

Thyroid Testing During Illness

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Many diseases can alter thyroid hormone levels, even though they do not directly involve the thyroid gland. Kidney, gastrointestinal, and orthopedic diseases, and even cancer, can temporarily lower these hormone levels in the bloodstream – a phenomenon known as euthyroid sick syndrome or nonthyroidal illness syndrome. This unfortunately means that an incorrect diagnosis of hypothyroidism can be made if these hormone levels are examined in a single blood sample taken while a dog is experiencing nonthyroidal illness.

Hypothyroidism is a common hormonal disease that typically affects middle-aged dogs. It is defined as inadequate production of thyroid hormones, which help regulate metabolism. The most common causes are inflammation within the thyroid gland (thyroiditis) or replacement of normal thyroid tissue with fat and connective tissue (atrophy). Clinical signs include decreased energy, weight gain, hair loss, and changes in the quality of the skin and haircoat (flaky skin, dull/dry haircoat). An accurate diagnosis requires the presence of appropriate clinical signs plus documented low hormone levels. Thankfully, most dogs respond well to treatment with a synthetic hormone replacement taken as a pill once or twice daily.

If other diseases can falsely lower thyroid hormone levels, but they return to normal once that illness is resolved, how can we ensure an accurate diagnosis of hypothyroidism? Until recently, few studies have examined the timeline of thyroid hormone recovery in dogs. To fill this knowledge gap, AKC Canine Health Foundation (CHF) funded investigators at Virginia-Maryland College of Veterinary Medicine set out to determine precisely when, after illness, standard thyroid function test results return to normal (CHF Grant O2686-A: Pattern of Thyroid Function Tests during Recovery from Acute Nonthyroidal Illness).

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Calendar of Events

Where to Find Us

May 13-14

Westminster Kennel Club Dog Show
 Flushing, NY

May 15

Irish Setter Club of America
 National Specialty
 Asheville, NC

June 6-8

ACVIM Forum
 Minneapolis, MN

July 24-27

Society for Theriogenology
 Conference
 Oklahoma City, OK

Thyroid Testing During Illness *continued*

Thyroid function tests including total T4 (TT4), free T4 by equilibrium dialysis (fT4ED), total T3 (TT3), and thyroid stimulating hormone (TSH) were measured in dogs representing 18 different breeds that had a nonthyroidal illness severe enough to require hospitalization. Thyroid tests were run on serum (blood) samples collected at hospital admission, once daily while hospitalized, at hospital discharge, and at two and four weeks post-discharge.

Results showed that low total T4 levels in acutely ill dogs recovered quickly, reaching normal levels by hospital discharge in 80% of cases and by two weeks post-discharge in all cases examined. Even better, free T4 levels returned to normal within two days of hospital admission, showing that this measurement is less affected by nonthyroidal illness and rapidly returns to normal levels.

Thanks to this simple but important study, dog owners and veterinary professionals can make informed decisions about thyroid testing in dogs. Based on this research, it is best to wait 2-4 weeks after an illness to measure thyroid hormone levels in the dog. If thyroid function must be evaluated before then, free T4 levels are less likely to be affected by non-thyroidal illness and provide the most accurate result.

Learn more about CHF-funded research helping to develop more accurate diagnostics and more effective treatments at akcCHF.org/research.



Donor Spotlight: Jeffrey Pepper



Jeffrey Pepper has been involved in dog breeding and sports since he acquired a Golden Retriever over fifty years ago. Since then, his breeding program has produced more than 65 Golden Retriever and 55 Petit Basset Griffon Vendéen AKC champions. He is an international conformation judge, Past President of the Dog Judges Association of America, a founder of Take The Lead (a charity for people involved in AKC events of all kinds), and author of multiple books. It is safe to say that Mr. Pepper has been a very active member of the fancy and valued advocate for all things dog.

Working with the AKC and the Golden Retriever Club of America (GRCA), Mr. Pepper witnessed the AKC Canine Health Foundation's (CHF) creation in 1995. As he followed the Foundation's growth and the impact of its mission to advance the health of all dogs, he urged the GRCA to support CHF-funded canine health research and became an individual donor as well. Mr. Pepper holds a Donor Advised Fund at CHF but works to keep his contributions actively invested in canine health studies.

