AIS PennHIP
(877) 727-6800 www.antechimagingservices.com

Owner's Copy

PennHIP Report

Referring Veterinarian: Dr Baron Jonsson	Clinic Name: Kedron Vet Clinic
Email: info@kedronvet.com.au	Clinic Address: 77 Leckie Rd
	Kedron, QLD 4031
	Phone: 6 (173) 857-8211
	Fax:6 (173) 857-1781

Patient Information

Client: Elgin, Lauren	Tattoo Num:
Patient Name: DKD Poppy	Patient ID: K10217281-3
Reg. Name: DKD Poppy	Registration Num:
PennHIP Num: 153636	Microchip Num: 978102100285178
Species: Canine	Breed: LABRADOR RETRIEVER
Date of Birth: 12 Oct 2019	Age: 17 months
Sex: Female	Weight: 58.4 lbs/26.5 kgs
Date of Study: 02 Mar 2021	Date Submitted: 05 Mar 2021
Date of Report: 05 Mar 2021	

Findings

Distraction Index (DI): Right DI = 0.35, Left DI = 0.29.

Osteoarthritis (OA): **No radiographic evidence of OA for either hip.**

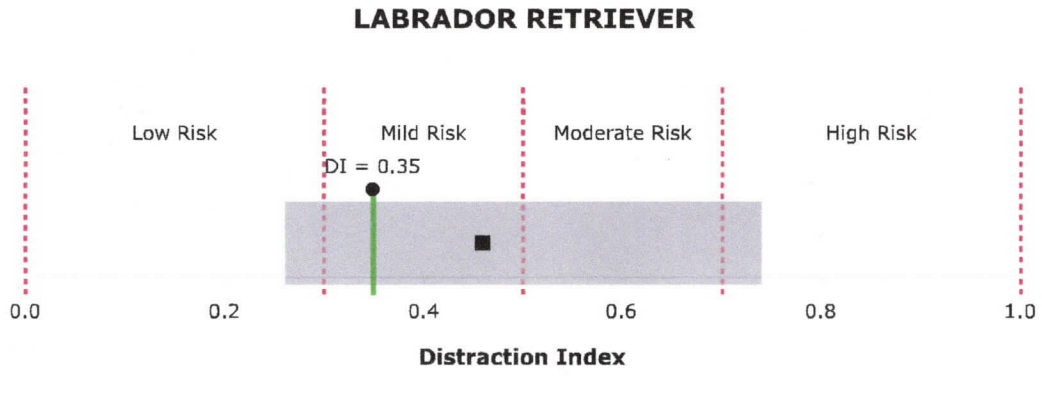
Cavitation/Other Findings: No cavitation present.

Interpretation

Distraction Index (DI): The laxity ranking is based on the hip with the greater laxity (larger DI). In this case the DI used is 0.35.

OA Risk Category: The DI is between 0.31 and 0.49. This patient is at mild risk for hip OA.

Distraction Index Chart:



BREED STATISTICS: This interpretation is based on a cross-section of 36591 canine patients of the LABRADOR RETRIEVER breed in the AIS PennHIP database. The gray strip represents the central 90% range of DIs (0.26 - 0.74) for the breed. The breed average DI is 0.46 (solid square). The patient DI is the solid circle (0.35).

SUMMARY: The degree of laxity (DI = 0.35) falls within the central 90% range of DIs for the breed. This amount of hip laxity places the hip at a mild risk to develop hip OA. **No radiographic evidence of OA for either hip.**

VETERINARY CARDIAC SERVICES
AUSTRALIA | NEW ZEALAND

Certificate of Echocardiography

This is to certify that I, Dr Geoff Nicolson BVSc (Hons I) MVETSTUD Dipl. ECVIM-CA (Cardiology), a qualified **Specialist Veterinary Cardiologist**, have today Tuesday 23rd February 2021 examined the following animal for evidence of cardiac disease:

Animal name: "POPPY" – DKD Poppy

Age/DOB: 12/10/2019 **Sex:** F **Breed:** Labrador Retriever

Colour: Yellow **Reg no:** N/A **Microchip no:** 978 102 100 284 821

Owner: Career Dogs Australia

Address: PO Box 620, North Lakes, QLD 4509

I hereby declare that the animal submitted for examination is the animal described above. Furthermore I declare I am the owner or agent of the dog

Signed: Owner/Agent _____ Date: 23/02/2021

Echocardiographic Examination
(cardiologist to complete)

Findings: Normal echocardiographic structure and function (trace MR/TR).

