

**VALIDATION OF THE ESSEN QUESTIONNAIRE AGE AND
SLEEPINESS (EQAS) BY MEANS OF PUPILLOMETRY**

Helmut Frohnhofen

Kliniken Essen Mitte, Geriatric Unit, Essen and Faculty of Health, University of Witten
Herdecke, Witten, Germany

Background: Excessive daytime sleepiness (EDS) has a major impact on physical and cognitive function in the elderly. However, there are no validated tools for the measurement of EDS in the elderly. Methods: We validated a newly created observational scale for the measurement of EDS (EQAS) by means of pupillometry. The EQAS tool in an observational that encompasses a score of 0 to 12 points with higher scores meaning more severe EDS. For judgement of EDS nurses had to evaluate mean EDS during the last week of in-hospital stay. During that week, pupillometry was performed. Nurses were blinded to the results of pupillometry. A pupillary unrest index [PUI] of 6.4 was regarded as a cut-off value indicative of EDS. Results: Assessment of EDS was performed in 37 older subjects (mean age 81 ± 7 years, 8 (22% men) by means of EQAS and pupillometry. Mean EQAS score was 3.2 ± 3 , mean PUI was 5 ± 3 . EQAS scores were significantly associated with PUI. A ROC analysis revealed an area under the curve of 0.837 (95% CI 0.689-0.985, $p < 0.003$) A EQAS score of 2 had a sensitivity 76% and a specificity of 78% for EDS defined as a PUI of more than 6.4. Conclusion: EQAS is the first validated tool to reliably assess EDS in older subjects. Since EQAS is a observational scale, it can be applied to all older subjects irrespective of cognitive or communicative abilities