

Gene Linked to Exercise-Induced Collapse in Labs

Discovery may help breeders reduce the number of Labrador Retrievers with the trait.

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Researchers at the University of Minnesota College of Veterinary Medicine and the University of Saskatchewan's Western College of Veterinary Medicine say they have identified a gene in Labrador Retrievers that is highly associated with the syndrome called exercise-induced collapse (EIC).

Labradors affected with EIC — about 3 percent to 5 percent of Labs are said to have this condition — may start to lose control of their hind limbs after intense hunting or retrieving exercises. In most cases, their legs get wobbly and the limbs give out. In rare cases, they may die, according to researchers.

“This is groundbreaking because this is the first naturally occurring mutation of this gene identified in any mammal,” said James Mickelson, Ph.D., professor of veterinary sciences at the University of Minnesota and co-principal investigator on the study. “Its discovery could offer insight into normal as well as abnormal neurobiology in both animals and humans.”

The findings will also help dog breeders gradually reduce the number of Labradors with the trait in future generations. Researchers have determined that up to 30 percent of Labradors are carriers of the mutation, and they have developed a genetic test to indicate whether dogs have the normal or mutated forms of the gene.

“The test can not only help confirm the diagnosis, but it can also help dog breeders ensure that no dogs inherit two copies of the mutated gene,” said Edward Patterson, DVM, Ph.D., assistant professor of veterinary medicine at the University of Minnesota and co-principal investigator of the study.

Owners can have their dog tested through their veterinarian by submitting a blood sample to the University of Minnesota Veterinary Diagnostic Laboratory.

The researchers are now determining what other breeds might be affected. For instance, Chesapeake Bay and Curly Coated Retrievers, both of which are closely related to Labradors, have also been found to have the mutation.

The research, published in the journal *Nature Genetics*, was funded by the Morris Animal Foundation, the American Kennel Club Canine Health Foundation and the Western College of Veterinary Medicine's Companion Animal Health Fund.

The research team also included Kari Ekenstedt, DVM, Katie Minor, RN, and Anna Tchernatynskaia, all from the University of Minnesota; Susan Taylor, DVM, from Western College of Veterinary Medicine; and G. Diane Shelton, DVM, Ph.D., from the University of California San Diego School of Medicine.