

DLDII FINAL PROJECT

**ATTENTION DEFICIT
HYPERACTIVITY DISORDER:**

ADHD

**A GUIDE FOR
SPEECH-LANGUAGE PATHOLOGISTS**

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TABLE OF CONTENTS



INTRODUCTION TO ADHD.....	PAGE 2
OVERVIEW.....	PAGE 2
EMBRACING ADHD.....	PAGE 2
ETIOLOGY.....	PAGE 2
PREVALENCE.....	PAGE 2
INTERVENTION.....	PAGE 2
ADHD & DLD.....	PAGE 3
OVERVIEW.....	PAGE 3
ASSESSMENT APPROACHES.....	PAGE 3
CO-OCCURRENCE INTERACTION.....	PAGE 4
THIRD-VARIABLE INFLUENCES.....	PAGE 4
FUTURE DIRECTIONS.....	PAGE 4
SPEECH-LANGUAGE PATHOLOGIST INVOLVEMENT.....	PAGE 5
EXECUTIVE FUNCTIONING SUPPORT.....	PAGE 5
STRATEGIES FOR THE CLASSROOM & THERAPY ROOM.....	PAGE 5
ADVOCACY.....	PAGE 5
ADHD-AFFIRMING LANGUAGE.....	PAGE 6
HELPFUL RESOURCES.....	PAGE 7
RESOURCES FOR SPEECH-LANGUAGE PATHOLOGISTS.....	PAGE 7
RESOURCES FOR FAMILIES.....	PAGE 7

ATTENTION DEFICIT HYPERACTIVITY DISORDER



OVERVIEW (CADDRA, 2020)

According to the medical model of disability, Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental condition marked by persistent patterns of inattention, hyperactivity, and/or impulsivity. Such patterns impact daily functioning, including school learning. Upon meeting the diagnostic criteria outlined in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5), ADHD can be organized into three distinct presentations:

- 1 **Inattentive Presentation:** Characterized by challenges in sustaining attention, following instructions, organizing tasks, and managing distractions. Common manifestations include frequent forgetfulness and misplacing items.
- 2 **Hyperactive-Impulsive Presentation:** Characterized by excessive physical activity, impulsive behaviours, and difficulty regulating responses. Manifestations may include fidgeting, restlessness, difficulty remaining seated, a tendency to interrupt others, and excessive talking.
- 3 **Combined Presentation:** Characterized by inattentive and hyperactive-impulsive characteristics.

ETIOLOGY (CADDRA, 2020)

ADHD does not have a single known cause, though research suggests a genetic basis with environmental influences. ADHD is not caused by dietary factors such as sugar consumption, excessive screen time, or inadequate parenting.

ADHD can be viewed through the lens of neurodiversity as a natural variation in how the brain processes and responds to information, stimuli, and tasks. Rather than being a deficit in ability, ADHD represents a different way of thinking and interacting with the world.

PREVALENCE (Polanczyk et al., 2007; Visser et al., 2014)

ADHD is estimated to affect approximately 5-9% of children globally, with prevalence rates increasing with time. Boys are diagnosed more frequently than girls due to more overt presentation of ADHD characteristics.

INTERVENTION (CADDRA, 2020; Drechsler et al., 2020)

ADHD intervention is multifaceted. Medication is a common component, often supplemented by counseling and additional therapeutic interventions. In educational settings, accommodations and classroom strategies are essential in supporting academic success. Further, a multidisciplinary team approach facilitates improved outcomes. See page five for speech-language pathologist involvement.



ADHD & DLD



OVERVIEW (Bruce, 2006; Redmond, 2016; Sciberras, 2014)

Analogous to ADHD, Developmental Language Disorder (DLD) is a neurodevelopmental condition that profoundly impacts students' academic progress and social interactions. Despite comparable prevalence rates, ADHD is globally recognized and supported by extensive clinical and research resources, whereas DLD remains relatively unknown, largely confined to the research literature.

