DEWS		
	DRY EYE: DIAGNOSTIC TEST TEMPLATE	
	Murat Dogru	Date: 31 Oct,2004
RAPPORTEUR		
TEST	Hamano (phenol red thread) test	
	Test used to diagnose – Tear quantity	Sakamoto 1993
ТО		
DIAGNOSE		
VERSION of	[Zone Quick-Menicon Ltd}]	Sakamoto 1993
TEST		
DESCRIPTION	Minimally invasive test of tear quantity (especially, volume	
	of tears in conjunctival fornix)	
CONDUCT of	3 mm of thread inserted into lateral 1/3 conjunctival fornix	Sakamoto 1993
TEST	Wait for 15 seconds and measure the length of thread	
	changing color from orange to red, including the 3 mm thread	
	length inserted into formix.	
	Any value less than 10mm suggests a tear deficiency	
Web Video	Not available:	
Materials.	Zone Quick kit (Menicon)	
Variations		
Standardization	Time of day $[\sqrt{1}]$ Temperature $[\sqrt{1}]$ Humidity $[\sqrt{1}]$	Tomlinson 2001
~~~~~~~~~	Air speed $\lceil \sqrt{1} \rangle$ Illumination $\lceil \sqrt{1} \rangle$ . Assumed to influence.	
Repeatability	Intra-observer agreement. []	Cho 2003
1 0	Inter-observer agreement.	
Sensitivity	(true positives) [86%] $\leq 10 \text{ mm}$	Patel 1998
Specificity	$(100 - \text{false positives}) [83\%] \leq 10 \text{ mm}$	Patel 1998
Test problems	Although the test appears to be a very good non-invasive	Tomlinson 2001
	method of testing tear quantity, it is not known whether the	Cho 2003
	test is an index of tear production or tear volume.	Cho 1993
	Still not widely used among ophthalmologists but seems to	Korb 2000
	enjoy acceptance among optometrists.	
	Comparative studies with other tests of tear quantity do not	
	exist as yet. Further experience with this test is needed before	
	he made	
Test solutions	Further experience and studies needed	
FORWARD	The test is reproducible and does not produce corneal	Tomlinson 2001
LOOK	staining and induces less reflex tearing compared to Schirmer	Nichols 2003
	testing, comfortable for patients and might be a preferable	
	option for children.	
Glosssary		

## **References:**

Cho P. The cotton thread test: a brief review and a clinical study of its reliability on Hong Kong-Chinese. *Optom Vis Sci* 1993;70(10):804-8. Review.

Cho P, Chan CC. Inter-examiner difference and the effect of training on the phenol red thread test results in Hong Kong-Chinese. *Optom Vis Sci* 2003;80(12):820-5.

Korb DR. Survey of preferred tests for diagnosis of the tear film and dry eye. Cornea 2000;19(4):483-6.

Nichols KK, Nichols JJ, Lynn Mitchell G. The relation between tear film tests in patients with dry eye disease. *Ophthalmic Physiol Opt* 2003;23(6):553-60.

Patel S, Farrell J, Blades KJ, Grierson DJ. The value of a phenol red impregnated thread for differentiating between the aqueous and non-aqueous deficient dry eye. *Ophthalmic Physiol Opt* 1998;18(6):471-6.

Sakamoto R, Bennett ES, Henry VA, Paragina S, Narumi T, Izumi Y, Kamei Y, Nagatomi E, Miyanaga Y, Hamano H. The phenol red thread tear test: a cross-cultural study. *Invest Ophthalmol Vis Sci* 1993;34(13):3510-4.

Tomlinson A, Blades KJ, Pearce EI. What does the phenol red thread test actually measure? *Optom Vis Sci* 2001;78(3):142-6.