Dyslexia: A Misunderstood Neurodevelopmental Condition

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Case Study

JD completed 4th grade in a suburban Baltimore public school in 1974. Unfortunately, he was unable to read at the expected level. As a result of his intellect and coping skills, he was able to hide his lack of reading skills for many years. His Father, a Child Psychiatrist, and Mother, a Registered Nurse, began to suspect there was a significant learning problem. JD underwent private testing and was formally diagnosed with dyslexia. He was transferred to a private school with a specialized curriculum to retake the 4th grade. This early intervention and continued dyslexia treatment resulted in a successful academic career. This ultimately led to becoming a Surgeon in Springfield, Missouri and JD also serves on the Board of Directors for the Springfield Center for Dyslexia and Learning. (Table 1) This underscores the importance of early diagnosis and treatment of dyslexia. As healthcare providers, we can create a major change in the life of those who struggle with dyslexia by referring them to appropriate resources and interventions.

Dyslexia

The International Dyslexia Association defines dyslexia as 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. The reported incidence of dyslexia is 1 in 5 individuals. Dyslexia Research over the past decade has contributed to considerable progress in understanding the key underlying causes of dyslexia as well as helping to identify effective interventions. Dyslexia is characterized by a core deficit in phonological processing (the ability to recognize and manipulate speech sounds), which results in impairments in decoding (sounding out words), spelling, and word recognition. Dyslexia cannot be explained by poor hearing or vision, lack of attention, motivation, or opportunity.

One breakthrough in the field of dyslexia research has been the identification of specific genetic factors that contribute to this neurodevelopmental condition. These findings support the previous assumption that dyslexia, in some families, was passed down from generation to generation. In addition to genetic factors, research has helped clarify the role of brain structure and function in dyslexia. Neuroimaging studies have revealed differences in the brain regions involved in reading and language processing. These discoveries have helped to clarify the neural basis of dyslexia and have also confirmed changes in neuroprocessing with appropriate interventions.

Interventions based on the Orton-Gillingham approach have been found to be effective in improving reading skills, especially when implemented with young children. Early detection and intervention are critical in preventing significant delays in the development of independent reading acquisition. Many associated emotional and academic problems that follow poor readers can be prevented. Missouri schools are now required to screen for dyslexia. The screening methods vary from school to school and the screening does not provide a diagnosis necessary to develop an individual education plan (IEP). More consistent research-based approaches need to be undertaken in our schools and lobbying for these services has been ongoing.

Pediatricians, Family Practitioners and other medical professionals are often on the front line working with parents to help identify neurodevelopmental disorders and refer them to local resources. Parents may report their child as struggling with reading and despite limited

services provided by the school, their child does not seem to be making progress. Through careful observation and targeted questioning, the pediatrician can gain insight into a child's reading difficulties, such as their ability to recognize letters, decode words, and comprehend written text. These initial observations play a crucial role in determining if a further evaluation for dyslexia would be helpful. A clinical diagnosis is important as are services from a specialized research-based reading program, as well as accommodations in the classroom. By working together and leveraging their expertise, medical professionals can ensure that these children receive the necessary testing and diagnosis as well as appropriate intervention, paving the way for a brighter future.

Springfield Center for Dyslexia and Learning

The Springfield Center for Dyslexia and Learning (SCDL) began out of a need for struggling students to get help with reading and writing outside the classroom. SCDL started with tutoring provided at a private home. In 2015 Steve Edwards (then President and CEO of CoxHealth) and Jennifer Edwards saw that there was a great need in the community for this researched service / treatment. CoxHealth donated the space and scholarship money seeding SCDL. The program has grown from 5 to 19 therapists. In addition to tutoring, SCDL provides families advocacy at their 504 or IEP school meetings as well as dyslexia screenings and evaluations. Teacher training and seminars have become a core part of the SCDL mission. Please consult the SCDL website www.dyslexiaandlearning.com and phone number 417-269-0259 for further information.

Reference:
Sanfilippo J, Ness M, Petscher Y, et al. Reintroducing Dyslexia: Early Identification and Implications for Pediatric Practice. Pediatrics. 2020;146(1): e2019304.

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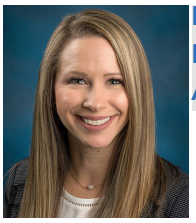

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