

The International DYSLEXIA Association

Promoting literacy through research, education, and advocacy.

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Basic Facts About Dyslexia and Other Reading Problems



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Dyslexia

- What is dyslexia? dys-lexia
 - dys—*difficulty*
 - lexia—*with words*
- Why define dyslexia?
 - Clear up myths and misconceptions
 - Link the public to information and resources
 - Enable research on the value of educational treatments

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What We Know From Research

Thousands of studies have addressed and answered these critical questions:

- How does a good reader read?
- How do students learn to read?
- Why do some students fail to learn easily?
- What is the relationship between spoken language and reading?
- How can we help students with reading and spelling problems?

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Dyslexia Defined

Dyslexia is a **specific learning disability** that is **neurobiological** in origin. It is characterized by difficulties with **accurate and/or fluent word recognition** and by poor **spelling** and **decoding** abilities. These difficulties typically result from a deficit in the **phonological** component of language that is **often unexpected** in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in **reading comprehension** and reduced reading experience that can impede growth of **vocabulary** and **background knowledge**.

—Lyon, G.R., Shaywitz, S. E., Shaywitz, B.A. (2003). A definition of dyslexia. *Annals of Dyslexia*, 53, 1-14.

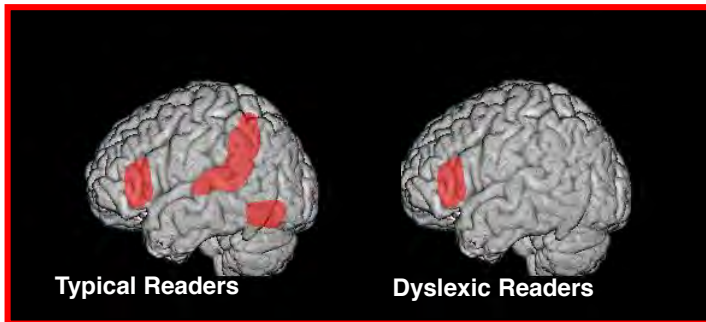
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Dyslexia Defined

- Specific learning disability
- **Neurobiological** in origin
- Inaccurate or non-fluent word recognition
- Deficit in spelling and decoding abilities
- Deficit in phonological component
- Often unexpected
- Secondary consequences

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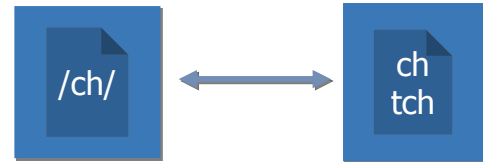
Neurobiological Basis of Dyslexia



Eden et al., *Neuron*, 2004

The Heart of the Problem

Understanding the *alphabetic principle* and learning all sound-symbol correspondences.



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Dyslexia

- Is a *language-based* problem
- Does not mean seeing things backwards
- Exists across all levels of intelligence
- Is not caused by a lack of motivation
- Occurs at all socioeconomic levels
- Occurs equally in boys and girls
- Symptoms on a continuum – mild to severe impact and varies from person to person
- Often occurs with other disorders (ie. ADHD)

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Dyslexia and Literacy

- The term *dyslexia* is most often used to identify a **reading** problem that originates in an inability to **recognize** and **spell** written words accurately and quickly
- **Literacy** is a broader term. Literacy is the use of printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.

—National Center for Educational Statistics, 2003

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Literacy in Schools

- 80-85% of students with an identified specific learning disability have a primary problem with reading and/or language – most common LD
- 10-20%, or 1 out of every 5-10 students has symptoms of dyslexia



—National Institute of Child Health and Human Development (2003)

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Literacy in Schools

- Good reading instruction is good reading instruction. It doesn't matter if the instruction is for a dyslexic student or traditional learner. For the dyslexic student the variables of instruction that might need to change include the intensity, the frequency, and the duration of that instruction.



