

**I**  
**ILLINOIS**  
Veterinary Teaching Hospital  
COLLEGE OF VETERINARY MEDICINE

**Funded Study:** Investigation of canine epilepsy

**Study Title:** Magnetic Resonance Spectroscopic Imaging (MRSI) in the evaluation of dogs with idiopathic epilepsy

**Purpose of the Study:**

The purpose of this study is to utilize a very novel MRI technique known as SPectroscopic Imaging by exploiting spatiospectral CorElation (SPICE) to noninvasively measure brain metabolites in dogs with idiopathic epilepsy. SPICE is a form of magnetic resonance spectroscopy (MRS) that allows whole brain measurement of brain metabolites. MRS has been used in people to allow the detection of the origin of the seizure activity within the brain as well as assisting with guiding therapeutic interventions, such as surgical intervention and potential responses to antiepileptic drugs (AEDs).

**Inclusion Criteria:**

- History of 2 or more generalized tonic clonic seizures, occurring at least 24 hours apart. Dogs presenting for cluster seizure activity or status epilepticus are INELIGIBLE.
- Age of seizure onset between 6 months and 6 years of age
- Unremarkable physical and neurologic examinations
- Not on ANY medications
- No history or previous or concurrent metabolic disease(s)

**Eligibility diagnostics:**

In order to be enrolled in the study, all dogs will have to have normal lab work, including a CBC, serum chemistry, urinalysis, and pre- and post-prandial serum bile acids. Dogs with normal examinations and lab work will then undergo routine MRI of the brain and cerebrospinal fluid (CSF) collection and analysis. If the brain MRI and CSF analysis are normal, patients are fully enrolled.

**Protocol:**

Following routine brain MRI to exclude any potential structural abnormalities, SPICE image acquisition will be performed under the same general anesthesia.

**Compensation:**

For patients meeting all inclusion criteria discussed above, the cost of the entire workup (bloodwork, MRI, general anesthesia, CSF collection and analysis) totaling approximately \$2300-2500 will be covered by the study.

If a patient does NOT meet the inclusion criteria (i.e. abnormalities are found on the diagnostic workup) owners **will be responsible** for 50% of the cost of the workup. Additionally, the cost of any medications or extended hospitalization will be the responsibility of the client.

**Contact information:** Please feel free to contact the Neurology & Neurosurgery Service at [VTHNeurology@vetmed.illinois.edu](mailto:VTHNeurology@vetmed.illinois.edu) or 217-300-6892 to refer a patient or for any additional information. Referring veterinarian and client inquiries are welcome.