PRACTICAL OPHTHALMOLOGY

STEP BY STEP VIDEO GUIDES TO OPHTHALMIC TECHNIQUES

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OCULAR ASSESSMENT

REMEMBER TO PERFORM THE OCULAR EXAMINATION IN THE FOLLOWING ORDER:

1 DISTANT OBSERVATION	• Examine the patient walking around the room. • Assess head and ocular symmetry from a distance .
2 SCHIRMER TEAR TEST	• Perform this first if there is a suspicion of Dry Eye. • Bright lights, manipulation and ocular stains may give erronous STT results.
3 NEURO-OPHTHALMIC EXAM	• Including pupillary light and menace responses, and dazzle, palpebral and corneal reflexes.
4 SWABS & CYTOLOGY	• Obtain conjuctival/corneal swabs BEFORE any topical applications in cases of culture and sensitivity testing.
5 TONOMETRY	• Use minimum amount of restraint possible - heavy restraint or pressure on the head and neck can affect readings.
6 DIRECT OPHTHALMOSCOPY	• Distant and close.
7 FLUORESCEIN STAINING	• Always flush fluorescein with sterile saline after testing.

A FULL PHYSICAL EXAMINATION SHOULD ALWAYS ACCOMPANY ANY OCULAR ASSESSMENT.

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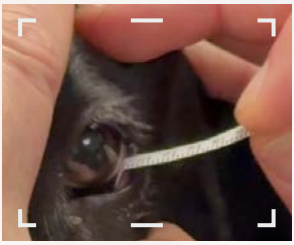
SCHIRMER TEAR TEST

ASSESSES:

The quantity of tears in order to diagnose quantitative keratoconjunctivitis sicca (KCS).

HOW DOES IT WORK?:

The aqueous layer of the tear film is slowly absorbed by the filter paper test strips. Any deficits in aqueous production will result in low STT values.



STEP-BY-STEP:

- Avoid or perform with care when a deep ulcer is present.
- Minimise direct handling of the test strips as oils can interfere with the test.
- To aid placement, the patient end of the test strip can be bent over before opening the packet.
- Slightly evert the lower eyelid and place the end of the test strip into the conjunctival sac.
- Leave the test strip in situ for 60 seconds (it can be useful to close the patient's eyelids).

EXPECTED VALUES:

- Dogs:
  - <5mm/min = severe KCS
  - 5-15mm/min = indicative of KCS, assess clinical signs
  - >15mm/min = normal
- Cats: can have variable results

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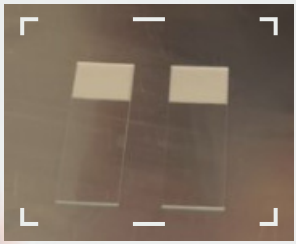
CORNEAL CYTOLOGY

ASSESSES:

Cells and pathogens that are present

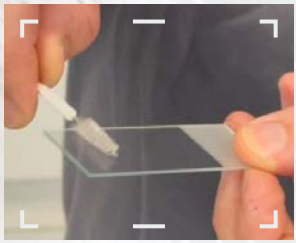


HOW DOES IT WORK?:

Corneal lesions, including complicated ulcers, can present with an array of pathogens and/or cellular changes. Cytology can help to identify these to aid treatment.

STEP-BY-STEP:

- Avoid or perform with care when a deep ulcer is present.
- Apply topical anaesthetic and ensure adequate restraint of the patient.
- Using a cytobrush or blunt end of scalpel (cotton bud not ideal), gently turn or scrape cytobrush/scalpel at the edge (not the centre) of the ulcer or defect 5-7 times.
- Transfer the sample to a glass slide by gently tapping, rolling or brushing.
- Stain slides with with an appropriate stain e.g. Diff-Quick™.
- Evaluate under oil immersion, high power microscopy.



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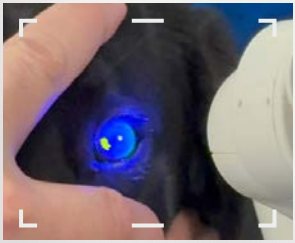
ULCER STAINING

ASSESSES:

Corneal ulceration: reveals damaged epithelium and stromal exposure. Can also help differentiate between types of corneal ulceration e.g. Descemetocele, SCCED/ indolent ulcers.

