

A Case for Identifying Dyslexia and Executive Function Challenges: A Pediatrician Mom Perspective

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Disclosures

- I have no financial disclosures.



A call from a mother

Her 12 yo 7th grade boy has experienced challenges with school. He does not want to attend because teachers tell him he is “lazy” and not putting in enough effort. He feels defeated and hopeless. The private school is weighing whether he can stay. Many emails about his performance have come home. Mother reports they have had two visits with a therapist as she is worried about his mood and his wellbeing.

He loved his previous school, had many friends and thrived. Spanish, writing initiation and spelling/grammar were challenges. He excelled at oral presentations and was noted to have great insights in discussions. He received reading help in first grade and speech therapy as a toddler.

Links Between Health & Education

- Education is a social determinant of health
- Smoking prevalence in U.S. adults varies inversely with educational attainment— smoking varies from 5% in those with a graduate degree to 41% in those without a high-school diploma [10.15585/mmwr.mm6702a1](https://doi.org/10.15585/mmwr.mm6702a1)
- In a large systemic review children with low literacy had poorer health behaviors [10.1542/peds.2009-1162B](https://doi.org/10.1542/peds.2009-1162B)
- Adults with higher education live healthier longer lives and disparities in education opportunities manifest greater inequities [10.1146/annurev-publhealth-031816-044628](https://doi.org/10.1146/annurev-publhealth-031816-044628)

Links Between Health & Education

- Common—estimates are 5-10% of kids have dyslexia
- Impacts health, social, emotional and economic wellbeing
- Reading proficiency is a better predictor of health and long life than cigarette smoking and obesity
- Strong connection between dyslexia and executive function challenges

What is Dyslexia

- **IDA 2025 Definition of Dyslexia**
- *“Dyslexia is a **specific learning disability characterized by difficulties in word reading and/or spelling that involve accuracy, speed, or both** and vary depending on the orthography. These difficulties occur along a continuum of severity and **persist even with instruction** that is effective for the individual’s peers. **The causes of dyslexia are complex** and involve combinations of genetic, neurobiological, and environmental influences that interact throughout development. Underlying difficulties with phonological and morphological processing are common but not universal, and early oral language weaknesses often foreshadow literacy challenges. Secondary consequences include reading comprehension problems and reduced reading and writing experience that can impede growth in language, knowledge, written expression, and overall academic achievement. **Psychological well-being and employment opportunities also may be affected.** Although identification and targeted instruction are important at any age, **language and literacy support before and during the early years of education is particularly effective.**”*

What is dyslexia?
“its not just reversing
letters or being unable
to read”

- A specific neurobiological learning disability that is **lifelong**
- fMRI brain differences
- Not every person with dyslexia has all of these challenges **AND** many have other strengths
- **Difficulties with:**
 - Word recognition
 - Spelling
 - Decoding words (sounding words out), mastering the rules of phonics
 - Reading fluency and comprehension
 - Processing speed-how fast a person can take in, process and respond to information
 - Procedural learning- a rote skill often learned and becomes automatic with practice—automaticity often does not happen

What is dyslexia?
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- **Other challenges**

- Challenges learning a foreign language
- Challenges writing and with writing conventions (grammar rules, punctuation etc.)
- Difficulties in manual handwriting—translating auditory word images into forming letters
- Enormous gap between oral and written expression
- Solving math word problems
- When looking at executive function-because reading is not automatic working memory is taxed as people with dyslexia work to read

