



# The Efficacy of Strip Meniscometry and DEQS for Dry Eye Screening during Medical Health checkups

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**Purpose:** Screening medical checkups need to be short and safe with high sensitivity and specificity. Strip meniscometry (SM) is a new method to quantify tear volume using meniscometry strips that are inserted into the tear meniscus for 5 s. The dry eye-related quality-of-life score (DEQS) questionnaire consists of 15 questions. It has questions covering ocular symptoms and their impact on daily life. Both examinations require a short time period and are suitable as screening tests. We have evaluated the efficacy and safety of SM and DEQS as screening tests for DE disease during general health checkups.

**Methods:** In total, 333 right eyes of 333 soldiers (331 males and 2 females) who had a health checkup at Yokosuka Medical Squadron between November 2013 and December 2013 were enrolled. The mean age was 42.8 +/- 8.8 years. Subjects wearing contact lenses were excluded. All subjects were requested to complete the DEQS questionnaire. Also, the fluorescein tear film break-up time (FTBUT), and the fluorescein and rose bengal staining were assessed. A score of greater than 15 in the DEQS and less than 5 mm in the SM was considered positive.

**Results:** According to the Japanese DE diagnostic criteria, 35 (11%) soldiers were diagnosed to have definite DE. The sensitivity of SM for diagnosed DE was 38% and specificity was 88%. The sensitivity of DEQS for diagnosed DE was 76% and specificity was 92%. The sensitivity of SM+DEQS for diagnosed DE was 27% and specificity was 100%. Only one (0.003%) of the enrolled subjects complained of eye pain or discomfort during the SM, but the individual was suffering conjunctivochalasis at the time.

**Conclusions:** The results show that the SM and DEQS were useful and noninvasive for DE screening during the health check-up.

**Layman Abstract (optional):** Provide a 50-200 word description of your work that non-scientists can understand. Describe the big picture and the implications of your findings, not the study itself and the associated details.: