

Evidence for Cluster Seizure Management

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Epilepsy, especially the phenomenon known as cluster seizures, is a challenging disease for affected dogs and their families. Since approximately 30% of dogs with idiopathic epilepsy (seizures of unknown cause) continue to have seizures despite appropriate therapy with anti-seizure medications, the need for effective treatment strategies is a priority. Unfortunately, there is little scientific evidence to guide caregivers on the best treatment strategy for cluster seizures that happen at home. To address this knowledge gap, the AKC Canine Health Foundation (CHF) and its donors are funding a pilot study at North Carolina State University in which Dr. Karen Muñana and her team will compare two in-home treatment protocols to assess their effectiveness in controlling cluster seizures in dogs (*CHF Grant O3243-A: Comparison of Clorazepate and Levetiracetam as Pulse Therapy for the In-Home Management of Cluster Seizures in Dogs with Idiopathic Epilepsy: A Pilot Study*).

When a dog has a seizure that lasts more than five minutes, it's considered a medical emergency. If a dog has more than two distinct seizures over a 24-hour period, it's known as a cluster seizure. This increased seizure activity quickly becomes self-sustaining and resistant to standard anti-seizure medications. Cluster seizures can lead to serious problems like irreversible damage to the nervous system, high body temperature, low blood sugar, and low oxygen levels. They also increase the risk that a dog will experience status epilepticus, or prolonged seizure activity that usually needs rescue medication to stop.

In their Consensus Statement on the management of status epilepticus and cluster seizures in dogs and cats, the American College of Veterinary Internal Medicine recommends a multi-tiered approach to managing cluster seizures in dogs. A successful treatment plan should involve short-term and long-term medications, and address any underlying conditions or complications associated with the seizures. Short-acting medications are used to stop seizures and prevent more from happening in the short term. After that, pulse therapy (intermittent dosing) with longer-acting anti-seizure medications is used to prevent seizure recurrence while minimizing the risk of developing drug tolerance.

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December 13-15

AKC National Championship
 Orlando, FL

Upcoming Webinars

Register at akcchf.org/webinars

October 16, 23, and 30 @ 7 pm ET

Canine Breeder Excellence Seminar Track:
 Pharmacology, Nutrition, and
 Progesterone Management

Evidence for Cluster Seizure Management *continued*

Dr. Muñana's study is positioned to make a significant impact on the treatment of canine cluster seizures. By comparing two oral, in-home treatment protocols in a randomized clinical trial, this study aims to provide evidence for which medications work best to treat cluster seizures. Thirty client-owned dogs with a history of cluster seizures will participate, with their owners recording the dog's seizure frequency, medications given, and adverse effects. Dogs will receive pulse therapy with either oral clorazepate or oral levetiracetam (known by the brand name Keppra) with the goal of having no additional seizures for 24 hours after administration.

"There is a critical need for research in veterinary neurology," emphasizes Dr. Muñana. "I am inspired by the wide network of extremely committed pet owners who are focused on advancing our understanding of epilepsy to help both their dog and others suffering from the disorder."

The results of Dr. Muñana's latest CHF-funded study will provide evidence-based recommendations for the treatment of cluster seizures in dogs. "Idiopathic epilepsy is a chronic medical condition, with seizures tending to occur at a relatively young age and typically requiring lifelong management," she says. "The AKC Canine Health Foundation has provided me the opportunity to educate pet owners and veterinary care providers about epilepsy and the research being performed in this field, with our shared goal of improving the quality of life for dogs affected by epilepsy as well as their caregivers."

Stay tuned for the results of Dr. Muñana's pilot study and catch up on all the latest CHF-funded canine epilepsy research at akcchf.org/epilepsy.

Canines & Cocktails

The AKC Canine Health Foundation proudly presents **2024 Canines & Cocktails**, a highly anticipated fundraising event!

On December 12th, from 6:30 PM until 10 PM, join us at the elegant Rosen Centre on International Drive in Orlando, Florida, for an evening of celebration, philanthropy, and fun. This unique event brings together dog lovers and advocates for a relaxing night of lively entertainment, dancing, and a thrilling raffle with exciting prizes—all while raising funds for critical canine health research. Whether you're sipping on a fantastic cocktail or enjoying time with your canine enthusiast companions, your participation helps advance vital research and improve the lives of dogs everywhere.

We can't wait to see you there! Get tickets at caninesandcocktails.org or scan the QR code below.