Spoon Theory/Working Memory Load

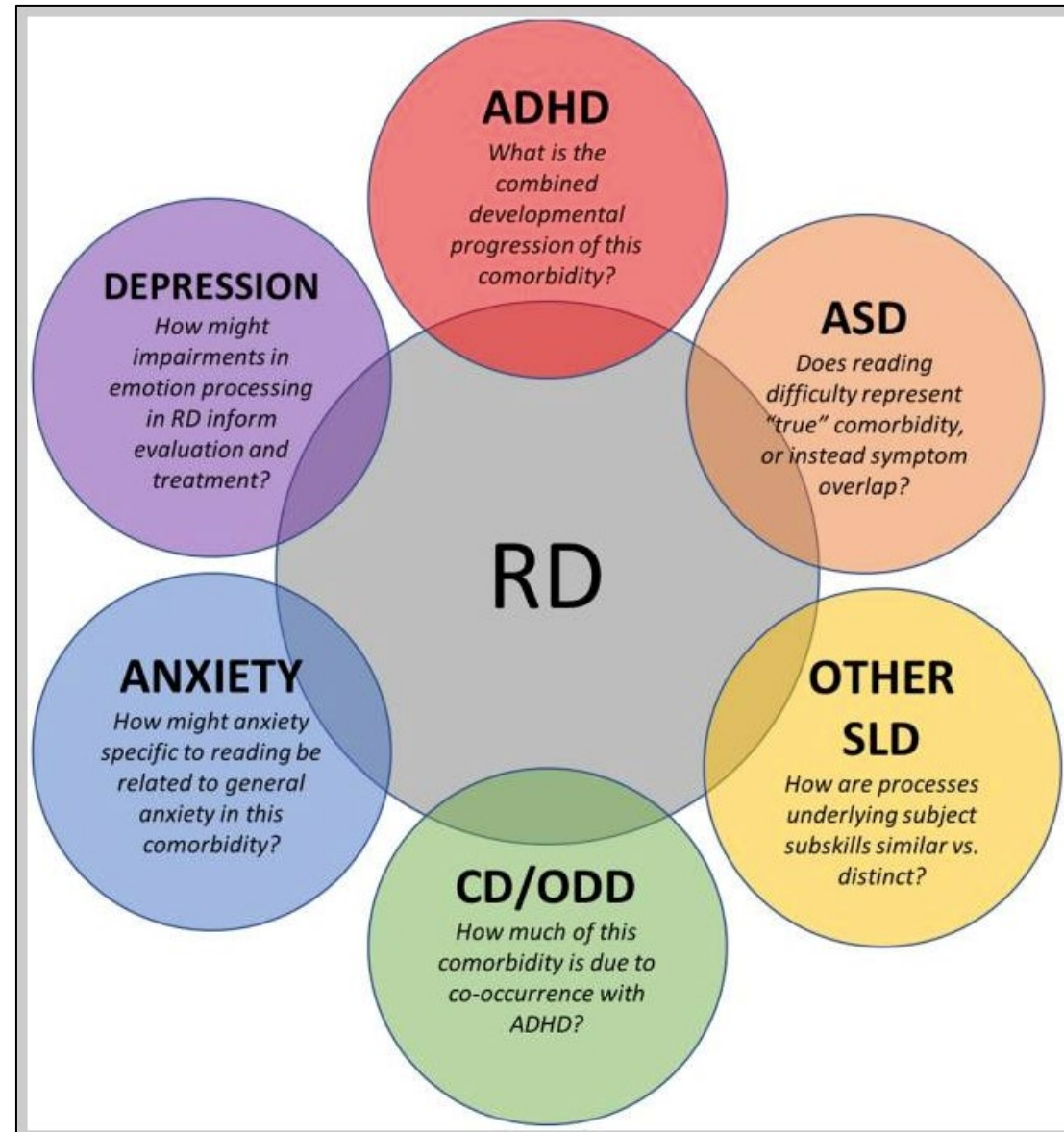
Coined by Christine
Miserandino in her
2003 essay

- “people with no outward symptoms or symbols of their condition are often perceived as lazy, inconsistent or having poor time management skills” but often it’s a question of energy being used up



Spoons are used as a metaphor and visual representation for energy rationing.

Hendren RL, Haft SL, Black JM, White NC, Hoeft F. Recognizing Psychiatric Comorbidity With Reading Disorders. Front Psychiatry. 2018 Mar 27;9:101. doi: 10.3389/fpsyt.2018.00101. PMID: 29636707; PMCID: PMC5880915.



