Dispel the Three Most Common Myths

1. Dyslexics see things backwards.
2. Dyslexics can’t read at all.
3. Dyslexia is rare (10-15%)

Dyslexia is a neurologically-based, often familial, disorder that interferes with the acquisition and processing of language. Varying degrees of severity, dyslexia causes difficulty in receptive and expressive language. Symptoms can include difficulty in phonological processing, reading, writing, spelling, handwriting, and sometimes arithmetic. Dyslexia is not the result of lack of motivation, sensory impairment (such as eyesight or hearing), inadequate instructional or environmental opportunities, or other limiting conditions. But dyslexia may occur together with other conditions. Although dyslexia is lifelong, individuals with dyslexia frequently respond successfully to timely and appropriate interventions.

Four Key Points About Dyslexia

1. Inherited
2. Brains Are Different
3. Language Processing:
   - Auditory & Visual Sequential Challenges
4. Directionality
INHERITED

- Genetic & strongly runs in family trees.
- 50% chance of inheriting it if one parent is dyslexic.
- Specific genes have been isolated for:
  - Phonemic awareness
  - Rapid naming
  - Visual memory for words
- Doesn’t skip generations: dominant feature

How do we learn to read?

- New words → phonetic attack
  - Ex. dysnemkinesia
- Once we have seen a word a few times it becomes part of our sight word memory
- Proficient readers use sight word recognition skills to read fluently

Language Pathways

From Shaywitz, Overcoming Dyslexia, p 78

How the Dyslexic Brain Works

- FMRI - Shaywitz
  - Use a completely different part of the brain
  - Neurological Plasticity: changes after the right remediation

www.dyslexia.yale.edu/
Auditory and Visual Sequential Processing

- Can not process fast enough to make the link between sound and symbol.
  - Impaired phonemic awareness
  - Affects phonetic decoding skills (dysphonesia)
- Often dyslexics have difficulty seeing all the letters in a word in the correct sequence.
  - Affects visual memory for words (dyseidesia)
- Severe dyslexics have both of these problems (dysphoneidesia)

Spelling Issues due to Sequencing

- Laugh may look like:
  - Luagh  lagh  laug  lahg

  How does the child remember what this word looks like if it never gets cemented in the visual word area of the brain?
  - Resort to phonetic strategy \( \Rightarrow \) “LaF”
    (if not dysphonetic)

  This is why non-phonetic words are so challenging.

Sequential Processing also affects...

- Rapid Automatic Naming
- Direct impact on ability to memorize verbal/written information.
- Rote random facts (word retrieval problems)
- Temporal Sequencing Problems
  - Days of the week
  - Months of the year
  - The alphabet

Directionality

- Late to establish a dominant hand
- Problems with writing on the correct side of their papers
  - \( g/j \); \( b/d \); \( p/q \); m/n confusion
- Trouble reading a traditional clock
- Trouble with direction words (next to, to the right)
Warning Signs: Preschool
- Delayed speech
- Mixing up sounds & syllables in long words
- Trouble learning numbers and alphabet
- Can’t say words that rhyme
- Chronic ear infections
- Difficulty learning to tie shoes
- Late establishing a dominant hand
- A close relative with dyslexia

Warning Signs: Elementary School
- Terrible Spelling
- Slow, choppy, inaccurate reading
  - Guesses based on shape or context
  - Skips or misreads prepositions (at, to, of)
  - Ignores suffixes
  - Can’t sound out unknown words
- Often can’t remember sight words (they, were, does, of)
- When speaking, difficulty finding the correct word
- Dysgraphia (slow, non-automatic HW that is difficult to read)
- Extreme difficulty learning cursive
- Difficulty telling time on clock with hands
- Letter/number reversals continuing past the end of 1st grade
- Trouble with math
  - Memorizing multiplication tables
  - Memorizing a sequence of steps
  - Directionality
- Extremely messy bedroom, desk, or backpack
- Dreads going to school

Phonemic Awareness is:
- Ability to hear & manipulate sounds within a one-syllable word in your head
- Essential pre-reading skill
- Phonics won’t work
  - If you don’t have phonemic awareness

Seven Essential P.A. Skills
1. Count & say each sound: “Tell me how many sounds you hear in this word.”
2. Add a sound. “Take fly and add /t/ to it.”
3. Delete a sound. “Say meet and take the /t/ off of it.”
4. Change a sound
   - Say flash and take off /fl/ what do you have?
   - Say wish and add /sh/ what do you have?
5. Compare a sound
6. Blend sounds into words
7. Create words that rhyme. Cat/rat.
How important?

• “Phonemic Awareness is more highly related to learning to read than intelligence, reading readiness, and listening comprehension.”

– Keith Stanovich

Canada Research Chair of Applied Cognitive Science at the Department of Human Development and Applied Psychology, University of Toronto. His research areas are the psychology of reasoning and the psychology of reading.

