

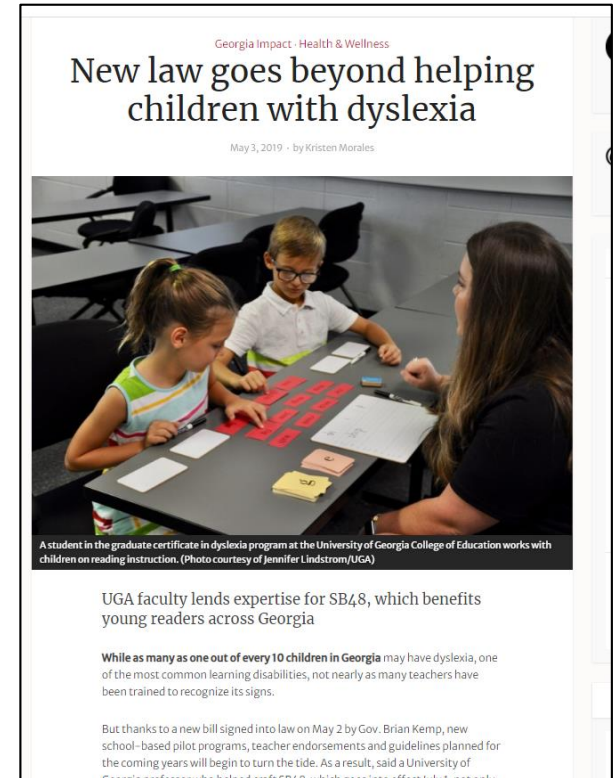
# Screening for Dyslexia

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# A Little Bit About Me





# Agenda

- Overview
- Importance of early identification
- Screening tools – selection and use
- Schoolwide implementation



# Overview



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# What is Dyslexia?

- Dyslexia is the most common learning disability, affecting **5-17%** of children (Cortiella & Horowitz, 2014; Shaywitz, 1998).
- It is a brain-based specific learning disability that impairs a person's ability to **spell** words in isolation accurately or to **read single words** fluently (Peterson & Pennington, 2015).
- Dyslexia can have a secondary impact on reading **fluency and comprehension** on the sentence or paragraph level.
- The reading impairments associated with dyslexia are unexpected; individuals with dyslexia demonstrate otherwise typical learning growth.



# What is Dyslexia?

- Although there is some debate about the precise definition, most states use the IDA's definition of dyslexia:

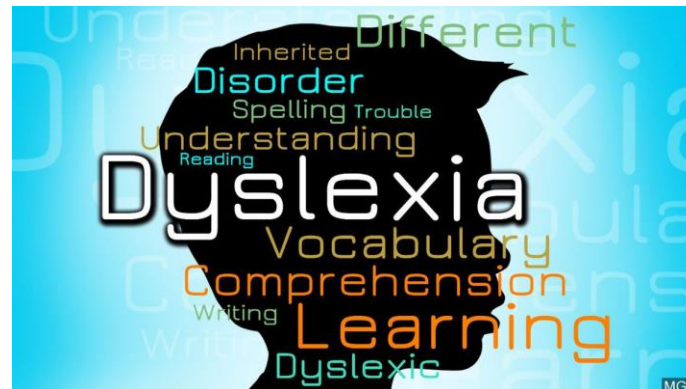
*Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent **word recognition** and by poor **spelling** and **decoding** abilities. These difficulties typically result from a deficit in the **phonological component of 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* (Lyon, Shaywitz, & Shaywitz, 2003). p. 2.



# The Dyslexia Paradox



According to Torgesson, “we can, using tests currently available, accurately identify students who are likely to struggle with reading starting in preschool or kindergarten. What these tests **cannot** do this early is to differentiate students with dyslexia from others who will struggle in learning to read for reasons other than dyslexia.” (Florida Center for Reading Research, 2010)





# Purpose of Screening

- Identify students thought to be at risk.
- Provide students with extra intensive instruction.
- Conduct additional assessment for specific identification if the students lag behind their peers.



# Purpose of Screening

- Screening is neither a comprehensive nor a complete process and does **not**, in and of itself, constitute the diagnostic process.
- The goal is **not** to refer “at risk” children to special education but to more effectively address their specific deficits earlier in the general education setting thereby improving overall outcomes (Badian, 2000).



# Optimal Characteristics of Universal Screeners

- Accessible to all students
- Classification Accuracy (i.e., accurately classifies as “at risk” “low risk” or “not at risk” for reading failure)
- Low cost
- Given to all students
- Valid\*
- Reliable\*
- Administered 3 times per year
- Brief and easy to administer, score and interpret

\*Commercial assessments have undergone psychometric analyses to determine reliability & validity. A “teacher-made” assessment cannot be referred to as reliable or valid if it has not been analyzed by a psychometrician.



