



Identifying children at risk of late emerging language difficulties during the preschool years

*Dr Ciara O'Toole, Caoimhe Bowles, Professor Fiona Gibbon
Department of Speech and Hearing Sciences, University
College Cork*

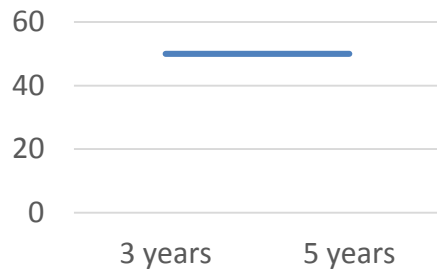
11th Annual
Research
Conference
2019

- Variability of language development in the preschool years
- Prioritisation of services
- Population based studies

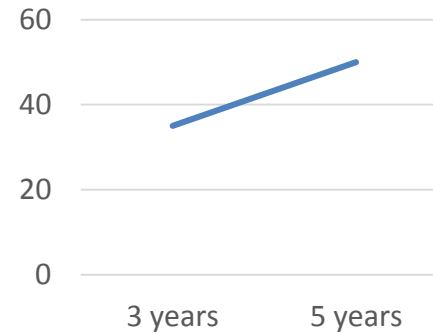


Patterns of Language Growth During the Preschool Years

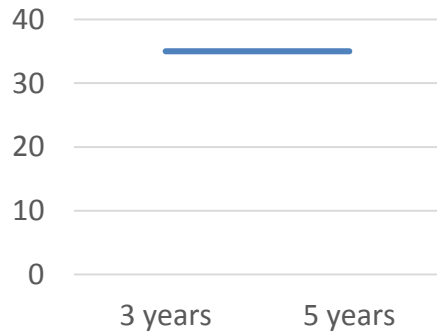
Typical



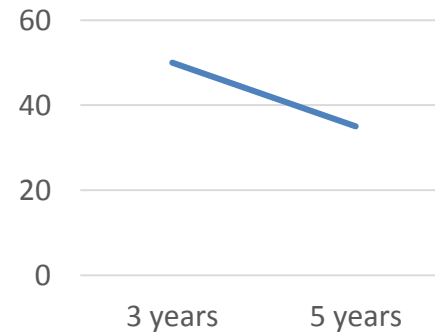
Resolving



Persisting



Late onset



Biological Factors and late-onset language difficulties

- Family history of reading and writing difficulties
- Neurodevelopmental diagnosis
- Low birth weight
- Emotional or behavioural difficulties



