

## Dyslexia – Making the Diagnosis and Providing Intervention Recommendations

Stacy Henn, M.A., CCC-SLP  
Janise Stueve, M.A., CCC-SLP  
Speech-Language Pathologists  
Children's Mercy Hospitals & Clinics  
[www.childrensmercy.org](http://www.childrensmercy.org)  
September 22, 2017



## Literacy Research

### National Reading Panel (1997)

**Purpose:** To review research, determine best teaching practices and to determine the key components of learning how to read.

**Findings:** Came out in 2000



## Reading Difficulties

- Dyslexia is the **most common** cause of reading, writing and spelling difficulties.
- Of people with poor reading skills, **70-80%** are likely dyslexic.
- **One in five** (20%) of the population, has dyslexia.
- Nearly the **same percentage** of males and females, people from different ethnic and socio-economic backgrounds have dyslexia.
- Percentages of children **at risk** for reading failure are much higher in high poverty, language-minority populations who attend ineffective schools.
- The Nation's Report Card from 2015 reported about one third of fourth- and eighth-grade students performed at or above the *Proficient* level in reading.



## Reading Difficulties

- About 3/4 of children showing early primary difficulties with basic reading skills can be helped to overcome those difficulties. Not all have dyslexia.
- Less than 1/3 of children with reading disabilities receive school services.
- The causes for reading difficulty may be **neurobiological, experiential, instructional** or a combination of these factors.
- At present, there is no genetic or neurological test to diagnose or predict whose problems are primarily neurobiological or which problems are experiential or instructional (dyslexia is a neurobiological condition).
- About **5% of the population will have enduring, severe reading disabilities** that are difficult to treat given our current knowledge.



## Literacy Research

### National Reading Panel (1997)

**Findings in 2000:** The best approach to reading instruction is one that incorporates explicit and systematic instruction in five important areas:

- **Phonemic Awareness**
- **Phonics**
- **Fluency**
- **Vocabulary**
- **Comprehension**

(Shaywitz, 2003)



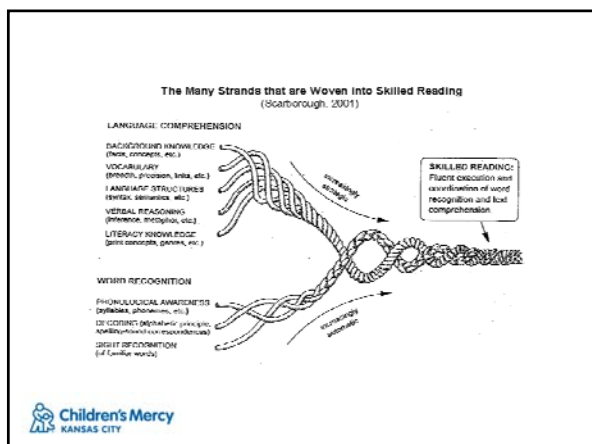
## Speech-Language Pathologists and Literacy

### ASHA Position Statement -

Roles and Responsibilities of Speech-Language Pathologists With Respect to Reading and Writing in Children and Adolescents (2001)

ASHA Scope of Practice in Speech-Language Pathology (2016)





### SLP's Role in Literacy (ASHA 2001)

- Prevention
- Assessment
- Identification
- Intervention
- Documentation
- Education
- Research

Children's Mercy  
KANSAS CITY

### Demographics of Patients evaluated at Children's Mercy

- Ages 6 – 21 (typically only through high school age)
- Kansas and Missouri (and other states as well)
- All types of co-occurring disabilities

Children's Mercy  
KANSAS CITY

### CMH Academic-Language Evaluation

- Parent paperwork and request any previous testing and IEP
- Parent and patient interview
- Assessment preview
- Administration of assessment tools
- Results discussed and recommendations given
- Report completed and mailed to family

Children's Mercy  
KANSAS CITY

### Risk Factors Preschool/Kindergarten

- Delayed speech and language
- Ear infections
- Family history of reading or spelling difficulties
- Confusion with left/right
- Trouble recognizing words that rhyme
- Trouble saying sounds or syllables in long words
- Trouble memorizing the alphabet/phone number/learning letter sounds

