

Australian Cattle Dog	
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Ocular disorders known or presumed to be inherited (published)

	Diagnosis	Description and comments specific to the breed	Inheritance	Gene/ marker test	References
A	Lens luxation		Autosomal recessive	ADAMTS1 7	1,2,8,9,11
B	Persistent pupillary membranes -iris to iris			NO	8,9
C	Cataract			NO	9
D	Persistent hyperplastic primary vitreous/Persistent hyperplastic tunica vasculosa lentis (PHPV/PHTVL)			NO	9
E	Glaucoma			NO	1,3
F	Progressive Retinal Atrophy (PRA)	1. Early/intermediate form. 2. Late form, vision loss from 7 y.o.	1 and 2. autosomal recessive	1. prcd 2. C2orf71, (rzd4)	4,5,6,8,9,10
G	Neuronal Ceroid lipofuscinosis			ATP13A2	7, 12

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	Corneal dystrophy	ACVO genetics committee
B	Retinal dysplasia -folds	ACVO genetics committee

References

1. Collier L, McCalla T, Moore CP. Anterior lens luxation in Queensland Healer (Australian Cattle) dogs. Proc Am Coll Vet Ophthalmol. 1989; 20: 185.
2. Farias FH, Johnson GS, Taylor JF, et al. An ADAMTS17 splice donor site mutation in dogs with primary lens luxation. Invest Ophthalmol Vis Sci. 2010; 51: 4716-4721.
3. Gelatt KN, MacKay EO. Prevalence of the breed-related glaucomas in pure-bred dogs in North America. Vet Ophthalmol. 2004; 7: 97-111.
4. Laratta LJ, Sims MH, Brooks DE. Progressive retinal degeneration in the Australian cattle dog. Proc Am Coll Vet Ophthalmol. 1988; 19: 9.
5. Dekomien G, Epplen JT. Exclusion of the PDE6A gene for generalised progressive retinal atrophy in 11 breeds of dog. Anim Genet. 2000; 31: 135-139.
6. Zangerl B, Goldstein O, Philp AR, et al. Identical mutation in a novel retinal gene causes progressive rod-cone degeneration in dogs and retinitis pigmentosa in humans. Genomics. 2006; 88: 551-563.
7. Wood PA, Sisk DB, Styer E, et al. Animal model: ceroidosis (ceroid-lipofuscinosis) in Australian cattle dogs. Am J Med Genet. 1987; 26: 891-898.

8. Rubin LF. Inherited eye diseases in purebred dogs. Williams & Wilkins 1989; 13-15.
9. Chaudieu G, Chahory S Affections oculaires héréditaires ou à prédisposition raciale chez le chien. 2nd ed, Ed. du Point Vétérinaire, pp.152-153.
10. Downs LM, Bell JS, Freeman J et al. Late-onset progressive retinal atrophy in the Gordon and Irish Setter breeds is associated with a frameshift mutation in C2orf71. *Anim Genet* 2013;44(2):169-77.
11. Gould D, Pettitt L, McLaughlin B, Holmes N, Forman O, Thomas A, Ahonen S, Lohi H, O'Leary C, Sargan D, Mellersh C. ADAMTS17 mutation associated with primary lens luxation is widespread among breeds. *Vet Ophthalmol* (2011) 14(6):378-84.
12. Schmutz I et al. ATP13A2 missense variant in Australian Cattle Dogs with late onset neuronal ceroid lipofuscinosis. *Mol Genet Metab.* 2019; 127:95-106