Family/Parent Factors and late-onset language difficulties

- Parent education levels
- Household income
- Parenting stress



Home Environment Factors and late-onset language difficulties

- Television viewing
- Parent child book reading
- Number of books in the home



Research Questions

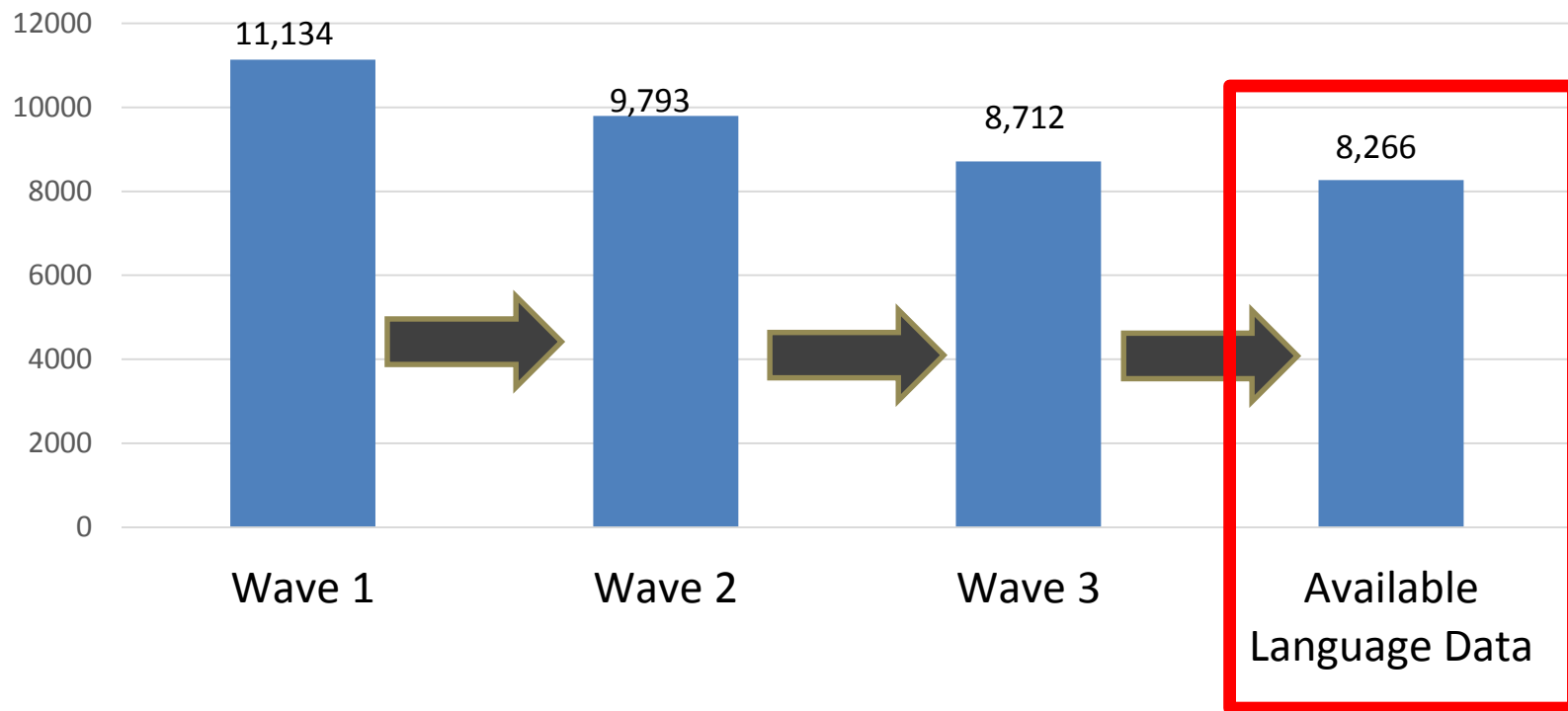
- What percentage of Irish children present with late-onset-language difficulties between 3 and 5 years?
- What predictors are associated with late-onset language difficulties between 3 and 5 years?





METHODOLOGY

Sample



Language Measure

- Expressive Vocabulary was measured at 3 and 5 years using the Naming Subtest of the British Abilities Scales (BAS) (Elliott, Smith, & McCulloch, 1997).
- The BAS was used in the Millennium Cohort Study (MCS) and Growing up in Scotland (GUS) allowing for comparison.
- Expressive vocabulary is only one dimension of language, it is likely to be a good estimate of a child's global language ability between 3 and 5 years (Language and Reading Research Consortium, 2015; Tomblin & Zhang, 2006).

Predictors

Child/Biological	Parent/Family	Home Environment
Gender	English as an additional language	Frequency of book reading
Low birth weight	Primary caregiver education	Number of children's books in the home
Preterm birth	Lone parent household	Frequency of home learning activities (HLA)
Early communication skills		Frequency of screen time
Child behaviour		Television in child's bedroom
		Rules regarding television use

Data Analysis

- Cross tabulation was used to predict patterns of language development between 3 and 5 years.
- Logistic regression analysis was used to identify the risk factors associated with late-onset language difficulties.



FINDINGS & ANALYSIS

What percentage of Irish children present with late-onset language difficulties between 3 and 5 years?