HOW DOES IT WORK?:

Fluorescein is a water-based stain, taken up by the hydrophilic stroma and appears as a green lesion on the cornea. It is repelled by the hydrophobic epithelium and Descemet's membrane.



STEP-BY-STEP:

- Instil one drop of fluorescein onto the cornea and force blink.
- Always flush fluorescein to avoid false positive results.
- Observe the cornea with blue light and, ideally, magnification.

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TEAR FILM BREAK UP TIME

ASSESSES:

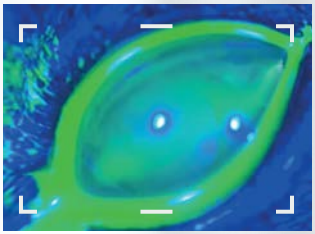
The quality of the tear film in order to aid in the identification of qualitative tear film disorders, such as KCS.

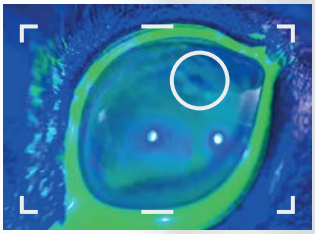
HOW DOES IT WORK?:

Any deficits within the mucin and/or lipid layers reduces the stability of the tear film and as a result reduces the break-up time of the tears.

STEP-BY-STEP:

- Instil 1-2 drops of fluorescein onto the cornea and force blink to spread evenly.
- Hold the eyelids open and count the seconds until the uniform tear film starts to break up (as evidenced by the appearance of dark spots).





EXPECTED VALUES:

- Dogs ~20 seconds
- Cats ~17 seconds.

Anything quicker than this, indicates an unstable tear film and possible qualitative KCS. Assess alongside compatible clinical signs.

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JONES TEST

ASSESSES:

Nasolacrimal duct patency

HOW DOES IT WORK?:

The tear film is drained via the nasolacrimal duct into the nasal cavity.

STEP-BY-STEP:

- Instil 1-2 drops of fluorescein onto the eye.
- Fluorescein should be expected at the nares within 5-14 minutes.
- Cats and brachycephalic breeds may have an accessory opening in the oropharynx.
- No visibility at the nares in these breeds is not necessarily a concern, instead the mouth and throat should be examined with blue light.

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SEIDEL TEST

ASSESSES:

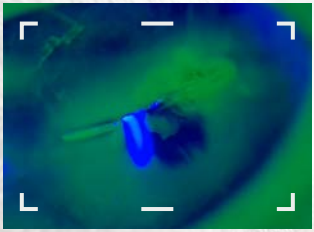
For corneal perforation E.g. after foreign body removal (thorns, claws etc)

HOW DOES IT WORK?:

Aqueous humour leaking through the damaged cornea disrupts fluorescein within the tear film

STEP-BY-STEP:

- Instil 1-2 drops of fluorescein onto the cornea
- Force blink to spread evenly until a thin green film covers the cornea.
- Fluorescein will stain any exposed corneal stroma.
- Leaking aqueous humour will disrupt the overlying film of green within the tear film; visible as a dark rivulet.



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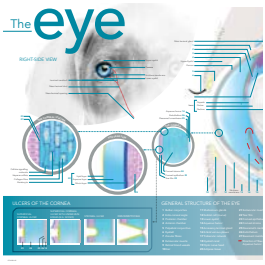
HOW CAN WE HELP?

To help you maximise the health of the cornea in practice and to aid in the compliance of pet owners when faced with challenges to corneal health, Dômes Pharma provides a suite of materials for use in clinic and to help pet owners at home. Here are some examples of the tools and services we can provide you.

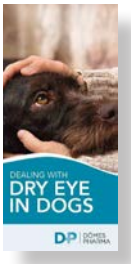
Our interactive 3D eye tool



Anatomy poster & step by step Ophthalmology Exam Guide

Guidelines on common ophthalmic conditions

Client leaflets



Scan for our Vet Vault full of resources

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