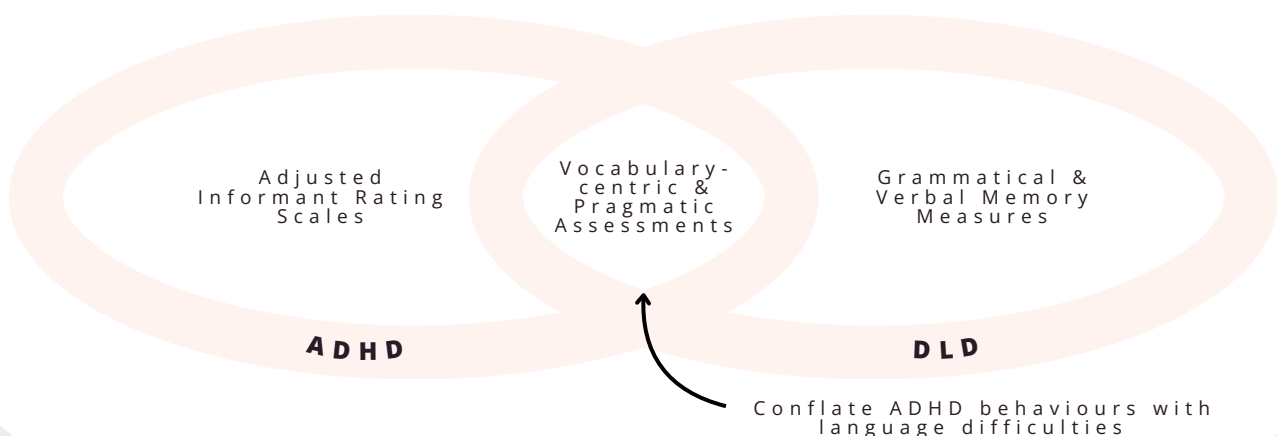
Although ADHD and DLD can occur independently, literature reviews suggest a **co-occurrence** between the two conditions. However, findings in primary literature report inconsistent rates of co-occurrence, ranging from less than 20% to more than 65%.

Clarity on ADHD and DLD co-occurrence could have significant clinical implications, allowing for the development and implementation of individualized approaches for children presenting with ADHD + DLD.

ASSESSMENT APPROACHES (Archibald, 2024; Redmond, 2016)

Accurately measuring language impairment in ADHD individuals necessitates the use of assessment tools that can reliably distinguish between ADHD and DLD. However, many standardized language tests lack the precision required to differentiate between the presence or absence of language impairment. Vocabulary-centric metrics are particularly insufficient in making such a distinction. Further, assessments of pragmatic skills can complicate the diagnosis of DLD by conflating language difficulties with behaviours associated with ADHD. In light of these complexities, assessments for DLD are recommended to focus on **grammatical and verbal memory measures**, such as tense marking, sentence recall, and nonword repetition. These psycholinguistic measures have demonstrated strong sensitivity and specificity in distinguishing between DLD, neurotypical development, and ADHD, thereby providing a more reliable approach to diagnosing DLD. Research indicates ADHD-only children exhibit outcomes on grammatical and verbal memory measures comparable to those of neurotypical peers.

Executive function measures, commonly used in ADHD assessment, share limitations with pragmatic measures, producing misdiagnoses due to overlapping condition constructs. Further, the use of **standardized informant rating scales**, while cost-effective and reliable, may introduce language biases. Removal of language and academic items from the Child Behaviour Checklist and the Conners' Parent Rating Scales-Revised, two widely used ADHD rating scales, had minimal impact on the accuracy of diagnosing ADHD, while improving the ability to differentiate between ADHD and DLD. Therefore, adjustment of rating scales to exclude such items can enhance diagnostic precision.





ADHD & DLD CONTINUED

CO-OCCURRENCE INTERACTION

(Redmond *et al.*, 2013)
(Redmond, 2016)

The co-occurrence of ADHD and DLD does not definitively result in worsened linguistic outcomes. ADHD + DLD children demonstrate grammatical and memory skills comparable to those of DLD-only children. Notably, ADHD behaviours positively correlated with improved sentence recall performance, suggesting ADHD may provide a limited protective effect against certain language difficulties. This finding challenges assumptions of an additive relationship between ADHD and DLD, highlighting a more complex interaction. Conversely, the co-occurrence of ADHD and DLD may exacerbate ADHD behaviours, though evidence is inconclusive. Further, the co-occurrence of ADHD and DLD may contribute to more pronounced social challenges for children. Parents of ADHD + DLD children reported greater levels of social difficulty than parents of ADHD-only children.

THIRD-VARIABLE INFLUENCES

(Redmond, 2016)

A third variable may mediate or moderate the ADHD and DLD relationship, influencing how co-occurring characteristics interact and manifest. One potential mediator is **reading status**. Evidence suggests that reading difficulties can intensify behavioural and academic challenges, creating a cyclical pattern that heightens difficulties associated with ADHD and DLD. Chronic **peer victimization** is an additional potential mediator, as ADHD and DLD students are at an increased risk of experiencing negative peer interactions. Such experiences may increase emotional stress, anxiety, and attentional difficulties, potentially compounding ADHD and DLD experiences. **Academic failure** further complicates the ADHD and DLD relationship by reinforcing negative educational outcomes, reducing self-confidence, and potentially increasing externalizing behaviors.