LVIDd 33.9 mm **LVIDs** 22.6 mm

IVSd 8.2 mm **LVFWd** 10.4 mm **LA:Ao** 1.06 **(norm. < 1.6)**

Ao Vmax 1.62 m/s **(norm. < 2m/s)** **PV Vmax** 1.04 m/s **(norm. < 2m/s)**

MR velocity N/A **(norm. 5-6m/s)** **TR velocity** N/A **(norm. < 3.0m/s)**

Certification Statement
(cardiologist to complete)

The above animal has no echocardiographic evidence of cardiac disease. Fit for breeding.

1) The above animal has no echocardiographic evidence of cardiac disease
2) The above animal has echocardiographic changes, which I consider to be of no significance with regards to breeding
3) The above animal has an echocardiographic abnormality, which I consider makes it unsuitable for breeding purposes

Dr Geoff Nicolson
BVSc (Hons I) MVETSTUD Dipl. ECVIM-CA (Cardiology)
Specialist Veterinary Cardiologist

Lavelle's Diagnostic Imaging

Dr Roger B Lavelle MA Vet MB MRCVS DVR FANZCVS FAVA (ABN 755 752 02799)

ANKC Canine Hip and Elbow Dysplasia Report #31297

Dog Details

Registered Name	DKD POPPY		
Registered Number	M/C NO: 978100285178	DOB	12 Oct 2019
Microchip Number	978100285178		
Breed	Golden Retriever	Sex	F
Owner Name	Elgie, Lauren		
Owner Registration			
Contact Name	Elgie, Lauren	Email	lauren@careerdogs.com.au
Contact Address	PO Box 620, NORTHLAKES, QLD		

Referring Veterinarian Details

Veterinarian Name	Dr Baron Johnsson, Kedron Veterinary Clinic		
Veterinarian Registration		Email	info@kedronvet.com.au

Radiologist Details

Radiologist Name	Dr Roger B Lavelle		
Radiologist Practice	Lavelle's Diagnostic Imaging		
Address	80 Ashworths Rd, Lancefield, VIC		
Telephone Number	61 3 5429 1682	Email	lavellesdiagnosticimaging@gmail.com

General Details

Date Xrayed	02 Mar 2021	Film Quality	Satisfactory
Date Received	11 Mar 2021	Positioning	Satisfactory
Date Returned	11 Mar 2021		

Examination Results

Hip Joint	Right	Left	Hips Comment	
Norberg Angle	**	**		
Subluxation	**	**		
Cranial acetabular edge	**	**		
Dorsal acetabular edge	**	**		
Cranial effect acetabular rim	**	**		
Acetabular fossa	**	**		
Caudal acetabular edge	**	**		
Femoral head/neck exostosis	**	**	The current five year breed average for the Golden Retriever is 10.97 and the median is 9.00.	
Femoral head re-contouring	**	**		
Total	**	**	**Total Score**	**

Elbow Joint	Mm of change	Grade	UAP	Comment
Right elbow	0	0	No	
Left elbow	0	0	No	

Payment Details Electronic Transfer: Account Name: Lavelles Diagnostic Imaging – BSB 063 541 Account No: 10608568 [ ] or Cheque [ ]. Results available when payment received.	R. B. Lavelle Dr Roger B Lavelle MA Vet MB MRCVS DVR FANZCVS FAVA

