

Internal Validity in Experiments for Typefaces for People with Dyslexia

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Several fonts targeting people with dyslexia since 2000

Dyslexie

Sylexiad Sans Medium

Lexia Readable

Sylexiad Serif Medium

A B C D E F G H I J K L M N
O P Q R S T U V W X Y Z

Open Dyslexic

Several fonts targeting people with dyslexia since 2000

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Lexia Readable

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A B C D E F G H I J K L M N
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Open Dyslexic

Dyslexie was created by Christian Boer with several properties

More spacing between letters

Dyslexie

Dyslexie was created by Christian Boer with several properties

More spacing between letters

↓ ↓ ↓ ↓ ↓ ↓ ↓

Dyslexie

Larger x-height { **X** **X**

Dyslexie Helvetica

Dyslexie was created by Christian Boer with several properties

More spacing between letters

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

Dyslexie

Larger x-height { X X

Dyslexie Helvetica

dbcell dbcell

Dyslexie Helvetica

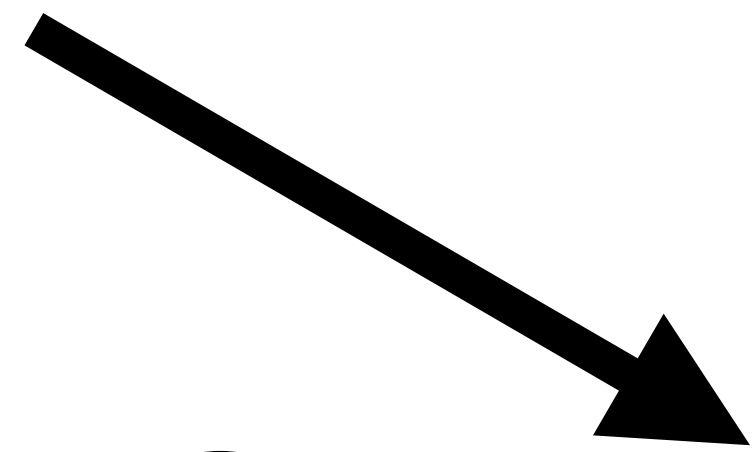
Less similar letters
and
Sturdy bottoms

OpenDyslexic is a free alternative based on another free font

Bitstream vera sans

OpenDyslexic is a free alternative based on another free font

Bitstream vera sans



OpenDyslexic

What is internal validity?

**“How much an effect
observed is due to
the test condition”**

Mackenzie (2013)

Typesetting is more than just the picking a font and size

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CCFacefront, 36 pt.



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Aktiv Grotesk, 36 pt.

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Equity Text A, 36 pt.

I looked at six studies for internal validity in testing

- R. Hillier, "Sylexiad. A typeface for the adult dyslexic reader," 2007 & 2008.
- R. De Leeuw, "Special Font For Dyslexia?," University of Twente, 2010.
- L. Rello and R. Baeza-Yates, "Good fonts for dyslexia," 2013
- T. Pijpker, "Reading performance of dyslexics with a special font and a colored background," University of Twente, 2013.
- A. Comfort, M. Kalichuk, H. Wenban, and L. Wasylkiw, "Can a font improve reading?," 2014.

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De Leeuw matches font size, but not line spacing

This is some sample text

Dyslexie, 52 point

This is some sample text

Arial, 63 point

De Leeuw matches font size, but not line spacing

This is some sample text

Dyslexie, 52 point

This is some sample text

Arial, 63 point, +13% character spacing

Rello and Baeza-Yates test many fonts, but don't control them

This is Arial

This is Arial It.

This is Computer Modern

This is Courier

This is Garamond

This is Helvetica

This is Myriad

This is OpenDyslexic

This is OpenDyslexic It.

This is Times

This is Times It.

This is Verdana

Comfort et al. had students that claimed OpenDyslexic better to read; results say otherwise

- **Interested students also had a chance to download and use OpenDyslexic, but when Comfort et al. checked back, no one had switched.**

Several conclusions about these font studies

- Currently, no good scientific studies on “dyslexia fonts”
- We can try to validate this with new experiments
- We can use internal validity to improve experimental design
- Nothing shows other fonts and good typography are worse than these dyslexia fonts.