# Importance of Early Identification



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# Causes of Early Reading Problems

- Students may be at risk for reading problems for a variety of reasons.
  - English learners who are struggling to learn literacy skills in two languages simultaneously
  - Inadequate reading instruction (i.e., instructional casualties)
  - Comorbid disabilities
  - Environmental factors
  - Family history
- Single-cause explanations rarely capture the complexity behind a student's struggle to develop strong literacy skills
- Multiple risk factors likely make literacy problems more pronounced



# Why Universal Screening is Critical

- It takes **4X** longer to intervene in 4th grade than in late kindergarten.
- Children at-risk for reading failure can be **reliably identified** even before kindergarten by assessing their emergent literacy skills.
- With early identification and prevention programs, the number of children who are placed in special education can be reduced by up to **70%**.
  - It costs **2x** more to serve a student in special education than in general education.



# Why Universal Screening is Critical

- **Birth to age 8** is a critical period for literacy development due to rapid brain growth and its response to instruction.
- **90%** of children with reading difficulties will achieve grade level in reading if they receive the right help **before the end of 1st grade**.
- Brain imaging studies show that, when effective interventions are used successfully, you see changes in the structure and function of the brain.



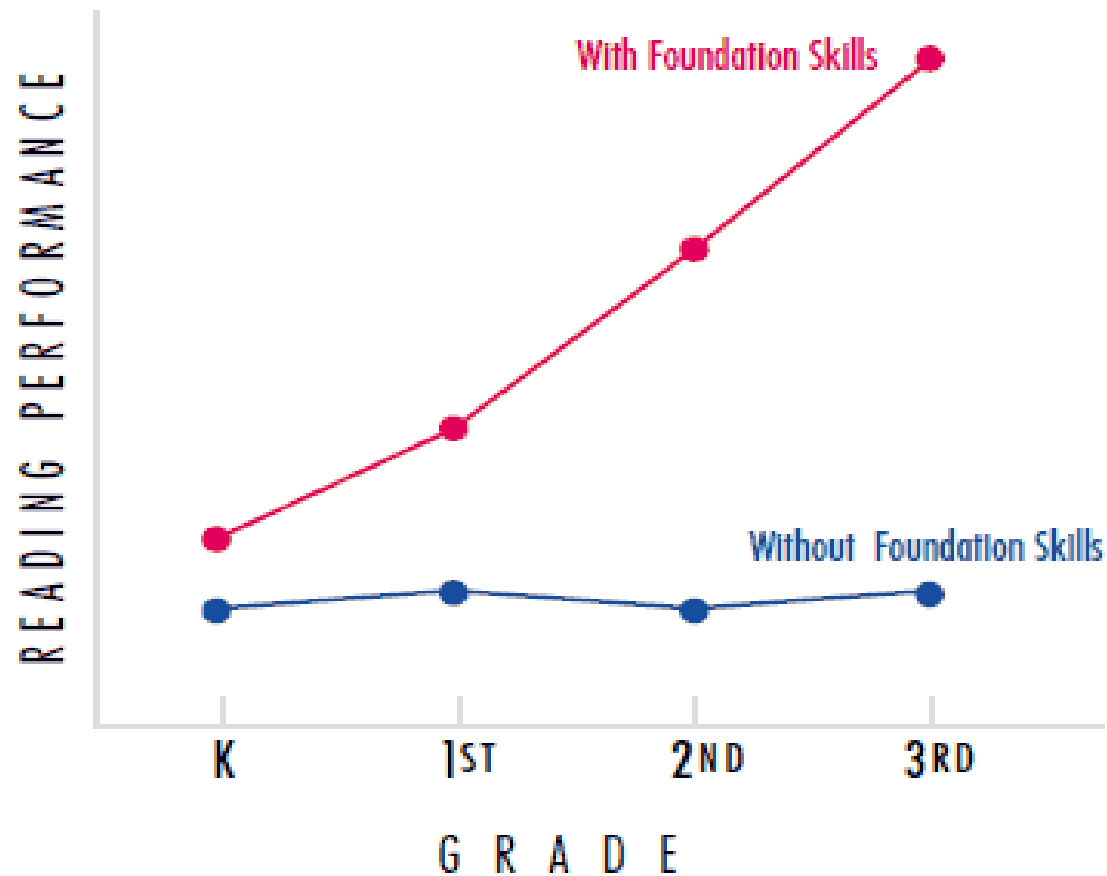
# Why Universal Screening is Critical

- Children who get off to a poor start in reading rarely catch up (Stanovich, 1986).
- The consequences of a slow start in reading become monumental as they accumulate exponentially over time.
  - Stanovich (1986) refers to this as the “**Matthew effect**” (the idea that, in reading, the **rich get richer and the poor get poorer** due to differentiated exposure to text) associated with failure to acquire early word reading skills