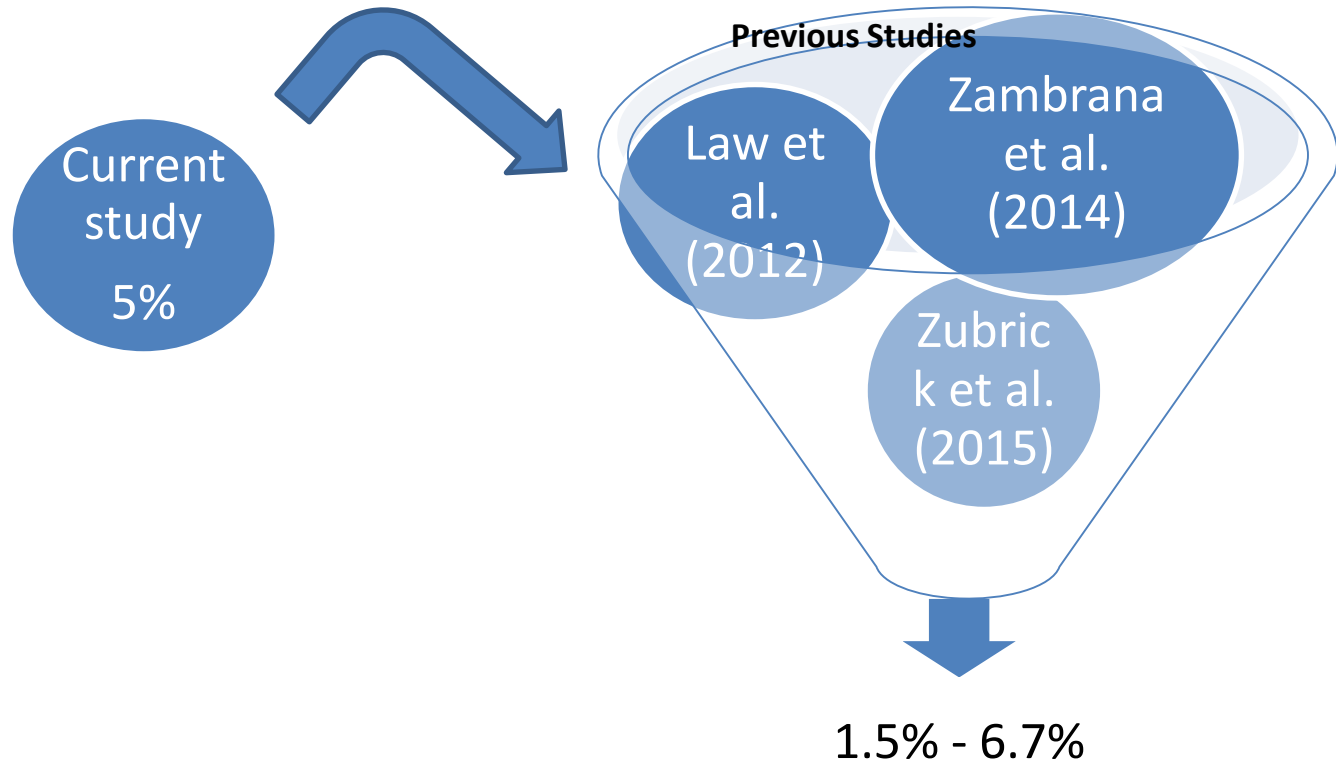
**Stable Patterns of Development
92.2% (7620)**

Typical	89.9%
Persistent	2.3%

**Changing Patterns of Development
7.8% (846)**

Resolving	2.8%
Late-onset	5.0%

What percentage of Irish children present with late-onset language difficulties between 3 and 5 years?



Law et al. (2012) v Current study

Law et al. (2012)