FUTURE DIRECTIONS

(Redmond, 2016)

Future ADHD + DLD research directions include refining epidemiological approaches to address regional variability, implementing parallel longitudinal investigations to explore developmental trajectories and potential intersections, and examining genetic and environmental contributors to co-occurrence. With continued research, our understanding of the ADHD and DLD relationship will expand, allowing for clinical and theoretical advancements.

The field of speech-language pathology is continuously advancing and evolving - which is what makes it so exciting! To ensure effective client care, stay up-to-date with the latest research and best practices in ADHD and DLD. One way to stay informed is by following the work of Dr. Sean Redmond, a highly respected researcher in the field of pediatric language disorders.



SPEECH-LANGUAGE PATHOLOGIST INVOLVEMENT

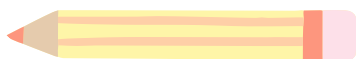
EXECUTIVE FUNCTIONING SUPPORT (CHADD, 2022) (Diamond, 2020)

Executive functions refer to a collection of high-level cognitive processes essential for attention regulation, concentration, problem-solving, decision-making, self-regulation, evaluating options, drawing connections, reflecting on past experiences, envisioning potential outcomes, and adapting to novel information. Working memory, cognitive flexibility, and inhibitory control are the three core executive functions fundamental to success in both academic contexts and daily life. ADHD individuals exhibit differences in executive function, often approaching tasks in a manner distinct from neurotypical individuals. Speech-language pathologists can support ADHD individuals by implementing tailored strategies to enhance organization, attention management, and task navigation, fostering strengths and facilitating active engagement in learning.

CLASSROOM STRATEGIES

(Brock *et al.*, 2009)
(CHADD, 2022)

- Implement stretch breaks
- Allow fidget toys
- Ensure a traditional classroom arrangement, with desks oriented towards the educator
- Position the student close to the front of the classroom, near the educator
- Use multiple means of engagement, representation, and expression
- Implement peer tutoring and/or class-wide peer tutoring




A critical responsibility of speech-language pathologists is to assist educators by providing guidance and strategies for supporting the communication and executive function needs of all students. Collaboration between educators and speech-language pathologists fosters growth and enhances student outcomes.

THERAPY ROOM STRATEGIES

(Archibald, 2024)

- Follow the lead of the client & engage in their interests
- Establish clear expectations
- Establish predictable session routines
- Use short and direct instructions
- Provide supported language input

ADVOCACY



Misunderstandings about ADHD behaviours can lead to misjudgement. Therefore, speech-language pathologists must help teachers, parents, and peers understand ADHD from a neurodiversity-affirming perspective. Further, speech-language pathologists must advocate for individualized accommodations and interventions, and empower ADHD individuals to self-advocate.

ADHD-AFFIRMING LANGUAGE

(Divergent Perspectives, 2022; Gaddy & Crow, 2023)

When writing reports and speaking with clients, speech-language pathologists should use affirming, strengths-based language that accurately describes a client's needs and abilities without assigning judgment or perpetuating stigma. Deficit-based or medical-model language often focuses on challenges, pathologizing behaviours in a way that can feel dehumanizing or shaming. Reflect on your language choices and consider how it might feel if such language was used to describe a family member.

The chart below provides examples of how to replace deficit-based phrases with ADHD-affirming alternatives.



Instead of...	Say this...	Rationale
Has ADHD	ADHDer; ADHD student	Identity-first language is rooted in the neurodiversity movement and aims to affirm the identity and lived experiences of ADHD individuals. *It is best practice to ask if a client prefers person-first or identity-first language.
Poor attention, inattention	Has attention differences characteristic of ADHD; Attends best when engaged in topics of interest.	Highlights situational variability and individual differences in how the brain processes and sustains focus.
Hyperactive, overly energetic	Displays high energy levels, characteristic of ADHD	Reframes energy as a potential asset.
Impulsive, reckless	Acts spontaneously and possesses the ability to quickly make decisions	Rapid processing skills are a strength that allow for the timely identification of connections and patterns.
ADHD Symptoms	Specific ADHD characteristics or experiences	Symptoms refer to a disease model, and ADHD is not a disease. Characteristics provide a neutral choice, free of negative connotations.
Unable to follow instructions	Benefits from clear, concise, and step-by-step instructions	The responsibility is placed on the educator to adapt the instructional approach to support the student, rather than attributing the challenge to the student.
Unable to sit still	Engages in movement to aid in focus and self-regulation	Movement is acknowledged as a self-regulation strategy rather than a disruptive behaviour.

RESOURCES

Speech-language pathologists play an important role in supporting ADHD clients. To provide effective and holistic care, it is essential for speech-language pathologists to have access to reliable ADHD resources and to be able to identify when additional research or professional development is warranted. Maintaining an inventory of resources for families is equally important, ensuring parents and caregivers are informed about supports and strategies.

