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

No registrations found.

Ethical review	Positive opinion
Status	Recruitment stopped
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON20124

Source
NTR

Brief title
Defocus specific contrast sensitivity and spherical aberration

Health condition

Measurements in 48 healthy subjects aged 20 to 35 years (24 subjects) and 55 to 70 years (24 subjects).

Sponsors and support

Primary sponsor: University Hospital Groningen, department ophtalmology
Hanzeplein 1
Postbus 30.001
9700 RB Groningen
The Netherlands
Tel: (+31)050-3612510
Fax: (+31)050-3611709

AMO (advanced medical optics) Groningen B.V.
Van Swietenlaan 5

9728 NX Groningen
Tel: (+31)050-5296600
Fax: (+31)050-5267860
Source(s) of monetary or material Support: SenterNovem

Intervention

Outcome measures

Primary outcome

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

Secondary outcome

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.

Study description

Background summary

The relation between contrast sensitivity and spherical aberration and other higher order aberrations (RMS) will be studied in young and elderly subjects without ocular pathology. Contrast sensitivity will be assessed with the use of eight different contrast sensitivity tests at optimal focus and at positive and negative defocus. These results will be related to the higher order aberrations of the eyes.

Study objective

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

Study design

N/A

Intervention

Best corrected visual acuity was determined with an 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 computerized 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/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).

Contacts

Public
University Medical Center
Groningen (UMCG), Department Ophtalmology,
P.O. box 30.001
K.W. Gaalen, van
Hanzeplein 1
Groningen 9700 RB
The Netherlands
+31 (0)50 3619692
Scientific
University Medical Center

Groningen (UMCG), Department Ophtalmology,
P.O. box 30.001
K.W. Gaalen, van
Hanzeplein 1
Groningen 9700 RB
The Netherlands
+31 (0)50 3619692

Eligibility criteria

Inclusion criteria

No ocular pathology.

Exclusion criteria

1. Refractive correction larger than +/- 2 D;

2. Cylindrical correction larger than 1.5 D;

3. Cylindrical axis more then 20º from the horizontal or vertical axis.

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	01-07-2005

Enrollment:	48
Type:	Actual

Ethics review

Positive opinion Date:	17-11-2006
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL799
NTR-old	NTR812
Other	: 1
ISRCTN	ISRCTN66724598

Study results

Summary results
N/A