Dyslexia and Related Disorders: An Overview, Signs and Symptoms, and Screening Tools

Presented by Beth McClure, M.Ed. and Colleen Sliva, MS.Ed.
Introduction to the Presenters

Beth McClure, M.Ed. is a teaching principal and a Fellow of the Academy of Orton-Gillingham Practitioners and Educators. She has served on the board of the NH Branch of the International Dyslexia Association. She has done teacher training in OG, assessment, and learning disabilities.

Colleen Sliva, MS.Ed. is a principal and special education director. She led her school in an effort in which identified students made an average of 2 years of growth in 1 year. She served as president of the NH Branch of the International Dyslexia Association.
Overview

- Background: Brain Basis of Dyslexia and Related Disorders
- Characteristics of:
  - Dyslexia
  - Dysgraphia
- Screeners
What is dyslexia?
Dyslexia, a Definition

RSA 200:58

I. "Dyslexia" means a specific learning disability that is:

(a) Neurobiological in origin;

(b) Characterized by difficulties with accurate or fluent word recognition and by poor spelling and decoding abilities that typically result from a deficit in the phonological component of language; and

(c) Often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction, and may include secondary consequences such as reading comprehension problems and reduced reading experience that can impede growth of vocabulary and background knowledge.

https://www.youtube.com/watch?v=zafiGBrFkRM
What disorders are related to dyslexia?
Related Learning Disorders

- Dyslexia
- Dysphasia
- Dyspraxia
- Dysgraphia
- Dyscalculia
- ADHD
Potential Indicators K-1

- Family history of dyslexia
- Alphabet knowledge (Preschool and Kindergarten)
- Language delay, organizing spoken language
- Phonemic processing, including:
  - Segmenting sounds
  - Blending sounds
  - Sequencing sounds
  - Rhyming
- Naming speed
Potential Indicators Grade 2+

- Remembering sound-symbol relationships
- Spelling
- Acquiring and using written language
- Remembering words
- Organizing written and spoken language
- Slow reading affects comprehension, especially with longer passages
What is dysgraphia?
Dysgraphia Overview

https://www.youtube.com/watch?v=WMfl5kqSWmk

Definition:

As defined in the latest edition of the Diagnostic and Statistical Manual (DSM-5) is a “specific learning disorder” with impairment in written expression. Writing problems can result from one or more of the following components:

- Fine motor difficulties
- Visual-spatial difficulties
- Handwriting issues

In addition, spelling problems, difficulty with word retrieval and verbal fluency, and language processing problems can all contribute to difficulty producing a written product. (American Psychiatric Association, 2013)
Dysgraphia

Dysgraphia is a deficit in

• handwriting
• the ability to write cohesively.

Students with Dysgraphia have impairment in

• handwriting,
• orthographic coding (orthography, the storing process of written words and processing the letters in those words) an important component to spelling,
• moving finger muscles needed for writing
• grammar and usage
• writing organization
Dysgraphia Symptoms by Age/Grade

- **Preschool children** may be hesitant to write and draw and say that they hate coloring.
- **School-age children** may have illegible handwriting that can be mix of cursive and print. They may have trouble writing on a line and may print letters that are uneven in size and height. Some children also may need to say words out loud when writing or have trouble putting their thoughts on paper.
- **Teenagers** may write in simple sentences. Their writing may have many more grammatical mistakes than the writing of other kids their age.

Dysgraphia Overview

**Causes:** Impaired orthographic coding in working memory is related to difficulty with handwriting.

Thought to be the result of impairment in the cerebellar region or due to impairment in the cortico-cerebellar loop.

**Potential Indicators:** Diagnosis of Dyslexia, ADHD, or selective language impairment.

No familial link found.
The Dysgraphia Experience

Write the following words with your nondominant hand upside down in cursive:

apple, drink, flap, dib
Screening Tools

For use in the regular education classroom as a universal tool
I. School districts shall screen all public school students, including English learners, using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) or an equivalent cost effective screener for the identification of potential indicators or risk factors of dyslexia and related disorders upon enrollment in public school kindergarten or first grade, and at appropriate times thereafter, to monitor progress. Beginning in 2017, such screening shall be completed no later than November 30 of each school year.
Choosing a Screening Tool

• For what skills do we need to screen?
• For what grades do we need to screen?
• What is the technical rigor of the screening tool?
  • Classification accuracy, reliability, validity, norming sample with disaggregated data

Interactive Screening Tools Chart:


Source: National Center on Response to Intervention (2010). *Users Guide to Universal Screening Tools Chart*
Screening Tools

- Universal or Tier II capable
- Don’t diagnose, show at-risk
- At-risk determination based on cut score
  - Identify to receive intervention
  - Progress monitoring
Progress Monitoring

- Purpose: to identify a trend line for progress based on the intervention
- Trend line of 4 data points during 6 weeks
- Possible outcomes:
  - Continue intervention
  - Intensify intervention
  - Move to only core instruction
  - Refer for additional testing
Dyslexia Screening Tools

• DIBELS Next: https://dibels.uoregon.edu/ (Based in the University of Oregon)

• Aimsweb: http://www.aimsweb.com/ (Available through Pearson)

