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Interviews

The Latest in Tests and Treatments for Thyroid Disease in Pets, Part 1

Dr. Becker chats with Dr. Jean Dodds, the leading authority on thyroid disease in pets. Dr. Dodds discusses the best tests for an accurate diagnosis of hypothyroidism in dogs, and why some cats go from hyper to hypo.

Analysis by Dr. Karen Shaw Becker

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STORY AT-A-GLANCE

- Dr. Jean Dodds is a world-renowned expert on thyroid disease in pets, and today she discusses the importance of using the right tests to accurately assess thyroid function in dogs and cats
- Canine hypothyroidism typically goes undiagnosed until it is far progressed and 70% or more of the thyroid gland has been compromised. Dr. Dodds recommends a complete thyroid antibody profile versus the total T4 test
- Hyperthyroid cats often become hypothyroid within a matter of months after medical intervention that inactivates their thyroid gland. These cats do quite well with added thyroid hormones that return them to a state of metabolic balance

Editor's Note: This article is a reprint. It was originally published May 10, 2015.

By Dr. Becker

Today I have a very special guest, Dr. Jean Dodds. Dr. Dodds lectures worldwide on clinical pathology and hematology, blood banking, immunology, endocrinology, nutrition, and holistic medicine. In 1986, she founded a nonprofit organization called **Hemopet**, which set the standard for veterinary transfusion medicine. Then in 1991, she created the **Pet Life-Line**, which is a Greyhound rescue adoption organization.

Dr. Dodds also started Hemolife Diagnostics at the same time. Each of these endeavors has achieved worldwide recognition. I wanted to talk to Dr. Dodds today because she is considered the world's foremost expert on thyroid disease in pets.

Diagnosing Thyroid Disease in Pets Is Problematic

First I asked Dr. Dodds to describe the classical clinical signs of canine hypothyroidism, and when they typically occur. She replied that dogs with the disease are usually overweight, lethargic, have a chronic skin condition, and don't like the cold. Unfortunately, classical symptoms of canine hypothyroidism don't appear until at least 70% of the thyroid gland has been damaged.

Cats acquire feline hyperthyroidism, and their symptoms are more dramatic. The condition typically occurs in older cats who become ravenously hungry, lose weight, and howl and pace around much of the time. These cats seem to be wired or suddenly energized, but not in a good way.

One of the problems in diagnosing pets with thyroid disease is the use of standard laboratory reference ranges. There's just one reference range for dogs, no matter how old or what breed. And there's just one reference range for cats.

With cats it's not such a big deal, because most domesticated kitties are roughly the same size. But dog sizes vary tremendously, from the tiny teacup toy Poodle to the English Mastiff or Saint Bernard. Obviously, these dogs don't have similar metabolisms.

The challenge for veterinarians is: how do we diagnose hypothyroidism in a dog before he's showing end-stage symptoms and 70% or more of his thyroid gland is impaired? Also, how do we determine what the ranges should be for a toy breed that is much more active and has a much more active metabolism than a giant breed? It makes no sense to view very small and very large dogs through the same lens. As Dr. Dodds puts it, "Would you want a Newfoundland with the energy of a Yorkie? Oh, my God!"

The one-size-fits-all reference ranges make even less sense when you consider that we know from decades-old scientific studies that age affects thyroid levels. Young growing animals have higher metabolic demands. Mature animals are no longer growing, so their metabolic demands are less. We also know that blood serum chemistry parameters and complete blood count (CBC) parameters are different in puppies and adult dogs.

Complete Thyroid Antibody Profiles vs. T4 Tests

I asked Dr. Dodds how vets could learn to perform truly effective screenings for thyroid dysfunction in pets. She replied that as part of most comprehensive wellness exams for presumably healthy pets, veterinarians order a number of blood tests, including a total thyroxine (T4) test, which is a type of thyroid function test.

The problem is that the results of a T4 test can be totally misleading, because thyroxine levels can be affected by non-thyroid-related illnesses, a wide variety of drugs, and excessive iodine in the diet. According to Dr. Dodds, about 8 in 10 T4 tests, whether run in-house or at an outside lab, return a low number, indicating the animal is hypothyroid.

