Labrador Retriever	

Ocular disorders known or presumed to be inherited (published)

	Diagnosis	Description and comments specific to the breed	Inheritance	Gene/ marker test	References
A	Entropion	Lower eyelid	Unknown	NO	1,2,38,39
B	Macular corneal dystrophy (MCD)	Middle-aged dogs. They develop cloudy eyes due to an abnormal accumulation of glycosaminoglycans	Autosomal recessive	CHST6	40,42
C	Limbal melanoma		Unknown	NO	3,39
D	Iris melanoma	High incidence of this neoplasia in Labrador ; May cause secondary glaucoma	Presumed autosomal recessive	NO	4,39
E	Glaucoma		Unknown	NO	5
F	Cataract	At least 3 types : 1.Posterior polar (cortical or subcaspular), unilateral but becoming bilateral. In dogs between 6 to 18 months. Slowly progressive	1.Presumed autosomal dominant with incomplete penetrance	NO	1,2,6,7,8, 9,10,38,39

		2. Posterior cortical polar cataract progress to mature, blinding cataract at 15-18 months 3. Anterior subcapsular / cortical punctate suture line cataract. appears from 4-5 y.o., increasing incidence with age , never affecting vision	2.Presumed autosomal dominant with incomplete penetrance 3.unknown		
G	Progressive Retinal Atrophy (PRA)	Fundus changes seen from 2-4 y.o. ERG abnormal at 18 month of age	Autosomal recessive	prcd	11,12,13,14, 15,16,17,18, 19,20,21,38, 39
H	Retinal pigment epithelial dystrophy (RPED)	Photoreceptor death secondary to disease of pigmented epithelium; Late Onset: from 5 year of age. Seen in England but uncommon in other parts of Europe and USA	Unknown	NO	22,23,24,38, 39
I	Retinal dysplasia – folds/ geographic/ total (without skeletal defects)	Present at birth with all 3 forms: Geographic and total RD forms associated with visual impairment or blindness.	Presumed Autosomal recessive	NO	25,26,27,28, 29,30,31,32, 33,34,35,38, 39

		Total RD seen in Europe but rare in the USA Milder forms seen in the USA			
J	Retinal dysplasia – folds/geographic/ detached (with skeletal defects) RD/OSD1	Inherited defect of the Labrador Retriever and Samoyed affecting both the eyes and the forelimbs. Recessive effect on the skeleton and incomplete dominant on the eye. Homozygous recessive dogs: detached forms with cataracts and corneal pigmentation (blindness) with form of short limbed dwarfism Heterozygous dogs :uni or bi lateral ocular defects with folds or geographic forms. Normal or impaired vision, rarely progressive.	Presumed autosomal dominant with incomplete penetrance	COL9A3	25,26,27,28, 29,30,31,32, 33,34,35, ,36,37,38,39
K	Achromatopsia type 2 (ACHM2-LR)	Day blindness and photophobia; 8-10 weeks of age	Autosomal recessive	CNGA3	41
L	Stargardt Disease	Clinical signs indicating cone and rod degeneration	Autosomal recessive	ABCA4	43

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	Ectropion	ACVO genetics committee
C	Corneal dystrophy -epithelial/stromal	ACVO genetics committee
D	Persistent Pupillary Membranes	ACVO genetics committee
E	Persistent hyaloid artery	ACVO genetics committee
F	PHPV/PHTVL	ACVO genetics committee
G	Vitreous degeneration	ACVO genetics committee
H	Uveal cysts	ACVO genetics committee

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