Children's Mercy  
KANSAS CITY

### Risk Factors Elementary/Middle School

- Letter or number reversals after first grade
- Slow, incorrect reading
- Skips or misreads small words
- Poor spelling
- Difficulty learning cursive
- Poor handwriting
- Trouble finding the right word when speaking
- Trouble memorizing sight words/math facts

Children's Mercy  
KANSAS CITY

## CMH Academic Language Evaluation Standard Assessments

- Clinical Evaluation of Language Fundamentals-5 (CELF-5)
- Comprehensive Test of Phonological Processing-2 (CTOPP-2)
- Test of Word Reading Efficiency -2 (TOWRE 2)
- Word Identification and Spelling Test (WIST)
- Gray Oral Reading Tests - 5 (GORT-5)
- Dynamic Indicators of Basic Early Literacy Skills (DIBELS)
- Test of Non-Verbal Intelligence (TONI-4)
- Phonological Awareness Test – 2 (PAT-2)
- Rapid Automatized Naming/Rapid Alternating Stimulus Tests (RAN/RAS)

**Additional Factors Considered:** Medical and family history, IEP, cognitive assessments, tutoring



## Clinical Evaluation of Language Fundamentals-5 (CELF-5)

- Measures ability to understand and use spoken language
- Provides insight regarding vocabulary and auditory comprehension and verbal expression
- Ages 5 - 21



## CELF-5 Reading and Writing Supplement

- **Reading Comprehension subtest**  
Student reads silently to self and is allowed to look at text when answering questions.  
Reported to be more like an ACT or SAT test. Helpful information when applying for accommodations on these types of tests.
- **Structured Writing subtest**  
A story completion task. Scored for Completeness, Sentence Structure, Grammar, Organization, and Writing Mechanics (includes spelling).
- Ages 8 10 and Ages 11 – 21
- Standard scores obtained



## Comprehensive Test of Phonological Processing-2 (CTOPP-2)

- **Phonological Awareness:** the ability to distinguish and manipulate individual sounds in words
- **Phonological Memory:** the ability to hold sounds and words in short term memory long enough to sound out and remember words
- **Rapid Naming:** the ability to quickly retrieve phonological information from long-term or permanent memory
- Ages 4 - 24



## Rapid Automatized Naming/Rapid Alternating Stimulus Tests (RAN/RAS)

- This test measures a person's ability to perceive a visual symbol, such as a letter or color, and retrieve the name for it accurately and rapidly.
- Ages 5;0 – 18;11
- Subtests:
  - Objects
  - Colors
  - Numbers
  - 2-Set Letters and Numbers
  - 3-Set Letters, Numbers, and Colors
- Given as a supplement to the CTOPP-2 Rapid Naming subtests



## Test of Word Reading Efficiency-2 (TOWRE-2)

- **Sight Word Efficiency**
- **Phonemic Decoding Efficiency**
- We also observe accuracy for both measures.
- Typically we will see a discrepancy between memorized words and ability to decode unknown words.
- Ages 6 - 24



## Word Identification and Spelling Test (WIST)

- Assesses fundamental literacy skills
- Reading and spelling regular words
- Reading and spelling irregular words
- Letter Sounds
- Pseudo Word reading
- Ages 7 - 18



## Gray Oral Reading Tests-5 (GORT-5)

- Paragraph reading
- Reading rate
- Reading accuracy
- Reading fluency (combination of rate and accuracy)
- Reading comprehension
- Ages 6 - 23



## Dynamic Indicators of Basic Early Literacy Skills (DIBELS)

- Measures of critical skills that underline early reading success
- Sometimes used in our clinic for early identification of younger patients or as a supplemental measure



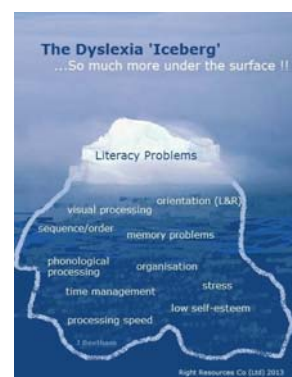
## Test of Nonverbal Intelligence-4 (TONI-4)

- Measure cognitive ability in a nonverbal manner
- Able to assess general intelligence without the effects of linguistic (language) skills confusing or interfering with the results



## Phonological Awareness Test-2 (PAT-2)

- Graphemes subtest
  - Consonants
  - Long and Short Vowels
  - Consonant Blends
  - Consonant Digraphs
  - R-Controlled Vowels
  - Vowel Digraphs
  - Diphthongs



## Differential Diagnosis for Children with Reading Difficulties

Determine if reading difficulties are secondary to difficulties with attention skills, behavior, cognitive skills, vision, hearing. (Per parent report, review of previous testing, observations, and assessments given)

Determine if difficulty with reading is due to a primary language disorder.