You Can Hear Dyslexia

• “The champ stuck a pink sock in the stink.”
• “Joan did need to plant her bungalow.”
• “A dainty lady in a velvet coke.”
• “The hungry runway.”
• “Kent swung the bat in the thick frog.”

Typical P.A. Errors in Dyslexics

<table>
<thead>
<tr>
<th>Shape</th>
<th>Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>form-from</em></td>
<td><em>does-dose</em></td>
</tr>
<tr>
<td><em>trail-trial</em></td>
<td><em>who-how</em></td>
</tr>
<tr>
<td><em>house-horse</em></td>
<td><em>lots-lost</em></td>
</tr>
<tr>
<td><em>lock-look</em></td>
<td><em>on-no</em></td>
</tr>
<tr>
<td><em>come-came</em></td>
<td><em>was-saw</em></td>
</tr>
<tr>
<td><em>beach-bench</em></td>
<td><em>girl-gril</em></td>
</tr>
<tr>
<td><em>timed-timid</em></td>
<td><em>untied-united</em></td>
</tr>
</tbody>
</table>

Omit-Insert, Silent E, Sight Words

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Star-stair</em></td>
<td><em>Her-here</em></td>
</tr>
<tr>
<td><em>Place-palace</em></td>
<td><em>Quite-quiet</em></td>
</tr>
<tr>
<td><em>Could-cold</em></td>
<td><em>Rid-ride</em></td>
</tr>
<tr>
<td><em>Black-back</em></td>
<td></td>
</tr>
<tr>
<td><em>Ounce-once</em></td>
<td><em>Where-were</em></td>
</tr>
<tr>
<td><em>Steam-stream</em></td>
<td><em>Want-what</em></td>
</tr>
<tr>
<td><em>Bucket-basket</em></td>
<td><em>Though-thought-through</em></td>
</tr>
</tbody>
</table>
### Suffixes
- needed-need
- shoulder-should
- every-very

### Function Words
- a-the
- to-on-at-in

### Directionality
- b-d
- b-p
- m-w
- n-u
- g-j
- m-n

### Sensible Substitutions
- horse-pony
- journey-trip

### Wild Guess
- Abandon-ambition

### Dyslexic Spelling Patterns
- Leaving out vowel sounds in syllables.
- Inserting or putting consonants in wrong place.
- Using correct letters in the wrong order.
- Spelling the same word in different ways.
- Silent-E confusion.
- Messing up the vowel sounds.
- High frequency words spelled wrong.
- Incorrect use of suffixes.
- Trouble with sounds—(ch) for (tr) or (j) for (d), (t) for (l), (v) for (y)
- Poor letter formation & directionality problems—b/d/p/g w/m/n

### Writing Sample

![Writing Sample Image](image)

### One Year Later

![One Year Later Image](image)
Formal Evaluation Process

- Parent Interview
- CTOPP-2 (Comprehensive Test of Phonological Awareness)
- GORT
- Auditory discrimination test
- Sound-to-symbol test & Symbol-to-sound test
- Long-term memory test
- Reading of Graded Word Lists
- Reading of High Frequency Sight Words
- Reading of phonetically regular nonsense words (decoding)
- Reading of grade-level passage for fluency and accuracy
- Written Expression & Writing Sample Review
- Review of all previous testing and remediation

Remediation That Works

- Multi-Sensory, Orton-Gillingham
  - If they are ready for it
  - 85% are ready for it
- Lindamood-Bell LiPS
  - If they are not ready for O-G

Dr. Samuel Orton & Dr. Anna Gillingham

“Multi-Sensory Language Instruction”

What is Multi-Sensory Instruction?

“Re-wiring in Action”

“Effective instruction for students with dyslexia is explicit, direct, cumulative, intensive, and focused on the structure of language. Multisensory learning involves the use of visual, auditory, and kinesthetic-tactile pathways simultaneously to enhance memory and learning of written language. Links are consistently made between the visual (language we see), auditory (language we hear), and kinesthetic-tactile (language symbols we feel) pathways in learning to read and spell.”

------definition from the International Association of Dyslexia
What does learning to play a violin & teaching reading to dyslexics have in common?

- Complex Auditory Processing
- Kinesthetic memory—stored in a different area of the brain.
- Cue & Strengthen the visual attention & memory for symbols “Power Eyes”. Connecting the senses.
- “Reading Is Rocket Science” Louisa Moats article

Use Your Senses!

