**The Ocular Examination**

These are performed on indication of ocular abnormalities and are essential for diagnosis. Findings derived from examinations determine the treatment options, whether surgical or non-surgical, the prognosis of the case, the animal’s return to productivity or their risk to slaughtering.

The extent of ocular disorder will be determined based on the clinical signs present and their severity. Diseases such as intraocular disease will require ophthalmoscope use and topical application of drops to dilate the pupil. Any masses visible within the lid margins, third eyelid, conjunctiva, or sclera should be palpated with a gloved and lubricated finger to determine degree of infiltration into adjacent periorbital structures. The third eyelid can be grasped with an atraumatic forcep to facilitate exteriorization and examination of the base of the nictitating membrane.

Steps:

1. Get history from owner.
2. Distance exam: Assess the animal’s ability to see. A blind animal may exhibit high stepping, collision with objects, a stare-like expression, or reluctance to move in a strange environment.
3. Restrain: Mechanical or chemical method used before checking vision and sensory function.
4. Assess vision: using the menace test, which is where you make a menacing gesture towards their eye while covering the other and they should blink or turn away and a cotton ball test where if you drop a cotton ball from above line of vision their eye should follow it as it falls. Palpebral reflex test is a sensory test where if you touch their eyelid they should react.
5. Do Schirmer’s test to measure tear production before any manipulation of the eye or drugs given. If there is any abnormal excretion you can take a swab and culture which should be done before the eye is cleaned and any drugs are given to the patient. Can also do a scrape of the conjunctiva to test but topical anesthetic like proparacaine is necessary.
6. Gross inspection of eye: Assess orbit, eyeball and eyelid. Observe size, symmetry, eye-orbit relationship and any deformities. Determine if this is normal for the species and breed. Look for any masses, discoloration or any other lesions. Look at conjunctiva for any abnormalities as well such as foreign bodies, abnormal growth and lacerations.
7. Observe sclera and cornea look for any lesions, discoloration, vascularization. The cornea is normally transparent, avascular, moist, and unpigmented with a smooth, even contour. It should be carefully examined for loss of transparency (edema or infiltrates), opacity, vascularization, pigmentation, dryness, growths, foreign bodies, lacerations, changes of contour, and ulceration.
8. Check the anterior chamber by shining a light into it from different angles, it should be clear with no opaque or cloudy areas. Iris colour and pupil shape should be normal for that species.
9. Tonometry to check intraocular pressure. Dilate the pupil and use an ophthalmoscope to visualize the structure in the back of the eye. So, see the optic nerve tapetal fundus and vessels, any sign of inflammation, retinal atrophy etc and tell if it's normal for that species.
10. Do fluorescein eye stain dye test which is used to check for ulcers in the cornea. If there is any ulcer it will be stained a green. Wasn’t done earlier because it will affect you looking into the back of the eyes.
* Three main diagnostic tests performed in a routine eye exam; Schirmer tear test, Intraocular pressure measurement (Tonometry)and Fluorescein staining.
* Schirmer tear test
1. first diagnostic test to be done in exam
2. should be done before any medications eye washes or topical anesthetics are used in the eye
3. test strip placed in the middle lower conjunctival fornix for a full minute
4. measures the basal tearing as well as the reflex tearing due to the irritation from the test strip itself
5. used to diagnose rate of tear production, used in the evaluation of conjunctivitis to diagnose tear deficiency as a contributing factor to ocular surface diseases and to assess lacrimal gland function.
* Intraocular Pressure (Tonometry)
1. animal should be properly restrained for procedure improper technique can lead to falsely elevated readings.
2. measurement of pressure within the eye (called intraocular pressure) to determine if glaucoma is present.
3. normal intraocular pressure helps support the shape of the eye, which in turn supports the 2 million parts of the eye that help with sight
4. Glaucoma is caused by the buildup of fluid within the eye. Abnormally high pressure can damage the optic nerve, leading to vision loss.
5. Tonometry is also useful for identifying low IOP, which may occur with anterior uveitis (inflammation within the eye) or following intraocular surgery. Low IOP is also associated with dehydration.
* Fluorescein staining
1. An important diagnostic tool in detecting corneal ulceration, abrasions, scratches and lacerations present in the cornea on the surface of the eye.
2. The fluorescein dye will not penetrate the normal lipophilic corneal epithelium and in a normal cornea will be completely irrigated with eyewash after instillation.
3. When a defect in the surface epithelium is present, the dye will be retained by the hydrophilic stroma and easily visualized with traditional illumination or preferably with a cobalt blue light available on most direct ophthalmoscopes.

Ancillary tests; taking corneal and conjunctival cytology and cultures