Lhasa Apso	

Ocular disorders known or presumed to be inherited (published)

	Diagnosis	Description and comments specific to the breed	Inheritance	Gene/ marker test	References
A	Prolapsed gland of the nictitating membrane		Unknown	NO	1,2,3
B	Cataract	Bilateral posterior cortical cataract; between 6 months and 3-6 y.o	Unknown	NO	1,2,4
C	Progressive Retinal Atrophy (PRA) GR-PRA1	Late-onset: in dogs between 6 to 7 years on average, though age of onset can vary	Autosomal recessive	SLC4A3	1,2,5
D	Progressive Retinal Atrophy (PRA) PRA4	First clinical signs could be present at the age of 2.5 years	Autosomal recessive	IMPG2	6
E	Corneal dystrophy stromal	Subepithelial oval lipoid deposits, inferior paracentral; between 2-4 y.o	Unknown	NO	1,2

F	Vitreous syneresis	Usually in young dogs (more than 2 y.o.)	Unknown	HEXA	1,2

The ECVO's advice relating to hereditary eye disease control

Please see ECVO Manual chapter 8: VET Advice

Recommendations regarding age and frequency for eye examinations

Please see ECVO Manual chapter 7: ECVO Age and Frequency recommendations

Other ocular disorders (reported)

	Diagnosis	Source
A	Distichiasis	ACVO genetics committee
B	Ectopic cilia	ACVO genetics committee
C	Atresia of lacrimal punctum	ACVO genetics committee
D	Caruncular trichiasis	ACVO genetics committee
E	Dermoid	ACVO genetics committee
F	Keratoconjunctivitis sicca	ACVO genetics committee
G	Exposure keratopathy syndrome/macroblepharon	ACVO genetics committee
H	Persistent pupillary membranes	ACVO genetics committee

References

1. Rubin LF. Inherited eye diseases in purebred dogs. Williams &Wilkins 1989;194-197.

2. Chaudieu G., Chahory S. Affections oculaires héréditaires ou à prédisposition raciale chez le chien. Ed. du Point Vétérinaire 2nd ed. 2013;435-437.

3. Morgan RV, Duddy JM and McClurg K. Prolapse of the gland of the third eyelid in the dog: A retrospective study of 89 cases (1980-1990). J Am Anim Hosp Assoc. 1993;29:56.

4. Gelatt KN and Mackay EO. Prevalence of primary breed-related cataracts in the dog in North America. Vet Ophthalmol. 2005 Mar-Apr;8:101-111.

5. Downs LM, Wallin-Håkansson B, Boursnell M, Marklund S, Hedhammar Å, Truvé K, Hübinette L, Lindblad-Toh K, Bergström T, Mellersh CS. A frameshift mutation in golden retriever dogs with progressive retinal atrophy endorses SLC4A3 as a candidate gene for human retinal degenerations. PLoS One (2011) 6(6):1-9 e21452

6. Hitti-Malin RJ, Burmeister LM, Ricketts SL, Lewis TW et al. A LINE-1 insertion situated in the promoter of IMPG2 is associated with autosomal recessive progressive retinal atrophy in Lhasa Apso dogs. BMC Genet. 2020 Sep. 7;21(1):100.