

MCT Oil Helps Manage Canine Idiopathic Epilepsy

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Idiopathic epilepsy is a disease characterized by seizures with no structural brain abnormalities. It is the most common medical neurologic condition diagnosed in dogs. Unfortunately, it is reported that two-thirds of epileptic dogs continue to have seizures despite appropriate treatment. Seizures cause stress for both the affected dog and the humans caring for them. Affected dogs may exhibit behavioral problems including certain types of fear and attention-seeking behavior, or experience unwanted side effects from their anti-seizure medication such as sedation, unsteady gait, and changes in appetite. For these reasons and more, the AKC Canine Health Foundation (CHF) and its donors have invested almost \$3 million in the study of canine epilepsy – looking for more accurate diagnostics and more effective treatments.

One successful avenue of study has been exploring the use of dietary supplements to help manage idiopathic epilepsy in dogs. A survey showed that approximately two-thirds of dog owners changed their dog's diet following a diagnosis of idiopathic epilepsy, and about half of them added dietary supplements such as coconut oil or medium chain triglyceride (MCT) oil.

The ketogenic diet has shown success in treating children with epilepsy. So, CHF-funded investigator Dr. Holger Volk and his team at the Royal Veterinary College, University of London studied whether MCT oil – one component of the ketogenic diet with direct anti-seizure effects – could help epileptic dogs. “We urgently need more management options for canine epilepsy which can then be tailored to the individual patient's needs,” Dr. Volk says. “Many owners reported huge success rates when changing their epileptic dog's diet. Hence, we started to investigate the influence of diet on canine epilepsy. We used a study design similar to what you would use when developing new anti-seizure drugs.”

Dr. Volk and his team completed a clinical trial in which dogs were randomized and then fed one of two study supplements – MCT oil or a control oil (placebo) – with their regular diet for 3 months. Then after a one-week washout period of no supplementation, dogs were switched to the other supplement for an additional 3 months.

Twenty-eight client-owned dogs of various breeds and mixed breeds completed the clinical trial. The promising results have been shared in numerous peer-reviewed journals and presented at several European veterinary conferences. While taking MCT oil in addition to their regular anti-seizure medications, both seizure frequency and severity were reduced. Owners also reported improvement in medication side effects and quality of life while dogs received MCT oil. Specifically, they were better able to learn new tricks and respond to feedback while taking the supplement.

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In This Issue

MCT Oil Helps Manage Canine
 Idiopathic Epilepsy

Canines & Cocktails

2023 Clinician-Scientist Fellows

2022 Awards

Research Grant Highlights

Calendar of Events

Where to Find Us

January 28-19

AKC Meet the Breeds
 New York, NY

March 24-26

Fetch Veterinary Conference
 Charlotte, NC

MCT Oil Helps Manage Canine Idiopathic Epilepsy *continued*

Investigators also collected blood and urine samples from participating dogs to explore exactly what effects MCT oil has in the body. They identified changes in fat, protein, and ketone metabolism and neurotransmitter levels which can be used to develop additional dietary modifications for dogs with epilepsy and behavioral problems.

“We have now reproducibly shown that a group of difficult to treat dogs with idiopathic epilepsy respond to MCT diets,” Dr. Volk says.

This study demonstrates the value of canine epilepsy research to improve our understanding of the mechanisms that cause disease in dogs. Results objectively show the benefits of MCT oil supplementation in epileptic dogs and provide a road map to explore additional and more effective treatments for this challenging disease. Learn more about CHF’s commitment to epilepsy research at akcchf.org/epilepsy.

CHF Grant 02252: Investigating a Ketogenic Medium-Chain Triglyceride (MCT) Supplement for the Treatment of Drug-Resistant Canine Idiopathic Epilepsy and Its Behavioral Comorbidities

Principal Investigator: Holger Andreas Volk, DVM, PhD; previously at the Royal Veterinary College, University of London, currently at the University of Veterinary Medicine Hannover

2023 AKC Canine Health Foundation Clinician-Scientist Fellows

Established in 2013, the AKC Canine Health Foundation’s Clinician-Scientist Fellowship Program encourages and supports the next generation of canine health researchers to sustain future advancements in canine health. Visit akcchf.org/clinsci for more information. The 2023 fellows are:



Dr. Matthew Berry is a veterinary medical oncology resident and doctoral candidate at the University of Illinois College of Veterinary Medicine. Under the mentorship of Dr. Tim Fan, he will study the effects of combining a known cancer cell apoptosis (programmed cell death) inducer with radiation therapy as treatment for a variety of canine cancers.