# Matthew Effect in Reading



# Consequences of Reading Failure

- Consequences associated with failure to acquire early word reading skills
  - negative attitudes toward reading
  - reduced opportunities for vocabulary growth
  - less practice in reading than other children receive
  - less likely to complete high school



# What and When to Screen



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# How to Select an Effective Screening Tool



# What to Screen

- Decoding Dyslexia CA has created a downloadable summary of Screening by Domain Area and Grade Level
- Based on recommendations from **National Center on Response to Intervention, Rtl Action Network, the IDA** and other **State Departments of Education** for review in establishing best practices.



# Kindergarten

## Key Areas:

- Phonemic Awareness – Blending & Segmenting
- Letter-Sound Association
- Letter Naming Fluency- Timed
- Rapid Automatized Naming (RAN)\*
- Phonological Memory/ Nonsense Word Repetition
- Decoding (Word) Fluency – Real & Nonsense Words
- Spelling Analysis and/or Inventory



# First Grade

## Key Areas:

- Phonemic Awareness – Blending, Segmenting & **Manipulating (i.e. adding, omitting, and substituting individual sounds)**
- Letter-Sound Association
- Letter Naming Fluency- Timed
- Rapid Automatized Naming (RAN)\*
- Phonological Memory/ Nonsense Word Repetition
- Decoding (Word) Fluency – Real & Nonsense Words
- **Oral Reading Fluency – Rate & Accuracy (Winter)**
- Spelling Analysis and/or Inventory



# Second Grade

## Key Areas:

- Phonemic Awareness – Segmenting & Manipulating (i.e. adding, omitting, and substituting individual sounds)
- Rapid Automatized Naming (RAN)\*
- Decoding (Word) Fluency – Real & Nonsense Words
- Oral Reading Fluency – Rate & Accuracy
- **Reading Comprehension**
- Spelling Analysis and/or Inventory





# Third Grade and Beyond

## Key Areas:

- Phonemic Awareness – Segmenting & Manipulating (i.e. adding, omitting, and substituting individual sounds)
- Rapid Automatized Naming (RAN)\*
- Decoding (Word) Fluency – Real & Nonsense Words
- Oral Reading Fluency – Rate & Accuracy
- Reading Comprehension
- Spelling Analysis and/or Inventory



# RAN Discussion

- For ages 4-6 years old, rapid naming performance for digits and letters may be limited because of their relative unfamiliarity with digits and letters.
  - Rapid naming of colors and objects may be used for younger children in lieu of digits and letters.
- Performance on RAN tasks involving symbolic items (e.g., digits and letters) is more predictive of reading than performance on non-symbolic items (Wagner et al., 2013).



# RAN Discussion

- Students who perform poorly on RAN and other essential areas of reading and language previously mentioned are at higher risk for dyslexia
  - May have signs of more severe dyslexia, particularly if they are struggling with both phonological awareness and rapid automatic naming (Mather & Wendling, 2011).
- It is critical that these students receive immediate and more intensive intervention.



# When to Screen

- Screening should begin in the fall of **kindergarten** (recommended within 2 weeks of school)
- Should occur at least **3x** a year (fall, winter and spring) through **3rd** grade.
- Continued **annual** screening for **4th grade and up** is recommended.



# When to Screen

- It is imperative for screening to occur for **all** children (including English Language Learners), not just the ones “at risk” or who have already been determined to have reading failure.
- Screeners should target skills that are relevant for both the grade level and the time in the school year when the screener is administered.



# Is it Ever Too Early to Screen?

- There is significant research on the benefits of screening for **emergent literacy skills** (prior to the start of reading instruction in elementary school) in an attempt to identify students who may be at risk for later reading difficulty
- Additional support can be provided proactively and reduce the likelihood that children will later receive a learning disabled classification or experience significant academic difficulties (Wilson, & Lonigan, 2010).



# Is it Ever Too Early to Screen?

- The three emergent literacy skills that are **most** predictive of reading ability are:
  - phonological awareness
  - print knowledge
  - oral language



# Selecting a Screener



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# Selection Criteria

- There are many commercially-available screeners out there, but not all of them have been well-researched.
- Few screeners for students at risk for dyslexia are comprehensive in **all** areas that need screening.
- It is highly likely that a school will need to use more than one screening tool.



