

HYPOTHYROIDISM

Hypothyroidism is one of the most common endocrine diseases in dogs but it is easily treatable.

The initial concept that evolved several years ago was that hypothyroidism in dogs was confirmed by finding a low serum T4 level with a high serum TSH level.

This has since been disproved, as the T4 level can be affected by non-thyroidal illness as well as the use of certain drugs. Further, the TSH test in dogs is poorly predictive of primary hypothyroidism (170% vs. 95% in people, because the dog has an active alternative thyroid regulatory pathway through growth hormone

Regarding the inheritance pattern of canine autoimmune thyroiditis, newly collected evidence has shown it to have autosomal incompletely dominant expression (with variable degrees of gene penetrance among offspring). Thus, one or both parents can transmit the trait to some of their offspring.

Bearing these facts in mind, do you think perhaps it is time that we in New Zealand took a serious look at the testing we are offering for thyroid disorders (hypothyroidism) in dogs.



Labrador with hypothyroidism (image from Wikimedia Commons)



HEMOPET ANNOUNCES AN IMPORTANT CLINICAL BREAKTHROUGH TO DIAGNOSE THYROID DISORDERS IN DOGS

Garden Grove, CA, October 11, 2013 – Dr. W. Jean Dodds, a leading international thyroid expert, and her clinical research team at Hemolife, Hemopet's diagnostic division, have discovered an important novel diagnostic tool to evaluate thyroid disorders in dogs called the T4:FT4 Ratio. Furthermore, Hemopet has patented and added the T4:FT4 Ratio to its diagnostic portfolio of all "green" technology and breed- and age-specific interpretive thyroid profiles.

The T4:FT4 Ratio more accurately diagnoses thyroid dysfunction and related diseases in dogs by determining the ratio between the level of total T4 and its free, unbound fraction. This diagnostic tool provides enhanced specificity for canine thyroid disorders. Importantly, clinicians can now determine whether the values of the different thyroid analytes being measured indicate a thyroid disorder and/or or some other underlying disease (non-thyroidal illness, NTI). Note that this ratio does not diagnose or rule out the presence of heritable autoimmune thyroiditis, where affected dogs have elevated thyroid autoantibodies (typically high thyroglobulin autoantibodies, TgAA).

Thyroid data from nearly 15,000 samples collected over the last 20 months were examined. Results from 1000 healthy dogs during a six-week period revealed a tight T4:FT4 ratio ranging from 1.30–1.54. Ratios below 1.25, by contrast, indicated the presence of primary NTI or NTI secondary to hypothyroidism. A subset of 242 dogs with elevated liver cell-specific enzyme (high ALT) was further analyzed as a group confirmed to have NTI. Of these, 119 dogs were receiving thyroxine treatment for hypothyroidism. The T4:FT4 Ratio was a critical factor in distinguishing the dogs with primary hypothyroidism from those with primary or secondary NTI. The results were highly statistically significant ($p < 0.001$). Further, the variance of T4 data for the 223 dogs with liver disease not receiving thyroxine was

much higher than that of the 119 dogs with high ALT that had their hypothyroidism corrected by thyroid medication (2.225 vs 0.085).

"Hypothyroidism is the most common endocrine disorder in dogs, and yet is one of the most challenging conditions to diagnose. This once again validates the need for doing comprehensive thyroid panels and the special importance of the T4 and free T4 data, along with measuring TgAA to exclude thyroiditis. Without this information, a disorder can be misdiagnosed or valuable effort and time expended on inaccurate care and treatment," explained Dr. Dodds.

Dr. Dodds added, "Hemopet has patented the T4:FT4 Ratio and is the only veterinary diagnostic laboratory anywhere in the world that can provide these unique assays and analysis."

About Hemopet

Founded in 1986 as a non-profit animal blood bank and greyhound rescue/adoption program by Dr. W. Jean Dodds, Hemopet has expanded its services to include comprehensive animal thyroid testing, and saliva-based food sensitivity and intolerance testing for dogs and cats. For more information, visit www.hemopet.org and www.nutriscan.org or contact 714-891-2022.

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