Dataset: Millennium Cohort Study

Assessment: British Abilities Scales

Age Range: 3 – 5 Years

Cut off point: -1.5 standard deviations



1.5%

Current Study

Dataset: Growing up in Ireland

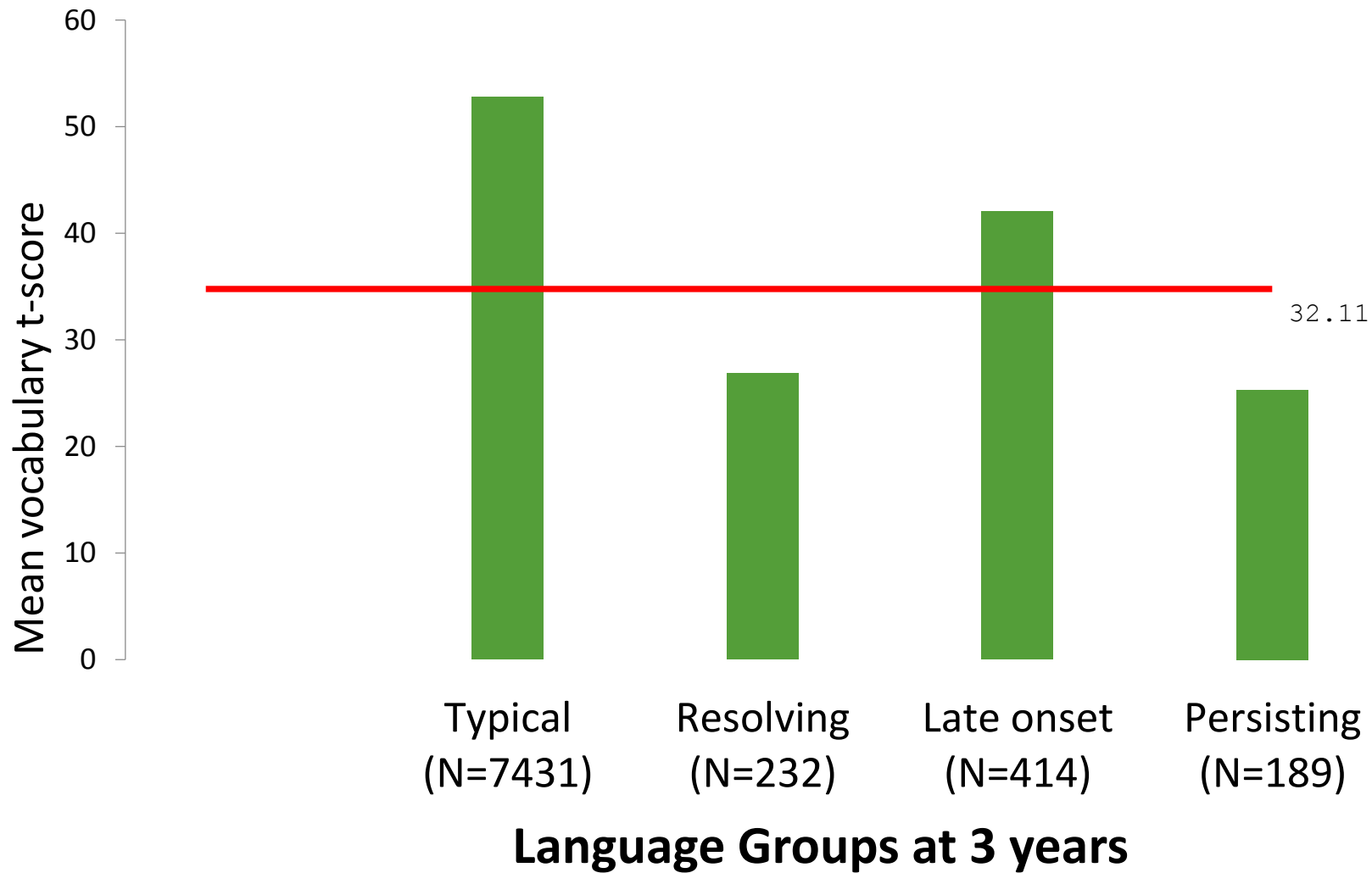
