Poodle **(Toy, Miniature, Medium, Giant and Standard)**	

Ocular disorders known or presumed to be inherited (published)

	Diagnosis	Description and comments specific to the breed	Inheritance	Gene/ marker test	References
A	Microphthalmia	Oftenassociated with otherocular malformations, uni- or bilateral (all varieties)	Unknown	NO	1
B	Distichiasis	Common (all varieties)	Unknown	NO	1
C	Lacrimalpunctum atresia		Unknown	NO	1
D	Corneal dystrophy - epithelial -epithelial	Clinically affected about 1 year of age (toy, miniature) 6 to 10 y.o; dogs (miniature, medium)	Presumed autosomal recessive Unknown	NO NO	1 21
E	Persistent pupillary membranes	Miniature, medium, giant, standard	Unknown	NO	1, 21, 22
F	Glaucoma	Narrow angle often associated with pectinate ligament abnormality. (miniature, toy, medium)	Unknown	NO	1,2,17

G	Cataract	Cortical/nuclear (all varieties)	Unknown	NO	1,8,16, 21, 23
H	Progressive RetinalAtrophy(PRA)	Early (from 3 y.o. dogs) (Toy, Miniature, and Standard)	Autosomal recessive	prcd	1,4,5,6,10-14
I	Progressive RetinalAtrophy (PRA)(rcd4)	Rcd4-PRA Lateonset; clinicalsigns from 10-12 y.o. (Miniature, Medium and Standard)	Autosomal recessive	C2orf71	18
J	Cone degeneration: Day Blindness/Retinal Degeneration (achromatopsia)	Day blindness in puppieswhichevolves over years in retinal degeneration (Standard Poodle)	Autosomal recessive	DB/RD test	19
K	Optic nerve hypoplasia/ micropapilla	Blindness and abnormal pupil response (miniature, toy)	Unknown	NO	1,7,9,15,20

The ECVO's advice relating to hereditary eye disease control

Pleasesee ECVO Manual chapter 8: VET Advice

Recommendations regarding age and frequency for eye examinations

Pleasesee ECVO Manual chapter 7: ECVO Age and Frequencyrecommendations

Other ocular disorders (reported)

	Diagnosis	Source
A	Trichiasis	ACVO genetics committee French National Panel
B	Vitreous degeneration	ACVO genetics committee French National Panel

References

1. Rubin LF: Inherited Eye Diseases in Purebred Dogs, Wiliams&Wiklins, 1989

2. Slater MR, Erb HN: Effects of risk factors and prophylactic treatment on primary glaucoma in the dog. J Amer Vet Med Assoc. 188:1028, 1986

3. Barnett KC: Hereditary retinal atrophy in the poodle. VetRec 74:672, 1962.

4. Barnett KC: Two forms of hereditary and progressive retinal atrophy in the dog. I. The miniature poodle. II. The Labrador retriever. J Am AnimHospAssoc 1:234, 1965

5. Aguirre GD, Rubin LF: Progressive retinal atrophy in the miniature poodle: an electrophyiologic study. J Am Vet Med Assoc 160: 191, 1972

6. Aguirre GD et al: Pathogenesis of progressive rod-cone degeneration in miniature poodles. Invest Ophthalmol Vis Sci 23: 610, 1982

7. Kern TJ, Riis RC: Optic nerve hypoplasia in three miniature poodles. J Am Vet Med Assoc 178: 49, 1981

8. Barnett KC, Startup FG: Hereditary cataract in Standard poodle. VetRec 117: 15, 1985

9. Vetstre WA, Brightman AH: Congenital blindness due to optic nerve hypoplasia. Canine practice 7: 45, 1980

10. Pawlyk KBS, Sandberg MA, Berson EL: Temporal aspects of the electroretinogram of Miniature Poodles with progressive retinal atrophy. Invest Ophthalmol Vis Sci 25:196, 1984.

11. Sandberg MA, Pawlyk BS, Berson EL: Full field electroretinograms in Miniature Poodles with progressive rod-cone degeneration. Invest Ophthalmol Vis Sci 19, 1179, 1986.

12. Aguirre G, Acland G: Variation in retinal degeneration phenotype inherited at the prcdlocus. ExpEye Res 46:663, 1988.

13. Wetzel MG, et al: Fatty acid metabolism in normal Miniature Poodles and those affected with progressive rod-cone degeneration. In LaVail MM, Anderson RE and Hoolyfield JG (eds): Inherited and Environmentally Induced Retinal Degenerations. ProgClinBiol Res 314:427, 1989.

14. Kemp CM, Jacobson SG: Rhodopsin levels in the central retinas of normal Miniature Poodles and those with progressive rod-cone degeneration. ExpEye Res 54:947, 1992.

15. Kern TJ, Riis RC: Optic nerve hypoplasia in three Miniature Poodles. J Am Vet Med Assoc 178:49, 1981.

16. Barnett KC, Startup FG: Hereditary cataract in the Standard Poodle. VetRec 117:15, 1985.

17. Gelatt KN, MacKay EO: Prevalence of the breed-related glaucoma in pure-bred dogs in North America. VetOphthalmol 7:2, 2004.

18. Downs LM, Bell JS, Freeman J, Hartley C, Hayward LJ, Mellersh CS. 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.

19. www.optigen.com

20. Becker D, Niggel JK, Pearce-Kelling S, Riis RC, Aguirre GD. Optic nerve hypoplasia in miniature poodle dogs: A preliminary genetic and candidate gene asociation study. V9.et Ophthalmol DOI:10.1111/vop.12691, 2019

21. Chaudieu G, Chahory S (2013) Affections oculaires héréditaires ou à prédisposition héréditaire chez le chien. Rueil-Malmaison : Ed. du Point Vétérinaire, Wolters Kluwer France, 420-29.

22. Arnjberg J. A study of ocular abnormalities in Standard poodles. Canine pract (1980) 7: 21-5.

23. Chaudieu G. Étude des cataractes primaires présumées héréditaires du caniche chez 181 chiens. Revue vétérinaire clinique (2019) 54: 69-77.