



**May 1, 2012**

**Dear Members NSDTRC-Canada,**

We are pleased to inform you that the Orthopedic Foundation for Animals (OFA- [www.OFFA.org](http://www.OFFA.org)) is now offering DNA testing for two important diseases, Cleft palate (CP1) and Juvenile Addison's Disease (JADD) for the Nova Scotia Duck Tolling Retriever.

### **JADD**

Scientists from the Bannasch Laboratory at the University of California, Davis have developed a DNA test available through the OFA to identify carriers of *JADD* in the Nova Scotia Duck Tolling Retriever. The juvenile form of Addison's disease is genetically distinguishable from the adult onset form in that all dogs who develop the juvenile form have two identical copies of a specific region within their genome. Researchers from Dr. Bannasch's lab identified numerous markers within this region and compiled these markers into a haplotype based test in order to identify dogs that carry *JADD*. In addition to the markers that distinguish affected puppies from unaffected ones, it is believed that the actual mutation responsible for *JADD* is included in this haplotype test.

The mutation responsible for *JADD* causes a change the amino acid sequence in a highly conserved region of a protein. This mutation is not present in any other breeds of dogs based on testing of over 250 individual animals in 80 different breeds. However, additional research is needed to demonstrate how this mutation causes *JADD* in Tollers. We offer the test now to help breeders avoid producing affected puppies while we continue to understand the mechanism of the mutation.

This form of the disease is inherited as an autosomal recessive disease meaning that affected puppies inherited one mutant copy of this gene from each of their parents. In addition, *JADD* is not completely penetrant meaning that not all puppies with two copies of the mutation will go on to develop the disease. Based upon our research, approximately 75% of puppies with two copies of the mutation and haplotype will develop Addison's disease.

### **Cleft Palate**

Scientists from the Bannasch Laboratory at the University of California, Davis have discovered the genetic cause of ONE FORM of cleft palate in the Nova Scotia Duck Tolling Retriever. Dogs with this form of cleft palate have a large insertion into a gene known to affect the proper development of the palate. This mutation is not present in any other breed based on testing conducted on over 300 individual animals of over 80 different dog breeds.

Cleft palate caused by *CP1* is a simple autosomal recessive disease meaning that an affected puppy has inherited one mutant copy of the gene from each parent.

Both tests are now available through the OFA. The cost for a single test is \$80 and for both tests the cost is \$150. Tests are batched in sets of 48 in order to keep costs low. The turnaround time for the test will depend upon the number of test requests but is likely to be 2-4 weeks. Included in the cost of the tests is automatic reporting to the OFA database.

Information about the tests and ordering is available on the OFA web site at the following links:

CP1 - <https://secure.offa.org/dnatesting/cp1.html>

JADD - <https://secure.offa.org/dnatesting/jadd.html>

Sincerely,

Danika Bannasch DVM PhD, Professor School of Veterinary Medicine, University of California, Davis

Eddie Dziuk, Chief Operating Officer of the Orthopedic Foundation for Animals