Age-related Macular Degeneration: Assessment and optimisation of macular function with special regard to reading and motor control (AMD-READ)

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‘AMD-READ’ (QLK6-CT-2002-00214)
BACKGROUND

• The growing number of patients with age-related maculopathy (AMD) causes an increasing demand for new treatment and rehabilitation options and requires an enhanced effort for assessing, monitoring and optimising macular function.

• New approaches are needed:
  Visual acuity has been commonly used as a measure in treatment trials. However, especially parafoveal functions are relevant for daily living skills.
Summary of 24 studies (after Klaver 2004)

Classification based on the Wisconsin Age-Related Maculopathy Grading System (WARMGS)
The Age Pyramids from 1910 to 2050 (prognosis)

Quelle: Statistisches Bundesamt 2002* 2050

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MAIN EFFECTS OF AMD TO EVERYDAY LIFE

- **reading disability** → loss of mental agility
- **orientation problems** → falls, anxiety
  (deficits in motor control and object recognition)
  → loss of
    - independence
    - communication
    - quality of life

‘AMD-READ’ (QLK6-CT-2002-00214)
Macular Degeneration

Morphology

Central Scotoma

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MAIN OBJECTIVES

To develop and evaluate new methods for

• early detection of AMD
• assessment and optimisation of macular function
• sensitive monitoring of the course
• standardised data acquisition
• standardised test battery
Examined Cohort

- 334 patients with AMD (60-85 years)
- 100 age-matched controls (60-85 years)
- 100 young normal subjects (18-35 years)
Fixation and Reading assessed by Scanning Laser Ophthalmoscopy (SLO)
Workpackage 5:
Standardized Low Vision Test Battery

AIMS:

1) Development of new methods to assess macular function, which consider the disabilities in everyday life.

2) Development of test procedures, which are comparable between different languages and centres and which can be applied in international studies.

3) Validation of new, simple methods by pre-existing, more sophisticated techniques (Video-Eye-Tracker, SLO, Threshold Perimetry)

4) To provide a reliable, simple and cheap test battery, which can be everywhere available.
Standardized Texts in 4 European Languages

English, Finnish, French, German

Requirements:

• Longer text passages (approx. 130 words) to measure reading performance
• Same degree of difficulty, content and linguistic characteristics in the different languages
• Set of equivalent texts in each language for repeated measurements

Hahn, Trauzettel-Klosinski et al., British J Ophthalmol 2006

Texts in other languages are in preparation (Portuguese, Spanish, Arabic, Dutch, Turkish)
Reading speed for all 10 texts in young normal subjects

8-10 equivalent texts in each language for repeated measurements
Standardised Low Vision Test Battery

- Visual acuity (ETDRS)
- Magnification requirement (Reading Navigator)
- Reading texts (EU texts)
- Fixation locus by modified slit lamp
- Foveal contrast sensitivity (Lea charts 2.5%)
- Parafoveal contrast sensitivity (Macular Mapping test)

More information see: www.amd-read.net
Success of Rehabilitation
Low Vision Clinic Tuebingen, n=763

before consultation after consultation
frequency
no reading ability
reading ability

10% 90%
13% 10%

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A new standardized test battery to assess macular function can be provided for clinical and scientific examinations.

Standardised tests allow comparison of results between different languages and centres and can be applied in international studies.

Examination of parafoveal contrast sensitivity allows early detection and sensitive monitoring of AMD – important for future treatment trials.

The test set provides a reliable, simple and cheap tool, which can be available everywhere without major technical equipment, also in private practice and in developing countries.
CONCLUSIONS II

• The results of the study contribute to an improved knowledge of the functional aspects of AMD, which are relevant for daily living skills, especially reading, and which can be applied in future treatment and rehabilitation studies.

• Ongoing research in functional assessment and rehabilitation options is necessary to
  – to match the increasing demand of low vision rehabilitation
  – reduce the socioeconomic costs caused by immobility and dependence of AMD-patients
  – to maintain quality of life for millions of low vision seniors in Europe

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THANK YOU!

More information see: www.amd-read.net

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