 ** Indicates elbows were not examined.

GENETIC ANALYSIS REPORT

OWNER'S DETAILS

Lauren Elgie
35 WALLAROO CIRCUIT NORTH LAKES
BRISBANE
QLD 4509 Australia

COLLECTION DETAILS

Case Number	:	20B31252
Date of Test	:	8th Apr 2020
Collected By	:	
Approved Collection	:	**NO**

ANIMAL'S DETAILS

Registered Name	: DKD POPPY
Pet Name	: POPPY
Registration Number	:
Breed	: Labrador Retriever
Microchip Number	: 978102100284821
Sex	: Intact Female
Date of Birth	: 12th Oct 2019
Colour	: YELLOW

Sample with Lab ID Number 20B31252 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported:

GENETIC ANALYSIS SUMMARY

[1] **Please Note:** This is a summary disease and trait report. To view more details on each test, including a DNA profile, please log in to your account and view the detailed single DNA report.

TESTS REPORTED	RESULT [1]
Urinary system / Urologic - Associated with the kidneys, bladder, ureters and urethra	
CANINE HYPERURICOSURIA	NEGATIVE / CLEAR [NO VARIANT DETECTED]
CYSTINURIA (SLC3A1) LABRADOR RETRIEVER TYPE	NEGATIVE / CLEAR [NO VARIANT DETECTED]
Musculoskeletal - Associated with muscles, bones and associated structures	
CENTRONUCLEAR MYOPATHY (LABRADOR RETRIEVER TYPE)	NEGATIVE / CLEAR [NO VARIANT DETECTED]
MYOTUBULAR MYOPATHY X-LINKED (LABRADOR RETRIEVER TYPE)	NEGATIVE / CLEAR [NO VARIANT DETECTED]
SKELETAL DYSPLASIA 2 (MILD DISPROPORTIONATE DWARFISM)	NEGATIVE / CLEAR [NO VARIANT DETECTED]
Haemolymphatic - Associated with the blood and lymph	
CONGENITAL MACROTHROMBOCYTOPENIA	NEGATIVE / CLEAR [NO VARIANT DETECTED]
ELLIPTOCYTOSIS B-SPECTRIN (LABRADOR RETRIEVER/POODLE TYPE)	NEGATIVE / CLEAR [NO VARIANT DETECTED]
Nervous system / Neurologic - Associated with the brain, spinal cord and nerves	
CONGENITAL MYASTHENIC SYNDROME (LABRADOR RETRIEVER TYPE)	NEGATIVE / CLEAR [NO VARIANT DETECTED]
DEGENERATIVE MYELOPATHY	NEGATIVE / CLEAR [NO VARIANT DETECTED]
EXERCISE INDUCED COLLAPSE (RETRIEVER TYPE)	NEGATIVE / CLEAR [NO VARIANT DETECTED]
NARCOLEPSY (LABRADOR)	NEGATIVE / CLEAR [NO VARIANT DETECTED]
Dermatologic - Associated with the skin	
HEREDITARY NASAL PARAKERATOSIS/DRY NOSE (LABRADOR RETRIEVER TYPE)	NEGATIVE / CLEAR [NO VARIANT DETECTED]
Ophthalmologic - Associated with the eyes and associated structures	
MACULAR CORNEAL DYSTROPHY (LABRADOR TYPE)	NEGATIVE / CLEAR [NO VARIANT DETECTED]
PROGRESSIVE ROD CONE DEGENERATION (PRCD) - PRA	NEGATIVE / CLEAR [NO VARIANT DETECTED]
Metabolic - Associated with the enzymes and metabolic processes of cells	
MALIGNANT HYPERTHERMIA	NEGATIVE / CLEAR [NO VARIANT DETECTED]
PYRUVATE KINASE DEFICIENCY (LABRADOR TYPE)	NEGATIVE / CLEAR [NO VARIANT DETECTED]