Determine specific difficulties with reading and spelling (phonological processing, decoding, sound-symbol knowledge, rule knowledge, fluency, accuracy, comprehension).



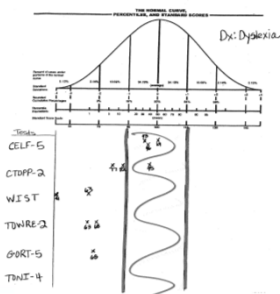
## Dyslexia

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.

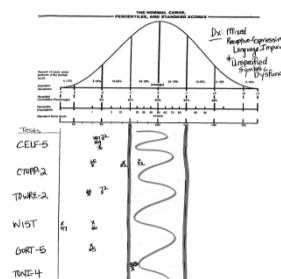
Adopted by the IDA Board of Directors, Nov. 12, 2002. This Definition is also used by the National Institute of Child Health and Human Development (NICHD). Many state education codes, including New Jersey, Ohio and Utah, have adopted this definition. Learn more about how consensus was reached on this definition: [Definition Consensus Project](#).



## Example Dyslexia Profile



## Example Non-dyslexia Profile



## CMH Academic Language Evaluation

### Checklist:

- Specific Learning Disability (affects one or more areas but not all)
- Adequate intelligence
- Provided opportunity to learn
- Reading/language/written problems arose from factors within the individual that have a basis in "wired in" aptitudes for language learning and reading (i.e., neurological in nature, not secondary to another diagnosis/disorder)
- Difficulty with accurate and/or fluent word recognition
- Poor Spelling (accuracy) and decoding abilities (of unknown words/poor phonics or letter-sound correspondence and syllable patterns/chunks of longer words)
- Deficit in phonological component of language
- Unexpected in spite of effective class instruction/adequate intelligence, opportunity to learn
- Struggles with reading and/or writing more than other students at same grade/age/ability level

**Secondary Characteristics:** Problems learning meanings of words, Comprehending academic language as progress through grades, Lack of motivation to read/write, Impeded growth of vocabulary and background knowledge



## ICD-10 Diagnosis Codes

- Dyslexia-R48.0
- Unspecified Symbolic Dysfunctions-R48.9  
(difficulty with reading and spelling; does not meet criteria for diagnosis of dyslexia)
- Mixed Receptive-Expressive Language Disorder-F80.2
- Expressive Language Disorder-F80.1



## Recommendations

- Multisensory structured approach/structured literacy approach
- Examples include: Orton-Gillingham, Wilson Method, Barton Method, Souday System, Alphabetic Phonics, Slingerland, and others.



## Multisensory Structured Literacy Approach

- Multisensory (auditory, visual, kinesthetic, tactile; all at same time)
- Systematic (scope and sequence)
- Explicit teaching (nothing assumed)
- Cumulative
- Typically instructor has undergone some type of training with their program



## Additional Recommendations

- Reading fluency intervention (in addition to structured literacy intervention/not a substitute)
- Language therapy (Visualizing and Verbalizing; Expanding Expression Tool)
- Articulation Therapy
- Handwriting (Handwriting Without Tears [www.hwtears.com](http://www.hwtears.com); formal evaluation with an OT)
- Refer on for concerns with attention, anxiety, behavior
- Refer on for concerns with cognition, more global learning issues (Psychologist/Dev. Pediatrician)
- Rhyming to Reading



## Accommodations

- Allow additional time for test taking (including ACT or other like tests).
- Allow student to take tests in a quiet environment outside of classroom.
- Provide a reader on classroom assignments, tests, and standardized tests (including tests such as the ACT). (When knowledge in a core subject area such as science or social studies is assessed in a way that requires the student to read, s/he may be unfairly penalized because difficulty with decoding interferes with reading comprehension.)
- Provide access to textbooks/books in audible format. As text materials become more difficult it may take an increasing amount of time for homework completion and comprehension of material may be negatively impacted if student is required to read the text. (Audio textbook resources: Learning Ally, Bookshare)
- Do not require student to copy from the board, overhead projector, or from the book.
- Provide copy of teacher's or another student's notes to allow student to listen to information. Because spelling is difficult, writing notes may take concentration away from the information presented.



