

A DNA Test for Shaking Puppy Spongiform LeucoEncephaloMyelopathy (SLEM) in Border Terriers

From the time they begin to support weight and attempt to walk, Border Terriers with SLEM show severe tremors predominantly in the hind limbs creating a characteristic side-to-side shaking sometimes called “rump shaking” or “rocking horse” movements. Most affected pups die at a young age or are euthanized due to quality of life issues, although with extensive supportive care, in some rare cases affected pups can improve with time. Collaborating researchers at the University of Missouri, at the Animal Health Trust, and at Wisdom Health have identified the gene harboring the mutation responsible for this disease. The disease is a recessive trait, which means that affected puppies have inherited a defective copy of the gene from the sire and a defective copy of the gene from the dam. The researchers have developed a DNA test that identifies which dogs are genetically normal (with 2 normal copies of the gene), which dogs are otherwise healthy carriers of the disease (with one normal gene copy and one mutant gene copy), and which dogs suffer from SLEM (with 2 mutant gene copies).

Border Terrier breeders wishing to avoid producing affected puppies in future litters can use the DNA test to ensure that at least one member of a breeding pair has a normal DNA test result. In addition, the DNA test can be used to confirm a diagnosis of SLEM.

On Monday October 9th DNA testing will become available from the University of Missouri (<http://www.caninegeneticdiseases.net/> and the Animal Health Trust (<http://www.ahtdnatesting.co.uk>). Testing through a partnership with OFA (www.OFA.org , click the “ORDER DNA TESTS” link in left sidebar) should be available after mid-October. Orders placed through OFA use a cheek swab & barcoded card to collect DNA, and testing is done by U of MO. The OFA staff will send a kit and complete instructions for all orders. See the websites for further details.

The key individuals involved in this research include Dr. Ana Kolicheski and Dr. Gary Johnson (University of Missouri), Dr. Louise Burmeister (Animal Health Trust), and Dr. Oliver Forman (Wisdom Health). This research was possible because of support from the AKC Canine Health Foundation with funds from Border Terrier Club of America Donor Advised Fund, Wisdom Health, and the Kennel Club Charitable Trust. In addition, Marg Pough, Health Chair of the Border Terrier Club of America, deserves special credit for providing the researchers with key samples and persistent encouragement.