

IN FRONT OF THE EIGHT BALL: IDENTIFICATION OF LEARNING DISORDERS

McGill Family Medicine Refresher Course

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Dec. 1, 2020

- ▶ Speaker has no conflicts of interest

DISCLOSURE SLIDE

As a result of attending this session, participants will be able to

1. Know the definitions of learning disorders
2. Learn practical methods for discerning the signs of evolving learning disorders
3. Discuss practical interventions and preventions for the family practitioner

LEARNING OBJECTIVES

- ▶ Learning disabled children are lazy
- ▶ Learning disabilities are only identified when fully literate
- ▶ Learning disabilities are outgrown by adulthood
- ▶ Specific learning disabilities present similarly for all
- ▶ Learning disabled children have normal intelligence

WHICH IS NOT A MYTH ABOUT LD?

A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, set against a blue gradient background.

- ▶ Difficulty rhyming
- ▶ Follows directions easily
- ▶ Uses zippers efficiently
- ▶ When narrating, word-finding impaired
- ▶ Learns colors and shapes quickly

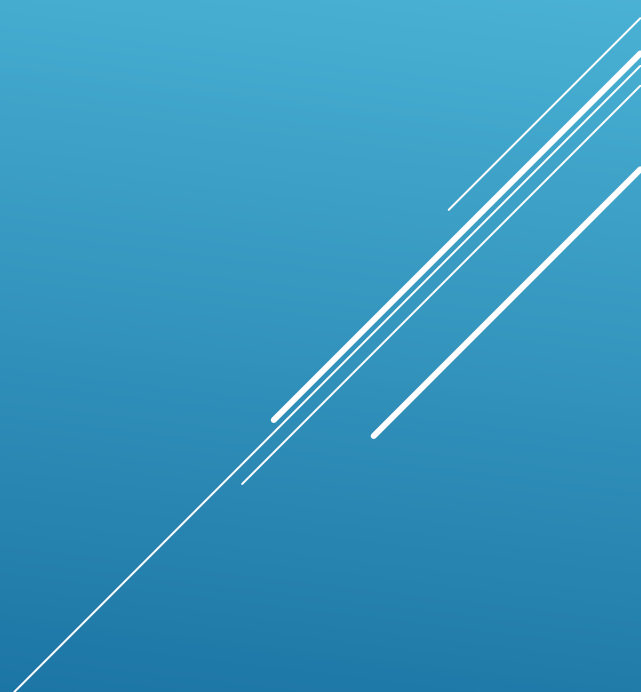
EARLY SIGNS OF LD IN 3-4 YEAR OLD?
CHOOSE TWO

- ▶ Links letters and sounds easily
- ▶ Basic math comes easily
- ▶ Misspells words
- ▶ Poor at telling time and remembering sequences
- ▶ Difficulty blending sounds to make words

EARLY SIGNS OF LD IN 5-9 YEAR OLD?
CHOOSE THREE

- ▶ Types
- ▶ History
- ▶ Underlying components
- ▶ Diagnosis
- ▶ Prevalence
- ▶ Etiology
- ▶ Intervention

OUTLINE



- ▶ Overlapping and interchanging academic and cognitive components, along with comorbidities make “predictors” hard to come by

CHALLENGE OF PREDICTION

- ▶ SWRD (specific word reading disability)
- ▶ SRCDD (specific reading comprehension disability)
- ▶ SMD (specific math disabilities)
- ▶ SWED (specific written expression disability)

TYPES



- ▶ Medical strand: 1676 (stroke), 1896 (word blindness)
- ▶ DSM criteria: tried for “one size fits all” with MBD but allowed for SLDs at last in the DSMV
- ▶ Intervention strand: discrepancy model vs response to intervention

HISTORY

- ▶ Componential: landscape of peaks, valleys, and canyons in various cognitive processes
- ▶ Components are dimensional and normally distributed in the general population
- ▶ Each component may have a distinct signature in the brain
- ▶ Some overlap explains rates of comorbidity
- ▶ Deficiencies in these components or cognitive and academic processes last throughout the life span

UNDERLYING COMPONENTS

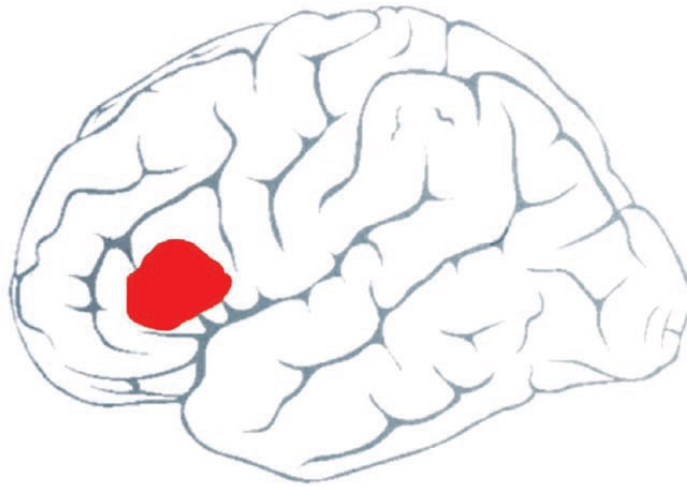
- ▶ Single indicator model not reliable due to complexity of presentation
- ▶ Hybrid method: 2 inclusionary (evidence of low achievement, evidence of inadequate RTI) and 1 exclusionary (not attributable to other NDDs or contextual factors)
- ▶ We hope for other indicators in the future: neurobiological, genetic, and behavioral
- ▶ No tests from optometrist, audiologist or PT can diagnose or treat SLDs

DIAGNOSIS

- ▶ Functional patterns of activation differ in the SWRD child
- ▶ Electrophysiological measures evident at first week of life
- ▶ Relative risk of SWRD rises the more members affected
- ▶ Environmental factors remain strong predictors of SLSs (e.g. SES indicators, schooling, family literacy)

ETIOLOGY

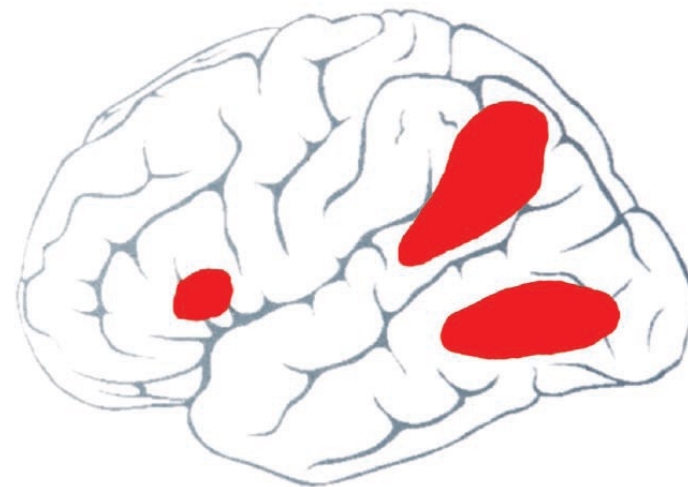
Reading



Anterior

Posterior

Dyslexic



Anterior

Posterior

Nonimpaired

- ▶ Explicit
- ▶ Individualized
- ▶ Comprehensive and differentiated
- ▶ Intensity adjustment
- ▶ Early
- ▶ Must occur in context of academic skill itself
- ▶ Effect sizes: from 0.49 for reading to 0.74 for writing

INTERVENTION