Orthopedic Foundation for Animals
LAB REPORT – DEGENERATIVE MYELOPATHY (DM)

A Not-For-Profit Organization

REO'S MISS HERSHEY'S KISS
registered name

BOXER
breed

FAWN & WHITE
color

981020001058624981
tattoo/microchip/DNA profile

1327580
application number

1005841
film/case no(s)

WS21666104
registration number

F
sex

3/30/2007
date of birth

19
age at evaluation in months

5/13/2009
date of report

Owner
PAULA VANDERVOORT
3515 URBAN WOODS TRAIL
HOUSTON, TX 77008

Veterinarian

DEGENERATIVE MYELOPATHY (DM) DNA ANALYSIS

BASED ON DNA ANALYSIS, THE LAB FINDINGS ARE:

Homozygous A/A – At Risk for Developing DM	√
Indeterminate/Equivocal Results	

Please see the accompanying letter for a further explanation of At-Risk (A/A) test results. Owners of At-Risk dogs are strongly encouraged to share this information with their veterinarian, and seek genetic counseling when considering this dog for inclusion in a breeding program.

Greg Keller DVM

G.G. KELLER, DVM, MS, DACVR
CHIEF OF VETERINARY SERVICES

DEGENERATIVE MYELOPATHY (DM)

Your dog has been tested for the mutation identifying susceptibility to Degenerative Myelopathy (DM) based on a DNA sample submission. The enclosed report lists the laboratory findings.

Explanation of results:

NORMAL (N/N): This dog is homozygous N/N, with two normal copies of the gene. In the seven breeds studied at the University of Missouri in depth so far, dogs with test results of N/N (Normal) have never been confirmed to have DM. This dog can only transmit the normal gene to its offspring, and it is unlikely that this dog or its offspring will ever develop DM.

CARRIER (A/N): This dog is heterozygous A/N, with one mutated copy of the gene and one normal copy of the gene, and is classified as a carrier. In the seven breeds studied at the University of Missouri in depth so far, dogs with test results of A/N have never been confirmed to have DM. While it is highly unlikely this dog will ever develop DM, this dog can transmit either the normal gene or the mutated gene to its offspring.

AT-RISK (A/A): This dog is homozygous A/A, with two mutated copies of the gene, and is at risk for developing Degenerative Myelopathy (DM). The research has shown that all dogs in the research study with confirmed DM have had A/A DNA test results, however, not all dogs testing as A/A have shown clinical signs of DM. DM is typically a late onset disease, and dogs testing as A/A that are clinically normal may still begin to show signs of the disease as they age. Some dogs testing A/A did not begin to show clinical signs of DM until they were 15 years of age. Research is ongoing to estimate what percentage of dogs testing as A/A will develop DM within their lifespan. At this point, the mutation can only be interpreted as being at risk of developing DM within the animal's life. For dogs showing clinical signs with a presumptive diagnosis of DM, affected (A/A) test results can be used as an additional tool to aid in the diagnosis of DM. Dogs testing Affected (A/A) can only pass the mutated gene on to their offspring.

Guidelines for Breeding

Owners with dogs testing as Carriers (A/N), or At-Risk (A/A) are strongly encouraged to share these results with their attending veterinarian and seek genetic counseling when making breeding decisions.

The "A" (mutated) allele appears to be very common in some breeds. In these breeds, an overly aggressive breeding program to eliminate dogs testing A/A or A/N might be devastating to the breed as a whole because it would eliminate a large fraction of the high quality dogs that would otherwise contribute desirable qualities to the breed. Nonetheless, DM should be taken seriously. It is a fatal

disease with devastating consequences for the dog, and can be a trying experience for the owners that care for them. A realistic approach when considering which dogs to select for breeding would be to treat the test results as one would treat any other undesirable trait or fault. Dogs testing At-Risk (A/A) should be considered to have a more serious fault than those testing as Carriers (A/N). Incorporating this information into their selection criteria, breeders can then proceed as conscientious breeders have always done: make their breeding selections based on all the dog's strengths and all the dog's faults. Using this approach and factoring the DM test results into the breeding decisions should reduce the prevalence of DM in the subsequent generations while continuing to maintain and improve upon positive, sought after traits.

We recommend that breeders take into consideration the DM test results as they plan their breeding programs; however, they should not over-emphasize the test results. Instead, the test result should be one factor among many in a balanced breeding program.

Additional information on the disease can be found on the University of Missouri CVM website: www.caninegeneticdiseases.net/DM/maindm.htm