

# Dyslexia: Facts

Charles P. Roth, Ph.D.

[www.drcproth.com](http://www.drcproth.com)

# What is dyslexia?

- Dyslexia means “poor reading”
- Dyslexia is a language based learning disability
- Typical problems dyslexics encounter are:
  - Needing extended time to read
  - Having difficulty with spelling and grammar
  - Needing extended time to write
  - Problems with math: word problems and automatic math facts

# Dyslexics can also:

- Have difficulties learning a foreign language
- They can have trouble reading clocks
- They can have trouble with maps and directions
- They might have problems quickly processing numbers (Dyscalculia)

# Some Facts

- Dyslexia has ZERO to do with intelligence
- Dyslexia is heritable
- Dyslexia exists across a spectrum from mild to severe
- Brain studies have conclusively shown that the brains of dyslexics are different from non-dyslexics

# How are they different?

- They have a smaller auditory region in the cerebral cortex.
- The visual and auditory portions of the thalamus reveal smaller cells.
- There are different connections between these areas and other parts of brain, e.g, the frontal part of the brain associated with verbal memory

# Brain differences affect:

- Visual processing
  - Reading is a visual processing and visual memory task
- 1. Words are composed of meaningless symbols
- 2. The sequence of symbols are stored in visual memory
- 3. The symbols are frequently similar looking:
  - Pdgbqmnw
  - though thought through thorough tough

# Brain differences affect:

- Auditory processing  
Reading is an auditory processing and auditory memory task
  1. Problems distinguishing sounds and/or linking them to letters, p, d, g, j
  2. Problems knowing sound combinations, e.g., ph, th, oo, oi, ai, etc.

# What helps?

- Scientifically proven remediation programs, e.g., Slingerland, Orton-Gillingham, and Lindamood Bell (but NOT through a Lindamood Bell Center)
- Software:
  - Kurzweil or Read-Out-Loud (text-to-speech software)
  - FastForWord for auditory discrimination in younger children.
  - Laptop functions: spell & grammar check



# And what else?

- Carefully planning readings so work is accomplished over a number of days and NOT the night before.
- Becoming an active reader: highlight, color code, annotate, orally summarize, etc.
- Texts in audible format, e.g., i-Toons, audible.com, Amazon Kindle, or Barnes and Noble, Nook.
- Learning the SQ3R technique for reading textbooks. See: [www.how-to-study.com](http://www.how-to-study.com) for details

# And what else ....

- State Department of Education through the Department for the Blind and Print Disabled at the San Francisco Main Public Library.
- Non-profit foundations offering texts in audible format for dyslexic learners:
  - [www.bookshare.org](http://www.bookshare.org)
  - [www.rfbd.org](http://www.rfbd.org)

# And continuing ...

- Does your school's library have a subscription to digital book, journal and newspaper collections? If yes, text-to-speech software will read that text aloud.
- Finding summaries/overviews of texts prior to reading the text itself, e.g., [www.sparknotes.com](http://www.sparknotes.com).
- Has the text been made into a movie, e.g., Hamlet, or Bleak House, or The Color Purple?

# And finally ....

- Dedication
- Humor
- Perseverance
- Becoming a good self-advocate and explaining to your teachers how dyslexia affect you
- Remember: persistence is probably more important than IQ or SAT scores.

# Want more information?

- International Dyslexia Association
- [www.interdys.org](http://www.interdys.org)
- Read: Sally Shaywitz, MD. “Overcoming Dyslexia,” Vintage Books, 2003
- Visit You Tube: The Power of Dyslexia