HEMOPET

Canine Health Seminar

Grants Pass, OR

July 28, 2013


PET
LIFE-LINE

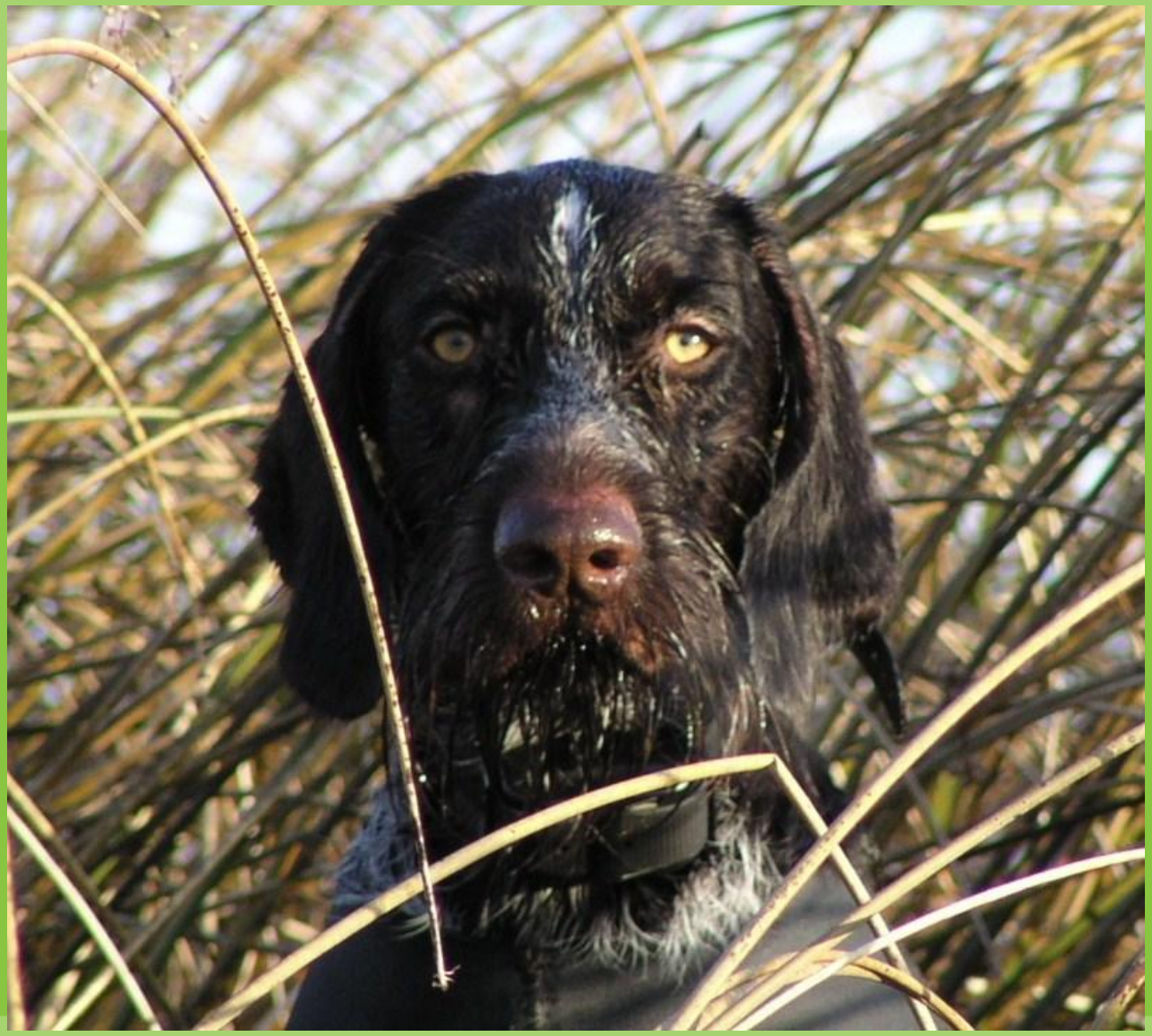
THYROID DISORDERS -- the latest

by

W. Jean Dodds, DVM

Hemopet/Hemolife


AUG 2 2010



All animals are not the same

- Puppies have higher basal thyroid levels than adults
- Geriatrics have lower basal thyroid levels than adults
- Large/giant breeds have lower basal thyroid levels
- Sighthounds have much lower basal thyroid levels