# Selection Criteria

- School administrators and educators must consider **when** the screener will be administered, **to whom**, and **how** the scores will be used.
- Each one of these decisions must be evaluated against the local context.
- School systems differ in terms of their student populations, financial resources, technical infrastructure, and schedules.
- What is best-practice for one school and its students might **NOT** be deemed best practice for another.



# Selection Criteria

- Classification Accuracy
- Generalizability
- Reliability
- Validity



# Classification Accuracy

- The extent to which a screening tool is able to accurately classify students into “at risk for reading disability” and “not at risk for reading disability” categories.
- **Classification Accuracy** should be a primary area of importance and focus.



# Classification Accuracy

Screen	Outcome	
	Fail	Pass
At Risk	<b>A:</b> True Positive	<b>B:</b> False Positive
Not At Risk	<b>C:</b> False Negative	<b>D:</b> True Negative

- **Cell A** individuals are called **True Positives** as these are individuals who were identified as at risk on a screener and performed below the set threshold on the outcome (e.g., below the 20th percentile of a standardized reading test);
- **Cell B** individuals are called **False Positives** as they were classified as at risk on the screener but ultimately performed at or above the set threshold on the outcome (e.g., above the 20th percentile of a standardized reading test);
- **Cell C** are **False Negatives** as they were identified as at risk on the screener and performed below the set threshold on the outcome;
- **Cell D** are the **True Negative** individuals who were not at risk on the screener and performed at or above the set threshold on the outcome



# Generalizability

- The extent to which results generated from one population can be applied to another population.
- A tool is considered more generalizable if studies have been conducted on larger, more representative samples.



# Reliability

- The consistency with which a tool classifies from one administration to the next.
- A tool is considered reliable if it produces the same results when administering the test under different conditions, at different times, or using different forms of the test.
- Reliability should be  **$\geq 0.70$** .
- Reliability is **necessary, but not sufficient**, for a quality screener.
- To be of value, a screener must also be **valid**.



# Validity

- Is a measure of how well a given scale measures what it actually intends to measure; leaving nothing out and including nothing extra.
- Validity should be  **$\geq 0.60$** .
- In the case of a reading screener, it is validity that indicates how completely and accurately the assessment captures the reading performance of **all** students who take it.
- Validity is both much harder to achieve than reliability, and **far more important**.





# Other Factors to Consider

- Screener tools that have been subjected to **rigorous peer-review** should be given greater attention than ones that have not.
- The **cost** of screener compared to the other criteria should be considered to ensure the best value for your investment.
- Tools must be **practical**, **brief** and **simple** enough to be implemented reliably on a wide scale under normal circumstances by trained personnel.



# Other Factors to Consider

- School districts are encouraged to inventory and evaluate screening tools **already in use** and to supplement as necessary to minimize additional investments.
- A number of commercially-available screeners are available for free or at a very low cost per student.



# Types of Scores

- A **norm-referenced** score compares an individual's performance with the performance of others within a relevant norm group (e.g., other first grade students or students of the same age).
- Norm-referenced scores are generally reported as **percentile ranks** and **standard scores**.
- Norm-referencing should always be preferred if an assessment is otherwise equal or superior to the available options.



# Types of Scores

- When a district uses **cut scores** based on national, aggregated norms, these scores will not always align with the resulting percentages for their district.
  - As a result, a cut score at the 20<sup>th</sup> %ile may identify more or less than 20 percent of their students, depending on the skill level of the class, grade, or school.
- Districts should choose a cut score that reflects the performance abilities of students enrolled in their district.



# Types of Scores

- A **criterion-referenced score** is interpreted in terms of a set performance standard.
- The criterion-referenced score reflects how well a student knows the expected skills or content in a particular curriculum.
  - e.g.,: Acadience (formerly DIBELS Next), DIBELS and AIMSweb
- Schools and districts should use a consistent cut score across the district so that comparisons can be made among schools.



# Types of Scores

- If your school (or district) is consistently having **more than 20%** of your student population failing to meet cut scores for universal screening, you should look at Tier 1 instructional quality
- Consider investing in improved instructional curriculum and further professional development.
- It is strongly recommended that a **Structured Literacy™** approach be used in Tier 1 to provide increased levels of reading failure prevention.



