

Diagnosis of visual stress: overview of the Delphi criteria

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Introduction

What is a Delphi study?

Delphi study: Methods

Delphi study: Results

Clinical implications

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Controversy: 2016 2 systematic reviews

Feature	Griffiths et al	Evans & Allen
Scope	Does colour improve reading	Controlled trials, visual stress, Intuitive system
Selection criteria	Experimental studies of reading performance with any coloured filters	Experimental studies of reading performance or symptoms with Intuitive Overlays or Intuitive Lenses in people diagnosed with visual stress ¹
Results	Table of limitations of studies	Table of limitations of studies and results of studies
Interpretation	Do not consider effect of over-diagnosis	Consider effect over-diagnosis
Conclusions	Need for better diagnostic criteria Colour to ameliorate RD "cannot be endorsed" Large-scale RCT required	Need for better diagnostic criteria Individually prescribed coloured filters improve reading performance & symptoms in visual stress. Large-scaled RCT required

OPO ¹Criteria given

Journal Optometry

A systematic review of controlled trials on visual stress using Intuitive Overlay or the Intuitive Colorizer

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What is a Delphi study

- Structured communication method relying on a panel of experts
- Well-suited for consensus-building by using a series of questionnaires delivered in multiple iterations to collect data from experts
- Need to take care not to lead participants
- Example: Behrens et al 2006 used Delphi process for diagnosis of Dysfunctional Tear Syndrome

Behrens et al 2006

Dysfunctional Tear Syndrome: A Delphi Approach to Treatment Recommendations

Figure 1. Algorithm of the 3 major subtypes found in DTSS. Each subset should be treated separately, but laser treatment modality varies according to the subtype.

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Delphi study

- Contacted 26 practitioners selected as frequent prescribers of precision tinted lenses
- Round 1**
 - Sent list of indicators of visual stress from literature
 - Asked to rank, and add any additional criteria
- Round 2**
 - Rank and comment on revised list
- All independent, except
 - 3 optometrists from one clinic
 - 2 orthoptists from one (different) clinic

Journal of Optometry

ORIGINAL ARTICLE
A Delphi study to develop practical diagnostic guidelines for visual stress (pattern-related visual stress)
Bruce J.W. Evans^{1,2,3,4}, Peter M. Allen¹, Arnold J. Wilkins¹

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Delphi study

- Round 1**
 - Of 26 invitees, 22 participated
 - The top 7 items can be characterised as symptoms or signs
 - For every respondent, their top 3 rated criteria included at least one sign and one symptom
- Round 2**
 - Of 22 invitees, 20 participated
 - Respondents attach most significance to items that help differentiate VS from other conditions (e.g., words moving v blurring)
 - Low rating for WRRT 5% criterion

Table 4 Table of putative diagnostic indicators for VS.

At least three of the following six typical symptoms:

- Words move
- Words merge
- Patterns or shadows in text (e.g., "rivers")
- Text seems to stand out in 3-D above the page
- Words or letters fade or darken
- Discomfort with certain artificial lights and flicker

And

At least two of the following three signs from investigations:

- Voluntary unprompted use of an overlay for 3 months or more
- Overlay improves performance at the WRRT by >15%
- PGT result >3 with mid-spatial frequency grating

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Clinical implications

- The Delphi criteria are putative, but
 - A significant step on the path towards rigorous diagnosis
- Exclude other optometric causes of symptoms
 - As in C.Optom guidelines
- Explain controversial – differing viewpoints
 - Also applies to other interventions where evidence is weak, for example: correcting hypermetropia in pre-presbyopes, anti-reflection coatings, OTC artificial tears, treatments for blepharitis, prisms, spheres for BVA
- In practice, Delphi process occurs in 3 stages
 - Symptoms, conventional optometric factors, pattern glare
 - Overlay testing & Wilkins Rate of Reading Test (WRRT)
 - Colorimetry

Flowchart: Why choose a contact lens? (Reflective error, Accommodation, Why choose a contact lens?, Why choose a contact lens?, Why choose a contact lens?, Why choose a contact lens?)

Flowchart: Are commonplace optometric activities evidence-based? (Visual stress, Accommodation, Why choose a contact lens?, Why choose a contact lens?, Why choose a contact lens?, Why choose a contact lens?)

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SEQUENTIAL MANAGEMENT PLAN: optometrist with overlays

(SUSPECTED) LEARNING DIFFICULTIES & SYMPTOMS FROM TEXT

referral to optometrist

ARE EYES HEALTHY? → no → refer

yes

IS THERE A SIGNIFICANT REFRACTIVE ERROR? → yes → optometric correction

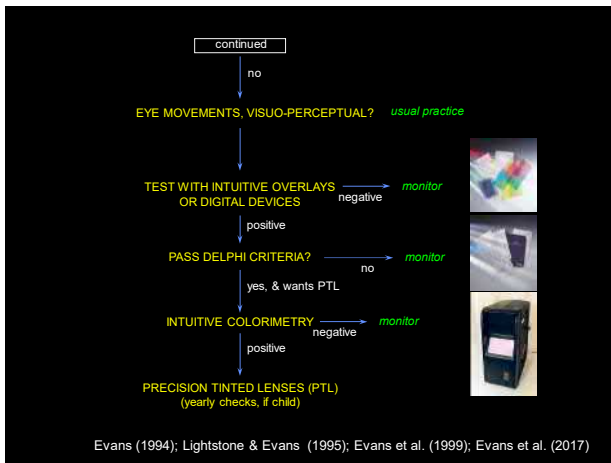
no

IS BINOCULAR VISION & ACCOMMODATION OK? → yes → optometric correction/treatment

no → continued

Evans (1994); Lightstone & Evans (1995); Evans et al. (1999); Allen, Evans, Wilkins (2010)

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