- “People who think that all sensations reach us through the eye and the ear have expressed surprise that I should notice any difference, except possibly the absence of pavements, between walking in the city streets and in country roads. They forget that my whole body is alive to the conditions about me. The rumble and roar of the city smite the nerves of my face, and I feel the ceaseless tramp of an unseen multitude, and the dissonant tumult frets my spirit. The grinding of heavy wagons on hard pavements and the monotonous clangour of machinery are all the more torturing to the nerves if one’s attention is not diverted by the panorama that is always present in the noisy streets to people who can see.”
- --Helen Keller, The Story of My Life

The Senses

2,500 receptors per cm² just on the fingertips!

- LIPS-fix articulatory memory if needed
- Feel & hear sight words
- Touch & Say & Slowly Blend
- Finger spelling
- Tap & Say the syllables---Say & Write –Say & Write
- Associate rules with pictures & use logic
- “Wow! This really works!” Katie Mae—one of my severely dyslexic students

OG Methodology

- Language-Based
- Multi-sensory
- Structured, Sequential, Cumulative
- Cognitive
- Flexible
- Emotionally Sound
The Right Program
Orton-Gillingham Systems
- Slingerland
- Alphabetic Phonics
- Project Read
- Wilson
- Language!
- Blosser
- Barton Reading & Spelling System

Programs that are not effective in remediating dyslexia
- Hooked on Phonics
- Reading Recovery
- Read Naturally
- Accelerated Reader
- Brain Gym or other exercises
- Fast Forward
- Sylvan, Score, or Kumon centers
- Ron Davis—Gift of Dyslexia
- Special diets or medicine

For OG To Work:
- The right program
- The right teacher or tutor
- The right setting
- At the right intensity level
- For the right length of time

The Right Teacher
- Ideally Certified
- Patient
- Skilled in pacing
- Able to build relationship—“Yes, and..”
- 100% success, 100% of the time
The Right Setting

- Quiet
- Distraction Free
- Welcoming & Safe

The Intensity & Length of Time

- Sequential
- Weaving old with the new--constantly
- Pacing—knowing when to move on
- Listening---knowing when to push the student

PS/KM Videos

- P.S. Level 2 drills after LIPs
- K.M. Age 10—pre-primer Nov. 2013; severe-profound
- Age 11-dictation level 3 video (10-21-14)
- Age 12-end of level 4 video (11-17-15)
- Age 13-end of level 6 video (10-27-16)

Writing Samples-8 month gap
What Parents need to do:

- Use only one OG reading intervention program.
- Increase the frequency of tutoring in the summer.
- Ask for classroom accommodations. (504 plan is ideal)
- Avoid handwriting by using technology.
- Read to your child nightly.
- Find & develop their strengths & talents.

A Different Brain-A Great Brain!

- Dyslexia is independent of IQ
- Right side of brain approximately 10% larger.
  - “picture/3-D thinkers”
- “Out of the box” thinkers

DYSLEXIC STRENGTHS

- Creative
- Intuitive
- Persistent
- Empathetic

- Critical thinkers
- Big picture thinkers
- Strong reasoning skills
- Excellent at solving puzzles
- Excelled oral comprehension

Careers

- Architecture
- Interior design
- Psychology
- Teaching
- Marketing, sales
- Politics
- Culinary arts
- Carpentry

- Performing arts
- Athletics
- Music
- Sci. research
- Engineering
- Computers
- Electronics
- Mechanics
Famous Dyslexics

- Artists: Walt Disney, Rodin, Charles Schulz, Ansel Adams
- Musicians: Harry Belafonte, Cher, John Lennon
- Entrepreneurs: Charles Schwab, Craig McCaw, Bell Hewlett, John Chambers
- Politicians: Churchill, Rockefeller, King of Sweden, Woodrow Wilson, Bush
- Writers: Agatha Christie, Hans Christian Anderson, John Irving, Patricia Polacco
- Scientists: Edison, Jack Horner, Pete Conrad, Einstein

Resources

- Children’s on-line book by Rose Kuntz, *Mommy, Why is it so hard for me to learn to read?* http://www.epubbud.com/read.php?g=R7FR45BV&p=1
- *Overcoming Dyslexia* by Dr. Sally Shaywitz
- *Basic Facts About Dyslexia & Other Reading Problems* by Louisa Moats & Karen E. Dakin
- *Essentials of Dyslexia Assessment & Intervention* by Nancy Mather & Barbara Wendling
- *Why Kids Can’t Read* by Blount & Lyon
- *The Dyslexic Advantage* by Eide & Eide, M.D.
- *The Dyslexic Empowerment Plan* by Ben Foss
- "Reading is Rocket Science" Louisa Moats article

The Arkansas Act: 1 of 27 states that have screening laws http://www.thedyslexiaproject.com/#!arkansas-act-1294-outlined/c17ou
Oregon’s Group that is working on a screening laws: (please join) http://www.decodingdyslexiaor.org/
Ted Talk with Dyslexia: Piper Otterbein, "Finding Passion". https://www.youtube.com/watch?v=ugFIHHom1NU