

The Link Between Respiratory and Gastrointestinal Disease

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The upper respiratory and digestive tracts are close neighbors – moving air or food and water into the lungs or stomach respectively. Additionally, food and liquid passing from the esophagus into the stomach don't always travel in one direction and may reflux backwards, potentially affecting the respiratory tract. So, it makes sense that disease in one system might affect the other – a phenomenon known as aerodigestive disease. Many humans with certain respiratory diseases report having gastroesophageal reflux. However, since dogs can't report signs of heartburn, this problem is not well recognized or addressed in veterinary patients.

Thankfully, with funding from AKC Canine Health Foundation (CHF) Grant 02699: The Pathologic Link between Lung and Gut: Diagnosis of Aerodigestive Disorders in Dogs, investigators at the University of Missouri are studying this problem in dogs. Dr. Reinero and her team completed a swallow study in 45 dogs with respiratory disease and 15 healthy dogs of varied ages and breeds. A swallow study is a real-time, video x-ray taken while a dog eats or drinks to look for abnormalities in swallowing or movement of material into or out of the stomach. Dogs with respiratory disease also had advanced diagnostics such as CT scan, bronchoscopy, and sampling of airway fluid.

Results of the study, recently published in the *Journal of Veterinary Internal Medicine*, showed that 75% of dogs with respiratory disease had one or more abnormalities on their swallow study, even though their owners reported no clinical signs of gastrointestinal (GI) disease. Dogs with respiratory disease were also more likely to have objective evidence of accidental breathing of food or fluid into the lungs (aspiration).

These findings show that owners and clinicians should always be suspicious of a digestive tract disorder disease in dogs with respiratory disease, even if the dog shows no overt difficulty in swallowing, regurgitation, or vomiting. The swallow study proved to be a valuable tool for evaluating aerodigestive problems in dogs and should be included in the diagnostic work-up for dogs with respiratory disease.

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Summer 2023

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August 11-13

AKC Canine Health Foundation National Parent Club Canine Health Conference
 St. Louis, MO

August 25-27

Great American Dog Show
 Chicago, IL

September 20-23

AAHA Con
 San Diego, CA

October 12-14

Veterinary Cancer Society Annual Conference
 Reno, NV

The Link Between Respiratory and Gastrointestinal Disease *continued*

“We need to treat both the respiratory and digestive system abnormalities to help control respiratory pathology,” says Dr. Reinero. “We have a lot more to learn, but treatment strategies will improve as scientific research leads to more targeted diagnoses in respiratory patients.”

CHF and its donors are committed to funding studies like this with real potential to advance the diagnosis and treatment of canine disease. The Foundation recently issued a call for research proposals exploring the influence of the microbiome on canine health and disease. The resulting funded studies are expected to improve our understanding of how the microbes living in and on the body impact the digestive and respiratory systems, plus dental health, allergic skin disease, and more.

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



A Labrador Retriever eats while a video x-ray is taken to look for abnormalities in swallowing or movement of material into or out of the stomach.
Photo credit: C. Reinero.

2023 AKC Canine Health Foundation National Parent Club Canine Health Conference

There is still time to join us for the 2023 AKC Canine Health Foundation National Parent Club Canine Health Conference on August 11-13! The biennial event, generously sponsored by Purina, brings together CHF-funded researchers, veterinary professionals, breeders, students, and dog lovers interested in canine health to discuss the latest outcomes from CHF-funded health research.

Scheduled topics include:

- periodontal disease
- the gut microbiome
- tick-borne disease
- pain perception and management
- cancer
- obesity
- cardiology
- gallbladder mucocele

This year, we are pleased to offer both in-person and virtual attendance options. An application for continuing education credit for veterinary professionals has been submitted. For the full schedule and registration details, please visit akcCHF.org/npcchc.

Hurry – registration closes August 8, 2023.
We hope to see you in St. Louis!



2023
AKC CANINE HEALTH FOUNDATION
NATIONAL PARENT CLUB CANINE HEALTH CONFERENCE

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2023 Theriogenology Resident



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CANINE HEALTH
FOUNDATIONSM
PREVENT TREAT & CURESM



theriogenology foundation
The Future of Animal Reproduction

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.

This year, a residency has been awarded to:



Gabriela Carneiro de Sousa, MV (DVM equivalent) (CHF Grant 03078-E)

Residency Coordinator: Julie T. Cecere, DVM, MS, DACT
Virginia-Maryland College of Veterinary Medicine

Dr. Sousa earned her veterinary degree from the Federal University of Goiás in Brazil. She completed an animal reproduction residency and is set to earn a master's degree in animal biotechnology at São Paulo State University, also in Brazil. She has completed theriogenology externships in Brazil and the United States. Dr. Sousa is passionate about reproductive medicine and surgery, with a particular interest in pregnancy/parturition topics. After her residency, she wants to be a professor and continue to do research to share and enhance our knowledge in small animal theriogenology.



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.

Researcher Spotlight:

Carol Reinero, DVM, PhD, DACVIM-Small Animal Internal Medicine



Dr. Carol Reinero is a Professor and Director of the Comparative Internal Medicine Laboratory at the University of Missouri College of Veterinary Medicine. She is a board-certified specialist in small animal internal medicine and an alumna of the University of California, Davis School of Veterinary Medicine. Her research focus is respiratory medicine, specifically diseases of the lower airways and lung tissue.

Dr. Reinero helped establish the **BREATHE** Clinic (**B**ringing **R**espiration & **A**erodigestion **T**oward **H**ealth) at the University of Missouri. This service was created specifically to provide high-quality care for dogs and cats with diseases that affect the respiratory and digestive systems. In the clinic, she can use prior research results to help patients referred from all over the country, plus gain new information and generate ideas for future clinical trials.

Many of her previous patients have inspired Dr. Reinero and guided her career path – including Emmie, a dog that demonstrated the power of resiliency and cooperation among dog owners and their veterinary team as she lived a long and happy life with chronic respiratory disease.

Thank you Dr. Reinero for all that you do for canine health!

Recent CHF Grant Highlights

Grant 03166-A: Evaluation of the Effects of Diluted Sodium Hypochlorite on Skin Microbiome in Dogs with Superficial Pyoderma and Atopic Dermatitis: A Single Blinded, Randomized, Controlled Clinical Trial

Principal Investigator: Domenico Santoro, DVM, MS, DrSc, PhD; University of Florida

Clinical trial evaluating the use of dilute bleach spray to restore the normal skin bacterial population in dogs with allergic dermatitis.

Grant 03147: Improving Treatment of Canine Blastomycosis Through Therapeutic Drug Monitoring

Principal Investigator: Jennifer M Reinhart, DVM, PhD; University of Illinois

Establish a protocol for measuring blood levels of itraconazole in dogs being treated for blastomycosis so that ideal blood levels of the medication are maintained throughout treatment.

Grant 03115: Prolonging Tear Film Stability in Dogs Using a Novel Rabbit Nonpolar Lipid (rNPL593)

Principal Investigator: Brian C Leonard, DVM, PhD, DACVO; University of California, Davis

Evaluate the effects of topical treatment using a unique fat molecule to prolong tear film stability in dogs with dry eye.

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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