

Comparative Tests of the Canine Tear Film Using the I-TEAR[®] Test and the Schirmer Tear Test

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Meniscometry I-TEAR[®] Test Strip

- Graduated capillary tube
 - Double-ended
 - Dye marker
 - 5 second test
 - Approximately $1/2 - 2/3$ of STT reading
 - > 5 normal



I-TEAR[®] Test

Touch end to tear film meniscus
(Not under eyelid)



Hypothesis

I-TEAR[®] Test is a clinically valid assessment of the canine pre-corneal tear film

Study Design

- 100 dogs / 200 eyes
 - Clinical patients undergoing routine STT testing
 - Owners consented to ITT testing
- No artificial tears the day of the exam
- No topical medications within 1 hour
- Dogs with corneal ulcers were exclude

Study Design

- ❑ ITT and STT performed on all eyes as a paired sample.
- ❑ ITT performed first on all eyes
- ❑ STT performed after 5 minute interval
 - STT performed for 60 seconds
 - 15 or greater considered normal

Results

- 205 eyes of 105 dogs
- Age ranged from 4 months to 18 years, mean 9.0 years
- Weight ranged 1.5 -46.1 kg, mean 10.4

Results

(31 Breeds Represented)

- 14 shih tzu
- 11 yorkies
- 9 mixed
- 8 English bulldogs
- 7 pugs
- 6 poodles
- 4 pekes, cockers
- 3 CKCS, schnauzers, Lhasa
- Rest misc

Results

- 56 dx or history of KCS
 - 50 previously on CSA or tacrolimus
 - 24 on artificial tears
- 13 diabetics
- 42 bracycephalics

Results

- ❑ ITT ranged from 0-20
- ❑ STT ranged from 0-30
 - ITT / STT 'in agreement' 86.3%
- ❑ Two variables
 - Dogs with 'viscus' tear film
 - Eyelid abnormalities that prevent eyelid margin contact with globe

Results

	N	ITT - Mean	ITT -Range	STT - Mean	STT -Range
OD - Normal	77	11.7	5-20	20.2	5-29
OD - Affected	24	2	0-4	7.2	0-14
Total	101				15-30
OS - Normal	79	11.2	10-30	20.3	
OS - Affected	25	1.6	0-14	6.9	0-16
Total	104				

Results

□ Predictive Value

- ITT 98% specificity / 98% sensitivity
- STT 96% specificity / 94% sensitivity

Results

□ Correlation with Diagnosis

- **ITT** .880, 95%CI: .804-.956
- **STT** .660, 95%CI: .542-.778
 - Cohen's Kappa test

Conclusions

- ❑ ITT is an accurate assessment of tear volume
- ❑ ITT has better correlation with clinical signs than STT
- ❑ Easily performed
- ❑ Perceived by clients as 'less invasive' than STT