[00:00:04.430] - W. Jean Dodds, DVM
Hello, everybody.

[00:00:05.730] - Speaker 2
Yeah.

[00:00:06.130] - Mary Duafala
Hi, Jeane. Let me give you a brief introduction and then we can get started. Go ahead. Tonight's discussion is going to be about thyroid disease, and thyroid homeowner is essential to every aspect of health. Each year, catless dogs suffered needlessly and many die from the easily treatable condition caused by low thyroid. This presentation will help us unravel the mystery of canine thyroid disease so our dogs can live a healthier, happier, longer life. I can't tell you how pleased I am that we were able to get Doctor Jean Dodds to do our presentation tonight. She spent five decades in hematology and immunology research and diagnostic veterinary clinical pathology. She's authored numerous research publications and holds 27 patents. She is the force behind Hemoped, the first nonprofit national animal blood bank. Today, Hemopet provides canine blood components and related services and adopts retired Greyhound blood donors as companions. The Hemolife Diagnostic division focuses on hematology and blood banking, immunology, Endocrinology nutrition and holistic medicine. She has co authored two popular award winning pet health books, the first on canine nutrigenomics, which looks at the signs of feeding your dog for optimal health, and the second, the canine thyroid tongue Tied, the Canine Thyroid Epidemic answers you need for your dog.

[00:01:38.470] - Mary Duafala
And she currently has a book in press. And some of you may already know Jane. She is always very generous with her time and with her incredible knowledge and all things canine. We're very pleased to welcome her tonight. And I'm going to get the floor now. Jean, are you ready?

[00:02:00.130] - W. Jean Dodds, DVM
Yes, I'm ready. Thanks, Mary. Just to clarify, our first book was actually the thyroid book in 2011. The second book was the nutrition book in 2015. And our new book, which is impressed, is vegan book for dogs only because cats can't be vegans, but dogs can be. So it's pretty interesting, actually, when you look at all of the emphasis on plant based foods today for pets and people, and also trying to avoid the issue with agricultural changes and global warming and the effect on reducing the carbon footprint on the Earth because of the fact that the animals that we choose to raise and eat take up so much more land than the plants. So it's a very interesting thing. It's a very interesting topic. We could talk about it some time with your group if you'd like. People are a little bit repulsed by the thought of eating insects and seaweed. But you know what? We have to get over that if we're going to feed the rest of the world. So tonight we're going to talk about thyroid disorders. And as Mary said, this is a major master gland that controls really everything else in the body when given a message from the pituitary gland.

[00:03:13.570] - W. Jean Dodds, DVM
So we need to think about all of this. And let's go forward. Let's start at the beginning. By the way. This is one of the most complicated, controversial topics in human and animal medicine today because they really don't teach the basics of how variable the testing for thyroid dysfunction can be in all species in undergraduate and even graduate education and then in continuing education. Most of the programs are sponsored by Big Pharma or Big Pet Food industry in the animal world. And so therefore, it's very difficult for veterinarians to unravel what they need for their patients and their clients. So here's a picture of optimum health, and you can see here a lovely, lovely picture I chose of a Wells terrier and hope you like it. You can read that right with the heading on the top. You can still see the slides. Perfect. Thank you. Okay, so how is the thyroid gland involved in all of this? As the thyroid gland regulates metabolism of all body cellular functions, reduced thyroid function can produce a wide range of clinical and behavioral manifestations. Many of these clinical signs mimic those resulting from other causes. And so recognition of the condition and interpretation of thyroid function tests can be problematical, as I mentioned, both for people and animals.

[00:04:38.610] - W. Jean Dodds, DVM

So although thyroid dysfunction is the most frequently recognized endocrine disorder of dogs, that's hypothyroidism and elderly cats hyperthyroidism, it may be difficult to make a definitive diagnosis. Now how do we remember this? I always tell people, remember that the dog is hypo, as in low is low, and the cat is hyper, as in high. So think about the way it sounds, and then you'll get it right now, thyroid disorders can affect any dog breed, any hybrid. With the emphasis on hybrid and cross breeds today, any of them can be affected. Small, white coated dogs are commonly affected, but any breed can be affected. And why would smaller, white coated dogs be more effective? That's because they require more food to maintain their energy needs and metabolic needs than do larger animals. And also the more dilute color of the coat is or the skin is in people, the more likely the environmental pollution that we have today is going to affect them. And that affects everything that's going on in the body. These are heritable and Familial traits. What does that mean in about 90% of hypothyroidism in the dog? We know that the trait is an autoimmune disease.

[00:06:01.680] - W. Jean Dodds, DVM
That's heritable, like human Hashimoto's disease. And we even know the genes that are involved in other breeds where we don't know the actual genetic background of what's going on. It's called familial. It means it runs in the family. It's still going to occur in more family members if you continue to breed them. So Familial and heritable have the same impact in the sense of how many animals in the next generations will be affected with a thyroid problem. But whether we need to breed away from it because it's documented to be inheritable or whether we need to select away from it if it's familiar, will depend on the situation. So accurate diagnosis is difficult now, let's think about it. When you have a sample of blood for thyroid testing done in an animal sent to a in house, for example, with a simple screen, which is not very accurate, by the way, because it's affected by many other things or sent out to a major veterinary reference laboratory, you'll get a reference range. And the reference range doesn't often tell you that this is adults only, average two to five year old adults. It doesn't apply to geriatrics because they have lower metabolic needs as they get older.