■ John Alexander – Head of Groves Academy

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Preschool and Kindergarten

- Late learning to talk or slow to learn new words
- Trouble producing speech sounds
- Avoids letters or confuses them
- Cannot recall sounds of letters
- Unable to break words into separate speech sounds

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Grades K-1

- Trouble learning phonics (sounds of letters)
- Low on phoneme awareness tests (taking apart speech sounds in words)
- Poor spelling
- Cannot remember “sight” words
- Poor handwriting

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Grades 2-3 4 Predictable Problems

1. Cannot recall sight words even after practice
2. Poor phonics skills
3. Poor spelling
 - Speech sounds omitted
 - Inaccurate recall of speech sounds for letters
 - Poor recall for even the commonest “little” word

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Grades 2-3 Additional Problems

- Inaccurate and slow oral reading
- Comprehension problems arising from poor word recognition
- Poor handwriting and/or written expression
- Avoidance of reading and writing
- Difficulty remembering colors, sequences (numbers, days of the week, seasons, months, etc.)

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Grade 3 A Transition Grade

- Most reading instruction stops after Gr.3
- Transition from “learning to read” to “reading to learn” is expected (subject matter)
- Vocabulary harder to determine from context
- Denser text, fewer pictures
- Longer assignments, more independence expected

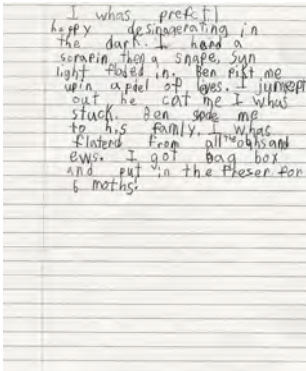
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Grades 4-6

- Slow on oral reading fluency tests
- Inaccurate reading of real & nonsense words
- Poor spelling, handwriting & written expression
- Avoidance of reading
- Weak in reading strategies
- Weak reading comprehension when compared to listening comprehension

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4th grade writing sample



I was perfectly happy disintegrating in the dark. I heard a scraping then a snap, sunlight flooded in. Ben picked me up in a pile of leaves. I jumped out he caught me I was stuck. Ben showed me to his family. I was flattered from all the ahhs and oohs. I got bagged, boxed and put it in the freezer for 5 months.

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Grades 7-8

- Slow and laborious reading
- Overwhelmed by multiple assignments
- Cannot work fast enough to cope
- Lack of effective strategies for studying
- Needs accommodations and modifications
- Written work remains a huge problem

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High School

- Reads slowly
- Comprehension and vocabulary may have declined from lack of practice
- Writes poorly and with great effort
- Needs strategy and study skills instruction
- Needs accommodations and modifications
- May need foreign language exemption if accommodations do not provide enough support
- Delivery of remedial instruction still critical

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Screening for Dyslexia

- Timed tests of *letter naming or letter-sound associations* (RAN) in kindergarten and early first grade
- *Phoneme awareness* tasks in kindergarten and beginning first grade level
- Direct measures of *decoding and word recognition* toward the middle and end of first grade and beyond
- *Oral reading fluency*, a timed test that combines reading rate and accuracy, once the student can read connected text

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Dyslexia Diagnosis

- Conducted by an educational psychologist
- Tests in cognitive processing (Wechsler Intelligence Scales for Children), academic skills (isolated word reading, connected text reading, spelling, writing), and phonological processing and phonemic awareness.
- Most often there has to be a significant discrepancy between potential (intelligence) and actual achievement level to receive services in special education.

