



### Ocular disorders

	Diagnosis	Description and comments specific to the breeds	Inheritance	Gene/marker test	References
A	Entropion		Not defined	None	1
B	Ectropion	Often located in central portion of upper and lower eyelid in combination with medial and lateral entropion.= Diamond shape eyelids	Not defined	None	1
C	Distichiasis		Not defined	None	1
D	Macroblepharon		Not defined	None	2
E	Persistent pupillary membrane (PPM)		Not defined	None	2
F	Retinal dysplasia (folds)		Not defined	None	1
G	Multifocal retinopathy (cmr1)		Autosomal recessive	YES	3
H	Progressive retinal atrophy (PRA)	Onset, progression and severity are modulated by light exposure.	Autosomal dominant	YES	4-6

**The ECVO's advice relating to hereditary eye disease control**

A	Entropion	OPTIONAL  Note: In severe cases the advice may be: NO BREEDING from the affected animal.
B	Ectropion	OPTIONAL
C	Distichiasis	OPTIONAL  Note: In severe cases the advice may be: NO BREEDING from the affected animal.
D	Euryblepharon	OPTIONAL
E	Persistent pupillary membrane (PPM)	-Iris to iris: OPTIONAL  -Other forms: NO BREEDING from the affected animal
F	Retinal dysplasia (folds)	OPTIONAL
G	Multifocal retinopathy (cmr1)	NO BREEDING from the affected animal, its parents or offspring
H	Progressive retinal atrophy (PRA)	NO BREEDING from the affected animal, its parents or offspring

**Recommendations regarding age and frequency for eye examinations**

As for all other breeds (see part 7)

### References

- 1- Rubin LF (1989) Inherited ocular diseases in purebred dogs. Williams & Wilkins, Baltimore, 62-63.
- 2- Chaudieu, G (2004) Affections oculaires héréditaires ou à prédisposition raciale chez le chien. Ed. du Point Vétérinaire, 108.
- 3- Guziewicz KE, Zangerl B, Lindauer SJ, et al. Bestrophin gene mutations cause canine multifocal retinopathy : A novel animal model for Best disease. Invest. Ophthalmol. Vis. Sci., 2007 ; 48 : 1959-1967
- 4- Kijas JW, Cideciyan, AV, Alemansd TS, et al. Naturally occurring rhodopsin mutation in the dog causes retinal dysfunction and degeneration mimicking human dominant retinitis pigmentosa. Proc Natl Acad Sci U S A, 2002; 99: 6328-6323.
- 5- Kijas JW, Miller BJ, Pearce-Kelling SE, et al. Canine models of ocular disease: outcross breedings define a dominant disorder present in the English Mastiff and Bull Mastiff dog breeds, J. Hered, 2003; 94: 27-30.
- 6- Cideciyan AV, Jacobson, SG, Aleman TS, et al. In vivo dynamics of retinal injury and repair in the rhodopsin mutant dog model of human retinitis pigmentosa, Proc Natl Acad Sci U S A, 2005; 102: 5233-5238