Trait (Associated with Phenotype)	
A LOCUS (FAWN/SABLE;TRI/TAN POINTS)	a^y/a - FAWN/RED/SABLE CARRIES SOLID BLACK/BICOLOUR
BROWN (345DELPRO) DELETION	B^d/B^d - DOES NOT CARRY BROWN or CHOCOLATE [DELETION]
BROWN (GLNT331STOP) STOP CODON	B^s/B^s - DOES NOT CARRY BROWN or CHOCOLATE [STOP CODON]
BROWN (SER41CYS) INSERTION CODON	B^c/B^c - DOES NOT CARRY BROWN or CHOCOLATE [INSERTION]
D (DILUTE) LOCUS	D/D - NO COPY OF MLPH-D ALLELE (DILUTE) - PIGMENT IS NORMAL
DILUTE D2 VARIANT (CHOW CHOW TYPE)	D^2/D^2 - NO COPY OF d2 ALLELE (DILUTE) - PIGMENT IS NORMAL
E LOCUS - (CREAM/RED/YELLOW)	e/e - YELLOW [CAN RANGE FROM WHITE/WHITE to FOX RED]
K LOCUS (DOMINANT BLACK)	KB / k^y or k^{br}- ONE COPY DOMINANT BLACK (KB) and ONE COPY OF NON-BLACK (k^y) dog MAY be brindled
LONG HAIR GENE (CANINE C95F)	NEGATIVE - NOT SHOWING THE PHENOTYPE

RESULTS REVIEWED & CONFIRMED BY:

Dr. Noam Pik BVSc, BMVS, MBA, MACVS

George Sofronidis BSc(Hons)

ORIVET GENETIC PET CARE
Suite 102A/ 163 - 169 Inkerman Street,
St Kilda 3182, Australia
t +61 3 9534 1544 | **f** +61 3 9525 3550
e admin@orivet.com
www.orivet.com

ORIVET INTERNATIONAL - USA
20 Church Street,
Hartford, CT 06103
t +844-4 ORIVET (Ext. 105)
e usa@orivet.com
www.orivet.com

ORIVET INTERNATIONAL - JAPAN
3-6-2, Kumata, Higashisumiyoshi-ku,
Osaka-shi, Osaka 546-0002, Japan
t 080 8312 41187 (Japan)
e japan@orivet.com.au
www.orivet.jp

Authentication Code

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EXPLANATION of RESULT TERMINOLOGY

The terms below are provided to help clarify certain results phrases on your genetic report. The phrases below are those as reported by Orivet and may vary from one laboratory to the other.

NEGATIVE / CLEAR [NO VARIANT DETECTED]
No presence of the variant (mutation) has been detected. The animal is clear of the disease and will not pass on any disease-causing mutation.

CARRIER [ONE COPY OF THE VARIANT DETECTED]
This is also referred to as HETEROZYGOUS. One copy of the normal gene and copy of the affected (mutant) gene has been detected. The animal will not exhibit disease symptoms or develop the disease. Consideration needs to be taken if breeding this animal - if breeding with another carrier or affected or unknown then it may produce an affected offspring.

POSITIVE / AT RISK [TWO COPIES OF THE VARIANT DETECTED]
Two copies of the disease gene variant (mutation) have been detected also referred to as HOMOZYGOUS for the variant. The animal may show symptoms (affected) associated with the disease. Appropriate treatment should be pursued by consulting a Veterinarian.

POSITIVE HETEROZYGOUS [ONE COPY OF THE DOMINANT VARIANT DETECTED]
Also referred to as POSITIVE ONE COPY or POSITIVE HETEROZYGOUS. This result is associated with a disease that has a dominant mode of inheritance. One copy of the normal gene (wild type) and affected (mutant) gene is present. Appropriate treatment should be pursued by consulting a Veterinarian. This result can still be used to produce a clear offspring.

POSITIVE HOMOZYGOUS [TWO COPIES OF THE DOMINANT VARIANT DETECTED]
Also referred to as POSITIVE HOMOZYGOUS. Two copies of the disease gene variant (mutant) have been detected and the animal may show symptoms associated with the disease. Please Note: This disease has dominant mode of inheritance so if mated to a clear animal ALL offspring with be AFFECTED – HETEROZYGOUS ONE COPY.

