Comparative study on actual lighting assessment practices and the use of a standardised tool (LuxIQ™)

# Producer notes

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Notes: Make sure you modified your Jaws' reading parameters by activating language detection and most punctuations reading.}

# Special symbols

{omega} small letter omega

{female} female sign

{male} male sign

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Comparative study on actual lighting assessment practices and the use of a standardised tool (LuxIQ™)

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{Logo: Centre intégré de santé et de services sociaux de la Montérégie-Centre du Québec}

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# Introduction

* Increasing number of seniors diagnosed with a visual impairment:
  + Growing population
  + Majority of the clients receive rehabilitation services
  + Frequently encountered pathologies: ARMD & Glaucoma
* Clinical experience:
  + #1 reason why seniors consult rehabilitation services: Reading difficulties

OMS (2014), The National Coalition for Vision Health (2007), U de M (2010), Duffy (2002), Borden et al. (2014), Brabyn et al (2001), Wolffsohn et al. (2012), Moore et al. (1997), Holzschuch et al. (2002) et Rubin (2013).

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* **Role of rehabilitation centres:**
  + Assessment and teaching of numerous tools in order to help with reading difficulties (magnifiers, CCTV)
  + One method increasing in popularity: lighting

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# Litterature Review

* Impacts on reading when lighting is adjusted to client's needs:
  + Increase of reading speed
  + Decrease of smallest print size
  + Decrease in magnification
    - The magnifier was sometimes not necessary anymore

Wolffsohn et al., (2012), Eldred, K. (1992), Bowers et al. (2001), Evans et al. (2012), Farrall, H. (1991), Legge et Rubin (1986), Haymes & Lee (2006), Fosse et Valberg, (2004), LaGrow (1986).

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# Objective

Does a standardised method (LuxIQ) assess more appropriately client's lighting needs while reading than the standard method used at the INLB?

**Variables:**

* Reading speed
* Print size
* Implementation of the recommendations
* Ocular fatigue
* Client's satisfaction of their length of time read

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# LuxIQ™ VS Standard method

{Illustrations not described}

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## Hypothesis

Statistically significant effect in favor of the LuxIQ on:

1. Increase of reading speed and decrease of print size
2. Implementation of the recommendations
3. Decrease of ocular fatigue
4. Improved satisfaction of client's length of time read

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## Methodology

* 3 clinicians (SRDV): home assessments
* Equal amounts of LuxIQ (17) and standard method assessments (17)
* Pre and Post evaluation
* Research assistant: follow-up call 3-4 weeks after
* Tools used:
  + Protocol for the standard method used at the INLB
  + Protocol for the LuxIQ (Perlmutter, 2015)
  + Standard method material (light bulbs)
  + LuxIQ
  + MN READ
  + HELA (Perlmutter et al. 2013)

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## Participants (n=34)

* Age: 19-100 yrs
* Gender: 20 {male} vs. 14 {female}
* VA: 0.12 to 1.3 LogMar
* 6/7.5 to 6/120 in best eye

| **Patho.** | **(n)** |
| --- | --- |
| ARMD | 21 |
| Glaucoma | 2 |
| ARMD & G. | 5 |
| Other | 6 |

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## Results

The analysis did not show any statistical significance of the method used on:

* Reading speed (Repeated measure ANOVA)
* Ocular fatigue (Mann-Whitney)
* Application of the recommendations (Chi-square)

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### Recommendations

#### Chi-square

The method used is not statistically significant and does not influence the implementation of the recommendations.

X² (1, n=32) = 0.69 p >0.05

**Implementation**

|  | **Yes** | **No** | **{}** |
| --- | --- | --- | --- |
| Stan. M. | 9 | 6 | **12** |
| LuxIQ | 9 | 8 | **17** |
| **Total** | **18** | **14** | **32** |

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### Print size

Lighting assessment is statistically significant on print size.

The effect is independent of the method used.

F(1, 32) = 22.95, p <.001, {omega}² =.37

{Chart not described}

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### Satisfaction

Participants who applied the recommendations: lighting assessment is statistically significant for their satisfaction on length of time read.

Wilcoxon signed rank test: p <.006

{Chart not described}

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# Main outcome: reduction of print size

{Illustration not described}  
Legend: MNread chart

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# Discussion

* Limitations
  + Sample size
  + Age difference
  + All data included
  + Missing data (post)
* Next step
  + Development and implementation of a protocol for the use of the LuxIQ at the INLB

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# Aknowledgements

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# Thank you

**Questions?**