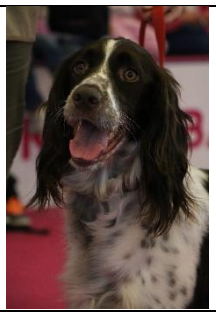
English Springer Spaniel	

Ocular disorders known or presumed to be inherited (published)

	Diagnosis	Description and comments specific to the breed	Inheritance	Gene/ marker test	References
A	Microphthalmia	Associated with other ocular anomalies (cataract, lens luxation, ciliary body dysplasia)	Unknown	NO	1,2,3
B	Retinal dysplasia 1. multifocal 2. geographic 3. total		1. presumed autosomal recessive 2. & 3. autosomal recessive	NO	1,2,3,4,5,6
C	Progressive Retinal Atrophy (PRA)	(CORD1) 1. Cone-Rod Dystrophy; night blindness between 6 months and 2 years of age 2. Late onset; night blindness at 7 years of age	1. Presumed autosomal recessive or polygenic 2. Unknown	1.RPGRIP1	1,2,7,8,9,10, 11,12
D	Glaucoma	In the breed positive association	Unknown	NO	1,2,13,14

		between PLA and glaucoma, between narrowing of the iridocorneal angle and glaucoma and effect of age on the iridocorneal angle			
E	Entropion	Lower eyelid and lateral canthus	Unknown	NO	1,2
F	Corneal dystrophy 1.stromal 2.endothelial	 1. 1-5 y.o. 2. >9 y.o	Unknown	NO	1,2
G	Cataract	1. posterior subcapsular, 1-3 y.o. 2. Fibrillar nuclear cataract; >5 y.o.	Unknown	NO	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	Persistent pupillary membranes All forms	ACVO genetics committee

C	Persistent hyaloid artery	ACVO genetics committee
D	Vitreous degeneration	ACVO genetics committee

References

1. Rubin LF. Inherited eye diseases in purebred dogs. Williams &Wilkins 1989;124-131.

2. Chaudieu G. Chahory S. Affections oculaires héréditaires ou à prédisposition raciale chez le chien.2nd ed. Ed. du Point Vétérinaire 2013;397-403.

3. Dubielzig RR, Swanson JF, Wenk EJ: Microphthalmia, cataract, lens luxation and ciliary body dysplasia in a litter of Springer spaniel pups. Trans Am Coll Vet Ophthalmol 16:96, 1985.

4. Schmidt GM et al: Inheritance of retinal dysplasia in the English Springer spaniel. J Am Vet Med Assoc 174:1089, 1979.

5. Lavach JD et al: Retinal dysplasia in the English Springer spaniel. J Am Anim Hosp Assoc 14:192, 1978.

6. O'Toole D, et al: Retinal dysplasia in English springer spaniel dogs: Light microscopy of the postnatal lesions. Vet Pathol 20:298, 1983.

7. Barnett KC: Canine retinopathies III. The other breeds. JSm Anim Pract 6:185, 1965.

8. Koch S: Retinopahty in the English springer spaniel: An aberrant form of PRA? Proc Am Coll Vet Ophthalmol 28:91, 1997.

9. Wheeler CA: Inheritance of progressive retinal degeneration in the English Springer Spaniel. Proc Am Coll Vet Ophthalmol 29:18, 1998.

10. Mellersh CS, Boursnell ME, Pettitt L, Ryder EJ, Holmes NG, Grafham D, Forman OP, Sampson J, Barnett KC, Blanton S, Binns MM, Vaudin M. Canine RPGRIP1 mutation establishes cone-rod dystrophy in miniature longhaired dachshunds as a homologue of human Leber congenital amaurosis. Genomics (2006) 88(3):293-301.

11. Kuznetsova T, Iwabe S, Boesze-Battaglia K, Pearce-Kelling S, Chang-Min Y, McDaid K, Miyadera K, Komaromy A, Aguirre GD. Exclusion of RPGRIP1 ins44 from primary causal association with early-onset cone-rod dystrophy in dogs. Invest Ophthalmol Vis Sci (2012) 15;53(9):5486-501.

12. Narfstrom K, Jeong M, Hyman J, Madsen RW & Bergstrom TF. Assessment of hereditary retinal degeneration in the English Springer Spaniel dog and disease relationship to an RPGRIP1 mutation. Stem Cell Int. (2012) Article ID 685901.

13. Gustavsson E. Glaukom hos Springer Spaniel. Svensk Veterinurtidning 38 (Suppl 11) : 149-151, 1986.

14. Bjerkas E, Ekesten B & Farstad W. Pectinate ligament dysplasia and narrowing of the iridocorneal angle associated with glaucoma in the English Springer Spaniel. Veterinary Ophthalmology (2002) 5, 1, 49-54.