Some vets treat patients based on just the T4 value, when it may or may not be appropriate, such as in the case of autoimmune thyroid disease.

Dr. Dodds feels that to accurately diagnose thyroid conditions, we should be running a complete thyroid antibody profile. And veterinarians should explain to clients up front that while the test is more expensive than a T4, it will also tell us what we can rule in or out.

Then we can compare those results with the history we have about the dog, for example, that she's been gaining weight even though she's not eating more. Or a normally happy, outgoing dog has grown withdrawn or is showing aggression for the first time ever.

Behavior changes are actually important markers. Most of my clients feed their dogs exceptionally well, meaning they offer species-appropriate, fresh, non-GMO, organic diets. It's important for everyone to know that for dogs who are very well-nourished like the majority of my patients, often the only symptom of hypothyroidism is a very subtle change in personality or behavior.

Thyroid Tests Dr. Dodds Recommends for Dogs

As part of a complete thyroid antibody profile, Dr. Dodds includes total and free T4, and total and free T3. Many veterinary experts believe it's useless to measure total and free T3, but Dr. Dodds strongly disagrees. The T3 values are necessary because in the case of a sick animal who has low levels in all four measures, it's much more likely to be a non-thyroid-related illness. Total T3 and free T3 are the markers that indicate a non-thyroidal condition.

Dr. Dodds also includes a thyroid antibody test, which for the initial screening is the thyroglobulin autoantibody test. She doesn't, however, include a TSH test, because it isn't as accurate in dogs as it is in humans. It's only accurate about 70% of the time in dogs, when it should have a minimum accuracy of 90%.

Bottom line, Dr. Dodds recommends against running the T4 only, because it gives an incomplete picture, and also the canine TSH on dogs, because it isn't dependably accurate.

Tests and Treatments for Thyroid Dysfunction in Cats

However, Dr. Dodds does recommend the canine TSH test for some cats. Older kitties with inactivated or ablated thyroid glands due to hyperthyroidism tend to become hypothyroid within about two to five months because the gland is no longer working. Often, these cats received radioactive iodine treatment for their hyperthyroidism.

So now the formerly reactive, pacing, howling hyperthyroid cat has become a blob of inactivity who doesn't even look at her humans, much less interact with them. Often, the family thinks kitty has reached the end of her life, when in fact, she's now hypothyroid and needs to be treated with thyroid hormones.

The way to monitor hypothyroidism in these cats is with the TSH test because it's very helpful in regulating doses of added T4 and T3 hormones to return the kitties to a state of metabolic balance. It returns cats to who they were before they became hyperthyroid, much to the surprise and delight of their owners.

To check a cat's thyroid function, Dr. Dodds recommends the same four tests: total T4, free T4, total T3, and free T3. But instead of the thyroglobulin autoantibody test, which is not relevant for cats, she substitutes the TSH test.

Dr. Dodds gives credit to **Dr. Jennifer Wakeling**, who was the first to alert the veterinary profession to the importance of using TSH as an assay in cats with chronic renal failure. Hyperthyroidism was being missed if the kidney failure was pushing the total T4 down into the upper limit of the normal range. These cases weren't being diagnosed correctly until Dr. Wakeling said, "Wait a minute, that's a non-thyroidal problem that's making the total T4 look normal or upper normal. Let's look at other assays." Dr. Wakeling then went on to discover that the TSH test was the most predictive of hyperthyroidism in cats with chronic renal failure.

Suppressing the thyroid in cats with renal failure can worsen renal tissue profusion, so we must be very careful treating these kitties. Some actually do better being slightly hyperthyroid when they have renal disease.

Dr. Dodds is thought of as the "thyroid queen of dogs," so I asked her if she's getting more involved with thyroid testing of cats. She says she definitely is, because so many older kitties are developing hyperthyroidism.

She's been working with Dr. Mark Peterson and Dr. Rhett Nichols of the **Animal Endocrine Clinic**, and together they concluded it is TSH that should be monitored in cats who have become iatrogenically hypothyroid (meaning the condition was induced unintentionally by a diagnostic procedure or medical treatment).
