A new test developed by the Veterinary Genetics Laboratory is available to screen pug dogs for susceptibility to necrotizing meningoencephalitis (NME), an inflammatory disease of the central nervous system that is usually progressive and fatal.

This DNA analysis is not a diagnostic test. The assessment helps determine the risk of developing NME in a particular pug and provides a tool that veterinarians and breeders may use to selectively mate animals that will produce puppies at decreased risk.

Approximately 1.2% of pugs die of the disease, also known as pug dog encephalitis. Symptoms include seizures, depression, ataxia, abnormal gait and blindness.

Recent research at the laboratory reveals that susceptibility to NME is associated with the dog leukocyte antigen region of dog chromosome #12. Dogs with two identical copies of the NME-associated markers (S/S) in this region are 12 times more likely to develop NME compared with pugs possessing one or no copies of these markers. Although 11 percent of pugs has both markers, only about one in eight in this group will develop NME.

Veterinary geneticists caution breeders not to eliminate the “S” genotype entirely as this approach would lead to a considerable loss of genetic diversity in the breed.

The laboratory website provides details on the disease and the role of genetic testing: [www.vgl.ucdavis.edu/services/PDE.php](http://www.vgl.ucdavis.edu/services/PDE.php).

**Veterinary genetics testing helps owners make informed breeding decisions.**

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