"There is no better place to invest in canine health research than CHF!" Mr. Pepper says. "The research is not breed-specific, and the results may even benefit human medicine. I tell others that it's not how much you donate, but how often you donate."

Thanks to dedicated supporters like Jeffrey Pepper, CHF can continue to find and fund groundbreaking studies with the greatest potential to prevent, treat and cure canine disease.

Purina Parent Club Partnership Donation

Thanks to those who participated in the Purina Parent Club Partnership (PPCP) Program during 2023, **\$111,910 has been donated** toward canine health research funded through the AKC Canine Health Foundation (CHF)!

The PPCP Program enables Purina Pro Club members to earn Purina Points by purchasing qualifying Purina pet foods and submitting proofs of purchase. Based on the accrual of Purina Points, an annual donation from Purina is shared between Purina Pro Club members' designated parent breed club and that breed club's Donor Advised Fund held at CHF.

Since its beginning in 2002, the Purina Parent Club Partnership (PPCP) Program has provided over \$9 million for canine health research, breed rescue, and educational efforts to positively impact the general health and well-being of dogs. Thank you to all who participate!

Learn more at akcCHF.org/ppcp.



NEW!

AKC/AKC CHF Canine Sports Medicine & Rehabilitation Residency Program

The American Kennel Club (AKC) and AKC Canine Health Foundation (CHF) announce a new Canine Sports Medicine & Rehabilitation Residency Program. This collaboration is designed to increase the number of specialists trained to meet the unique needs of athletic and working dogs, as well as all dogs in need of rehabilitation.

Rehabilitation focuses on recovery after surgical procedures, as well as improving the quality of life in animals suffering from diseases such as arthritis or neurologic impairments. Cutting-edge medicine and health research will benefit canine athletes such as AKC conformation and performance sport participants, detection dogs, military working dogs, police dogs, and more.

CHF released the first call for applications from veterinary colleges with approved sports medicine and rehabilitation programs in February 2024. Proposals will be reviewed and the program chosen for sponsorship will be announced in July 2024. Interested veterinary professionals can apply to that program in the spring of 2025 and start their residency training in July 2025.

Given the growing popularity of performance and companion dog sports, canine athletes across the country stand to benefit from additional practitioners trained in this relatively new veterinary specialty.

Learn more at akcCHF.org/sportsmed.



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.*

Recent CHF Grant Highlights

Grant 03194: A Blueprint to Develop Next-Generation CAR T Therapy for Canine Lymphoma

Principal Investigator: Matthew J Atherton, BVSc, PhD; University of Pennsylvania

Optimizes the use of immune cells to recognize two separate targets on cancerous cells for the treatment of high-grade canine B cell lymphoma.

Grant 03186-A: Comparison of Genomic Mutation Status Between Primary Site and Metastatic Lymph Node in Canine Oral Malignant Melanoma

Principal Investigator: Yoshimi Iwaki, DVM; University of Missouri

Compares mutations between primary tumors and lymph nodes to which this cancer has spread to explore what drives its malignant behavior and identify new treatment targets.

Grant 03169: Characterization of Hookworm Resistance in Dogs with a Novel Diagnostic Test for Early Intervention

Principal Investigator: Jeba RJ Jesudoss Chelladurai, BVSc, PhD; Kansas State University

Develops a rapid diagnostic test for hookworm resistance to common deworming medications to aid more effective treatment in canine patients.

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

How to Help

May is Canine Cancer Awareness Month

The AKC Canine Health Foundation (CHF) marks Canine Cancer Awareness Month every May to highlight the impact of its funded research and generate support for the ongoing fight against canine cancer. In 2023 alone, CHF and its donors invested \$530,000 in six cancer research studies exploring better diagnostics and more effective treatments for anal sac carcinoma, lymphoma, and bone cancer (osteosarcoma). That makes a total of over \$18 million invested in canine cancer research since 1995!

This research benefits our beloved dogs and is often relevant for human medicine as well. As CHF-funded investigators develop new treatment and prevention strategies for bone cancer, breast cancer, lymphoma, and more, much of what we learn can be used to help people with the same cancers. This One Health concept is important as CHF works to find and fund the highest quality studies.

This Canine Cancer Awareness Month, we invite you to help improve and extend the lives of dogs by investing in CHF's groundbreaking canine cancer research at akcCHF.org/caninecancer.



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