Thyroxine treatment is best given twice daily

- Dividing the daily dose q 12 hrs avoids "peak and valley" effect of once daily dosing
- Achieves better steady state over 24 hrs; half-life =12-16 hrs
- Dosing should be given directly by mouth rather than in food bowl
- Thyroxine binds to calcium and soy; should be given apart from meals (1 hr before or 3 hrs after)

Screening for Canine Thyroid Dysfunction

- Complete thyroid antibody profile preferred; OFA Thyroid Registry is a limited 3 test panel
- cTSH poorly predictive (~ 70%) compared to humans; dogs have another pathway (via GH)
- Basal levels affected (up to 25%) by certain drugs (steroids, Pb, sulfonamides, excess iodine)
- Basal levels lowered by estrogen; raised by progesterone [sex hormonal cycle effects]
- Rabies vaccine in prior 45 days can raise TgAA by~25 %

Do NOT Breed Dogs with Autoimmune Thyroiditis

- Screen relatives annually from puberty
- Consider for breeding, if negative, after age 3
- Heritable trait, regardless of clinical status

Genetics of CanineThyroiditis

- Canine autoimmune thyroid disease similar to human Hashimoto's Disease
- Affected humans & dogs have MHC gene profile which predispose to thyroiditis
- Unique DLA-DQA1*00101 genetic determinant of DLA class II haplotype found in Doberman Pinscher, English Setter and Rhodesian Ridgeback; doubles risk of hypothyroidism; 11 more breeds now studied
- Second genotype of the CTLA locus found in Boxer, Shih Tzu, Yorkshire Terrier, Irish Water Spaniel, and Siberian Husky affected with thyroiditis
- Holds promise for a genetic marker test to identify affected breeding stock and allow for selective breeding to reduce disease incidence

Top 10 Clarifications

- Classical clinical hypothyroidism & low thyroid values occur after =/> 70% thyroid tissue destroyed
- Other clinical / behavioral changes (especially aggression) seen during early phase
- T4 alone gives misleading results; over-diagnose hypothyroidism with non-thyroidal illness or certain drugs; under-diagnose hyperthyroidism in cats or from thyroxine overdosage; inaccurately assesses thyroxine therapy; and fails to detect autoimmune thyroiditis

Top 10 Clarifications (cont'd)

- Even T4 plus freeT4 and TSH = inadequate, if thyroiditis present
- Age-and breed-specific norms essential for accurate diagnosis; reference lab ranges not based on age and breed type
- Sight hounds all have lower basal thyroid activity than other breeds
- Thyroxine binds to calcium & soy; must be given apart from meals; BID therapy preferred

Top 10 Clarifications (cont'd)

- Dispensing thyroxine by human pharmacist often under-dosed [animal doses 10 x higher]
- Stopping thyroxine to retest basal capacity needs 6 weeks or more
- Thyroid Support or Thytrophin inadequate alone to fully correct true hypothyroidism or thyroiditis