## Accommodations

- Use of text-to-speech and speech-to-text software as appropriate.
- Do not require use of a traditional printed dictionary. Provide electronic spell checker, such as Franklin's Spelling Ace.
- Spelling lists should follow the same sequence as child's reading and spelling program.
- Do not require individual reading out loud in classroom unless materials have been provided to student for practice at home prior to the reading task. Grade handwritten assignments on content only. Do not take points off for spelling or grammar errors, or for penmanship.
- Allow student to provide verbal answers for assignments and tests due to difficulties with written expression skills. (Student could be provided with a writer/scribe, use speech-to-text software, or record answers into an audible recorder.)
- Teach keyboarding to work toward use of a computer for writing tasks.



## Accommodations

- Allow use of a computer in the classroom and at home for completing writing assignments.
- Reduce amount of homework as needed. Amount of homework should be based on the time it would take students without this disability to complete the assignment. The student should spend no more than 1 ½ the amount of time on homework as other students.
- Allow parent to read homework material to student including each question he must answer.
- Allow parent to write answers for student for homework or allow use of voice activated software.
- Avoid timed tests as able. Provide extended time when timed tests necessary.
- Provide alphabet strip for alphabetizing activities.



## Resources - Websites

- International Dyslexia Association, [www.dyslexiaida.org](http://www.dyslexiaida.org)
- The Yale Center for Dyslexia and Creativity, [www.dyslexia.yale.edu](http://www.dyslexia.yale.edu)
- Bright Solutions for Dyslexia, [www.dys-add.com](http://www.dys-add.com)
- 1 in 5 website, [www.explore1in5.org](http://www.explore1in5.org)
- Learning and Attention Issues, [www.understood.org](http://www.understood.org)



## Resources - Books

- Overcoming Dyslexia by Sally Shaywitz, M.D.
- Basic Facts About Dyslexia and Other Reading Problems by Louisa Cook Moats and Karen E. Dakin
- Basic Facts About Assessment of Dyslexia by Susan C. Lowell, Rebecca H. Felton, and Pamela E. Hook
- The Shutdown Learner: Helping Your Academically Discouraged Child by Richard Selznick, PhD
- Dyslexic Advantage: Unlocking the Hidden Potential of the Dyslexic Brain by Brock L. Eide, M.D., M.A., and Fernette Eide, M.D.



## Resources – Audio books

- Kansas Residents – Talking Books Program, [www.tscpl.org](http://www.tscpl.org)
- Missouri Residents – The Wolfner Library, [www.sos.mo.gov/wolfner](http://www.sos.mo.gov/wolfner)
- Learning Ally, [www.learningally.org](http://www.learningally.org)
- Bookshare, [www.bookshare.org](http://www.bookshare.org)
- Overdrive, [www.overdrive.com](http://www.overdrive.com)



## Resources - Products

- Live Scribe pen (note taking) [www.livescribe.com](http://www.livescribe.com)
- Dragon Naturally Speaking (speech to text) [www.shop.nuance.com/Dragon](http://www.shop.nuance.com/Dragon)
- Ginger software (spelling and grammar correction/text to speech reader) [www.gingersoftware.com](http://www.gingersoftware.com)
- Assistive Technology Solutions for Students with Adults with Dyslexia (online technology help/resources) [www.atdyslexia.com/assistive-technology](http://www.atdyslexia.com/assistive-technology) or the website [www.dyslexiatech.com](http://www.dyslexiatech.com)
- Rhyming to Reading DVD [www.childrensmercy.org/rhymingtoreading/](http://www.childrensmercy.org/rhymingtoreading/)
- C-Pen Reader [www.readerpen.com](http://www.readerpen.com)



## Resources - Tutors

- International Dyslexia Association – national provider directory
- Bright Solutions for Dyslexia (Barton system) – provider directory by state, also distance tutors and training for parent providers
- Learning Ally – national databank “find a tutor”
- Check individual structured literacy programs for providers certified within each system (Wilson Language, Orton-Gillingham Institute, Academic Language Therapy Assoc.)
- Decoding Dyslexia Johnson County <http://www.dyslexiajohnsoncounty.doodlekit.com/>



