Important Update: Juvenile Dilated Cardiomyopathy

July 15, 2016

Dear Manchester Terrier and English Toy Terrier Enthusiasts,

We are pleased to share the exciting news that Dr. Eva Furrow and her team at the University of Minnesota have identified the genetic mutation responsible for Juvenile Dilated Cardiomyopathy (JDCM) in Toy Manchester Terriers/English Toy Terriers and a test is now available for breeding stock!

As suspected, the JDCM mutation has a simple recessive inheritance. This means that a dog can be: clear of JDCM (no copies of the mutation), an unaffected carrier (one copy of the mutation), or affected by JDCM (two copies of the mutation). The relationship between affected status and death appears to be very high. As a result, breeders should anticipate that affected puppies will die, likely before reaching one year of age. Carriers are healthy but can produce JDCM affected puppies when bred to other carriers.

Over the past year, DNA samples have been submitted to the University of Minnesota in support of research into both xanthinuria and JDCM. All of these samples were used to create and proof the JDCM test, therefore owners who submitted samples in support of either project will receive test results. These results will be sent directly to each individual owner by the researchers and are strictly confidential. **No one on the JDCM committee will know your dog's test results; that information is confidential between you and the researchers at the University of Minnesota.**

Testing is now openly available through the University of Minnesota's Genetics Lab. The fee for the test is $65 and reduced pricing is available for testing of multiple dogs or if owners would like to test for both JDCM and xanthinuria. Please visit the following link for more information: http://z.umn.edu/jdcm

We are encouraging all breeders to test their breeding stock and avoid breeding carriers to other carriers. **However, it is very important that breeders KEEP their carriers and carefully breed them to CLEAR dogs. While breeders are encouraged to select for clear dogs to a degree, they should NOT make it their goal to completely eliminate carriers from their breeding programs.**

Why? At this point, 14 dogs confirmed to have died of JDCM have been tested. All 14 had two copies of the mutation. The lab has tested roughly 100 healthy adult Toy Manchesters and 17 were identified as carriers, while the rest were clear. Those early results suggest that approximately 15 to 20% of Toy Manchester Terriers may be carriers of the mutation. **Immediate elimination of all carriers from our already small gene pool will dramatically and negatively impact our breed's genetic diversity, making our breed vulnerable to increased frequency of other genetic diseases.** In addition, genes are linked to each other. There is no way to know what good traits linked to the JDCM gene could be lost to our breed if carriers are permanently eliminated from the gene pool. Therefore, breeders are encouraged to use the JDCM test as a screening tool but cautioned against using it to eliminate breeding dogs which are otherwise excellent examples of the breed.

Reaching this point took the support of the worldwide community who shared information about their experiences with JDCM, provided samples from affected dogs and their producers, submitted DNA swabs from healthy dogs, provided much needed funds, and helped spread the word. If you can be counted in one of these categories, you should be proud of the role you played in protecting our breed. We thank you from the bottom of our hearts.

Sincere thanks are also extended to the researchers who made this discovery possible, including Dr. Eva Furrow and the genetics team at the University of Minnesota's College of Veterinary Medicine; Dr. Etienne Coté and Dr. Shannon Martinson and their colleagues at the University of Prince Edward Island's Atlantic Veterinary College; and Dr. Paula Henthorn and Dr. Meg Sleeper at the University of Pennsylvania. Their willingness to tackle a poorly understood problem in a very small breed with limited available funds is a testament to their commitment to animal welfare and scientific inquiry.

For more information about juvenile cardiomyopathy, including answers to frequently asked questions, details on the study, and resources to assist breeders in using test results, please visit http://www.canadamt.com/juvenile-cardiomyopathy-study.html. If you have questions, please reach out to Michelle Barlak at michelle@maximaldog.com or the University of Minnesota Canine Genetics Lab at cgl@umn.edu or 612-624-5322.

Respectfully,

The Juvenile Dilated Cardiomyopathy Study Leads