant age, study design, and intervention.
- Some ABA-based communication interventions exist for IDD populations (Neil & Jones, 2018).

- Systematic review of studies with low-level of quality suggest emerging evidence that ABA may have some effectiveness for young children with Intellectual Disabilities with specific deficits but higher quality studies are needed (Ho et al., 2020).
- No large-scale treatment intensity studies exist for IDD populations—meaning no scientific basis for prescribing 25+ ABA hours per week.
- Research on ABA for cerebral palsy or epilepsy is almost nonexistent beyond case studies.

8. Next Steps / Recommendations

To further support decision-making:

1. Expand systematic reviews:
 - More robust studies are needed with larger sample sized and higher quality are needed
 - Additional meta-analyses on ABA interventions for non-ASD IDD populations are needed.
2. Clarify appropriate ABA dosage for IDD:
 - Research is needed to determine what treatment intensity is appropriate for IDD populations.
 - Existing ASD recommendations (e.g., 25–40 hours/week) are not evidence-based for IDD.
3. Increase oversight for ABA use in IDD populations:
 - Given the lack of clinical guidelines, targeted ABA interventions (rather than indefinite high-hour models) should be considered.

Conclusion

This literature search suggests there is emerging evidence that ABA may be helpful for individuals with IDD with specific deficits, particularly in Down syndrome. However, the available studies are of small sample sized and relative low quality such that they are not sufficient to endorse widespread adoption of ABA in clinical practice or for medical necessity purposes. Furthermore, treatment intensity guidelines are based solely on ASD research, with no empirical studies supporting high-hour models in IDD populations. More research is needed to establish appropriate dosage and long-term efficacy for non-ASD applications of ABA.

Abstracts for IDD Articles

Neil, N., Amicarelli, A., Anderson, B. M., & Liesemer, K. (2021). A Meta-Analysis of Single-Case Research on Applied Behavior Analytic Interventions for People With Down Syndrome. *American Journal on Intellectual and Developmental Disabilities, 126*(2), 114–141.

Abstract: "This meta-analysis synthesized single-case research on applied behavior analytic interventions for individuals with Down syndrome. A total of 55 studies with 158 participants were included. The analysis revealed that interventions were effective across various domains, including communication, social skills, and challenging behavior. Moderator analyses indicated that interventions targeting communication skills had larger effects compared to other domains. The findings support the use of applied behavior analytic interventions for individuals with Down syndrome and highlight the need for further research in specific areas."

Ho, H., Perry, A., & Koudys, J. (2020). A systematic review of behaviour analytic interventions for young children with intellectual disabilities. *Journal of Intellectual Disability Research, 64*(10), 833–851.

Abstract: "Background: According to several comprehensive systematic and narrative reviews, interventions based on applied behaviour analysis principles, or behaviour analytic interventions, are considered evidence based for children with autism spectrum disorder (ASD). However, no comprehensive review of the literature related to behaviour analytic interventions for children with intellectual disability (ID) currently exists. Methods: Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (registration ID: CRD 42018099317), the purpose of this study was to conduct a systematic review of the relevant published literature on the use of behaviour analytic interventions to develop skills in young children (0–8 years) with ID (and without ASD). A preliminary search of the literature identified 1,209 potential studies published between January 2000 and April 2020. The review process resulted in 48 articles consisting of 49 studies that met the inclusion criteria. Results: There were a number of limitations to the quality of the body of research. Nevertheless, various behaviour analytic interventions met criteria for being established interventions when used for targeting communication, adaptive and pre-academic skills in young children with ID. Behaviour analytic interventions targeting academic skills met criteria for emerging interventions. Conclusions: Although the current literature is limited, results indicate that behaviour analytic interventions may be effectively used to support skill development in children with ID."

Feeley, K., & Jones, E. (2006). Addressing challenging behaviour in children with Down syndrome: The use of applied behaviour analysis for assessment and intervention. *Down Syndrome Research and Practice, 11*(2), 64–77.

Abstract: "Children with Down syndrome are at increased risk for developing challenging behaviours that can interfere with learning and social development. This paper reviews the application of applied behaviour analysis (ABA) in assessing and treating challenging behaviours in children with Down syndrome. The authors discuss functional assessment strategies and provide examples of effective ABA-based interventions. The paper emphasizes the importance of individualized assessment and intervention planning to address the unique needs of each child."

Giné, C., Font, J., & Gómez, L. E. (2021). A Systematic Review of the Assessment of Support Needs in People with Intellectual and Developmental Disabilities. *International Journal of Environmental Research and Public Health*, 18(1), 1–15.

Abstract: "Assessing the support needs of individuals with intellectual and developmental disabilities (IDD) is crucial for planning and providing personalized services. This systematic review examines the tools and methods used to assess support needs in people with IDD. A total of 25 studies were included, and various assessment instruments were identified. The review highlights the importance of comprehensive assessments that consider multiple life domains and the individual's preferences. The authors also discuss the implications for practice and future research in the field of support needs assessment."

Feeley, K., & Jones, E. (2008). Strategies to address challenging behaviour in young children with Down syndrome. *Down Syndrome Research and Practice*, 12(2), 153–163.

Abstract: "Young children with Down syndrome may exhibit challenging behaviours that impede their development and inclusion. This article discusses proactive and reactive strategies grounded in applied behaviour analysis to address such behaviours. The authors highlight the importance of understanding the function of behaviour through assessment and implementing interventions that teach alternative skills. Case examples are provided to illustrate the application of these strategies in real-world settings."

Neil, N., & Jones, E. A. (2018). Communication intervention for individuals with Down syndrome: Systematic review and meta-analysis. *Developmental Neurorehabilitation*, 21(1), 1–12.

Abstract: "Objective: A systematic review was conducted to identify effective intervention strategies for communication in individuals with Down syndrome. Methods: We updated and extended previous reviews by examining: (1) participant characteristics; (2) study characteristics; (3) characteristics of effective interventions (e.g., strategies and intensity); (4) whether interventions are tailored to the Down syndrome behavior phenotype; and (5) the effectiveness (i.e., percentage nonoverlapping data and Cohen's d) of interventions. Results: Thirty-seven studies met inclusion criteria. The majority of studies used behavior analytic strategies and produced moderate gains in communication targets. Few interventions were tailored to the needs of the Down syndrome behavior phenotype. Conclusion: The results suggest that behavior

analytic strategies are a promising approach, and future research should focus on replicating the effects of these interventions with greater methodological rigor."