

## Questions to Dr. Jean Dodds of HEMOPET on Hypothyroidism

Several questions about Thyroid testing were sent to Dr Dodds. The questions and her answers are listed here.

- (Q) Can a dog have hypothyroidism that is asymptomatic, and still be considered hypothyroid? I have no idea upon what the basis was for the diagnosis of hypothyroidism.

(A) The blood tests can indicate hypothyroidism, provided a proper thyroid profile and not just a T4 or T4 and TSH was run, and the dog could show little --if any-- classical signs of hypothyroidism. This is because it takes destruction of at least 75% of thyroid glandular tissue before the classical signs appear. However, there are often early subtle signs of thyroid dysfunction -- which people and even vet colleagues may fail to recognize.
- (Q) A dog has "normal thyroid" but has a TgAA of 80. What does this mean? Apparently "normal thyroid" is all other thyroid values being within normal range

(A) The elevated TgAA means that the dog is in the early stages of autoimmune thyroiditis, before destruction of thyroid tissue has progressed enough to give lowered T4 and freeT4 values and the onset of clinical signs of thyroid dysfunction. Dogs confirmed positive with markers for thyroiditis [i.e. high T3AA and/or T4AA and /or TgAA] should not be used for breeding.
- (Q) What is the difference between idiopathic and genetic hypothyroidism?

(A) Idiopathic [from "idiot"; "pathology" -- just kidding] means that the cause is unknown or we cannot figure it out, whereas the genetic form is heritable. Actually, in humans, the so-called "idiopathic thyroid atrophy" form of thyroid disease has been shown in some cases to reflect the end stage "exhaustion" of thyroiditis.
- (Q) Should all dogs with a diagnosis of hypothyroidism be spayed/neutered?

(A) No; it depends upon whether or not they have positive markers for thyroiditis.
- (Q) Or should we only be concerned with autoimmune thyroiditis as inheritable?

(A) Yes; primarily true. BUT only because one shouldn't throw out stock of value to a breed unless the genetic markers are present -- otherwise we may end up with a small gene pool that has an increased chance of transmitting something else, if inbred. Does that mean that hypothyroids without these markers will never pass on the problem? No, but as long as they're treated with thyroxine and bred only to mates that have normal thyroid function [not on thyroxine, of course] we can hope to preserve the good qualities of these families for future selection amongst their get of the offspring with normal thyroid function.
- (Q) Should we utilize dogs on thyroid supplementation in the breeding programs if they are "just hypothyroid?"

(A) Yes, we can, if done carefully -- see answer # 5 above.
- (Q) Alaskan Klee Kai breeding programs that have as many as 10 or more dogs will likely always have a bitch in season or either coming in or going out. How crucial is it that a male not be exposed to those female hormones when we want to check his thyroid status?

(A) Yes, but we can just try our best to test males who are not too "aroused" hormonally. For some breeding programs, it may be nearly impossible to achieve a "clear" period or maybe only a window of 1 or 2 weeks/months per year. Makes for some tricky scheduling.

8. (Q) At what age is a puppy considered too young to test for hypothyroidism? Should a complete thyroid panel be performed or should only TgAA be done? What are the advantages or disadvantages?  
(A) The first test should be after puberty and 12-16 weeks after the maiden heat in bitches. I always prefer to do the complete panel + TgAa as you are establishing a baseline of values for this individual to be compared with later annual retesting as he/she becomes of breeding age. Also, the more test analyses you have, the more complete is your overall evaluation -- see below for #10.
9. (Q) Some breeders require a Breeding Quality Exam at 9 months of age. Is this a realistic goal that can be met?  
(A) I think that's too young. The labradoodle and goldendoodle folks do the same. Closer to a year for the first check is better.
10. (Q) Should a thyroid screening panel also consist of TgAA? **Yes.** Or should TgAA be done in lieu of thyroid screening panel?  
(A) No, both should be done. About 8% of proven thyroiditis positive cases are TgAA negative [false negative], so the TgAA test is ~ 92% predictive.  
(Q) Or should these be dictated by clinical setting? **No.**  
(Q) If so, what would indicate that TgAA needed to be done?  
(A) We now recommend it for all purebreds, and have a special regular combo price [\$85] for the whole thing. See [www.hemopet.org](http://www.hemopet.org) under "Services" for our latest test forms. However, **the AKK special Research Study Protocol offers this \$85 combo profile for \$55.**

Definitions:

**Idiopathic hypothyroidism** A condition in which the thyroid gland does not produce enough thyroxine. Its cause is unknown, but it can be treated by supplementing the body's supply of thyroxine. A tendency to develop this deficiency may or may not be inherited. However, a dog with hypothyroidism may be bred to another dog that does not have hypothyroidism. It should never be bred to another dog with hypothyroidism.

**Auto-immune thyroiditis** A state where the thyroid cannot produce enough thyroxine because the body's immune system has attacked the thyroid gland and is destroying it. This, too, can be treated with thyroxine, but it is definitely inherited and dogs with this condition should be permanently removed from the breeding pool.

**Symptoms** of hypothyroidism may include mental dullness, lethargy or tiredness or lack of energy, or weight gain without increase in food consumption. In intact males, there may be an inability to impregnate a female due to low sperm count, low libido, or lack of energy to complete the act. Intact females may not conceive or may have other reproductive problems, such as failure to cycle, infertility, abortion, etc. These reproductive problems may be the first signs of hypothyroidism.