Aberrant Behavior and Thyroid Dysfunction

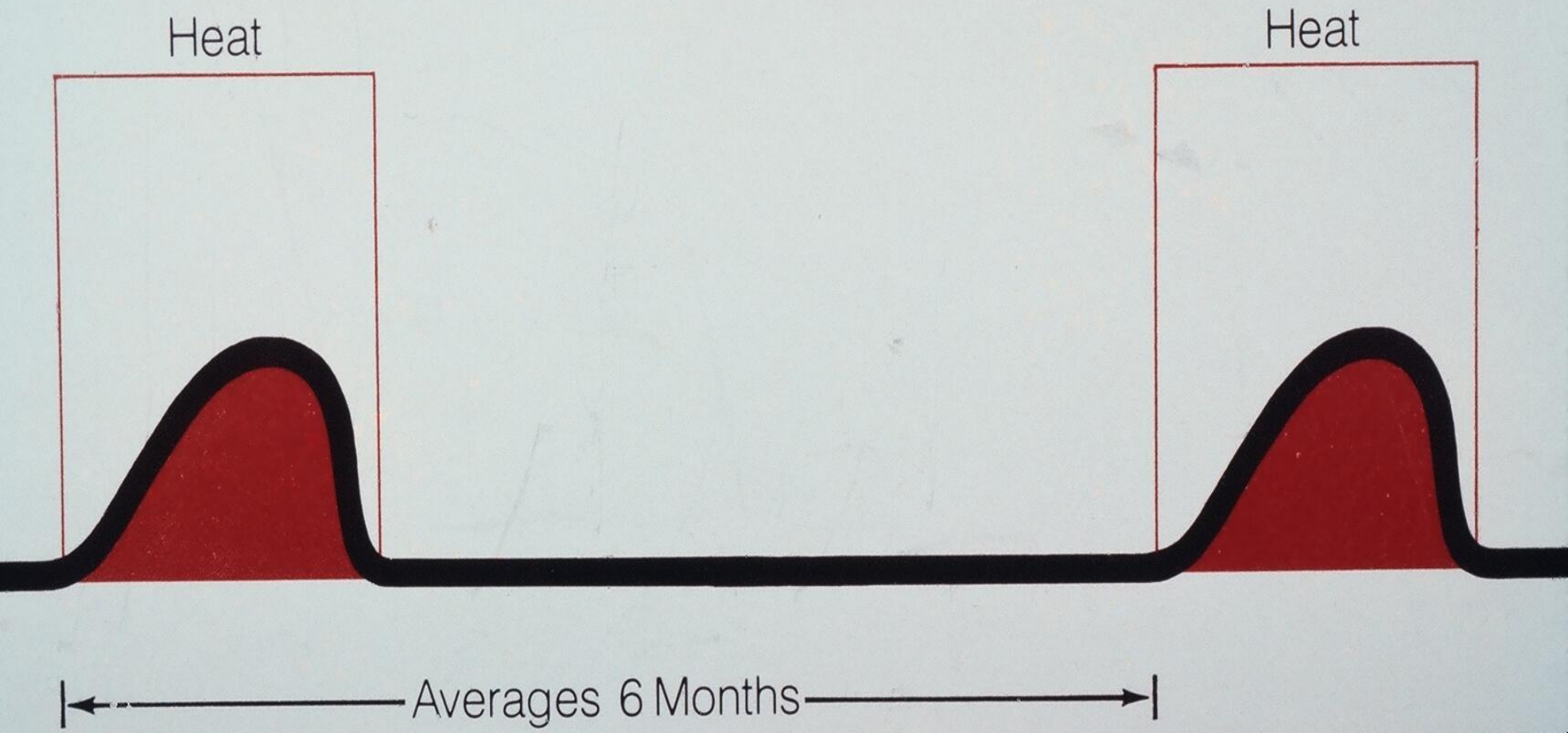
- Principal reason for pet euthanasia is undesirable behavior
- Association between behavioral / psychologic changes and thyroid dysfunction long recognized in humans
- 66% of people with ADHD found to be hypothyroid; thyroxine largely curative

Aberrant Behavior and Thyroid Dysfunction (cont'd)

- Parallel findings in dogs with thyroiditis/ hypothyroidism; & cats with hyperthyroidism
- Typical clinical signs: unprovoked aggression, sudden onset seizure disorder, disorientation, moodiness, erratic temperament, hyperactivity, hypoattentiveness, depression, fearfulness , phobias, anxiety, passivity, submissiveness, compulsiveness, and irritability


HEMOLIFE
TM

Sexual activity in the dog.



DIAGNOSIS OF THYROID DISEASE

- Complete Basic Profile

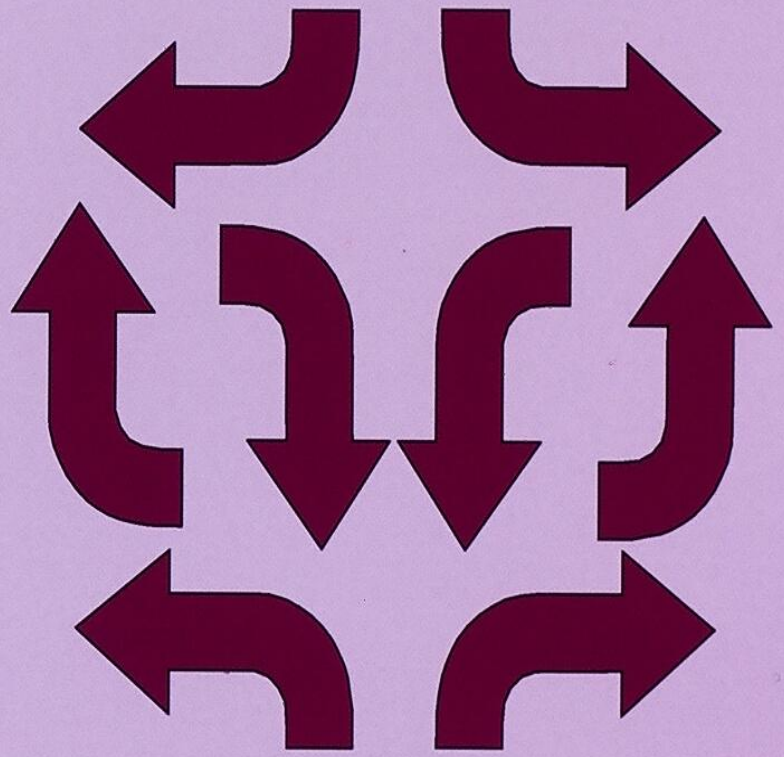
  -- (T4, T3, FT4, FT3, T4AA, T3AA)

