

DEWS	DRY EYE: DIAGNOSTIC TEST TEMPLATE	
RAPPORTEUR	<i>William Mathers</i>	16 th Dec 2004
TEST	Meibomian gland expression	
TO DIAGNOSE	eg., Meibomian gland dysfunction	REFERENCES
VERSION	[1]	Mathers 1991
DESCRIPTION	The quality and quantity of expressed meibomian oil is used to provide evidence of meibomian gland dysfunction	
CONDUCT of TEST	<p>1. Under slit lamp observation, the patient is directed to look upwards, to stabilize the lower lid.</p> <p>2. Digital or cotton tip pressure is applied to the center of the lower lid until meibum is expressed. This usually takes about 3-5 seconds.</p> <p>3. The diameter of the expressed lipid is recorded in millimetres and</p> <p>4. The appearance of the lipid is also recorded, in terms of:</p> <ul style="list-style-type: none"> • Clarity, • viscosity, • and colour. <p>Viscosity is described using a 1-4 scale:</p> <p>1 -free flowing liquid 2 -slight increase in viscosity, still free flowing 3 -noticeably thickened 4 -toothpaste consistency</p> <p>Record only the first attempt at compression. Subsequent compression will deplete the expressible volume. Sample multiple glands and record the greatest pathology seen.</p>	Mathers 1991
Web Video	Not available	
Materials:	Slit lamp and digital pressure	
Variations of technique	Use of an instrument to compress the lower lid.	
Standardization	Time of day [] Temperature [] Humidity [] Air speed [] Illumination [] Assumed to be uninfluenced by these factors.	
Diagnostic value	See references.	Mathers 1993, Mathers 1996 Mathers2004
Repeatability	Intra-observer agreement. [good] Inter-observer agreement. [fair]	
Sensitivity	(true positives) [good]	
Specificity	(100 – false positives) [fair]	
Other Stats	Low lipid volume correlates with gland dropout and increased evaporation and dry eye. High lipid volume correlates with low evaporation rates	
Test problems	Does not sample all glands, glands are not uniformly	

	affected.	
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References:

Mathers WD, Shields WJ, Sachdev MS, Petroll WM, Jester JV. Meibomian gland dysfunction in chronic blepharitis. *Cornea* 1991;10:277-85.

Mathers WD: Ocular evaporation in meibomian gland dysfunction and dry eye. *Ophthalmology* 1993;100:347-51.

Mathers WD, Lane JA, Zimmerman MB: Model for ocular tear film function. *Cornea* 1996;15:110-9.

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