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A comparison of widely used clinical contrast sensitivity tests: the relation between defocus specific contrast sensitivity and higher order aberrations

Submission date 01/12/2006	**Recruitment status** No longer recruiting	[_] Prospectively registered [_] Protocol [_] Statistical analysis plan [X] Results [_] Individual participant data
Registration date 01/12/2006	**Overall study status** Completed	
Last Edited 06/01/2021	**Condition category** Other	

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
NL799, NTR812

Study information

Scientific Title
A comparison of widely used clinical contrast sensitivity tests: the relation between defocus specific contrast sensitivity and higher order aberrations

Acronym
Defocus specific contrast sensitivity and spherical aberration

Study objectives
Higher order aberrations, like spherical aberration, decreases visual performance.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Medisch Ethische Toetsingscommissie, University Medical Center Groningen, date of MEC approval: 14 Oct 2005 (reference number: METc2005.188).

Study design
Randomised parallel armed clinical trial

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
No condition, healthy person

Interventions
Best corrected visual acuity was determined with an Early Treatment Diabetic Retinopathy Study (ETDRS) chart and the Spherical Aberration (SA) was measured with a wavefront analyzer (WASCA version 1.26.3, Asclepion Meditec, Jena, Germany).

The contrast sensitivity is measured with two computerised tests:
1. One with vertical sine-wave gratings (1.5-12 cpd) generated on a CRT (Cambridge Research Systems, Rochester, UK; Von Bekesy tracking method)
2. The Holladay sine-wave (1.5 -18 cpd) modulated circular lines (HACSS) (M&S Technologies, Skokie, Illinois, USA),

and with six contrast sensitivity chart tests:
1. Pelli Robson contrast sensitivity test
2. Low contrast ETDRS-like optotype chart 2.5%
3. Low contrast ETDRS-like optotype chart 10%
4. Edge contrast sensitivity test: GECKO
5. Edge contrast sensitivity test: GECKO-100
6. Vector Vision

Contrast sensitivity is measured in mesopic (3 cd/m^2) and photopic (160 cd/m^2) conditions, using only the dominant eye. Tests were performed at optimal refractive state of the eye and at a variety of defocus situations (-2D to 2D).

Intervention Type
Other

Phase
Not Specified

Primary outcome(s)
Selection of the contrast sensitivity test which predicts the spherical aberration most reliably.

Key secondary outcome(s))
1. Spherical aberration as function of age
2. RMS as function of age
3. Contrast sensitivity as function of age
4. Influence of defocus on contrast sensitivity

Completion date
30/06/2006

Eligibility

Key inclusion criteria
No ocular pathology

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Not Specified

Sex
Not Specified

Total final enrolment
48

Key exclusion criteria
1. Refractive correction larger than +/- 2 D
2. Cylindrical correction larger than 1.5 D
3. Cylindrical axis more then 20° from the horizontal or vertical axis

Date of first enrolment
01/07/2005

Date of final enrolment
30/06/2006

Locations

Countries of recruitment
Netherlands

Study participating centre
University Medical Center
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9700 RB

Sponsor information

Organisation
University Medical Center Groningen (The Netherlands)

ROR
https://ror.org/03cv38k47

Funder(s)

Funder type
Government

Funder Name
SenterNovem (The Netherlands)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?

Abstract results	results presented at ARVO	01/05/2007	06/01/2021	No	No