A red speech bubble graphic with a tail pointing downwards and to the right. The text "Doing nothing is devastating" is written in white inside the bubble.

Doing nothing is
devastating

- More likely to be labeled as “lazy” and “stupid”
- Less likely to complete HS
- Less likely to attend college
- Increased risk of entering the juvenile legal system (estimates are 30-45% of these youth have learning disorders)
- Increased risk of incarceration as adults (estimates are 20-30% with learning disorders)
- More likely to be unemployed as adults and earn less than the national average income

Dyslexia Treatment Helps

- With intensive early reading interventions most kids achieve average reading ability
 - Focus on phonics
 - Small group or 1 on 1 learning important
- Identification and Treatment alleviates emotional/psychic distress
- Elementary years focus is on remediation and phonologic skills
- Middle and HS students focus in on accommodations
 - more time for tests
 - quiet spaces so person can read aloud
 - audible book use
 - use of oral evaluations vs multiple choice
 - tutoring
 - walking through syllabi
 - Picture taking vs note taking
 - Text to Speech and Speech to Text

Of note....

Treatment that helps children with dyslexia also helps children with below grade level reading proficiency in general.

When we shape the world for difference, we all thrive.

[Learn more](#)



Understood.org

Advocacy

- Advocacy for accommodations and interventions
- Letter or attendance for IEP meetings
- Encouragement—these kids are often working **harder** and homework and schoolwork take way more time (think working memory and processing)
- Support for kids and support for parents
 - Understood <https://www.understood.org/>
 - Learning Ally <https://learningally.org/>
 - The Yale Center for Dyslexia and Creativity <https://www.dyslexia.yale.edu/>

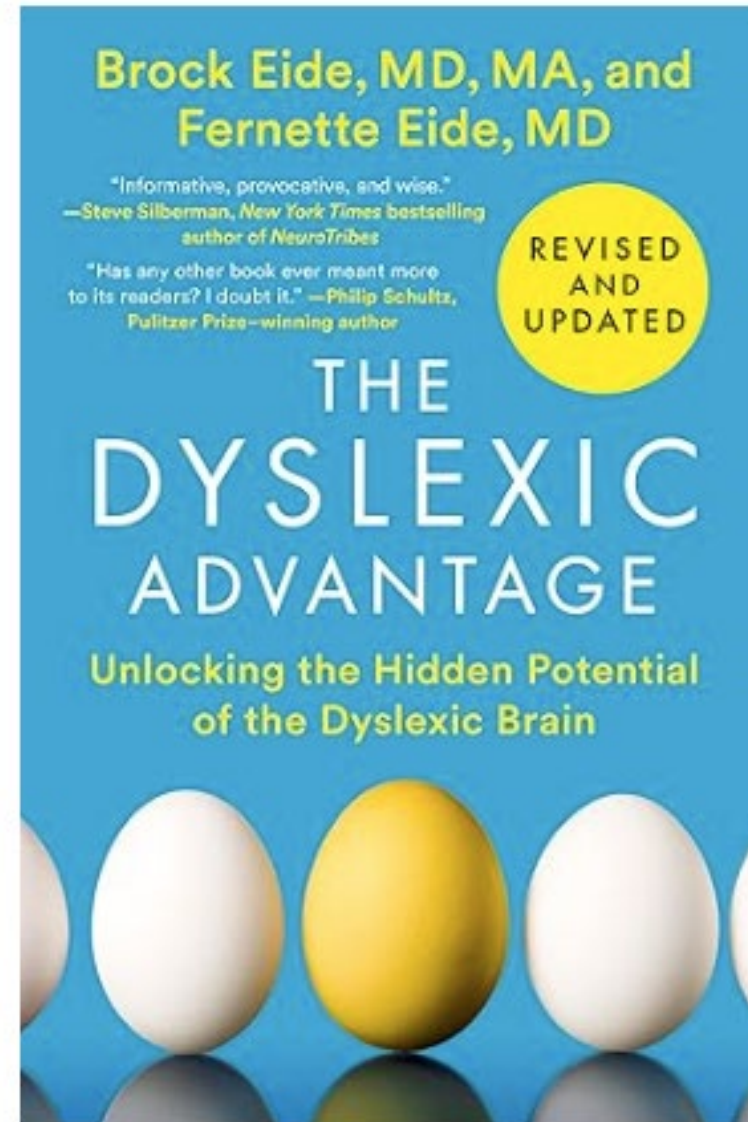
The background features a series of concentric, curved lines in a light gray color, creating a sense of motion and depth. These lines are more prominent on the left side of the slide and fade towards the right.