Assessment: British Abilities Scales

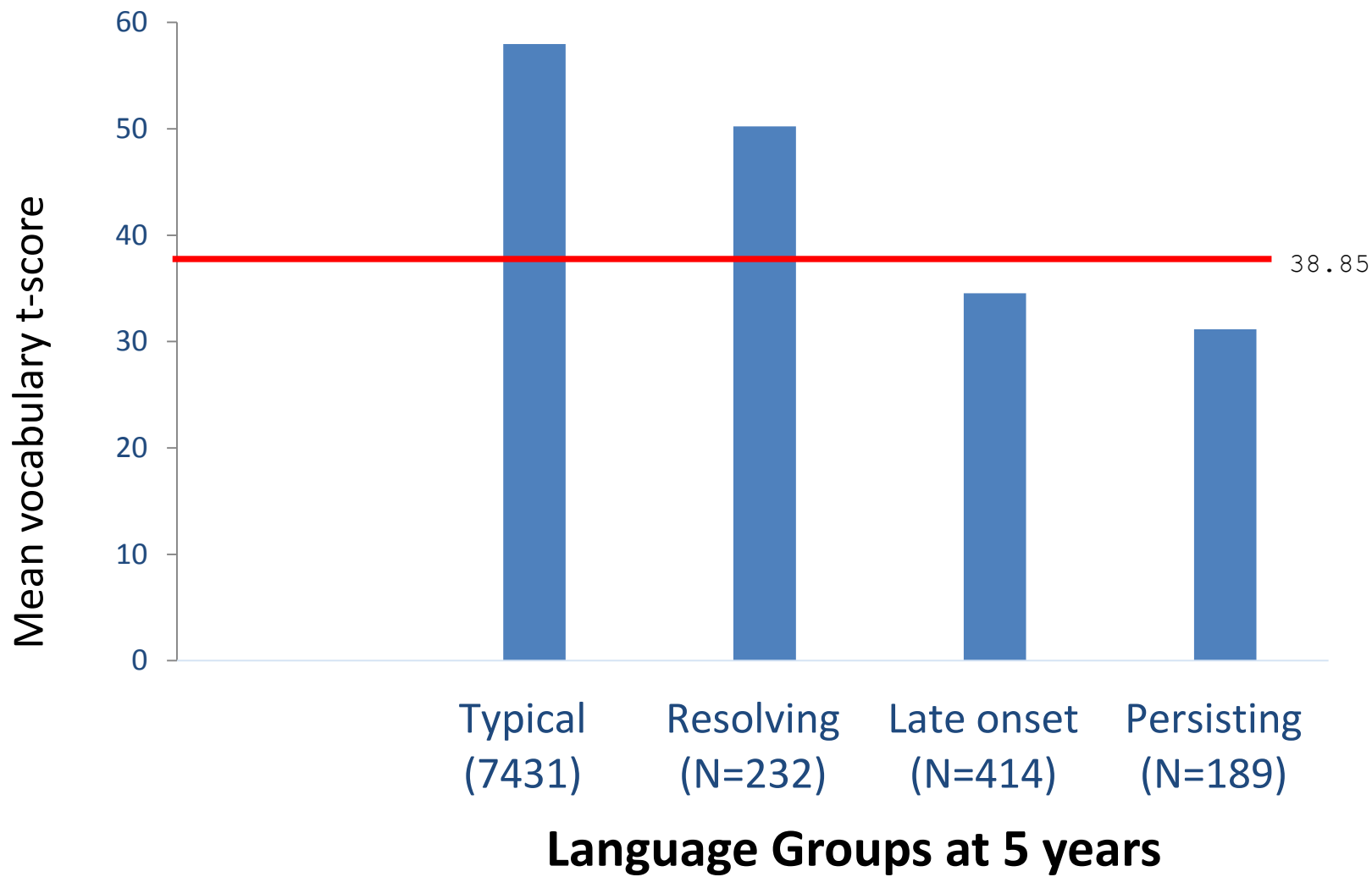
Age Range: 3 – 5 Years

Cut off point: -1.5 standard deviations



5%





What predictors are associated with late-onset language difficulties between 3 and 5 years?



