

## Abstract zur Masterarbeit

Fachgebiet: Ophthalmologie / Medizin  
Name: Hemkepler, Eva  
Thema: **Pilotstudie zur Entwicklung und Evaluierung eines Fragebogens zum symptomatisch trockenen Auge mit zusätzlicher Erstellung von Dokumentationsunterlagen für die Praxis**  
Jahr: 2015  
Betreuer: Prof., M.Sc. Optom. (USA), Dipl.-Ing. (FH) Wolfgang Sickenberger, Ernst-Abbe-Hochschule Jena, Deutschland  
Daniela Oehring, M. Sc.; Plymouth University, United Kingdom  
Prof. Dr. med. habil. Kathleen Kunert, Ernst-Abbe-Hochschule Jena, Studiengang Augenoptik

**Ziel.** Dry Eye is one of the major eye disease in the industrialized world but in daily praxis diagnosis is still time consuming and inconsistent. In this study the results of common objective tear film tests (TFT) and results of OSDI and McMonnies dry eye questionnaire (DEQ) were compared in symptomatic and asymptomatic patients to find the most suitable tests after filling in DEQ.

**Material und Methode.** A single-centre, one-visit, prospective study was conducted in 46 subjects (aged  $30.6 \pm 12.4$  years; 48% male, 52% female). Patients were grouped in symptomatic and asymptomatic according to the results of the DEQ. Additionally objective TFT: osmolarity, PRT, NIKBUT were conducted. Pearson correlation was used to compare the TFT and DEQ.

**Ergebnisse.** Strong statistically significant correlation between OSDI ( $15.9 \pm 15.2$  points) and McMonnies ( $10.8 \pm 6.2$  points) was detected ( $r=0.649$ ;  $p=0.000$ ). Between OSDI and PRT ( $15.8 \pm 8.6$  mm/15sec) a significant negative correlation ( $r=-0.324$ ;  $p=0.028$ ) could be found. Detecting a symptomatic NIKBUT as well as PRT is four times more likely if the result of OSDI classifies the subject as symptomatic. McMonnies DEQ only correlates significantly with osmolarity ( $304 \pm 13$  mOsmol/L ( $r=0.299$ ;  $p=0.043$ )). To detect a symptomatic NIKBUT is four times, PRT three times and Osmolarity two times more likely if the McMonnies also shows symptomatic results.

**Schlussfolgerung.** The study suggests that there is a higher correlation between OSDI and quantitative TFT. As expected, the probability to detect clinical significant results in TFT is higher if DEQ classifies the patient as symptomatic. To proof the correlation between qualitative or quantitative TFT and DEQs a study with samples with higher varieties of the different dry eye grades and objective TFT has to be conducted. In the future the detected correlations can be checked with further objective TFT to find the most suitable test depending on the result of a questionnaire.

**Schlüsselwörter.**

## Abstract Master Thesis

Specific Field: Ophthalmology / Medical Science  
Name: Hemkepler, Eva  
Master Thesis: **Comparison of DEQs and objective tear film tests to verify dry eye**  
Year: 2015  
Supervising Tutor: Prof., M.Sc. Optom. (USA), Dipl.-Ing. (FH) Wolfgang Sickenberger, Ernst-Abbe-Hochschule Jena, Deutschland  
Daniela Oehring, M. Sc.; Plymouth University, United Kingdom  
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**Purpose.** Dry Eye is one of the major eye disease in the industrialized world but in daily praxis diagnosis is still time consuming and inconsistent. In this study the results of common objective tear film tests (TFT) and results of OSDI and McMonnies dry eye questionnaire (DEQ) were compared in symptomatic and asymptomatic patients to find the most suitable tests after filling in DEQ.

**Methods.** A single-centre, one-visit, prospective study was conducted in 46 subjects (aged  $30.6 \pm 12.4$  years; 48% male, 52% female). Patients were grouped in symptomatic and asymptomatic according to the results of the DEQ. Additionally objective TFT: osmolarity, PRT, NIKBUT were conducted. Pearson correlation was used to compare the TFT and DEQ.

**Results.** Strong statistically significant correlation between OSDI ( $15.9 \pm 15.2$  points) and McMonnies ( $10.8 \pm 6.2$  points) was detected ( $r=0.649$ ;  $p=0.000$ ). Between OSDI and PRT ( $15.8 \pm 8.6$  mm/15sec) a significant negative correlation ( $r=-0.324$ ;  $p=0.028$ ) could be found. Detecting a symptomatic NIKBUT as well as PRT is four times more likely if the result of OSDI classifies the subject as symptomatic. McMonnies DEQ only correlates significantly with osmolarity ( $304 \pm 13$  mOsmol/L ( $r=0.299$ ;  $p=0.043$ )). To detect a symptomatic NIKBUT is four times, PRT three times and Osmolarity two times more likely if the McMonnies also shows symptomatic results.

**Conclusion.** The study suggests that there is a higher correlation between OSDI and quantitative TFT. As expected, the probability to detect clinical significant results in TFT is higher if DEQ classifies the patient as symptomatic. To proof the correlation between qualitative or quantitative TFT and DEQs a study with samples with higher varieties of the different dry eye grades and objective TFT has to be conducted. In the future the detected correlations can be checked with further objective TFT to find the most suitable test depending on the result of a questionnaire.

**Keywords.**