• STAR Early Literacy: http://www.renaissance.com/products/assessment/star-3-60-before-update/star-early-literacy-skills/

## DIBELS Next Assessment Alignment

| Phonological and Phonemic Awareness | Initial Sound Fluency (Optional Beg.-Mid K)  
First Sound Fluency (Beg.-Mid K)  
Phoneme Segmentation Fluency (Mid-End K) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphabet Knowledge</td>
<td>Letter Naming Fluency (K-1)</td>
</tr>
</tbody>
</table>
| Decoding Skills                     | Nonsense Word Fluency (Mid K-Beg. 2)  
Oral Reading Fluency (Mid 1-6)       |
| Rapid Naming Skills                 | Letter Naming Fluency (K-Beg. 1)                                 |
| Comprehension                       | Retell Fluency (Mid 1-6)  
Daze (DIBELS Maze) (3-6)              |

## AIMSweb Assessment Alignment

<table>
<thead>
<tr>
<th>Phonological and Phonemic Awareness</th>
<th>Phoneme Segmentation /fluency (Mid K-Mid 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound Symbol Recognition</td>
<td>Letter Sound Fluency (Mid K-Beg. 1)</td>
</tr>
<tr>
<td>Alphabet Knowledge</td>
<td>Letter Naming Fluency (K-Beg. 1)</td>
</tr>
<tr>
<td>Decoding Skills</td>
<td>Nonsense Word Fluency (Mid K-1)</td>
</tr>
<tr>
<td></td>
<td>Reading Curriculum Based Measurement (R-CBM) (Mid 1-8)</td>
</tr>
<tr>
<td>Rapid Naming Skills</td>
<td>Letter Naming Fluency, Letter Sound Fluency, or R-CBM (See grade levels above.)</td>
</tr>
<tr>
<td>Comprehension</td>
<td>AIMSweb MAZE (Mid 1-8)</td>
</tr>
</tbody>
</table>

# STAR Early Literacy (Grades K-3) Assessment Alignment

Computer Adaptive Test: Items are scored and results are given in the following areas

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phonological and Phonemic Awareness</strong></td>
<td>Rhyming; blending; segmenting; initial, final, and medial phonemes; adding/substituting phonemes</td>
</tr>
<tr>
<td><strong>Sound Symbol Recognition</strong></td>
<td>Sound/Symbol correspondence</td>
</tr>
<tr>
<td><strong>Alphabet Knowledge</strong></td>
<td>Letters, alphabetic sequence</td>
</tr>
<tr>
<td><strong>Decoding Skills</strong></td>
<td>Regular and irregular spellings</td>
</tr>
<tr>
<td><strong>Rapid Naming Skills</strong></td>
<td>X</td>
</tr>
<tr>
<td><strong>Comprehension</strong></td>
<td>Purpose of reading, reading with comprehension.</td>
</tr>
</tbody>
</table>

# PALS Assessment Alignment (PALS-K and PALS 1-3)

| Skill                          | PALS-K: Rhyme, beginning sound awareness  
|-------------------------------|------------------------------------------  
|                               | PALS 1-3: Blending, sound to letter       |
| Sound Symbol Recognition      | PALS-K and PALS 1-3: Letter sounds, spelling |
| Alphabet Knowledge            | PALS-K and PALS 1-3: Letter Recognition |
| Decoding Skills               | PALS-K and PALS 1-3: Concept of word  
|                               | PALS 1-3: Word recognition in isolation, passage reading |
| Rapid Naming Skills           | X                                         |
| Comprehension                 | PALS 1-3 only: Comprehension              |

Dysgraphia Screening Tools

Process Assessment of the Learner, 2nd Edition. Diagnostic for Reading and Writing (PAL-II RW)

## Process Assessment of the Learner, 2nd Edition

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>handwriting</td>
<td>Handwriting Legibility, Automaticity- subword level K-6</td>
</tr>
<tr>
<td>handwriting, orthographic coding</td>
<td>Handwriting Legibility, Automaticity- word level K-6</td>
</tr>
<tr>
<td>handwriting, orthographic coding, composition</td>
<td>Handwriting Legibility, Automaticity- text level K-6</td>
</tr>
<tr>
<td>handwriting</td>
<td>Numeral Writing K-6</td>
</tr>
</tbody>
</table>
Summary

Today we provided information:

- Background: Brain Basis of Dyslexia and Related Disorders
- Characteristics of:
  - Dyslexia
  - Dysgraphia
- Screening Tools
  - Dyslexia
  - Dysgraphia
- Progress Monitoring
Future Professional Development

**Webinars**
1. Webinar Thursday, May 25th from 4:00-5:00 p.m.
   Screening Tools, Progress Monitoring, and Parent Communication
2. Webinar Wednesday, May 31st from 4:00-5:00 p.m.
   Evidence-Based Strategies and Interventions

**In-Person Events: 8:30-11:30 or 12:30-3:30**
4. Thursday, June 8: The Common Man Inn and Spa, Plymouth, NH
5. Thursday, June 15: The Holiday Inn, Concord, NH
6. Wednesday, June 21: UNH, Memorial Union Building Theatre, Durham, NH
Presenter Feedback

We are interested in your feedback. Please respond to the brief 3-question survey after this webinar ends.

Thank you!!