### Labrador Retriever

#### Ocular disorders known or presumed to be inherited (published)

<table>
<thead>
<tr>
<th></th>
<th>Diagnosis</th>
<th>Description and comments specific to the breed</th>
<th>Inheritance</th>
<th>Gene/marker test</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Entropion</td>
<td>Lower eyelid</td>
<td>Unknown</td>
<td>NO</td>
<td>1,2,38,39</td>
</tr>
<tr>
<td>B</td>
<td>Limbal melanoma</td>
<td>High incidence of this neoplasia in Labrador; May cause secondary glaucoma</td>
<td>Presumed autosomal recessive</td>
<td>NO</td>
<td>4,39</td>
</tr>
<tr>
<td>C</td>
<td>Iris melanoma</td>
<td></td>
<td>Presumed autosomal recessive</td>
<td>NO</td>
<td>4,39</td>
</tr>
<tr>
<td>D</td>
<td>Glaucoma</td>
<td></td>
<td>Unknown</td>
<td>NO</td>
<td>5</td>
</tr>
<tr>
<td>E</td>
<td>Cataract</td>
<td>At least 3 types: 1. Bilateral posterior polar (cortical or sub-caspular), unilateral but becoming bilateral. In dogs between 6 to 18 months. Slowly progressive 2. Posterior cortical polar cataract progress to mature, blinding cataract at 15-18 months</td>
<td>1. Presumed autosomal dominant with incomplete penetrance 2. Presumed autosomal dominant with incomplete penetrance</td>
<td>NO</td>
<td>1,2,6,7,8, 9,10,38,39</td>
</tr>
<tr>
<td>ECVO MANUAL: BREEDS</td>
<td>2017</td>
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</tbody>
</table>

| Known and Presumed Hereditary Eye Diseases (KP-HED) in Dogs and Cats |
|------------------------|------------------------|
| 3. Anterior subcapsular / cortical punctate sutureline cataract. appears from 4-5 y.o., increasing incidence with age, never affecting vision | 3. unknown |
| **F** Progressive Retinal Atrophy (PRA) | Fundus changes seen from 2-4 y.o. ERG abnormal at 18 month of age |
| **G** 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 |
| **H** 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. Total RD seen in Europe but rare in the USA. Milder forms seen in the USA |
| **I** Retinal dysplasia – folds/geographic | Inherited defect of the Labrador Retriever and Samoyed affecting both the eyes and the | Presumed autosomal dominant |
| | | COL9A3 |
| | | 25,26,27,28, 29,30,31,32, 33,34,35, 36,37,38,39 |

Unknown NO 22,23,24,38,39

Autosomal recessive prcd 11,12,13,14, 15,16,17,18, 19, 20,21,38,39

Presumed Autosomal recessive NO 25,26,27,28, 29,30,31,32, 33,34,35, 38,39
graphic/ detached (with skeletal defects) RD/OSD

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.

with incomplete penetrance

J

Macular corneal dystrophy (MCD)

Middle-aged dogs. They develop cloudy eyes due to an abnormal accumulation of glycosaminoglycans

Autosomal recessive

CHST6

40

K

Achromatopsia type 2 (ACHM2-LR)

Day blindness and photophobia; 8-10 weeks of age

Autosomal recessive

CNGA3

41

**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)**

**Known and Presumed Hereditary Eye Diseases (KP-HED) in Dogs and Cats**
<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Distichiasis</td>
<td>ACVO genetics committee</td>
</tr>
<tr>
<td>B Ectropion</td>
<td>ACVO genetics committee</td>
</tr>
<tr>
<td>C Corneal dystrophy -epithelial/stromal</td>
<td>ACVO genetics committee</td>
</tr>
<tr>
<td>D Persistent Pupillary Membranes</td>
<td>ACVO genetics committee</td>
</tr>
<tr>
<td>E Persistent hyaloid artery</td>
<td>ACVO genetics committee</td>
</tr>
<tr>
<td>F PHPV/PHTVL</td>
<td>ACVO genetics committee</td>
</tr>
<tr>
<td>G Vitreous degeneration</td>
<td>ACVO genetics committee</td>
</tr>
<tr>
<td>H Uveal cysts</td>
<td>ACVO genetics committee</td>
</tr>
</tbody>
</table>

**References**


