

The Latest in Tests and Treatments for Thyroid Disease in Pets, Part 2

Dr. Becker wraps up her discussion with Dr. Jean Dodds, the leading authority on thyroid disease in pets. Dr. Dodds discusses her recommendations for testing and treatment of canine autoimmune thyroiditis, and why only synthetic thyroxine is appropriate for dogs with this form of the disease.

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 autoimmune thyroiditis versus hypothyroidism in dogs
- Dogs with simple hypothyroidism can be successfully treated with synthetic thyroxine natural thyroid support products, however, dogs with the autoimmune form of the disease must be given synthetic thyroxine
- It is critical that the right diagnostics, including autoantibody tests, are performed in suspected cases of thyroid disease, and in healthy relatives of dogs affected with autoimmune thyroiditis. A large percentage of dogs have autoimmune disease, which may require a different treatment than the treatment given for a sluggish thyroid gland

Editor's Note: This article is a reprint. It was originally published May 17, 2015.

Today I'm back with Dr. Jean Dodds as we continue our discussion on thyroid disease in pets. You can see Part 1 [here](#). Dr. Dodds lectures worldwide on clinical pathology and hematology, blood banking, immunology, endocrinology, nutrition, and **holistic medicine**. She is the founder of **Hemopet** (which set the standard for veterinary transfusion medicine), **Pet Life-Line** (a Greyhound rescue adoption organization), and Hemolife Diagnostics.

A Genetic Screening Test for Inherited Canine Autoimmune Thyroiditis Could Be on the Horizon

I asked Dr. Dodds about screening dogs for inherited canine autoimmune thyroiditis, a condition in which the body's immune system attacks the tissues of the thyroid gland.

Dr. Dodds explained that canine autoimmune thyroiditis is like the human Hashimoto's disease, also called lymphocytic thyroiditis. Three to five major histocompatibility complex genes are involved.

In both people and dogs, the diseases most often associated with autoimmune thyroid disease are immune complex glomerulonephritis, autoimmune hemolytic anemia, and immune-mediated thrombocytopenia. When multiple organs are damaged simultaneously, it's called polyglandular autoimmunity (PGA).

About 10 years ago, Dr. Dodds, Dr. George Happ, and Dr. Lorna Kennedy, a genome researcher in Manchester, England performed a study to look at mapping the genome for thyroiditis in 14 dog breeds. Their work was funded in part by the AKC Canine Health Foundation.

They were able to identify a unique genetic locus, the DOA1 locus, which increases the frequency of thyroiditis in certain breeds four- to five-fold. During the course of that work, Dr. Dodds and Dr. Kennedy also found a second genetic locus that was associated with thyroiditis in a handful of other breeds.

Their work was published as a scientific study, however, it has never been developed into a practical screening test for use in a clinical setting. As is often the case with specialty studies, the funding disappeared and there was no money to continue the work. However, Dr. Dodds is hopeful that she can move the project forward again in the next few months.

Dogs with diagnosed autoimmune thyroiditis should not be bred. It's not a matter of "if" they will pass the disease on to some of their offspring. According to Dr. Dodds, her experience following these dogs for several generations has shown that they will.

A dog that is profoundly hypothyroid, but doesn't show the thyroiditis marker, will also likely pass the disease to his offspring. This form of hypothyroidism is termed "familial."

However, Dr. Dodds believes that if a hypothyroid dog has an outstanding temperament, conformation, or other traits, she might consider breeding such an animal, but only to a mate that is middle-aged and with a clearly normal thyroid gland. What many people don't realize is thyroid values can change over time, which is why it's important to continue to test regularly.

Treating Autoimmune Thyroiditis: When, How, and For How Long

Next, I asked Dr. Dodds for her recommendations for treating a confirmed case of canine autoimmune thyroiditis. She replied that the diagnosis should be made by a reputable laboratory, and should be repeated if anyone involved is skeptical about the results.

Intact females should be tested only when they are not coming into – or are not in – estrus, and certainly not when they're pregnant. It's best to test an intact female in between estrus cycles when the sex hormones will not have an influence on test results.

Dogs should also not be tested within 45 days after a rabies vaccination, as blood tests may show a slight elevation in the thyroglobulin autoantibody (TgAA) level during those 45 days.

