

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	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 01/12/2006	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 06/01/2021	Condition category Other	<input type="checkbox"/> Individual participant data

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers

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

Secondary study design

Randomised controlled trial

Study setting(s)

Not specified

Study type(s)

Treatment

Participant information sheet

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 Békésy 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/m²) and photopic (160 cd/m²) 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 measure

Selection of the contrast sensitivity test which predicts the spherical aberration most reliably.

Secondary outcome measures

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

Overall study start date

01/07/2005

Completion date

30/06/2006

Eligibility

Key inclusion criteria

No ocular pathology

Participant type(s)

Patient

Age group

Not Specified

Sex

Not Specified

Target number of participants

48

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**

Groningen

Netherlands

9700 RB

Sponsor information**Organisation**

University Medical Center Groningen (The Netherlands)

Sponsor details

Department of Ophthalmology

P.O. Box 30001

Groningen

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Sponsor type

Hospital/treatment centre

Website

<http://www.umcg.nl/azg/nl/english/azg/>

ROR

<https://ror.org/03cv38k47>

Funder(s)

Funder type

Government

Funder Name

SenterNovem (The Netherlands)

Results and Publications

Publication and dissemination plan

Not provided at time of registration

Intention to publish date**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