

Understanding Gallbladder Mucocele in Dogs

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You may have never heard of a gallbladder mucocele, but it is an increasingly common disease in dogs with severe consequences. The gallbladder is a small organ tucked within the liver lobes in the abdomen. Its main function is to store and secrete bile into the small intestine to help the body digest fats and fat-soluble vitamins. A mucocele forms when the gallbladder lining secretes too much of an abnormally thick mucus, blocking bile flow into the small intestine. This causes the gallbladder to fill with thick mucus, become inflamed, and potentially rupture, leading to a life-threatening emergency. The only definitive treatment is surgery to remove the gallbladder, but it comes with significant risks. Medical management using medications that thin bile secretions and treat secondary bacterial infections can be attempted, but the disease can be fatal in up to 40% of cases.

We do not understand canine gallbladder mucocele well. The fact that certain dog breeds are predisposed to mucocele formation suggests that genetic factors are involved. Age is also a risk factor, as the disease is more common in older dogs. To explore why and how gallbladder mucoceles form, the AKC Canine Health Foundation (CHF) and its donors have invested more than \$400,000 to study this disease. Identifying the cause of mucocele formation could lead to prevention and new treatment strategies, ultimately improving outcomes for affected dogs and their families.

Since gallbladder mucocele is a multi-factorial disease, researchers are studying several aspects of disease development:

- **Metabolic Abnormalities** - CHF-funded research showed that many dogs with gallbladder mucocele had hypothyroidism, high fat levels in the blood, Cushing's disease (excess cortisol production), and/or abnormal urinary protein loss. Research is underway to determine if treating these metabolic abnormalities can stop, slow, or reverse mucocele formation.

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Where to Find Us

Houston World Series of Dog Shows

July 18-20
 Houston, TX

2024 Therio Conference

July 25-27
 Oklahoma City, OK

Santa Barbara Kennel Club Dog Show

August 24-25
 Santa Barbara, CA

Tarheel Cluster

August 31 – September 1
 Raleigh, NC

ECVIM Congress

September 4-7
 Lyon, France

Upcoming Webinars

Register at akcCHF.org/webinars.

Research Advancements in Canine Athletes – Utilizing Novel Tecqologies

Presented by Dr. Arielle Pechette Markley
 August 21 @ 7 pm ET

Echocardiography to Screen for Myxomatous Mitral Valve Disease (MMVD) in Cavalier King Charles Spaniels

Presented by Dr. Michele Borgarelli
 October 2 @ 7 pm ET

Understanding Gallbladder Mucocele in Dogs *continued*

- **Environmental Toxins** - Initial studies also identified environmental toxins potentially associated with mucocele formation in dogs. Data analysis is exploring how these toxins may adversely impact gallbladder function.
- **Inflammation** - A new CHF-funded study aims to help veterinarians identify dogs with gallbladder mucocele that are likely to decompensate and become critically ill. Researchers are evaluating if blood levels of C-reactive protein, a marker of systemic inflammation, can predict clinical decline.

These studies provide an increasingly detailed picture of which dogs are likely to develop gallbladder mucocele and those that will require more aggressive therapy. The results provide veterinarians and owners with actionable information to correct and monitor underlying metabolic disorders and potentially avoid harmful toxin exposures. CHF will share the findings of these ongoing studies to improve the health of all dogs affected by gallbladder mucocele.

Learn more about this important work at akcCHF.org/research.

Canine Infectious Respiratory Disease: New Research Insights

The AKC Canine Health Foundation (CHF) is committed to addressing the evolving health needs of all dogs. In 2022 and 2023, there were increased reports of canine infectious respiratory disease (CIRD) cases in dogs in the United States. Some cases were unusually severe and did not respond to standard treatments or resolve within the usual period of time. This led to intense debate regarding whether this was a true increase in disease incidence or just more media coverage. If there was an actual increase in cases, was it caused by a new infectious agent, a decrease in canine resistance to typical respiratory disease agents following the isolation and decreased vaccination practices that occurred during the COVID-19 pandemic, or something else?