[00:07:17.350] - W. Jean Dodds, DVM
So their levels of normal would be lower than adults. Puppies are still growing and they need much more metabolic energy. So their basal thyroid levels should be higher than the range that you see on the report. Large and giant breeds have lower basal levels because they're not as active as a terrier, for example, and sighthounds as a group have much lower basal levels. Sight hounds from the Middle East were desert bred and they were raised in such a way that they have lower basal levels of thyroid hormone. And this can be very confusing to not only to your veterinarian, but also to you. So all dogs are not the same. Look at these three pictures. Would it make sense that metabolism and growth needs of these three breeds would be the same? Well, obviously not. I mean, how could they be? Right there's, the BassetHound, which is going to be a heavy boned, much shorter breed. Then you've got the Wells ringers, excuse me, that's very much more active. And then you have the Great Dane with a much shorter lifespan and is much larger. So it's going to be different. So when you start thyroid testing, the first testing should be at puberty now because thyroid hormone controls growth and reproduction and whatever, whether the animals neutered or intact doesn't matter because they have to go through pubertyal development.

[00:08:40.080] - W. Jean Dodds, DVM
And so it's very difficult unless there are obvious clinical signs to show that a puppy, for example, or a kitten, a puppy being hypothyroid, a kitten being hyperthyroid. So we first tested puberty, which in males would be somewhere between eight to 14 months, depending on the breed type. And you've got Terriers. So you know where that would be typically. And in females, it should not be when they're coming into asterisk because sex hormonal balance changes thyroid function. And so ideally, what we do in families at risk or situations where you want to do that is you test the female after she set her first seat cycle, and that would be twelve to 16 weeks from the onset of her maiden heat at that period. She is anestrous, she is sex hormonally quiescent. And so every year after that, you test males if they're not around females in heat at the time, by the way, because that can affect them sex harmonly, and you test the female in anesthetic in between your heat cycles. Now, if the thyroiditis testing for the heritable form of thyroid disease is normal after two annual pests, then we say that animal should be okay for breeding.

[00:10:01.290] - W. Jean Dodds, DVM
So you consider for breeding basically after age three, ideally so later than we used to to make sure that we don't promote these diseases which are already so prevalent. If the relatives have thyroid disorders, you wait until three or if thyroiditis testing for thyroid antibodies is normal. So we need to try to increase the length of time before we start breeding our animals to make sure they're going to be clean. Now, the problem for veterinarians is the classical clinical signs of hypothyroidism and even what you might be looking for and low thyroid values doesn't occur until 70% or more of the thyroid gland has been destroyed and inactivated. So that means you wait for fat, lazy, and hates the cold. Forget it. A year to a year and a half before that, the thyroid gland is gradually, progressively being destroyed. So we have to look earlier, especially for clinical and behavioral changes such as aggression or sudden onset in young adults of seizure disorders. They're seen, for example, in the early phase of autoimmune thyroid disease. So what happens? Your veterinarian does an in office test for T four. That's basically misleading. It's not adequate because it's going to be low if the animal has any other kind of non Biotal illness or is given certain drugs like high doses of steroids, like anticonvulsants, like sulphonamide antibiotics, for example.

[00:11:37.810] - W. Jean Dodds, DVM
So you've gone to your veterinarian maybe for just a healthy wellness greed, and that could be fine. But you may have gone to your veterinarian because your animals ad are doing right. And in that case, the T four could be totally misleading because it could be something else entirely. We under diagnose hypervyridism in cats because the nonhyroidal illness that goes along with that, which is usually chronic renal failure in the cat, will suppress the total T four. If the thyroxin level, thyroxine treatment is overdosed and you've got a non thyroidal problem, it'll look like it's okay when it's not. So it doesn't accurately assess the thyroid therapy level. Post pill. You go into your veterinarian for a post pill checkup and all I do is a T four, and you don't know whether that's right or not. And it doesn't do any testing for the autoimmune form of thyroid disease. So again, I know it's more expensive. You need to have a proper profile done upfront to either rule in or rule out the problem where you go on and look for something else. So people say, oh, no problem, Doctor Dodge, we do a total T four and we add on a free T four.

[00:12:48.170] - W. Jean Dodds, DVM
Free does not mean no charge, by the way. It means unbound. Okay, free T four and a TSH, because in people we rely upon the human TSH to diagnose thyroid problems properly. But in the dog, that's not correct because the canine TSH assay is really not very accurate. We don't do age and breed specific norms for accurate diagnosis, as I mentioned, because the lab Rangers are not based upon breed type or age. Sighthounds are lower. I've changed that before. And so veterinarians may do a T four in a sighthound and it reads really low. The animal doesn't look hypothyroid, but gosh, the results say the animal is. So we give them thyroid hormone and we redo the T four and it's still low and we redo the T four and we increase the dose and still low. We had a Greyhound in Santa Barbara years ago that ended up having ten times the sighthound dose of thyroxine because the veterinarian was trying to get the T four up to the level he thought it should be. That animal got so agitated they gave it tranquilizers to calm it down. But the real reason was it had an overdose of thyroid therapy, not because the veterinarian was trying to do something wrong, because he just hadn't been educated on how it was different inside house.

[00:14:08.480] - W. Jean Dodds, DVM
Now, thyroxin binds to calcium, soy, so you don't give it with any meals or supplements or treats that have calcium and soy in them. Because if you do that, the thyroid hormone is not absorbed properly. It's bound to calcium and soy and it takes much longer for it to have its effect. We always give it twice daily. Now, unfortunately, the current most used via FDA approved brand of thyroid hormone has a new sticker on the top that says you can now give it one daily if you want to. That is totally misleading. The half life is twelve to 16 hours. If you give the total daily dose once daily, you get a peak in the Valley effect. It's too high for half of the day and it's too low for the rest of the day. So please, if you see that sticker on the product, just ignore it and continue to take the total daily dose, appropriate dose, split in half. I just got that same question again today. Now, spas and uters can impact basal thyroid function, of course, because you're changing the sex hormonal pathways. Stress can change it. Environmental exposure is in diet.