NORMAL BY PARENTAGE HISTORY
The sample submitted has had its parentage verified by DNA. By interrogating the DNA profiles of the Dam, Sire and Offspring this information together with the history submitted for the parents excludes this animal from having this disease. The controls run confirm that the dog is NORMAL for the disease requested.

NORMAL BY PEDIGREE
The sample submitted has had its parentage verified by Pedigree. The pedigree has been provided and details (genetic testing reports) of the parents have been included. Parentage could not be determined via DNA profile as no sample was submitted.

NO RESULTS AVAILABLE
Insufficient information has been provided to provide a result for this test. Sire and Dam information and/or sample may be required. This result is mostly associated with tests that have a patent/license and therefore certain restrictions apply. Please contact the laboratory to discuss.

INDETERMINABLE
The sample submitted has failed to give a conclusive result. This result is mainly due to the sample failing to “cluster” or result in the current grouping. A recollection is required at no charge.

DNA PROFILE
Also known as a DNA fingerprint. This is unique for the animal. No animal shares the same DNA profile. An individual’s DNA profile is inherited from both parents and can be used for verifying parentage (pedigrees). This profile contains no disease or trait information and is simply a unique DNA signature for that animal.

PARENTAGE VERIFICATION
QUALIFIES/CONFIRMED or DOES NOT QUALIFY/EXCLUDED
Parentage is determined by examining the markers on the DNA profile. A result is generated and stated for all DNA parentage requests. Parentage confirmation reports can only be generated if a DNA profile has been carried out for Dam, Offspring and possible Sire/s.

PENDING
Results for this test are still being processed. Some tests are run independently and are reported at a later date. When completed, the result will be emailed.
APPROVED COLLECTION METHOD (NO)
The sample submitted for testing HAS NOT met the requirements recommended by member bodies for the DNA collection process.

TRAIT (PHENOTYPE)
A feature that an animal is born with (a genetically determined characteristic). Traits are a visual phenotype that range from colour to hair length, and also includes certain features such as tail length. If an individual is AFFECTED for a trait then it will show that characteristic eg. AFFECTED for the B (Brown) Locus or bb will be brown/chocolate.

POSITIVE – SHOWING THE PHENOTYPE
The animal is showing the trait or phenotype tested.

CLARIFICATION OF GENETIC TESTING

The goal of genetic testing is to provide breeders with relevant information to improve breeding practices in the interest of animal health. However, genetic inheritance is not a simple process, and may be complicated by several factors. Below is some information to help clarify these factors.

1) Some diseases may demonstrate signs of what Geneticists call “genetic heterogeneity”. This is a term to describe an apparently single condition that may be caused by more than one mutation and/or gene.
2) It is possible that there exists more than one disease that presents in a similar fashion and segregates in a single breed. These conditions - although phenotypically similar - may be caused by separate mutations and/or genes.
3) It is possible that the disease affecting your breed may be what Geneticists call an “oligogenic disease”. This is a term to describe the existence of additional genes that may modify the action of a dominant gene associated with a disease. These modifier genes may for example give rise to a variable age of onset for a particular condition, or affect the penetrance of a particular mutation such that some animals may never develop the condition.
The range of hereditary diseases continues to increase and we see some that are relatively benign and others that can cause severe and/or fatal disease. Diagnosis of any disease should be based on pedigree history, clinical signs, history (incidence) of the disease and the specific genetic test for the disease.
Penetrance of a disease will always vary not only from breed to breed but within a breed, and will vary with different diseases. Factors that influence penetrance are genetics, nutrition and environment. Although genetic testing should be a priority for breeders, we strongly recommend that temperament and phenotype also be considered when breeding.

Orivet Genetic Pet Care aims to frequently update breeders with the latest research from the scientific literature. If breeders have any questions regarding a particular condition, please contact us on **(03) 9534 1544** or **admin@orivet.com** and we will be happy to work with you to answer any relevant questions.