English as
second
language

OR: 7.39



Parent
education

OR: 1.81



Frequency of HLA

OR: 1.71



Frequency of
book reading

OR: 1.49



Number of
children's books
in the home

Or: 1.37



CLINICAL IMPLICATIONS

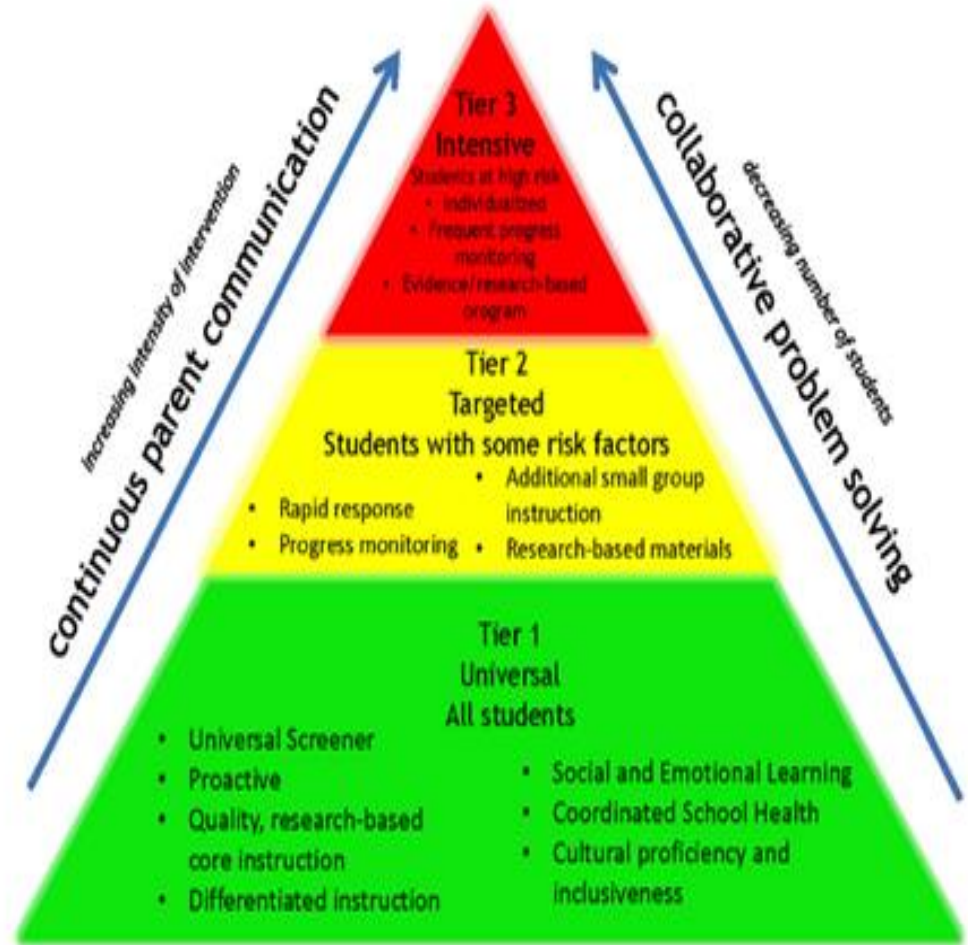


Assessment

- Language scores alone may not predict which preschool children are most in need of Speech & Language Therapy services.
- We should consider language scores in conjunction with risk factors.

Intervention

- Children with low average language scores and risk factors may require monitoring.
- The results support the need for targeted preventative interventions.
- Language enrichment for children from disadvantaged areas, and with English as an additional language



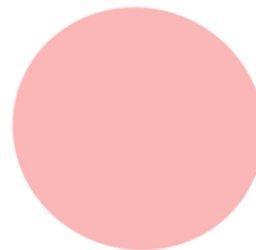
Examples of Tier 1 & 2 SLT Interventions





Future Research

- Follow-up analysis using GUI data at 7 years and 9 years.
- Large scale studies investigating the effects of targeted preventative interventions.



11th Annual
Research
Conference
2019

References

- Armstrong, R., Scott, J. G., Whitehouse, A. J. O., Copland, D. A., McMahon, K. L., & Arnott, W. (2017). Late talkers and later language outcomes: Predicting the different language trajectories. *International Journal of Speech-Language Pathology, 19*(3), 237-250.
- Elliott, C., Smith, P., & McCulloch, K. (1997). *British Ability Scales. 2nd ed.* London, UK: NFER Nelson.
- Henrichs, J., Rescorla, L., Schenk, J. J., Schmidt, H. G., Jaddoe, V. W. V., Hofman, A., ... Tiemeier, H. (2011). Examining continuity of early expressive vocabulary development: The generation R study. *Journal of Speech Language and Hearing Research, 54*(3), 854–869.
- Language and Reading Research Consortium (2015). The dimensionality of language ability in young children. *Child Development, 86*(6), 1948–1965.
- Law, J., Rush, R., Anandan, C., Cox, M. & Wood, R. (2012). Predicting language change between 3 and 5 years and its implications for early identification. *Pediatrics 130*(1), 132–137.
- McKean, C., Law, J. Mensah, F. K., Cini, E., Eadie, P., Frazer, K., & Reilly, S. (2016). Predicting meaningful differences in school-entry language skills from child and family factors measured at 12 months of age. *International Journal of Early Childhood, 48*(3), 329-351.

- McKean, C., Mensah, F. K., Eadie, P., Bavin, E. L., Bretherton, L., Cini, E., & Reilly, S. (2015). Levers for language growth: Characteristics and predictors of language trajectories between 4 and 7 years. *PLoS ONE*, 10(8) e0134251.
- Snowling, M. J., Duff, F. J., Nash, H. M., & Hulme, C. (2016). Language profiles and literacy outcomes of children with resolving, emerging, or persisting language impairments. *Journal of Child Psychology and Psychiatry*, 57(12), 1360– 1369.
- Tomblin, J. B., & Zhang, X. (2006). The dimensionality of language ability in school-age children. *Journal of Speech, Language, and Hearing Research*, 49(6), 1193-1208.
- Zambrana, I. M., Pons, F., Eadie, P., & Ystrom, E. (2014). Trajectories of language delay from age 3 to 5: Persistence, recovery and late onset. *International Journal of Language and Communication Disorders*, 49(3), 304–316.
- Zubrick, S. R., Taylor, C. L., & Christensen, D. (2015). Patterns and predictors of language and literacy abilities 4-10 years in the longitudinal study of Australian children. *PLoS ONE*, 10(9), 1-29