[00:15:23.430] - W. Jean Dodds, DVM
Now, sometimes the veterinarian doesn't have the actual dose of thyroid hormone kept in their clinic and so they dispense it and they tell you to go down to the pharmacy for humans down the road. And the human pharmacist assumes that the dose is wrong because the veterinarian prescribed 0.5 milligrams twice a day, which is enough for a 75 pound dog, roughly. And the pharmacist is sure it's wrong because in humans it would be zero 75 or zero five, I should say, because animal doses are ten times higher because animals have a much faster turnover rate and a much shorter lifespan, typically than a healthy human. So we had a case in Florida where the pharmacist changed the dose from zero five to zero five. And the dog didn't get better. And when finally they retested it and said, what happened? They sent a copy of the label of the prescription and I saw what happened. The guy ran out the door, ran down to the corner pharmacy and was seen trying to strangle the pharmacist. It was pretty funny, actually, but it wasn't funny. So sometimes animals are diagnosed with hypothyroid was just a total T four.

[00:16:33.880] - W. Jean Dodds, DVM
And the referring veterinarian is concerned that the diagnosis wasn't correct. If you stop the therapy that the animal has been on, you must wait at least six weeks before you retested because it takes six weeks for the pituitary thyroid axis to return to whatever its normal capacity was before the thyroid hormone was given. So please don't test right away because it will be hypothyroid looking. So maybe we don't want to use drugs. Maybe, Dr. Dodge, we want to use thyroid support or thy trophy. These natural products will that correct. True hypothyroidism thyroiditis. No, it won't. It can support the thyroid gland, but it won't correct the underlying problem. Okay, so we're always giving it now twice daily. Halflife is twelve to 16 hours, apart from meals. I mentioned that already. 1 hour before any calcium or soy or 3 hours after natural thyroid extracts I just mentioned will not do this easily. Like Armor thyroid, like Urfa in Canada, like Westroid or Nature Thoroid. Those products contain both T four and T three. They're much more costly. So if you give those products, you have a potential of giving too much T three. And what the T three does is it downregulates the T four.

[00:17:57.380] - W. Jean Dodds, DVM
So here the veterinarians got the animal on a natural thyroid extract, either because they or the client preferred it. And they do a T four, only it looks well, they increase the dose when in fact, the real problem is there's too much T three and the T four is being down regulated. Okay, so here is our hemolive thyroid diagnostic lab. And the complete diagnosis requires a total T four, a total T three, the free unbound form of T four, the free unbound form of T three, and the thyroglobulin auto antibody for the autoimmune form of thyroid disease. Now you can add on and some veterinarians still think they have to do that. Tsh, T three auto antibody and T four antibody. You don't really need those. And TSH can give you the wrong answer, both false positive and false negative 30% of the time in the dog. Here's what happens with the TSH. Which arrow would you like? Up, down normal. Who knows, right? Why is that? The reason for the TSH giving a poorly predictive false positive or false negative compared to humans is it has to be canine specific assay, by the way, because the dog has a much more active alternate thyroid regulatory pathway through growth hormone because animals are growing more rapidly and they don't live as long as we do.

[00:19:28.110] - W. Jean Dodds, DVM
So you need a complete thyroid antibody profile preferred always for the first diagnosis. Basal levels of thyroid are affected by steroids, too much iodine, phenobarbital, sulfonomy, flexIC preventive and sex hormonal change. Thyroid levels are lowered by estrogen. So if the animal is coming into Asterisk within 30 days of testing, it can be affected. Or if it's in asterisk when it's tested, it can be affected. It's raised by progesterone. So what happens is we've had unscrupulous people wait until their animal is in early pregnancy to get the thyroid level to look higher in order to tell the people that they're breeding with or working with that the animal is truly normal in thyroid, when in fact, its thyroid levels have been raised because of early pregnancy. So we checked intact females during sex hormonal quiescence. Now, you may have read that rabies vaccination boosters 45 days prior to doing the thyroglobulin auto antibody can change the level. And that's true. It can change it by 25%. That's not 25 percentage points on the tGAA assay level. It's a quarter of what it would have been otherwise. So many people say, oh, well, my animal had a rabies vaccine 100 days ago.

[00:20:52.030] - W. Jean Dodds, DVM
So therefore, that's what caused the hypothyroidism. Unfortunately, that is denial. And denial is not just a river in Egypt, sadly. So we need to be open and honest and sincere with each other to help this. Now let's talk a little bit more about the clinical signs, thyroid dysfunction, ultracellular metabolism. So the animal can be lethargic, it can be mentally dull. And I used to always laugh about the fact that my English setters always appeared to be mentally dull because they were the gentlemen and gentle ladies. They did not have the acute sensitivity of certain other breeds. And I hate to say that, but it tends to be true. Exercise intolerance. You're walking briskly around the community and the dog doesn't have any tolerance for exercise anymore, which is obviously the opposite of what it should be. Neurological signs like twitches and lazy leg syndrome and things that maybe they're not home polyneuropathy, the same thing. Seizures. You can have epilepsy, you can have weight gain. Honest, doctor Smith, my dog does not eat a lot, even though it's gaining weight. And we had a golden retriever puppy at puberty years ago where the person said to the veterinarian, but she doesn't eat too much, doctor.

[00:22:14.730] - W. Jean Dodds, DVM
And the husband who was taking his wife because she didn't drive to the clinic behind his newspaper, looked up and said, Tell her about the pizza. Tell her about the pasta. Oh, but that's not dog food. The lady said, so you never know. We have our own feeling about what's overweight and what's not overweight. Cold intolerance. They don't tolerate the colds well. They can be Moody, they can be hyper excitable. They can have a stunted growth. In other words, they can grow much more rapidly than they should in the first year of life, and then sort of slow down. And then they can have chronic infections, chronic foot, chronic ears, chronic tooth, chronic skin, just chronic urinary tract infections, pain in the neck, infections. So here we are. Look at this little dog who is cold, intolerant. She actually has to be is overweight. But you can't see that she doesn't look happy. She looks anxious, right? She has anxiety. So she's a classical example of a hypothyroid pet. Now, here you have an Akita that was severely obese. And this poor lady said, I am not overfeeding this dog. I know I'm not. The skin is wonderful.

