DEWS	DRY EYE: DIAGNOSTIC TEST TEMPLATE	
RAPPORTEUR	A.J.Bron	16th Oct 2004
TEST	**Schirmer I test (without anaesthesia).**	
TO DIAGNOSE	A reduction in reflex tear flow.	REFERENCES
VERSION of TEST		Nichols et al. 2004
DESCRIPTION	An estimation of tear flow stimulated reflexly by insertion of a filter paper into the conjunctival sac.	
NATURE of STUDY	[See Mixed Tests - Nichols for details of other tests performed in this study] **Nature of study** In this study, 75 patients regarded as having mild to moderate dry eye were assessed for symptoms, MG, tear quality, meniscus height, blink quality, TBUT F and BR staining, phenol red test and Schirmer. 70.7% female. 61% using ATS 21.9% met European Criteria for moderate to severe dry eye. **SCHIRMER I Test**: Without anaesthetic. Closed eye; placed 2 mm from lateral canthus. **PHENOL RED** test: Zone –Quick thread is placed 'in the recommended position over the lateral canthus. Measured at 15 seconds.	Nichols et al. 2004
CONDUCT of TEST	• Without anaesthetic. • Closed eye; • placed 2 mm from lateral canthus. • In place 5 minutes	
Web Video	Not available	
Materials:	• Schirmer papers not defined?	
Standardization	Time of day [√] Temperature [√] Humidity [√] Air speed [√] Illumination [√] . Assumed to influence.	Nichols et al. 2004
Diagnostic value	Tests. Cohen's k and weighted k 0-0.2 = slight agreement 0.21-0.4 = fair agreement 0.41-0.60 = moderate agreement 0.61-0.80 = substantial agreement 0.81-1.0 = almost perfect to perfect agreement 95% CI for k Fleiss and Cohen weighting percentage agreement intervisit mean difference t test and Wilcoxon sign-rank test intraclass correlation for test –retest reliability	
Repeatability	Schirmer test was repeated at 2 visits, within 2 weeks apart R.E only: One Observer. Only 29 with Schirmer's ≤10 mm: An expected and important observation is that the Schirmer variability increases with increasing value (see also Bjerrum 1996). Scores for this group (not the whole data set) were normally	

	distributed. Intra-observer agreement for the 29 with Sch: ≤10 mm. <table><tr><td>Mean Diff ± SD</td><td>P-value Diff to zero</td><td>95% limits of agreemnt</td><td>ICC (95%CI)</td></tr><tr><td>-190 ±3.93</td><td>0.0148</td><td>-9.60, 5.80</td><td>0.438 (0.133, 0.668)</td></tr></table> The 95% limits of agreement for the phenol red thread test and the Schirmer test were similar but the ICC test for the Phenol red test was much lower and the confidence interval was much larger. Inter-observer agreement. [-] Only one observer	
Sensitivity	**(true positives)** [-]	
Specificity	**(100 – false positives)** [-]	
Other Stats	See other templates for Schirmer Test	
Test problems	About 30% were CL wearers. They do not appear to have been analysed separately. Only 29/75 patients had Schirmer values ≤10 mm. Only a single observer was involved in the repeatability measurements. Did patients stop ATS drops before assessment?	
Glossary	ATS = artificial tear substitute	

References

Barr JT, Schechtman KB, et al. (1999). Corneal scarring in the Collaborative Longitudinal Evaluation of Keratoconus (CLEK) Study: baseline prevalence and repeatability of detection. *Cornea* 18(1):34-46.

Bjerrum K B. (1996). Test and symptoms in keratoconjunctivitis sicca and their correlation. *Acta Ophthalmol Scand* 74(5):436-41.

Nichols KK, Mitchell GL, et al. (2004). The repeatability of clinical measurements of dry eye. *Cornea* 23(3):272-85.