# Key Resources

- The research teams at the GaabLab at Boston Children's Hospital and the Gabrieli lab at MIT have provided a helpful summary of assessments/screeners for dyslexia risk and early literacy milestones.
  - GaabLab/Gabrieli Lab's "[Assessments / Screeners for Dyslexia Risk & Early Literacy Milestones](#)"



# Key Resources

- The Center on Multi-Tiered System of Supports at American Institutes for Research (<https://mtss4success.org/>) conducts annual reviews of research studies on selected screening tools.
  - It provides a free [Screening Tools Chart](#) that includes helpful rating information.
  - The Screening Tools Chart also compares time to administer, cost, training & support and whether there are benchmarks/norms available for screening tools.
  - The Center also provides some online [self-paced training modules](#) on Screening and related topics.





# Screeners Under Development

- APPRISE: <https://www.appriseproject.org/>
- Free to teachers, pediatricians, and parents



# **Schoolwide Implementation**

# Universal Screening Process

[Dyslexia Informational Handbook](#), Section V (pp. 17-20)

Performance indicators that school leaders are providing appropriate screening include, but are not limited to:

- Identifies screening tools for all areas (e.g., academics and behavior)
- Uses screening tools that are brief, valid and reliable
- Screens **ALL** students to identify students who may be at risk, need additional assessments or in need of enrichment/acceleration
- Establishes written procedures to ensure universal screening occurs more than once a year and implementation accuracy
- Uses results to determine the level of risk and identify students who need further assessments
- Uses results to identify the needs of all students (i.e., tiered supports)
- Uses results to inform the data-based decision-making process
- Uses a data system to store and access student data in a timely



# Implementation

## Dyslexia screening process in [Little Rock School District](#)

1. [LRSD Dyslexia Staff Guide](#)
2. [LRSD Dyslexia Screening: An Overview](#)
3. [LRSD Assessment Protocol](#)
4. [Characteristic Profile for Dyslexia](#)



# Identification of Dyslexia

- When a student is having difficulties with reading and spelling as discovered in the MTSS and universal screening processes, an evaluation for dyslexia should be conducted (see [Dyslexia Informational Handbook](#), Section VI, pp. 21-23).
- After evaluation, the school team will consider the case history and the testing data and will determine eligibility for Special Education services under IDEA.
  - For students with diagnosed SLD and dyslexia, the plan is typically an Individualized Education Plan (IEP), which provides both remediation and accommodations.
- Alternatively, the SST may determine that a student is eligible for a 504 Plan, which provides only accommodations, focusing on granting access for individuals with handicapping conditions.
  - A Section 504 Plan does not specify the provision of direct specially designed instruction or remediation.



# Identification of Dyslexia

**CAUTION:** A poor reader may appear to “fit the profile” of dyslexia. However, if the learner responds quickly to appropriate intervention, the source of the reading problem is more likely related to earlier educational opportunity than to differences in the child’s neurobiological makeup that limit the ability to learn from the instruction provided.

According to IDEA (2004), the team must determine that the reading disability is affecting the student’s performance **to a significant degree** and the student’s needs **cannot be met** without special education



# GaDOE Updates

- [GaDOE Dyslexia website](#)
- [GaDOE Dyslexia Update](#)
- [HB81](#) (p. 79): **140.5**: “Increase funds to fund SB48 (2019 Session) screening mandate and a state educational agency dyslexia specialist.”
  - There is not a current plan to have a statewide screener required of all districts.
  - However, districts do need support selecting screeners that are appropriate based on the required components of SB48.



# References

Decoding Dyslexia CA Universal Screening for Reading Difficulties:  
<https://decodingdyslexiaca.org/universal-screening>

GaabLab/Gabrieli Lab's "Assessments / Screeners for Dyslexia Risk & Early Literacy Milestones"  
([https://docs.google.com/spreadsheets/d/16m40o49LZ\\_9wZI9VPAXhHFIATvhSM1m-m-0oGr48jFfo/edit#gid=427370037](https://docs.google.com/spreadsheets/d/16m40o49LZ_9wZI9VPAXhHFIATvhSM1m-m-0oGr48jFfo/edit#gid=427370037))

Gaab, N. (2017, February). [It's a Myth That Young Children Cannot Be Screened for Dyslexia!](#) Baltimore, MD: International Dyslexia Association.

GaDOE Dyslexia Informational Handbook: <https://www.gadoe.org/Curriculum-Instruction-and-Assessment/Curriculum-and-Instruction/Documents/Dyslexia%20Informational%20Handbook%20Final.pdf>

Petscher, Y., Fien, H., Stanley, C., Gearin, B., Gaab, N., Fletcher, J.M., & Johnson, E. (2019). Screening for Dyslexia.  
<https://improvingliteracy.org/whitepaper/screening-dyslexia>







# Questions

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