[00:23:30.250] - W. Jean Dodds, DVM
And the veterinarian said, well, this dog is not hypofyroid because, look, the skin is perfect. She just said too much. She said, she said, a Germany performing dog, she can't jump anymore with the shoulders. Please check the thyroid hormone. And he said, okay, remember, you pay for it. So if you insist, they should do it for you. So here she is after therapy. You see, she was hypothyroid old mom. See how she's got beautiful muscle mass. And the best thing about this particular dog is here she is at age 14, kept on therapy, tested regularly. Happy, happy. Look at her. This is the same dog that needed thyroid medication. Here's a dog that came to us that had hair loss. And you can see down below here the hair loss. Okay, gosh. She looks like a golden retriever. She actually looks like a Butterball Turkey. So when we tested her thyroid, look at her truly wasn't a golden retriever. She was a mix. And you can see she's still not grown in her hair yet, but at least she's got a better shape. What about skin diseases? And this is what most veterinarians will see.

[00:24:50.250] - W. Jean Dodds, DVM
Animals that have thryoid dysfunction that will come to the clinic because they have dry, skinny skin and dandruff. They have a coarse, dull coat. They lose hair bilaterally because this is a central Anakin problem. So it should occur more both on the left and the right. They can lose their tail if they're a setter, for example, with a feathered tail, or they can have a puppy coat. It's always fluffy and interior, for example, a soft, fluffy coat rather than the normal texture of a Terrier's coat. Now, just remember, you can be fooled sometime. We had a double man that was hypothyroid. And there was much more hair loss on the right side than the left. And it perplexed us for some time. It turned out that she always lay down on her right side. And because she was always itchy, she was scratching on a heavy indoor outdoor carpet. And so the hair loss was more on the side that she was lying on and scratching than the other hyperpigmentation, usually under the armpits or the groin. Oily skin in some cases can imagine a terrier with an oily skin when you squeeze it, the oil comes on your fingers.

[00:25:55.550] - W. Jean Dodds, DVM

Or you can have a dry skin. Separate oliosa is oily or separate Aceta, which is dry. Chronic skin infections, mycadema, which is a thing that people get when they have a thyroid problem. And the skin smells because of the chronic bacterial secondary infection, the animal smells. And so you end up washing a terrier, for example, more often they should ever be washed. Use a neglect case. Look at the tail. Look at the Wooly coat. This is not a normal coat. And if you look at her skin more carefully, she's been scratching it and she's got bacterial infection and pussy coming out when you turn her over. See the hyperpigmentation? Now, what you might see in very early cases in your dogs would be these kinds of skin lesions that are not raised and not infected, but they're taupe colored, okay? They're not the right color. So these things will progress eventually and become like Armadillo syndrome. Here's a terrier that came with no hair, right? It's a rattail. My God, the poor thing. And he was so friendly, you could pick him up as a terrier and he would be acting like a mushy cavalier.

[00:27:20.710] - W. Jean Dodds, DVM
Totally not a terrier personality, right. And yet once his thyroid was fixed, look at his eyes. Try and pick me up now, friend. Just try. I'm a terrier again. I love that picture. Here's a German shorthaired pointer that had feet bandage so he couldn't scratch himself. And they put duct tape on it so his feet couldn't breathe. Now, remember, dogs swept from their footer beds, right? Can you imagine what it was like when you took the bandage off? Oh, my God. Okay. And you see the sad expression on his eyes, a tragic expression. And he has hair loss here. And this is an amazing case because when you look at the back, the hair loss is bilateral. It almost looks like you flippered it. That's very unusual, by the way, to see the hair loss like that. So here's an example of progressive face changes with more sadness and tragedy. Here's a golden retriever in 2010. Here's the same dog in the next year and the year after that. See how his eyes are changing. His face is changing color and shape, and he's looking more and more sad. And his nose is pink bit less sometimes.

[00:28:40.580] - W. Jean Dodds, DVM
It's very good. By the way, if you can do that on your phone or with a video, take pictures of your dog when they're in the prime of their health, and then take a picture at least once a year and look at them and compare them. If you see anything unusual, not just the face, the whole body, take it to your veterinarian and show them because they are not seeing the dog in the progression that you have. Here's an Irish waterspan who just had a litter and she's got some eye discharge there and look her coat is all gone and the shade of the coat is horrible. So she was carrying a large litter when she had thyroid dysfunction. This is from England. The person did not realize that. But once she was diagnosed and treated, look at her. See how the chocolate color came back again? See how the coat grew in again. Isn't that amazing? It's totally amazing. So your muscular signs, you can have weakness. When you put your hands on the body and you push down on the dog, it can collapse underneath you. In other words, it doesn't have any normal resistance.

[00:29:43.830] - W. Jean Dodds, DVM
Like you're stacking a dog for examination on the shoulders or on the Withers or on the rear, and he goes right down. That's not normal. They can be stiff. In other words, when they get up in the morning, they have to jog a little bit to get limber again and change the character of their bark, which actually might be good if you can't hear it as much. They can have facial paralysis, which means that one part of the face looks more goofy than the other. And they can have a sad expression, which I showed you a picture of. If you're a larger breed dog, you can have knuckling or dragging the feet. You have muscle wasting around the Withers and again around the rear. You can have a soft, floppy esophagus, so you can't swallow textured foods or crunch on safe bones like they used to. You can have a head tilt because you have a chronic inner ear infection on one side or the other. And your eyelids can be droopy and you're not a Bloodhound. So here's a golden retriever. It just happens to be a golden retriever again with temporal muscle wasting.

[00:30:50.290] - W. Jean Dodds, DVM
And this dog came to us because it had a skirtie, funny coat and my God, look at this. You could actually take the temporal bone here, put your thumb in there and it would go in almost an inch total missing temporal muscles. Now, we treated her for autoimmune thyroid disease. Sorry, I don't think I have another picture. No, I don't. We treated her for autoimmune thyroid disease. And this muscle mass grew in and she got an acute Lymphosarcoma and died in four months. Not that they were

related, but gosh, it was so sad. Okay. Reproductive disorders infertility of either sex, lack of Levido in the male. Oh, people say, well, my stunt dog is just tired of breeding females. And so he's not interested in anymore. At age five, as any man would know, that's not normal. Testicular atrophy the testicles seem to get softer and bushier. You have fewer numbers of sperm. And even though they can settle a bitch because you have thousands of sperm, you still have fewer numbers of good, healthy motile sperm. So it could affect, obviously, the fertility and the health of the fetuses. You can have no sperm.