Dr. Nolan Chalifoux is an emergency and critical care resident at the University of Pennsylvania Ryan Veterinary Hospital and Master of Science and Translational Research candidate at the Children’s Hospital of Philadelphia. Under the mentorship of Dr. Reineke, he will study advanced decontamination procedures for emergency treatment of muscle relaxant intoxication in dogs.

This fellowship is generously sponsored by owners Carolyn and Gary Koch along with breeders Kristy and Kevin Ratliff in honor of “Rumble,” GCHP Hill Country’s Let’s Get Ready To Rumble (akcchf.org/rumble).



GCHP Hill Country’s
Let’s Get Ready to
Rumble



Dr. Jennifer Heyward is a comparative ophthalmology resident at the University of Wisconsin-Madison School of Veterinary Medicine. Under the mentorship of Dr. Freya Mowat, she will study why dogs with sudden acquired retinal degeneration syndrome (SARDS) have an increased risk of blood clot formation to develop new diagnostic and treatment strategies for this disease.



Samantha Van Buren is a doctoral candidate in Animal Biology at the University of California, Davis. Under the mentorship of Dr. Anita Oberbauer, she will study the role of *MITF* gene mutations in white spotting of the haircoat and development of retinal degeneration in the Italian Greyhound.

This fellowship is generously sponsored by the Orthopedic Foundation for Animals (OFA).



Thank you to our 2022 Canines & Cocktails Sponsors!

Oh, what a night it was!

Glitz and glamour served as the backdrop to all who gathered for the 2022 Canines & Cocktails fundraising gala benefitting the AKC Canine Health Foundation (CHF). CHF's staff and Board of Directors would like to thank everyone who joined us at this event to celebrate the work CHF does throughout the year to advance the health of all dogs.

We would like to thank our many sponsors, whose generosity exceeded last year's participation, helping us to nearly double our sponsorship dollars. Thanks again to all who attended and thank you for your ongoing support of canine health research.

Last, but certainly not least, we thank our dedicated event committee chairs, Dr. and Mrs. William Truesdale. The Truesdale family's ongoing philanthropic commitment to CHF makes this event a success year after year.

Thank you again to all who supported this event. We look forward to seeing you next year!

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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.



2022 AKC Canine Health Foundation Awards

The AKC Canine Health Foundation (CHF) presents the **President's Award** annually to a person or organization that has made an exceptional contribution to advancing canine health. This year's recipient, Mari-Beth O'Neill, has dedicated much of her life to dogs as Vice President of Sport Services for the American Kennel Club, a breeder of top-producing dogs of several breeds, and dedicated supporter of CHF.

The **Distinguished Research Partner Award** is given annually to clubs or organizations for their ongoing and outstanding commitment to support canine health research. This year's recipient is the Kennel Club of Philadelphia, a long-time supporter of CHF-funded canine health research and educational programs, including their Champion Sponsorship in 2022.

The **Legacy Award** is given in special recognition of a lifelong champion for dogs and supporter of the AKC Canine Health Foundation and its mission. This year's recipients, Dr. and Mrs. William Truesdale, support CHF's mission as a board member, tireless volunteers, event hosts, and members of the Foundation's Heritage Society.

The new **Inspiration Award** is given to honor an individual creatively expanding awareness of the role that the AKC Canine Health Foundation plays in advancing canine health. Amber Koerner received the 2022 award in recognition of her annual walk-a-thon to raise awareness about canine cancer and donations for CHF-funded cancer research.

For more information on award recipients, visit akcchf.org/awards.



Mari-Beth O'Neill and her dog 'Watch'

Recent CHF Grant Highlights

Grant 03069: Optimizing GBLUP and Machine Learning Genomic Breeding Values for Health and Performance Traits in Working Dogs

Principal Investigator: Heather Huson, PhD; Cornell University

Assess the ability of different computer models to predict performance and health traits that support success in various working dog roles.

Grant 03059: Comparison of Sedated Respiratory-Gated Computed Tomography (CT) to Anesthetized Inspiratory:Expiratory Breath Hold CT in Dogs

Principal Investigator: Carol R. Reinero, DVM, PhD; University of Missouri

Determine if a sedated CT scan technique provides the same diagnostic quality for lung disease with less risk than an existing imaging technique that requires general anesthesia.

Grant 03039: Prognostic Biomarkers for the Development of Drug Resistance in Dogs with Idiopathic Epilepsy

Principal Investigator: Thomas Parmentier, DVM, PhD; Université de Montréal

Identify factors that predict drug resistance in newly diagnosed epileptic dogs to optimize treatment.

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

How You Can Help

Support the AKC Canine Health Foundation to help find better treatments, more accurate diagnoses, and an improved understanding of the mechanisms that cause disease in dogs. Whatever your capacity to give, there is a way for you to help.

Learn more at akcchf.org/how-to-help.



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