During the period of increased disease reporting, scientists at the University of New Hampshire identified genetic material from a potentially new CIRD pathogen that resembled a known human respiratory pathogen. To improve our understanding of this potential new pathogen, CHF and its donors have awarded University of New Hampshire researchers more than \$300,000 to fully study its genetic composition, explore its role in recent CIRD cases, and assess how it impacts other microbes within the respiratory system. Learn more about **CHF Grant O3273: Characterizing Potential Novel CIRD Pathogen and CIRD Microbiome Perturbations** and stay tuned for results at akcCHF.org/respiratoryRPA.

By investing in this research, CHF demonstrates its commitment to addressing the emerging health threats and complex issues that impact the well-being of all dogs.

This research is generously sponsored by:



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.*

2024 Theriogenology Resident



The American Kennel Club/AKC Canine Health Foundation/Theriogenology Foundation Small Animal Theriogenology Residency Program is a collaboration between these organizations to increase the number of trained practitioners in companion animal theriogenology and clinical genetics.

Theriogenology is the branch of veterinary medicine concerned with reproduction, including the physiology and pathology of male and female reproductive systems, and the clinical practice of veterinary obstetrics, gynecology, and andrology.

Learn more about this program at akcchf.org/therio.

In 2024, the newly supported resident is:

Joshua Trumble, DVM (CHF Grant 03183-E)

Residency Coordinator: Erin Runcan, DVM, DACT; The Ohio State University

After serving in the United States Marine Corps, Dr. Trumble completed his undergraduate and veterinary studies at Auburn University. After two years in primary care practice with an emphasis on reproductive medicine, he is returning to Auburn University College of Veterinary Medicine to complete a residency. He enjoys all aspects of pregnancy management, from ovulation timing to dystocia management.



Save the Date!



Mark your calendars and join us at Canines & Cocktails, the Foundation's annual gala to celebrate achievements in canine health research.

When: Thursday, December 12, 2024

Where: Rosen Centre, Orlando, FL



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.

Researcher Spotlight: Jody Gookin, DVM, PhD, DACVIM (Small Animal Internal Medicine)

Dr. Jody Gookin earned her veterinary degree from the University of California, Davis. She then completed post-doctoral training at North Carolina State University where she is currently a Distinguished Professor in the Department of Clinical Sciences and Chancellor's University Faculty Scholar. She is a board-certified small animal internal medicine specialist with research interests that include feline gastroenterology and canine biliary disease.

"As a young veterinarian, I had wonderful mentors and role models who inspired me to pursue the career of a veterinarian clinician-scientist," Dr. Gookin says. "I became passionate about studying gallbladder mucocele formation because it emerged during my lifetime, is diagnosed in beloved older dogs who become acutely severely sick, and the surgery needed to save their lives is expensive and carries a high mortality."

Dr. Gookin remembers one Shetland Sheepdog patient and her breeder/owner who helped champion gallbladder mucocele research. "To this day, Trinket is the youngest dog I have diagnosed with this disease at only two years of age," she states. "Her owner became an indispensable liaison within the dog community and with the AKC Canine Health Foundation in supporting our research."

Her research, if successful, will bring immediate benefits to dogs with this disease. Dr. Gookin aims to make a transformative advancement in canine healthcare that could help veterinarians save dogs worldwide every day. She is grateful for CHF as one of the few sources of financial support for veterinarian clinician-scientists to initiate grassroots research that benefits dogs.



Dr. Jody Gookin and her patient, Trinket

Recent CHF Grant Highlights

Grant 03219: Combining Traditional and Multiomic Approaches to Reveal the Cause and Mechanisms of Canine Dysautonomia

Principal Investigator: Jonathan H Fox, BVSc; University of Wyoming

Aims to identify the cause and mechanisms of this degenerative neurologic disease of young dogs in parts of the Mid-West and Western United States.

Grant 03237: Impact of Perioperative Antibiotic Prophylaxis on the Intestinal Microbiome in Selected Surgical Procedures

Principal Investigator: Mirja C Nolf, Dr. med. vet., DVM; University of Zurich

Investigate how profound the negative effects of preventive antibiotic usage are in dogs undergoing spays and gastrointestinal surgeries to understand the potential risks of this practice.

Grant 03243-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

Principal Investigator: Karen R Muñana, DVM, MS; North Carolina State University

Evaluate and compare the use of two oral treatment protocols for the in-home management of cluster seizures in dogs with idiopathic epilepsy.

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



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