Often, when a dog is diagnosed with autoimmune thyroiditis but has normal basal T4 and free T4 levels and looks and acts normal, the owner and/or veterinarian decides not to treat. They decide to wait until the dog gets sick or becomes suddenly aggressive or phobic.

That's an unwise approach. The dog should be treated immediately to protect against further progression of the disease. We want to save whatever thyroid tissue is still there. We want to put the condition in "park" or hibernation with treatment. Treatment inhibits the production of thyroid stimulating hormone (TSH), which triggers thyroid gland receptors to make more antibodies. So the goal is to put the whole thyroid stimulatory process in hibernation.

The treatment that Dr. Dodds uses for these cases is to give the hormone thyroxine in smaller-than-normal doses based on the dog's optimum weight. The special dosing prevents the animal from become hyperthyroid while bringing the TgAA levels down. It typically takes five to seven months for the levels to return to normal, or close to normal.

The treatment should continue for the rest of the dog's life, and a complete thyroid antibody profile must be run at specific intervals because the TgAA level can jump up again if stressors or other health changes are present.

The Right Way to Monitor Thyroxine Levels

There's a lot of confusion about when and how often to test dogs on thyroxine therapy, so I asked Dr. Dodds for her view. Her opinion, based on many years of experience treating thyroid disease in dogs, is that we should test after six to eight weeks on the appropriate dose of twice-daily thyroxine.

We should insure the thyroxine is always given away from any food and supplement containing calcium or soy. This is something most veterinarians are not aware of. Calcium and soy bind to thyroxine, and so despite the guidance of some veterinarians and even what may be printed on the label, it should not be given with meals if we want to achieve steady-state absorption and reliable post-pill therapeutic monitoring.

Blood samples should be taken four to six hours after a thyroid pill, and a complete thyroid antibody profile should be run. If, for instance, the test results show that a dog is hypothyroid but has a normal TgAA, he should receive treatment. Then in six or eight weeks, another sample is taken four to six hours post-pill, but the TgAA isn't needed this time. We can just run T4, free T4, T3, and free T3.

Dr. Dodds stresses that we should always include the T3 and free T3 tests, along with T4 and free T4 tests, even though the current recommendation may be just to use only total T4 for monitoring purposes.

Discontinuing Thyroxine

Sometimes with dogs that are mildly hypothyroid, veterinarians want to give supplemental thyroid support just once daily, but that's not a good plan. Once a day doesn't work adequately because the thyroxine half-life is 12 to 16 hours in dogs and we don't want to induce a peak-and-valley situation, where the dog has a very high level of circulating hormone part of the day, and a low level the rest of the day.

Dr. Dodds has a patient, a 110-pound (overweight) German Shepherd. His vet had him on 0.8 milligrams of thyroxine in the morning and 0.4 milligrams at night. The dog was wired half the day and sleeping the rest. Dr. Dodds divided the doses so the dog was getting 0.6 milligrams twice a day to stabilize him.

In certain situations, thyroxine therapy can be discontinued. For example, when we're not sure the original diagnosis was correct. We might have a total T4-only diagnosis, or a dog who has been put on thyroxine for hotspots or weight gain, and we're not even sure there's a problem with the thyroid. In those cases, we can stop therapy and wait six to eight weeks – a minimum of six – and then run a complete thyroid profile.

Sometimes an owner will simply stop giving thyroxine. We can't always be sure that clients are complying with our recommendations because they look at their pet and they don't see what we see as veterinary practitioners. And the flip side of that coin are clients that decide on their own to triple the dose, which brings up an interesting point. I

asked Dr. Dodds why it is that some dogs who receive too much thyroxine still have low thyroid levels based on blood tests.

She answered that when a dog is overdosed on thyroxine, the T4 doesn't go up as intended, and ultimately the animal may collapse. What happens is the dog's body simply gets rid of the excess thyroxine at about double the normal rate of excretion. The increased dosage isn't having any sort of positive effect on the tissues of the thyroid gland. Blood tests still show a low T4 level, so veterinarians keep increasing the dose.

What needs to happen in those cases is the thyroxine should be decreased gradually to the recommended lower dose, and the T4 levels will eventually normalize, while the patient gets better.