- Additional Tests

  -- (TSH, TgAA)

"The TSH test is discordant"

This is what I mean .....



TECHNOLOGY BREAKTHROUGH

NEW HEMOLIFE THYROID 5 PANEL

- Thyroid 5 is composed of T4, Free T4, T3, Free T3 and TGAA.
- The TGAA (thyroglobulin autoantibody) test is included for genetic screening of breeds and cross-breeds at risk for heritable autoimmune thyroiditis. The confirmatory TGAA method is preferred because it removes any non-specific binding that could falsely elevate the result.
- Novel, 'green' non-RIA technology never used before in veterinary medicine (patented).

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THYROID GOLD ™ REGISTRATION CERTIFICATE

This is to certify that _____, *Reg. #* _____,

owned by _____,

has successfully earned the THYROID GOLD ™ Registration Certificate.

Testing was completed on, Date _____; *Hemolife Acc. #* _____.

Certificate Number: _____

W. Jean Dodds, DVM
President

POLYGLANDULAR AUTOIMMUNE SYNDROME

- Multiple endocrine glands become involved in a systemic immune-mediated process
- Patients have underlying autoimmune thyroid disease and concurrent Addison's disease, diabetes, reproductive failure, skin disease, alopecia, and IBD
- Most commonly associated non-endocrinologic autoimmune disorders are: AIHA, ITP, chronic active hepatitis, and immune-complex glomerulonephritis (SLE)

CLINICAL SIGNS OF CANINE HYPOTHYROIDISM

Alterations in Cellular Metabolism

- lethargy
- mental dullness
- exercise intolerance
- neurologic signs
  - polyneuropathy
  - seizures
- weight gain
- cold intolerance
- mood swings
- hyperexcitability
- stunted growth
- chronic infections

CLINICAL SIGNS OF CANINE HYPOTHYROIDISM (cont'd)

Dermatologic Diseases

- dry, scaly skin and dandruff
- coarse, dull coat
- bilaterally symmetrical hair loss ;"rat tail"; "puppy coat"
- hyperpigmentation
- seborrhea olesa (oily), or seborrhea sicca (dry)
- pyoderma or skin infections
- myxedema
- chronic offensive skin odor


2010
2011
2012


5 8 2010

CLINICAL SIGNS OF CANINE HYPOTHYROIDISM (cont'd)

Neuromuscular Problems

- weakness
- stiffness
- laryngeal paralysis
- facial paralysis
- "tragic" expression
- knuckling or dragging feet
- muscle wasting
- megaesophagus
- head tilt
- drooping eyelids


Love is...
a French Bulldog

CLINICAL SIGNS OF CANINE HYPOTHYROIDISM (cont'd

Reproductive Disorders

- infertility of either sex
- lack of libido
- testicular atrophy
- hypospermia
- aspermia
- prolonged interestrus interval
- absence of heat cycles
- silent heats
- pseudopregnancy
- weak, dying or stillborn pups

CLINICAL SIGNS OF CANINE HYPOTHYROIDISM (cont'd)

Cardiac Abnormalities

- slow heart rate (bradycardia)
- cardiac arrhythmias
- cardiomyopathy

Gastrointestinal Disorders

- constipation
- diarrhea
- vomiting

CLINICAL SIGNS OF CANINE HYPOTHYROIDISM (cont'd)

Hematologic Disorders

bleeding

bone marrow failure

low -- red blood cells (anemia)
white blood cells
platelets

Ocular Diseases

corneal lipid deposits

corneal ulceration

uveitis

Keratoconjunctivitis sicca or "dry eye"

infections of eyelid glands (Meibomian gland)