[00:32:06.410] - W. Jean Dodds, DVM
In fact, in some of these cases, that's probably a good idea, so they don't reproduce. You can have a prolonged interestrous interval. In other words, your young, wealthy has a cycle every, say, six to eight months. And all of a sudden they don't come in for a year and a half. Or they can have no recycles or have silent heats. In other words, the male knows the animal cycling, but she doesn't see show any overt signs of heat stress. She can have chronic recurrent pseudo pregnancies. Having a pseudo pregnancy after the first heat is not always abnormal. But if it keeps coming heat after heat, then there's something wrong where you can have weak, dying or still lone puppies, cardiac abnormalities, a slow heart rate, cardiac arrhythmias. When your veterinarian listens to the heart or, God forbid, cardiomyopathy in the breeds that have that quite frequently. And you have all kinds of GI disorders, because we now know that the microbiome in the bowel of humans and animals have all sorts of problems with beneficial bacteria and harmful bacteria. And if it's imbalanced, you can have an overgrowth of harmful bacteria and inflammatory bowel disease, constipation diarrhea or vomiting.

[00:33:21.810] - W. Jean Dodds, DVM
We can have bleeding because the blood is not produced in a normal level. You can have bone marrow failure with low grade anemia, changes in white blood cell counts and changes in the platelet counts that help us clot. Okay. You can have Cornell liver deposits or ulceration. You can have inflammatory immune, inflammatory surface of the eye, uvitis. You can have dry eye, particularly in some breeds like the Cocker spaniel. And you can have infections of the eyelid glands. You can have deficiency of immunoglobulin A, which is your Secretary immunity in your tears, your sweat, your urogenital secretions, for example. Not uncommon. It's a hero disorder in people and animals. And we see it in quite a few dog breeds, the Sharpie being the most likely. They lose their smell. So if they're doing scenting, they can't smell anymore. They can lose their taste. And so you keep adding more herbs and other things to the food or something to make it tastier, so they'll eat it. If you're a Basenji, you can have glycosuria in the urine. You can have chronic active liver problems. You can have Adrenal disease, pancreatic disease and parathyroid disease. So let's talk now just for a few minutes about foods that are important for thyroid function.

[00:34:49.220] - W. Jean Dodds, DVM
Green leafy vegetables are very important, fed at least three times a week to pets. They can be chopped. They should be chopped raw, lightly steamed or cooked. More yellow Orange vegetables are the same. They are very important, both of them three times a week or even daily. Fruit, blueberries, raspberries, cranberries and pomegranates. These are excellent sources of antioxidants. Apples, pears, watermelon, melons, bananas. If you're doing watermelon, no rind or seeds, obviously. And we need to avoid the glutens. The gluten will be wheat, wheat germ, wheat Bran, Rye, barley, oatmeal, unless it's labeled gluten free. Kamut spelt, Pharaoh and couscous. These are the foods that affect thyroid function. So what about soy? Soy affects thyroid function, and it's the isoflavones of soy that are present in most premium cat foods. Not so much in dog foods, but in the cat. Food effects are protected by dietary iodine. So what if the pet food industry done they've added too much iodine to try to offset it. And of course, hyperdine is not good and hypoidine is not good and it triggers hyperthyroidism in cats. Soya is a plant estrogen, so therefore it can affect dog and cat diets.

[00:36:17.830] - W. Jean Dodds, DVM
In the skin, the hair coat, the immune response, it can delay puberty and it can promote infertility. So again, you've got to be careful what you're feeding. Ok. Iodine excess causes ulcerations and thyroid activity. Feeding excess amounts of iodine, such as kelp and seaweed, reduces thyroid function, contributes to the rising prevalence of hypothyroidism in young dogs and hyperthyroidism in older cats. It increases the likelihood of autoimmune thyroid disease. So here's the gluten thyroid

connection. Autoimmune thyroid disease in people, which is Hashimoto's disease, is the dog version. Hypothyroidism and Graves disease is hyperthyroidism the older cat, and it equates to gluten intolerance. So as I mentioned earlier, we need to avoid wheat, barley, Rye, oats and less labeled gluten free kumuk spelled Pharaoh and couscous because the protein from the glutens looks like thyroid gland protein and because it's a molecular mimic, it affects thyroid function. So why are pets euthanized most often if they have undesirable behavior? In parallel findings in dogs with hypothyroidism and thyroiditis and cats with hyperthyroidism. All of these behavioral change, unprovoked aggression, sudden seizures, disorientation moodiness, erratic temperament, hyperactivity, hyperattenderness. They're not listening anymore. Depression, even fearfulness, phobias, anxiety passivity in a breed that should be there for you like a terrier, for example.

[00:38:09.400] - W. Jean Dodds, DVM
Submissiveness compulsiveness and irritability rolling over and peeing when you go to pet them. Definitely not normal. So here you see the sad hypothyroid, withdrawn, submissive, aggressive, anxious, depressed, sensitivity to noises or objects. Much more concerned with firecracker activity, for example, on the 4 July than they used to be. Here's a group of budhounds that did search and rescue from Ontario. Very, very nice family. And they went to Oklahoma and the other places. This was the mother and these were her four offspring. Look how different they are. Look how big he is. The only non hypothyroid dog in this family was Jackson sitting on the rock. His full name had Prudential in it on the rock. Here we have Shiba. Enu was the best agility Shiba in theu in the country. And all of a sudden he goes into the tunnel and wouldn't come out. He would hide, gosh. I was giving a seminar and she showed me his picture. I said, look, he's got wasting underneath his eyes and his eyes are not open properly. I think he has a headache. So we tested him and he ended up being hypothyroid and here he is winning his ribbons again with his face going back in and his eyes, the normal almond shape.