Dietary-Induced Hyperthyroidism

Dietary-induced hyperthyroidism (hyperthyroidism is more or less the opposite of hypothyroidism) is something we've seen recently in dogs fed a raw diet containing the throat or gullet where thyroid gland tissue is found. Dr. Dodds just learned recently that in the 1980s, throats and gullets were no longer allowed to be included in the human meat supply because children were becoming hyperthyroid from the thyroid hormone in the meat they were eating. But no such regulations exist yet for pet food.

Additionally, according to a study published in January in the Journal of the American Veterinary Medical Association,¹ thyroid hormone was found in chicken-based commercial kibble. So now we need to be concerned about whether we might be creating hyperthyroidism in pets by dietary means.

Brand Name vs. Generic Thyroxine

I asked Dr. Dodds to discuss the different types of thyroid support products on the market, in particular, generics vs. brand names. Curiously, she has noticed that when some dogs are given generic thyroxine and then switched to a brand name thyroxine (e.g., Soloxine®), they improve.

So there is clearly something different about the generic version, perhaps it's the filler or the color, Dr. Dodds doesn't know. But it doesn't seem to achieve the same results as brand name thyroxine.

Also, many holistically oriented people don't want to use synthetic thyroxine. They want to use a natural extract like Armour, Nature-Throid, or Westhroid. Dr. Dodds says that while those products work well, they contain both T3 and T4, and we have to be careful not to overdose the T3 in order to get the T4 level where we want it. The natural extracts can also be much more expensive, according to Dr. Dodds.

She recommends using the brand name synthetic product to correct the thyroid tissue metabolic imbalance, and do everything else naturally, including feeding whole food, minimizing exposure to chemicals and toxins, not over-vaccinating, and so forth.

Natural Thyroid Support Products Shouldn't Be Used With Thyroiditis

Another thing Dr. Dodds warns against is using natural thyroid support products, including kelp or other natural sources of iodine, as well as OTC thyroid glandular products in cases of autoimmune thyroiditis. As she explains it, these products "aren't the actual molecules needed to shut off the pituitary thyroid axis from stimulating the thyroid

gland." Using them can accelerate the destruction of thyroid tissue.

I like using Armour Thyroid in cases that are not autoimmune-related. I always start those animals on a natural thyroid extract to see the response. If I don't get the response I'm looking for, I move to a synthetic thyroxine. But I never, ever handle cases of autoimmune thyroiditis this way, because the disease will continue to progress if the animal isn't given synthetic thyroxine.

Dr. Dodds points out that there are some owners of large breed dogs that prefer to use both the synthetic and a natural extract, say, Armour and thyroxine, and that's usually fine.

Number of Cases of Canine Autoimmune Thyroiditis vs. Hypothyroidism

I asked Dr. Dodds what percentage of dogs have autoimmune thyroiditis versus those whose thyroid glands just peter out over time and they become hypothyroid. She replied that while the data is hard to pin down, she guesses anywhere between 20 and 45 percent of certain breeds will have the autoimmune form of the disease versus simple hypothyroidism.

And of those animals with autoimmune thyroiditis, about eight percent will have a normal TgAA, while the remaining 92 percent will have high levels. We still must rely on the TgAA level – the thyroglobulin autoantibody level – as the definitive marker for the disease. If we're not sure, we would need to biopsy the thyroid gland, but that can damage the gland.

Recently, researchers at the University of California, Davis suggested that ultrasound imaging can be helpful in the early inflammatory stage of canine thyroiditis, because the gland becomes slightly enlarged during this phase. But Dr. Dodds doesn't feel ultrasound is a practical clinical tool because it's too subjective, for example, how large is "enlarged?" And are the parathyroid or salivary glands making the thyroid gland appear larger on the ultrasound image?

Many Thanks to Dr. Jean Dodds

The reason I wanted to have this discussion with Dr. Dodds today is to encourage viewers and readers here at Healthy Pets to demand their veterinarians to check for autoantibodies when a thyroid problem is suspected.

We can't stress enough that a basic thyroid panel without autoantibody testing is an incomplete diagnostic, especially since such a large number of dogs will have the autoimmune form of the disease, and the treatment approach is different.

My sincere thanks, once again, to the wonderful Dr. Jean Dodds for another remarkably enlightening discussion. I think it's important to provide this kind of information for owners of sick pets who are searching for the best treatment options available, and Dr. Dodds is the recognized expert on all things thyroid-related in pets.

Sources and References

¹ [JAVMA, January 1, 2015, Vol. 246, No. 1, Pages 105-111](#)