People with Dyslexia Thrive

- David Boise
- Gavin Newsome
- Albert Einstein
- Steve Jobs
- Danny Glover
- Selma Hayek
- Muhammad Ali
- Whoopi Goldberg
- Erin Brockovich
- Anderson Cooper
- Ansel Adams

Strengths of people with Dyslexia-

an entirely different brain
organization that also comes
with special abilities



MIND Strengths Dyslexia Advantage

<https://www.dyslexicadvantage.org/>

- **Material Reasoning**
- **Interconnected Reasoning**
- **Narrative Reasoning**
- **Dynamic Elements**

MIND Strengths Dyslexia Advantage

<https://www.dyslexicadvantage.org/>

- **Material Reasoning** - 3D spatial reasoning and models;
 - This strength is often late blooming; creativity outside the classroom.
 - Allow learners visual ways to show understanding.
- **Interconnected reasoning** - The ability to spot connections and relationships. “See things other people miss.” Develop integrated conceptual models. See things from different points of view.
 - Understanding relevance and application helps these learners stay motivated.

Einstein's Office at Princeton





THE YALE CENTER FOR
DYSLEXIA & CREATIVITY

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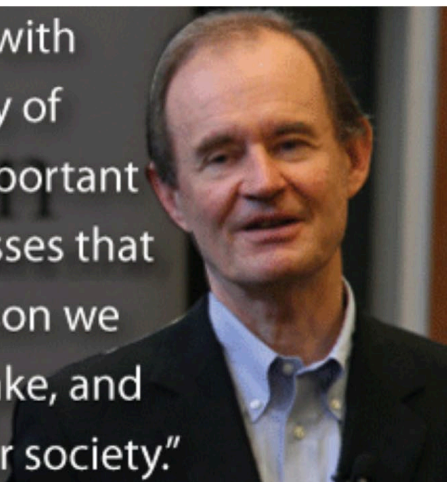
Resources

Success Stories

Success Stories

David Boies, Attorney & Chairman of Boies, Schiller & Flexner LLP

"Reading has nothing to do with intelligence. It's just one way of getting information. The important thing is how a person processes that information, the kind of person we are, the contributions we make, and the kind of utility we have for society."



- One of the most highly acclaimed lawyers in the country.
- If you want further reading great chapter "David Boies: You wouldn't wish dyslexia on your child. Or would you?" *David and Goliath* by Malcolm Gladwell

Chuck Harrison Industrial Designer Extraordinaire (1931-2018)

Freelance to head of Industrial design at Sears— from
plastic garbage cans to sewing machines

“Some refer to him as the Jackie Robinson of industrial
design,” Nancy Perkins, an industrial designer who worked
for Mr. Harrison at Sears.