[00:39:42.690] - W. Jean Dodds, DVM
Here's a German brah from the original German ancestry from Germany. He had unprovoked aggression and nobody knew what was wrong with him. Look at his eyes and the intensity of his look. His next step is in your face. His dog was treated and he was much better. The people didn't trust him, however, and they humanely put him to sleep. And I can understand why they did that. He was a big dog, a very strong dog and a very determined dog. So we don't breed animals that have the autoimmune form of thyroid disease. We screen the relatives annually from puberty on. We've talked about this already, how you can breed them, and it's a heritable trait, regardless of whether they have any clinical signs or not. So here's what happens when the thyroid gland gets destroyed. This is a histemicrograph of a normal thyroid gland. And the pink fluid is thyroid hormone. And their cells are different sizes, but they look sort of innocuous, like a scarf, even might be for a person. Then the body programs the Lymphocytes, these blue areas, to come into the gland and start destroying it. And the cells get disarrayed and piggledy.

[00:41:04.950] - W. Jean Dodds, DVM
Some of them are ghost cells. You see, they rupture. See the nuclei of the Lymphocytes destroying them. This is about to rupture. So many of the glands and they cannot reproduce. Once the thyroid cells are damaged, they cannot be replaced. And here you have the end stages of autoimmune thyroid disease. Obviously, thyroid gland can't function. At this point. There are no cells really left to provide any function, as mentioned in our book, The Canine Thyroid Epidemic from 2011. You can read all about this or you can actually just study the seminar we've had. Thank you very much.

[00:41:46.110] - Mary Duafala
Thank you so much, Jean. That was a wonderful presentation and provided so much great information.

[00:41:52.890] - Mary Duafala
Thank you.

[00:41:54.160] - Mary Duafala
Do you want to stop sharing your screen now?

[00:41:57.110] - W. Jean Dodds, DVM
Is that what I do? Yeah.

[00:42:01.450] - Mary Duafala
Great. Now I'd like to open up for questions. Anybody have questions? Just unmute yourself and speak up while you're doing that. I do have a question, Jane. The

[00:42:17.920] - Mary Duafala
OFA Thyroid Registry has different standards for normal thyroid function than your Hemo Pet standards, is that correct?

[00:42:27.590] - W. Jean Dodds, DVM
Yes. And the reason for that is.

[00:42:29.710] - Mary Duafala
Yeah. Thank you. I wanted to ask you to explain that and let us know how we can address it.

[00:42:34.810] - W. Jean Dodds, DVM
Do I have to do anything?

[00:42:36.590] - Mary Duafala
No. Just talk.

[00:42:38.120] - W. Jean Dodds, DVM
Okay. Sorry. The Simple Thyroid Registry only has three tests in it. They are not based on age and breed specific norms. They don't. They aren't. Now you can do an expanded thyroid registry test, which has more tests than those three, which is the one we recommend because it looks at everything. And our thyroid interpretations are patented globally. And we actually always look at breed and age specific norms. And when you get a result from hemopox, it has a case specific range and then a general range. The case specific range applies to your pet, that pet's age and that breed type. And it's based on 20 plus years of cumulative data studies where I have collected the norms of all the different breeds, being someone who was a dog fancier and even an AKC delegate for a while. So I'm totally involved in that. The other thing you should remember is that the other thyroid assays that are done use radio immunoassay reagents. For the most part, those reagents are polluting the Earth. Our patented technology does not use any radioisotopes because I don't care how strongly you put your radioisotopes into a concrete block and you put them down a special drain, they're still going to continue to pollute the Earth.

[00:44:00.120] - W. Jean Dodds, DVM
And we need to try to stop that.

[00:44:03.710] - Mary Duafala
That's interesting. So if we're looking at the OSA registry and say a dog is listed as normal for thyroid, that may not be helpful information for us, is that correct?

[00:44:18.240] - W. Jean Dodds, DVM
Right. For your particular breed type and the age of the pet. Now, the other thing what people do is we cannot be part of the Ofa system ourselves. You know why? Even though we had independent verification and two endocrine experts come and examine our protocols, we got 100% concordency with the Ofa standards. They would not accept it because we would not disclose where we buy our reagents from because they're patented and the technology comes from Europe. And we would not disclose it because obviously all of these experts that came from other reference laboratories would be able to tell their people that, hey, we don't have to do it with isotopes anymore. You can just buy the reagents from X and we could never reveal that.

[00:45:07.780] - Mary Duafala

That's interesting. Thank you. Other questions. I have a question about the aging dogs. How common do you see thyroid disease develop as the dog ages, for example, 10, 12, 13 years old? Nuanced thyroid disease?

[00:45:33.510] - W. Jean Dodds, DVM
Yeah, that's a very interesting question. Animals that become geriatric very rarely start to be truly hypothyroid de Novo. It can be that hypothyroidism is connected with something else. Let's say, for example, they become Cushing disease, right. Hyperactive, adrenal glands, which is very common. Now, if you just do a T four, you'll think they're all hypothyroid, but you don't have to do that when you do them together. You can have a problem, just like you can have thyroid problems show up in old age when the animal has immuneiated destruction of red blood cells or platelets. And in humans, the combination is called Schmidt's syndrome, and it goes together with Addison's disease, believe it or not, which may not show up also until old age. So it's unusual to have that first thing you would do in a geriatric animal. It looked like it was hypothyroid. Get a proper assay done. If it's still hypothyroid, then you start therapy at a much lower dose than you would be if they were younger. So you start at a conservative dose, like, say, half the amount you would give to a five year old, and then you tighter it and see how they behave and how their blood tests change.

[00:46:45.070] - Mary Duafala
I see. Thank you.

[00:46:47.890] - Trish
I have a question.