Epilepsy Awareness Month

November is National Epilepsy Awareness Month. At the AKC Canine Health Foundation (CHF), we know that many dogs and their families are affected by this challenging disease. In fact, epilepsy is the most common medical neurologic disorder of dogs and is reported to affect one in every 100 dogs.¹

Since 1995, thanks to the generous support of donors like you, CHF has invested **more than \$3 million** to study canine epilepsy. These studies seek to better define the causes of canine epilepsy and develop more accurate diagnostics and more effective treatments for this disease.

Some of the most recent CHF-funded studies on epilepsy are:

- Measuring brain tissue stiffness and how it relates to epilepsy,
- Exploring biomarkers of drug-resistant epilepsy to quickly identify affected dogs, providing owners with a more accurate prognosis and helping clinicians begin appropriate therapies, and
- Using different technologies such as MRI and EEG to define how the brain is impacted by epilepsy and anti-seizure drugs.

Please join us this November in the fight to improve the lives of epileptic dogs and their families. Learn more about CHF-funded research and support this important work at akcCHF.org/epilepsy.

1. Heske L, Nødtvedt A, Jäderlund KH, Berendt M, Egenvall A. A cohort study of epilepsy among 665,000 insured dogs: incidence, mortality and survival after diagnosis. *Vet J*. 2014 Dec;202(3):471-6.



MISSION: *The mission of the American Kennel Club Canine Health Foundation, Inc. is to advance the health of all dogs and their owners by funding scientific research and supporting the dissemination of health information to prevent, treat and cure canine disease.*

Fighting Canine Lymphoma Together

The Golden Retriever Foundation® (GRF) hopes to inspire donors and highlight the impact of the canine health research it supports through the AKC Canine Health Foundation (CHF). One project has emerged as a particularly compelling opportunity - a new lymphoma treatment study to benefit all breeds of dogs (*CHF Grant 03144: Lomustine, Asparaginase, Procarbazine and Prednisone (LAPP) for Canine Multicentric Lymphoma: A Practical Multiagent Chemotherapy Protocol that Avoids Injectable Cytotoxics*).

“The GRF wants its donations to make as big a difference as possible,” explains Rhonda Hovan, who serves as the Golden Retriever Club of America’s research facilitator on its Health & Genetics Committee, which advises the GRF on research funding decisions. “We want to help all dogs.” This study aims to do just that by addressing a critical gap in affordable and accessible lymphoma treatment.

Currently, owners face a difficult choice when their dog is diagnosed with lymphoma. Oral prednisolone treatment can provide some relief at a low cost, but usually only extends life by a few months. Multi-drug chemotherapy offers significantly longer survival, but can be prohibitively expensive and may require referral to a specialty practice. This clinical trial is evaluating a potential middle ground: an oral multi-drug treatment protocol that could be more effective than prednisolone, at a more affordable price than standard chemotherapy, and accessible through the dog’s primary care veterinarian.

Hovan says, “Wouldn’t it be amazing if there was something that’s affordable and accessible to a large percentage of owners!”

With the potential to extend and improve the lives of countless dogs, this study has emerged as a top priority for the Golden Retriever Foundation. Please join them in supporting this and other critical CHF-funded research studies that could impact dogs’ lives in our lifetimes!

Visit akcchf.org/donate to give now.



Recent CHF Grant Highlights

Grant 03262: Dual Energy Computed Tomography and Bone Resorption Markers in Dogs with Appendicular Osteosarcoma Treated with Stereotactic Body Radiation Therapy

Principal Investigator: Tiffany W. Martin DVM, MS, DACVR; Colorado State University

Seeks to assess changes in bone density secondary to radiation therapy for bone cancer, helping clinicians and owners assess the risk of pathologic fracture.

Grant 03257: B cell Subset Analysis Through Spatial Transcriptomics with Application to B cell Disorders

Principal Investigator: Emily D. Rout, DVM, PhD; Colorado State University

Aims to compare gene expression in B cells of the immune system affected by three different diseases in order to understand disease mechanisms and develop better treatments.

Grant 03248: The Application of Magnetic Resonance Elastography in the Assessment of Dogs with Idiopathic Epilepsy

Principal Investigator: Kari D. Foss, DVM, MS; University of Illinois

Explores a method to detect changes in brain tissue stiffness or elasticity that may help us better understand what changes in the brain of epileptic dogs.

See our full research grants portfolio at akcchf.org/research.



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