Tests for Hereditary Diseases in Sighthounds

Tests for Hereditary Diseases in Sighthounds: Genetic and Physical

Fortunately, sighthounds are generally a healthy breed. However, there are certain health issues that every potential owner should be aware of before acquiring one. PRA (progressive retinal atrophy), patellar luxation, alopecia, dental problems, and broken legs are not uncommon. Responsible breeders do their best to minimize the risk of health problems in their lines. Thanks to science, tests for many hereditary diseases are now available.

For sighthounds, two physical tests are highly recommended:
- Patellar Luxation
- General Eye Health Check (ESVO)

These tests are performed by certified veterinary experts on dogs over 14 months old but are most informative when done at an older age, after 3-4 years.

Currently, genetic tests for four hereditary diseases have been developed for sighthounds:
- Familial Enamel Hypoplasia of Italian Greyhounds (FEH)
- Progressive Retinal Atrophy (PRA-IG1)
- Primary Closed Angle Glaucoma (PCAG)
- Primary Lens Luxation (PLL)

These tests can be done even at a young puppy age (when a DNA sample can be taken) and are valid for the dog's lifetime, as the genome does not change throughout life.

The most comprehensive set of genetic tests for sighthounds is offered by the US Davis laboratory. This is where we test our dogs.

Important! When ordering a PRA test, ensure it is specifically designed for sighthounds, as there are about a dozen different PRA tests for various breeds.

Familial Enamel Hypoplasia of Italian Greyhounds (FEH)
This hereditary genetic disease affects the dental enamel and is found in sighthounds. It is characterized by thin enamel that easily chips and discolors. Often, the teeth are unusually small, pointed, and prone to increased spacing with age. It is estimated that 14% of Italian Greyhounds suffer from FEH, and 30% are carriers.

FEH follows an autosomal recessive inheritance model.

Primary Closed Angle Glaucoma (PCAG)
Primary closed angle glaucoma (PCAG) is a hereditary condition resulting from a rapid increase in eye pressure, causing loss of optic nerve function and retinal ganglion cells. The onset is sudden, painful, and if untreated, will lead to blindness. The average age of dogs at diagnosis is 3.9 years (ranging from 0.5 to 6 years).

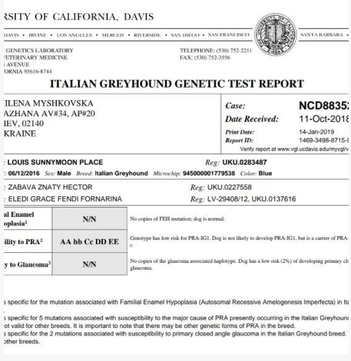
PCAG follows the same autosomal recessive inheritance model as FEH.

Primary Lens Luxation (PLL)
Primary lens luxation (PLL) is a painful hereditary eye condition where the lens shifts from its normal position, causing inflammation and glaucoma. PLL results from a single base change mutation in the ADAMST17 gene. If untreated, it can quickly lead to blindness. PLL usually occurs spontaneously between 3-8 years, although both eyes may not be affected simultaneously. Watery, red, and teary eyes may indicate lens dislocation requiring veterinary intervention. Dogs with only one copy of the mutation typically show no signs of the disease but may occasionally develop PLL.

The PLL mutation is widespread among terrier breeds, and genetic testing is recommended for this group. PLL is also known to occur in several other breeds, including sighthounds.

PLL follows the same autosomal recessive inheritance model as FEH.

These are all the currently known breed-specific genetic tests for sighthounds. We conduct these tests on all our sighthounds at the US Davis laboratory. Results can be seen on the dogs' personal pages and in the Breed Archive.