CANADIAN ADHD RESOURCE ALLIANCE (CADDRA)

CADDRA is a not-for-profit organization focused on providing evidence-based ADHD guidelines and resources. CADDRA offers access to comprehensive tools and research that can inform health professionals on the latest diagnostic criteria, treatment approaches, and interventions for ADHD. Further, membership with CADDRA offers opportunities for professional networking.

@DIVERGENTS LT

A social media page that offers guidance for speech-language pathologist working with neurodivergent children.

ADDITUDE MAGAZINE

A trusted source for practical advice and expert tips on parenting ADHD children.

CADDAC Parent ADHD Support Groups

The Centre for ADHD Awareness Canada (CADDAC) provides a platform for parents and caregivers of ADHD children to connect and share experiences.

THE DLD PROJECT: DLD & ADHD SHORT COURSE

The DLD Project offers a comprehensive workshop that integrates the latest research with practical, functional strategies to support ADHD and DLD clients. Further, the workshop aims to provide participants with an understanding of the intersection of DLD and ADHD.

Of note, there is a nominal course fee of \$49 AUD.

REFERENCES



Archibald, L. (2024). Vulnerable Populations [Course Unit 5]. COMMSCI 9638: Developmental Language Disorders II, Western University.

Brock, S. E., Jimerson, S. R., & Hansen, R. L. (2009). *Identifying, Assessing, and Treating ADHD at School*. Springer US.

Bruce, B., Thernlund, G., & Nettelbladt, U. (2006). ADHD and language impairment: A study of the parent questionnaire FTF (Five to Fifteen). *European child & adolescent psychiatry*, 15(1), 52-60. <https://doi.org/10.1007/s00787-006-0508-9>

Canadian ADHD Resource Alliance (CADDRA). (2020). *Canadian ADHD Practice Guidelines, 4.1 Edition*, Toronto ON.

Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD). (2022). *Executive functioning support for kids with ADHD*. <https://chadd.org/attention-article/executive-functioning-support-for-kids-with-adhd/>

Diamond A. (2020). Executive functions. *Handbook of clinical neurology*, 173, 225-240. <https://doi.org/10.1016/B978-0-444-64150-2.00020-4>

Divergent Perspectives. (2022). Neurodivergent-affirming report writing. <https://www.divergentperspectives.co.uk/post/neurodivergent-affirming-report-writing-2>

Drechsler, R., Brem, S., Brandeis, D., Grünblatt, E., Berger, G., & Walitza, S. (2020). ADHD: Current Concepts and Treatments in Children and Adolescents. *Neuropediatrics*, 51(5), 315-335. <https://doi.org/10.1055/s-0040-1701658>

Gaddy, C., & Crow, H. (2023). A primer on neurodiversity-affirming speech and language services for autistic individuals. *Perspectives of the ASHA Special Interest Groups*, 8(6), 1220-1237. https://doi.org/10.1044/2023_persp-23-00106.

Polanczyk, G., de Lima, M. S., Horta, B. L., Biederman, J., & Rohde, L. A. (2007). The worldwide prevalence of ADHD: a systematic review and metaregression analysis. *The American journal of psychiatry*, 164(6), 942-948. <https://doi.org/10.1176/ajp.2007.164.6.942>

Redmond, S. M., Ash, A. C., & Hogan, T. (2013). Consequences of LI comorbidity on the severity of children's ADHD symptoms and related behavioral difficulties. Poster session presented at the Symposium on Research in Child Language Disorders, Madison, WI.

Redmond, S. M. (2016). Markers, Models, and Measurement Error: Exploring the Links Between Attention Deficits and Language Impairments. *Journal of speech, language, and hearing research : JSLHR*, 59(1), 62-71. https://doi.org/10.1044/2015_JSLHR-L-15-0088

Sciberras, E., Mueller, K. L., Efron, D., Bisset, M., Anderson, V., Schilpzand, E. J., Jongeling, B., & Nicholson, J. M. (2014). Language problems in children with ADHD: a community-based study. *Pediatrics*, 133(5), 793-800. <https://doi.org/10.1542/peds.2013-3355>

Visser, S. N., Danielson, M. L., Bitsko, R. H., Holbrook, J. R., Kogan, M. D., Ghandour, R. M., Perou, R., & Blumberg, S. J. (2014). Trends in the parent-report of health care provider-diagnosed and medicated attention-deficit/hyperactivity disorder: United States, 2003-2011. *Journal of the American Academy of Child and Adolescent Psychiatry*, 53(1), 34-46.e2. <https://doi.org/10.1016/j.jaac.2013.09.001>

"ADHD IS NOT A BAD THING, IT IS A
DIFFERENT WAY OF THINKING."

- David Neeleman,
ADHDer & Founder of JetBlue