[00:46:49.450] - Mary Duafala
Hi, Trish. Trish, do you have a question?

[00:46:53.850] - Trish
I do. Thanks, Mary. I have a bitch that I recently had a T four terror and it came up low normal. But the reason I brought her to that was because I thought she had an ear infection, which she, in fact, did have. How much of the ear infection might have contributed to the fact that the T four showed up low normal?

[00:47:28.850] - W. Jean Dodds, DVM
Okay, that's a very interesting question. The point is that the ear infection could have been caused by a thyroid function level that was gradually becoming lower normal. Doesn't I mean, low normal for a Welsh terrier, what was it again, to me that would require all of you can just send me results and issues from your patients, from your pets. If you've had an assay run and ask me what I would recommend, there's no charge. I'd be happy to help you so I could review in your case what was done.

[00:48:01.280] - W. Jean Dodds, DVM
Look at the low normal.

[00:48:02.310] - W. Jean Dodds, DVM
Look at the ear infection and whatever. But just remember, you've also got the effect of heartworm preventives and all these horrible new flea and tick preventives that are affecting behavior and causing seizures. And you know what? The FDA has finally required that all these products have a warning put on their labels when it wasn't put on for at least a year, it was put on in Canada a year earlier because there weren't that many animals in Canada and they weren't so worried about their huge biggest moneymakers in veterinary medicine, by the way, from the Pharmacological group. And so finally, the FDA overlooked the political lobby and said, you have to put it on the label. So now it's on the label in 7.5 font in white print on a black background. And most veterinarians who have been prescribing these products for years don't even read the change in the label. Right. Because they wouldn't think to look at it. So we the public and I conclude myself in that need to be much more aware about what's going on, not only for ourselves, but also for our pets.

[00:49:08.030] - Trish

Thank you. I was planning on having her retested once the infection was gone to ensure that that wasn't causing the low normal results on the T four.

[00:49:24.530] - W. Jean Dodds, DVM
Okay, well, you need to do more than the T four, but if your animal style better, you could do a proper thyroid profile and make sure that everything's okay, Trish.

[00:49:33.370] - Trish
Okay. Thank you.

[00:49:36.350] - Mary Duafala
Let me put in a pitch for Jean. She has a wonderful laboratory service there, and her charges for the laboratory tests are very reasonable. And in fact, you can often pay your vet to draw the blood, pay for the shipping and pay for gene services. And it will cost you less than having the same labs done at your local vet. So don't be offput by the fact that if you're going to have Jean's lab do the test that you need to package it up and send it. It's not that complicated. I don't know if you want to add anything to that gene or if I've misspoken serum.

[00:50:18.750] - W. Jean Dodds, DVM
We need the serum separated. Please don't have the veterinarian draw blood, put it in a serum separator tube with a gel in the middle, spin it down and send it in the mail, because it's going to be raspberry jam when we get it. And if you were me, I would not rely on results done on raspberry jam. So you need to separate the serum.

[00:50:37.500] - W. Jean Dodds, DVM
Put it into another tube.

[00:50:38.910] - W. Jean Dodds, DVM
And plastic tube is fine. It's good for ten to 14 days in the mail. So you can send it by USPS priority mail, because the sooner we get it, the sooner you get your results within 24 to 48 hours. And veterinarians have been known to charge three times the price. Please don't do that. Please understand that we're a nonprofit company. And yes, they have to cover their overhead, their salaries for their people and everything else. But don't let them tell you that they have a contract and they have to do their thyroid tests with Brand X. They don't have a contract in that sense. If they don't use Brand X all the time, Lab X all the time, they lose their volume discount, which you never know about.

[00:51:25.130] - W. Jean Dodds, DVM
And the instructions for your vet in terms of how to handle the draw and the packaging of the specimen are very clear on the Hemo Pet website.

[00:51:35.750] - Mary Duafala
Thank you.

[00:51:37.970] - Speaker 6
Jean. I have a question about the food you were talking about. You talked about giving Greens and berries and things. What percentage of the diet should be those fruits and vegetables?

[00:51:51.230] - W. Jean Dodds, DVM
Oh, that's very interesting. If you want to feed your dog a vegan diet, it can be whole fruits and vegetables. If you want to add some meat or fish, 30% is plenty. Don't feel 70% raw. That's not a good idea, because unless you're using grass fed meats, most of the GMO corn sprayed with glyphosate is in the flesh of the animals that they're eating. Think about it. Right. Phosphate is roundup, as you know, which we don't want to have in our animals at all if we can avoid it. Thank you.

[00:52:32.450] - Mary Duafala
Other questions?

[00:52:34.190] - Speaker 3
I have a question. This is just something that I've heard about not had any experience with, but I've heard that there's some dogs that can't be treated with the synthetic thyroid. Is that the case? And if that's the case, what is it that people that have that can do to help their dog?

[00:53:01.790] - W. Jean Dodds, DVM
That's a very good question. I think I limited to it when I talked about the Armor thyroid, Nature, thyroid Westroyd as alternatives. What usually happens if they quotes can't handle the synthetic is because the dose is not correct or they're being given a tablet with a color. The thyroid tablets all have different colors. Okay. The white one is zero five, for example. So if a Welsh terrier needed it and it was a color issue, you wouldn't want to feed a bright turquoise pill or a bright pink pill or a green pill. You might want to take the white one and cut it in half or quarters or whatever, so you avoid the color issue. The other thing is you can feed these alternative thyroid treatments, but they are much more expensive and they have the problem with increasing the T three, like I mentioned. So again, we have German Shepherds, an excellent long time client of Reading German Shepherds in San Diego, and she wants to do everything naturally as she can because it's too expensive to do the natural extracts. What she does is she does two thirds to three quarters synthetic of a white pill and the rest with the natural supplements to get the balance that she wants.