RSITY OF CALIFORNIA, DAVIS

DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO • SANTA BARBARA

GENETICS LABORATORY
TERINARY MEDICINE
AVENUE
ORNIA 95616-8744

TELEPHONE: (530) 752-2211
FAX: (530) 752-3556

ITALIAN GREYHOUND GENETIC TEST REPORT

ILENA MYSHKOVSKA
AZHANA AV#34, AP#20
IEV, 02140
KRAINE

Case: NCD8835
Date Received: 11-Oct-2018
Print Date: 14-Jan-2019
Report ID: 1469-3498-8715-6
Verify report at www.vgl.ucdavis.edu/myvgl/v

: LOUIS SUNNYMOON PLACE Reg: UKU.0283487
: 05/12/2016 Sex: Male Breed: Italian Greyhound Microchip: 945000001773538 Color: Blue
: ZABAVA ZNATY HECTOR Reg: UKU.0227558
: ELEDI GRACE FENDI FORNARINA Reg: LV-29408/12, UKU.0137616

al Enamel ophasia[1]	N/N
ility to PRA[2]	AA bb Cc DD EE
y to Glaucoma[3]	N/N

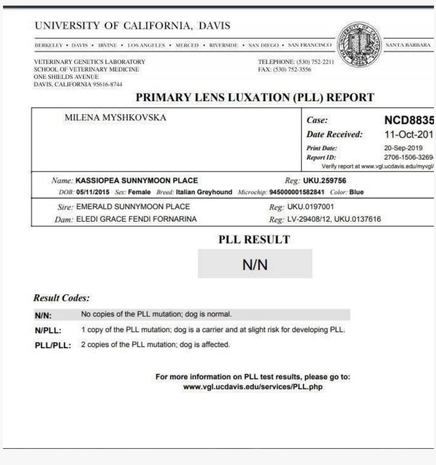
No copies of FEH mutation; dog is normal.

Genotype has low risk for PRA-IG1. Dog is not likely to develop PRA-IG1, but is a carrier of PRA-
c.

No copies of the glaucoma associated haplotype. Dog has a low risk (2%) of developing primary cl
glaucoma.

specific for the mutation associated with Familial Enamel Hypoplasia (Autosomal Recessive Amelogenesis Imperfecta) in It

specific for 5 mutations associated with susceptibility to the major cause of PRA presently occurring in the Italian Greyhound
or valid for other breeds. It is important to note that there may be other genetic forms of PRA in the breed.
specific for the 2 mutations associated with susceptibility to primary closed angle glaucoma in the Italian Greyhound breed.
other breeds.



UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO • SANTA BARBARA

VETERINARY GENETICS LABORATORY
SCHOOL OF VETERINARY MEDICINE
ONE SHIELDS AVENUE
DAVIS, CALIFORNIA 95616-8744

TELEPHONE: (530) 752-2211
FAX: (530) 752-3556

PRIMARY LENS LUXATION (PLL) REPORT

MILENA MYSHKOVSKA

Case: NCD8835
Date Received: 11-Oct-201
Print Date: 20-Sep-2019
Report ID: 2706-1506-3269
Verify report at www.vgl.ucdavis.edu/myvgl

Name: KASSIOPEA SUNNYMOON PLACE Reg: UKU.259756
DOB: 05/11/2015 Sex: Female Breed: Italian Greyhound Microchip: 945000001582641 Color: Blue
Sire: EMERALD SUNNYMOON PLACE Reg: UKU.0197001
Dam: ELEDI GRACE FENDI FORNARINA Reg: LV-29408/12, UKU.0137616

PLL RESULT

N/N

Result Codes:

N/N:	No copies of the PLL mutation; dog is normal.
N/PLL:	1 copy of the PLL mutation; dog is a carrier and at slight risk for developing PLL.
PLL/PLL:	2 copies of the PLL mutation; dog is affected.

For more information on PLL test results, please go to:
www.vgl.ucdavis.edu/services/PLL.php

Sources:

- "Italian Greyhound Health Panel" article by US Davis Veterinary Genetics Laboratory
- "Primary Lens Luxation (PLL)" article by US Davis Veterinary Genetics Laboratory