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Social/Emotional Consequences

- Frustration, fear, anxiety
- Learned/chronic helplessness
- Avoidance behaviors/misbehaviors
- Trouble expressing self in social situations
- Feelings of inadequacy

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Essential Components of Effective Reading Instruction

- **Phonemic awareness**
- **Phonics** and word recognition
- **Fluency**
- **Vocabulary**
- **Comprehension**



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Definition of Terms

- **Phoneme:** An individual speech sound. (/sh/, /ð/, /p/)
- **Grapheme:** A letter or letter group that represents a speech sound or phoneme. (sh – o – p)
- **Morpheme:** The smallest linguistic unit in a word that has meaning. (shop + ed)

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Phonemic Awareness

The ability to notice, think about, and work with the individual sounds in spoken words

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Phonemic Awareness Principles of Instruction

- Teach what the speech sounds are—they are not the same as letters
- Use multisensory strategies—looking in a mirror during sound pronunciation, describing what the mouth is doing, moving chips or blocks to show sounds in words
- Link to letters as soon as the student is ready

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Phonics and Word Recognition

The relationships between the letters (graphemes) of written language and the individual sounds (phonemes) of spoken language.

shock = /sh/ /ð/ /k/

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Phonics

Principles of Instruction

- **Systematic:** Planned teaching of all useful correspondence patterns
- **Sequential:** Planned sequence of instruction
- **Multisensory:** Using listening, speaking, reading, and writing together
- **Explicit:** Concepts are explained, not left to “discovery learning”
- **Cumulative:** Ample practice with “old learning” is provided as new concepts are introduced

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Fluency

- Reading text with sufficient speed to support understanding
- Includes accurate and fluent recognition of word parts (letters, letter groups, syllable patterns),
- Builds from words, to phrases and sentences, and then to whole text

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Building Fluency

Principles of Instruction

- Initial decoding without timing
- Simultaneous oral reading
- Alternate oral reading
- Repeated reading
- Increasing speed in underlying skills

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Vocabulary

- Knowledge of the meaning of individual words, especially academic content area words
- Appreciation of words with **multiple** meanings (ie. bat, run, camp)
- Use of words in oral and written language

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Vocabulary

Principles of Instruction

- Repeated exposures—oral and written—gained from **reading** and listening
- Active use
 - Explanation of multiple meanings
 - Using in varied contexts
 - Show images (Google images is great!)
- Emphasis on relationships between and among words and concepts
 - Semantic (graphic) organizers
 - Comparison charts

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Comprehension

Complex - Depends on many variables:

- Fluency and reading speed to hold information in working memory
- Accessing background knowledge
- Knowing the meanings of individual words
- Understanding text structures
- Interpreting complex sentences
- Constructing mental images of the concepts
- Making inferences and elaborating on text

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Comprehension Principles of Instruction

■ After reading:

- Summarize and retell
- Reread for a specific purpose
- Outline or complete a concept graph
- Connect and apply information to other information outside the text

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To Summarize, Effective Instruction is...

- Explicit
- Systematic
- Cumulative
- Sequential and Incremental
- Data-driven



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Explicit

- Concepts are clearly and directly explained
- No assumptions are made about the student's ability to make inferences



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Systematic

The entire system of speech sounds, spelling patterns, sentence structures, text genres, and language conventions is taught directly and integrated into lessons.



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Cumulative

Skills are continually reviewed, practiced, extended, and once mastered, applied to more and more difficult text.



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Sequential and Incremental

- Follows a planned scope and sequence
- Progresses in measurable, manageable steps
- Addresses all essential components, often in parallel



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Data-Driven

- **Progress-monitoring** assessments are used frequently
- Curriculum-based measurements are emphasized to assess progress
- Guided practice is continuous and ample
- Independent application is expected



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Successful Instruction Includes...

Multisensory learning: Children engage in learning language concepts and other information using their eyes, ears, hands, mouths, and sometimes whole bodies

Visual • Auditory • Tactile • Kinesthetic



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Successful Instruction Includes...

Cognitive strategies:

- Acquiring a set of effective learning strategies for reading, spelling, writing
- Selecting appropriate strategies for tasks
- Monitoring one's own strategy use
- Evaluating results of effort



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How do we put it all together?

- Early identification
- Explicit, systematic instruction
- Progress-monitoring
- Comprehensive programming
- Student self-advocacy

= Literacy!

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For More Information

The International Dyslexia Association

- www.interdys.org (national)
- IDA-Upper Midwest Branch
www.ida-umb.org
- 612.486.4242



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