MIND Strengths Dyslexia Advantage

<https://www.dyslexicadvantage.org/>

- **Narrative Reasoning**—The ability to construct a series of mental scenes from past experiences to explain the present and imagine the future. *Simulation in general, learning through experience*
 - Using cases and stories rather than stripped down facts helps people with dyslexia remember.
- **Dynamic Elements**- The ability to recombine events from the past creatively to predict the future or problem solve. *Simulation for prediction or problem solving.*
 - *Intuitive and takes time- "daydreaming"—assumptions about schoolwork or work*
 - *Forcing inhibits creativity*
 - *Different attention set points*
 - *Value getting the answer, the show your work step by step paradigm this will develop in folks with dyslexia but often later*

How to help people with dyslexia and EF difficulties learn and thrive

- Experiences—real and imagined—explorers vs rote facts
- Understanding of the principles, context or connection, build bridges with things the person already knows something about
- Short previews of reading assignments or roadmaps of the big picture
- Prediction- cases or examples to hypothesis test, error driven learning to reshape and refine models
- Better access to assistance technologies to support those students who cannot yet read as well as they think (*reading development does not end at age 9)
- Be mindful and patient of the late bloomers in reading, writing and organization
- Relationships with teacher and encouragement matters

How young
people with
dyslexia and EF
challenges can
help themselves

- Embrace the diagnosis
- Know their own differences both the good and the struggles
- Stay positive and get support when needed to stay positive- do things that help foster belief in a great future. Resilience and grit can be developed and strengthened.
- Young people, parents/caregivers, pediatricians can be persistent advocates and teach about learning differences to deepen understanding-no one goes it alone.
- Learn how to bring out best work/efforts- create routines, simplify, talk out writing assignments, break into smaller steps, etc
- Be on the lookout for people and environments that support the effort.

Back to our case

- Educational testing revealed diagnosis and recommended accommodations.
- High school remained a challenge. Parents met with every teacher every year to explain dyslexia and EF differences and gave David and Goliath book.
- Accommodations were given after a lot of advocacy—more time for tests, distraction free testing, note taking support, foreign language exemption, text to speech and speech to text applications encouraged.
- Close weekly work with an academic coach who is a highly trained learning specialist.
- Encouragement of lots of other experiences outside the classroom- THIMUN.
- Attends University of Denver with accommodations.
- Feels good about himself and knows his talents and challenges.



Thank you

Rick Riordan, author of the Percy Jackson series, and parent of a son with dyslexia

“Dyslexic kids are creative, ‘outside-the-box’ thinkers. They have to be, because they don’t see or solve problems the same way other kids do. In school, unfortunately, they are sometimes written off as lazy, unmotivated, rude or even stupid. They aren’t. Making Percy dyslexic was my way of honoring the potential of all the kids I’ve known who have those conditions. It’s not a bad thing to be different. Sometimes, it’s the mark of being very, very talented.” — *RickRiordan.com*

References

- Shaywitz SE. Dyslexia. *N Engl J Med*. 1998;338(5):307–312
- Sanfilippo J, Ness M, Petscher Y, Rappaport L, Zuckerman B, Gaab N. Reintroducing Dyslexia: Early Identification and Implications for Pediatric Practice. *Pediatrics*. 2020 Jul;146(1):e20193046. doi: 10.1542/peds.2019-3046. Epub 2020 Jun 23. PMID: 32576595; PMCID: PMC7329249.
- Hendren RL, Haft SL, Black JM, White NC, Hoefft F. Recognizing Psychiatric Comorbidity With Reading Disorders. *Front Psychiatry*. 2018 Mar 27;9:101. doi: 10.3389/fpsy.2018.00101. PMID: 29636707; PMCID: PMC5880915.
- Peterson RL, Pennington BF. Developmental dyslexia. *Lancet*. 2012 May 26;379(9830):1997-2007. doi: 10.1016/S0140-6736(12)60198-6. Epub 2012 Apr 17. PMID: 22513218; PMCID: PMC3465717.
- Zajacova A, Lawrence EM. The Relationship Between Education and Health: Reducing Disparities Through a Contextual Approach. *Annu Rev Public Health*. 2018 Apr 1;39:273-289. doi: 10.1146/annurev-publhealth-031816-044628. Epub 2018 Jan 12. PMID: 29328865; PMCID: PMC5880718.