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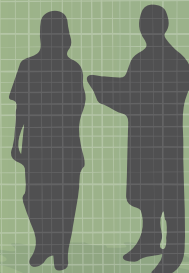
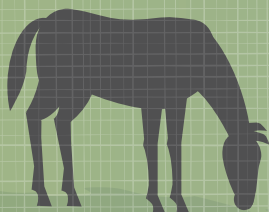
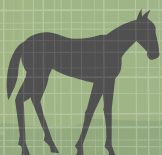
Championing the Equine Vet



60th



Handbook of Presentations



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How to assess whether a cataract is significant

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Cataract pathology has the potential to impact on the health and function of an eye due to adverse optical effects and the potential for lens proteins, liberated from the lens, to incite inflammation within the eye.

The cause of the cataract may also be significant in terms of assessing its impact; recurrent or chronic uveitis has the potential to escalate tissue damage and dysfunction beyond the lens. Hereditary cataracts would impact the reproductive potential of an individual.

Effects on 'vision'

While we have an understanding of elements of the equine visual experience (colour perception, depth of field, refractive state, stereopsis, field of view, adaptations to dark and bright environments) it is not possible to determine what a 'normal' individual sees by simply studying globe anatomy, and therefore determining what an intermediate loss of clarity to the visual axis will have on 'normal' equine vision adds a secondary layer of conjecture in terms of predicting what an individual, with some degree of lens opacity, will experience.

Defining 'functional vision' as an ability to adequately undertake equestrian visual tasks, a total cataract would be considered to be blinding to an eye, although horses cope well in general with monocular vision. The human experience of cataracts predicts lens opacities will reduce visual acuity, increase glare and alter colour perception. It should, however, be noted that significant differences exist between the anatomy of the eye, and the visual needs of the individual will differ, when considering the experiences of a horse compared with its rider.

Predicting the presence of functional vision requires a subjective assessment of visual impairment and objective (or at least semiquantitative) clinical measurements, both of which present significant challenges to the clinician. Most observations of visual impairment will be made by owners and a 'vision questionnaire' forms part of a patient's visual assessment. The

author adopts the subjective measurements of percentage lens affected (as viewed through dilated pupils on distant direct ophthalmoscopy) and a 'fundic detail score' as indicators of the degree to which a lens is affected; this also allows for monitoring of cataract progression. Cataract location within a lens may also impact predictions in terms of its visual significance.

The personality of the horse, the ability and experience of the rider, and activities being undertaken loosely determine an assessment of impact that lens(es) opacities might have. It is the author's subjective opinion that while cataract changes must detract from perfect vision, it requires significant reductions in fundic detail scores of both eyes before visual handicap issues are noted in most individuals.

Markers of uveitis

In the presence of a cataract, the assessment of eye structures associated with active (or historical) uveitis will likely be limited to the cornea, trabecular meshwork (where visible), iris face, pupil margin and granula iridica. Intraocular pressure may be altered (most commonly reduced but occasionally increased). Mature cataracts are deemed to be a risk factor for lens-induced uveitis, with phacoclastic uveitis representing a devastating pathology where lens rupture, or lens cortex exposure through injury, occurs. Ophthalmic ultrasound examination is required to assess for lens capsule integrity and changes to the posterior segment (vitreal changes, retinal detachment) where mature cataracts are present.

Congenital cataracts

Deprivation amblyopia represents abnormal development of the visual pathways due to a disruption in the normal image-forming ability of the eye at an early age. The risk of deprivation amblyopia is a theoretical consideration in congenital cataracts and would prompt the earliest practical surgical intervention of congenital cataracts.