[00:54:15.790] - W. Jean Dodds, DVM
So there are ways to do that, and I'm happy to help anybody that's struggling with it. Just send me an email. I'm more than happy to make my suggestions, which, of course is a prescription product. You have to get it from your veterinarian, not from me. Okay. Other questions.

[00:54:38.130] - Mary Duafala
You mentioned during your presentation that I don't remember the exact percentage, but there is a delay between potentially between the development of clinical symptoms and laboratory test results reflective of the low thyroid level.

[00:54:57.840] - W. Jean Dodds, DVM
Right.

[00:54:59.010] - Mary Duafala
And so do you ever recommend treatment with thyroid based on clinical presentation, even though the thyroid test results are still normal?

[00:55:14.120] - W. Jean Dodds, DVM
That's a very good question, Mary. So then the early signs of thyroid dysfunction, which may not be easily determined by the veterinarian or by you, it could be a year and a half before the actual classical things occur and the classical example is overweight. So what we do is we say we'll try with the veterinarians concurrence a clinical trial of four to six weeks at a small dose of thyroid hormone to see if we can increase the body's metabolism to help the animal lose weight. So then we recheck everything and determine sometimes those animals have to stay on thyroid hormone. Some of them, they have lost weight, they change the diet, they do other things that they need to do, exercise the animal more and they don't need it anymore. So it's not incorrect for a veterinarian to make a clinical decision to give thyroid hormone at a lower than therapeutic dose on a trial basis.

[00:56:11.230] - Mary Duafala
So that dog initially had normal thyroid lab results when you give them the thyroid supplementation, despite the fact that it's at a lower dose, are you going to bump up those thyroid lab results?

[00:56:27.530] - W. Jean Dodds, DVM
Actually, that's a good question. Everybody seems. Well, if I add X on top of Y, which is already normal, I'm going to have too much. No, the body down regulates it. The body knows at the level of the pituitary gland in the head just how much the thyroid gland needs to do. And so what happens if it's an overdose? Is excreted faster. Okay, so the body has we haven't given our bodies enough God or whomever we believe created them enough credit for having the checks and taxes that are needed.

Okay. Body takes care of it. You don't have to worry.

[00:57:05.170] - Mary Duafala
How often in your hypothyroid dog should you thyroid testing?

[00:57:11.050] - W. Jean Dodds, DVM
I'm sorry, what?

[00:57:12.690] - Mary Duafala
How often should you repeat your thyroid testing and a hypothyroid dog annually to make sure that you're still on charge?

[00:57:18.910] - W. Jean Dodds, DVM
Annually. But initially you need to do the first retest of six to eight weeks after you've started the fire at home loan to make sure you're on the right dose, not too high, not too low, whatever. And then the client will see a change. Remember, each animal, like each person, is an individual, so the animal could get much better. Whatever you're looking for within two weeks, 110 days even, or it could take two months, depending on what it is, it has to change.

[00:57:49.010] - Speaker 3
I have another question. It's about how you had spoken to the fact that a lot of veterinarians, they don't have the training in terms of understanding the proper tests or they'll do the testing with the TSH, et cetera. There's people that I think encounter issues where they've sent stuff, for example, through Hemo pet. And when they go back to their own veterinarian, the veterinarian won't really help them. Are there endocrinologists throughout? Right now, I'm going to say the United States, but also outside of the United States, because I know we've got somebody from Australia and we've got people all over. How do people deal with that issue? Because that seems to be something that I've heard from pet owners in some of the various groups that I'm in on Facebook.

[00:58:56.050] - W. Jean Dodds, DVM
It's very common and it's so frustrating. You can't believe it. The first thing you need to do is if you cannot have your veterinarian understand and agree to do what you need to do what you believe is right for your pet. You have to see if there's another veterinarian in the area that can do that. The other thing you can do is you can go to the national and international holistic veterinary associations, for example, the American Holistic Veterinary Medical Association, which has members. Not everybody that's a holistic veterinarian is a member, but it's www. And for those of you lovely people in Australia, members, for example, Dr. Barbara Fujer, a longtime personal friend of mine, is a member, and we do testing in Australia. Often people send samples to us all the time from all over the world. It's not a big deal so it can be done. And eventually we have an example of a person who went into her veterinarian to have her large breed dog, Spade, asked for the price and they were told $750. Oh, my God. She said, I'll think about it. So she went out the door and she saw that about a block away there was another veterinary clinic and she went in there and she said, Hi, I have a healthy large breed dog and I'd like her to be spayed.

[01:00:19.270] - W. Jean Dodds, DVM
What's the cost? And they said $450, let me think about it. So she went back to the first clinic and she said, your colleague down the road has offered to spay my dog for $400 instead of $700. Oh, he said we'll do it for $400. She said, like hell you will. And walked out, right? Believe me, I love my profession. Okay, I'm not trying to belittle it, but we just have to be buyer beware today and we have to realize that. You have to be able to negotiate. You have to be able to say I'm a senior, I'm on Social Security. I need a discount, I have a financial hardship. Can you help me? And most veterinary clinics will agree to give you some kind of payment plan or help or reassess what it is they need to charge, give them a chance at least. And if they don't, goodbye.

[01:01:16.750] - Mary Duafala
Any final questions? Well, Jean, thank you so very much. I really have learned so much from your presentation and I look forward to going back and listening to it again because I'm sure I'll learn even

more the second time around. Before we close, I want to let you know that Dr. Dodge is doing this presentation free of charge, and we sincerely appreciate her donating her time and her energy to our group, if you're so inclined. She does have a nonprofit Hemopet, so if you go to Hemopet.org, there is a Donate button, please, if you like, go there and donate to this wonderful organization to help Dr. Dodds continue her work. So any final comments questions.

[01:02:14.090] - W. Jean Dodds, DVM
You guys are wonderful.

[01:02:15.360] - W. Jean Dodds, DVM
Thank you so much. Wow. Thank you all for your questions, thank you all for listening and be safe. Be safe. Thank you.

[01:02:23.550] - Mary Duafala
Thank you. Thank you. Good night. Bye.