## What training is available?

- Learning Ally – Spotlight on Dyslexia online conference every December
- You have the knowledge and credentials to provide the services, learn/practice the tests
- Study/Read the resources listed on evaluation and diagnosis
- Collaborate with others who are evaluating
- Take a class, if offered at a university
- Attend IDA, belong to KS/MO IDA to receive updates on local opportunities for training
- Use ASHA resources, groups/networks, e.g., SLP literacy group on facebook



Design by Cheri Gremmet  
Alabama Branch of the International Dyslexia Association

## References

- American Speech Language Hearing Association ([www.asha.org](http://www.asha.org))
  - Brown, L., Sherbenou, R.J., & Johnsen, S.K. (2010). *Test of nonverbal intelligence—Fourth edition*. Austin, TX: PRO-ED.
  - Catts, H.W., Adolf, S.M., Hogan, T., & Weismer, S. (2005). Are specific language impairment and dyslexia distinct disorders? *Journal of Speech, Language and Hearing Research, 48* (6), 1378-1396.
  - Good, R.H., & Kaminski, R.A. (Eds.). (2002). *Dynamic indicators of basic early literacy skills—Sixth edition*. Eugene, OR: Institute for the Development of Educational Achievement. Available: <http://dibels.uoregon.edu/>
  - Ehler, D.J., & McChes, R.L. (2008). *Primary test of nonverbal intelligence*. Austin, TX: PRO-ED.
  - International Dyslexia Association ([www.ida.org](http://www.ida.org))
  - ICD-10-CM Expert for Physicians: The Complete Official Code Set. (2015). USA: Optum360, LLC.
  - Lyon, G.R., Shaywitz, S.E., & Shaywitz, B.A. (2003). A definition of dyslexia. *Annals of Dyslexia, 53*, 1-14.
  - Mathes, P. (2016, June 15). *Curing dyslexia: what is possible?* [Webinar]. Retrieved from [www.dyslexiaida.org](http://www.dyslexiaida.org)
  - Moats, L.C., & Dakin, K.E. (2008). *Basic facts about dyslexia and other reading problems*. Baltimore: The International Dyslexia Association.
  - National Assessment of Educational Progress (NAEP). Nation's Report Card 2015. [www.nationsreportcard.gov/reading\\_math\\_2015/#?grade=1](http://www.nationsreportcard.gov/reading_math_2015/#?grade=1)
  - National Reading Panel. (2000). U.S. Department of Health and Human Services Public Health Service, National Institutes of Health, National Institute of Child Health and Human Development, NIH Pub. No. 00-4769.
  - Robertson, C. & Wanda, S. (2007). *The phonological awareness test—Second edition*. East Moline, IL: LinguSystems.
  - Shaywitz, S. (2003). *Overcoming dyslexia*. New York: Alfred A. Knopf.
  - Torgesen, J.K., Wagner, R.K., & Rashotte, C.A. (2012). *Test of word reading efficiency—Second edition*. Austin, TX: PRO-ED.
  - Wagner, R.K., Torgesen, J.K., Rashotte, C.A., & Pearson, N.A. (2013). *Comprehensive test of phonological processing—Second edition*. Austin, TX: PRO-ED.
  - Wiederholt, J.L., & Bryant, B.R. (2012). *Gray oral reading tests—Fifth edition*. Austin, TX: PRO-ED.
  - Wiig, E.H., Semel, E., & Secord, W.A. (2013). *Clinical evaluation of language fundamentals—Fifth edition*. Bloomington, MN: Pearson.
  - Wilson, B.A., & Feltz, R.H. (2004). *Word identification and spelling test*. Austin, TX: PRO-ED.
  - Yale Center for Dyslexia and Creativity ([www.dyslexia.yale.edu](http://www.dyslexia.yale.edu))
- 

## CMH Contact Information

Hearing and Speech Clinic – College Blvd.  
913-696-5750

Stacy Henn [srhenn@cmh.edu](mailto:srhenn@cmh.edu)  
Janise Stueve [jastueve@cmh.edu](mailto:jastueve@cmh.edu)