CLINICAL SIGNS OF CANINE HYPOTHYROIDISM (cont'd)

Other Associated Disorders

- lgA deficiency
- loss of smell (dysosmia)
- loss of taste
- glycosuria
- chronic active hepatitis
- other endocrinopathies
  - adrenal
  - pancreatic
  - parathyroid

CANINE ABERRANT BEHAVIOR *

Total No. Cases	Purebreds	Mixed Breeds	Thyroid Dysfunction	Euthyroid
634	568	66	401	233

* 72 dog breeds. Mean age, 3.7 yrs (0.5-12); Median age, 2.5 yrs

CANINE ABERRANT BEHAVIOR *

Of 499 cases analyzed by neural network correlative programs, statistically significant relationship was found between:

- Thyroid dysfunction and seizure disorder
- Thyroid dysfunction and dog-to-human aggression

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* Analysis, Dr. Robert Keller, Computer Sciences, Harvey Mudd College


Koshou
Volunteer


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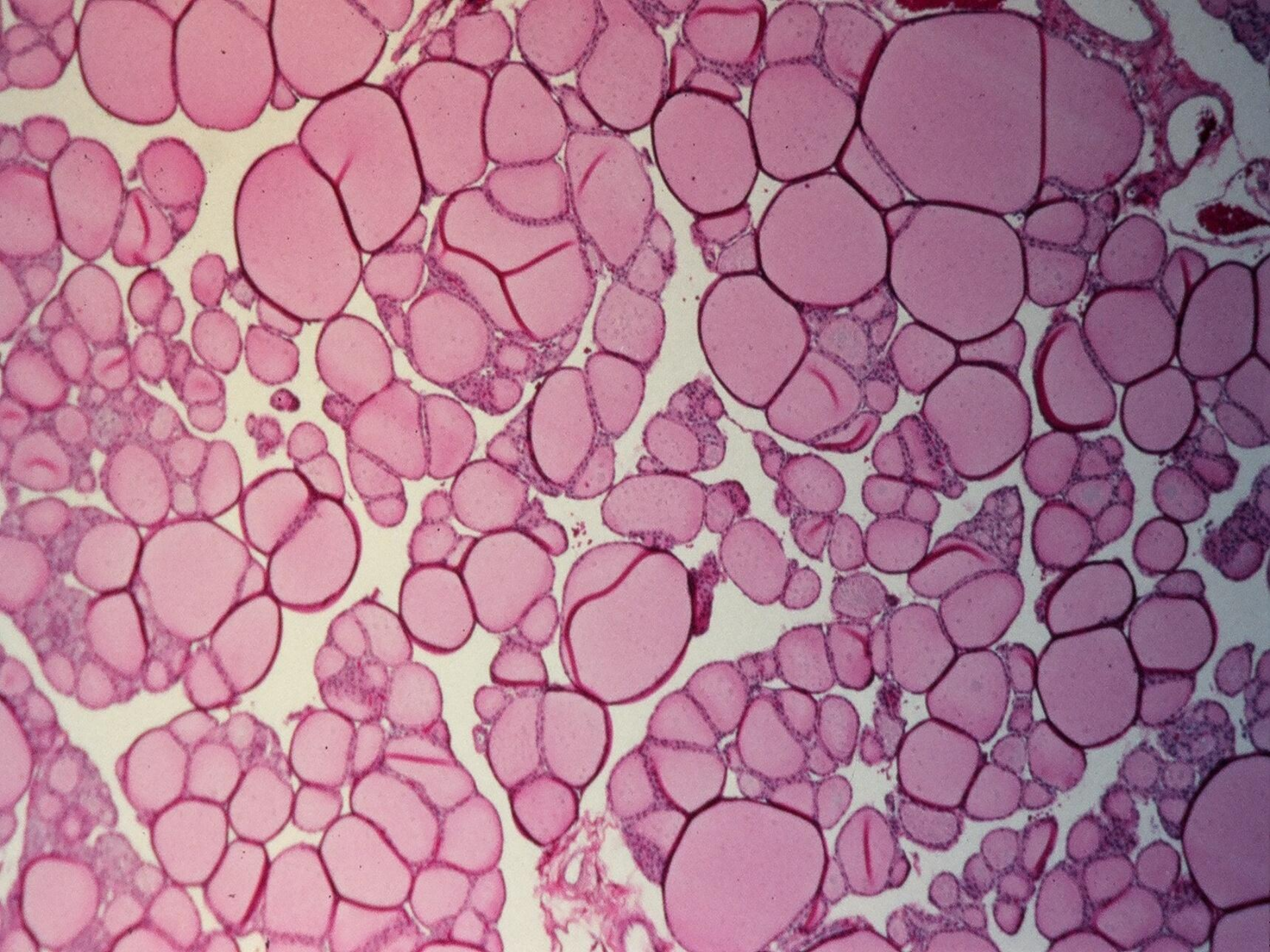
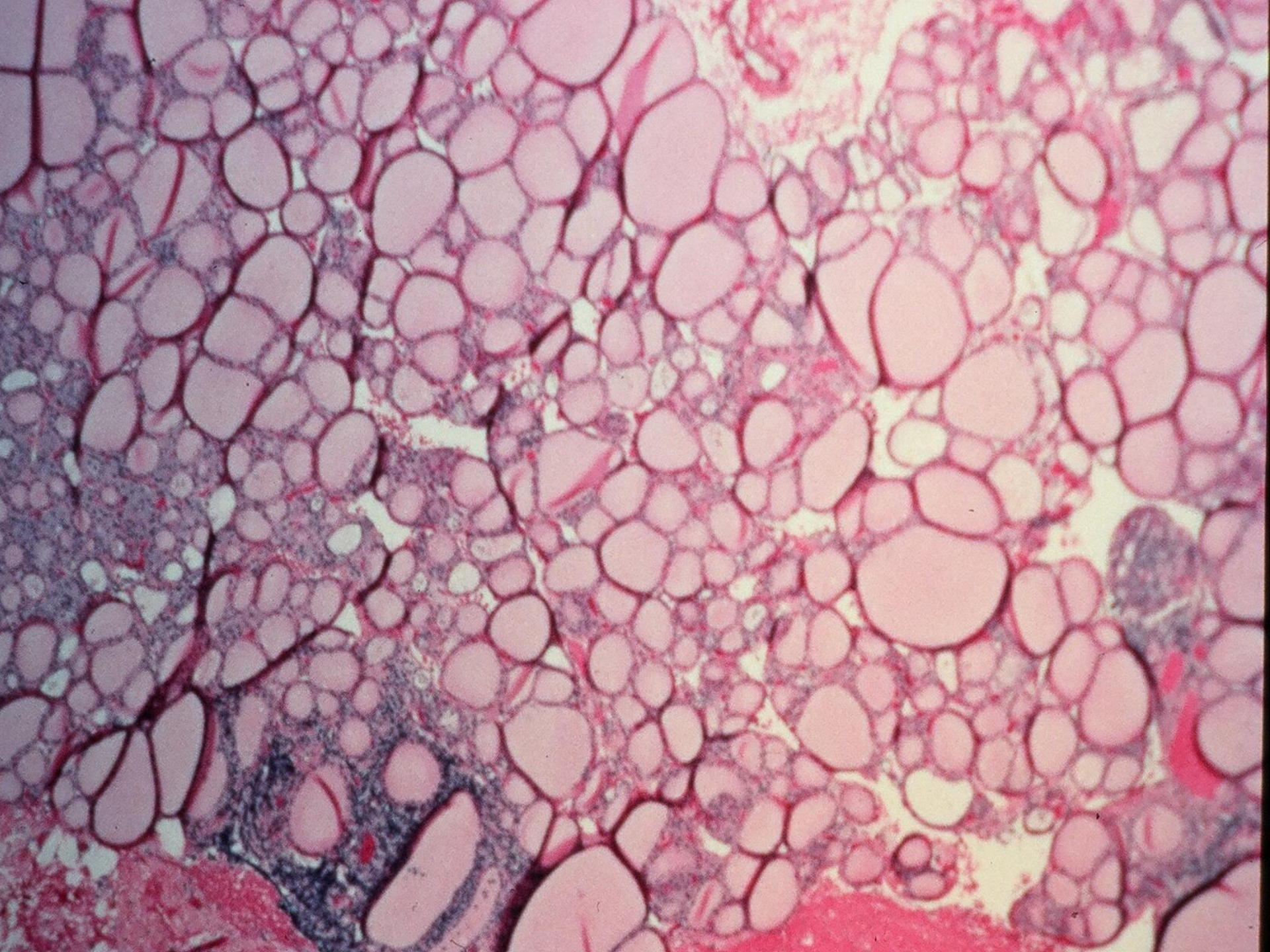
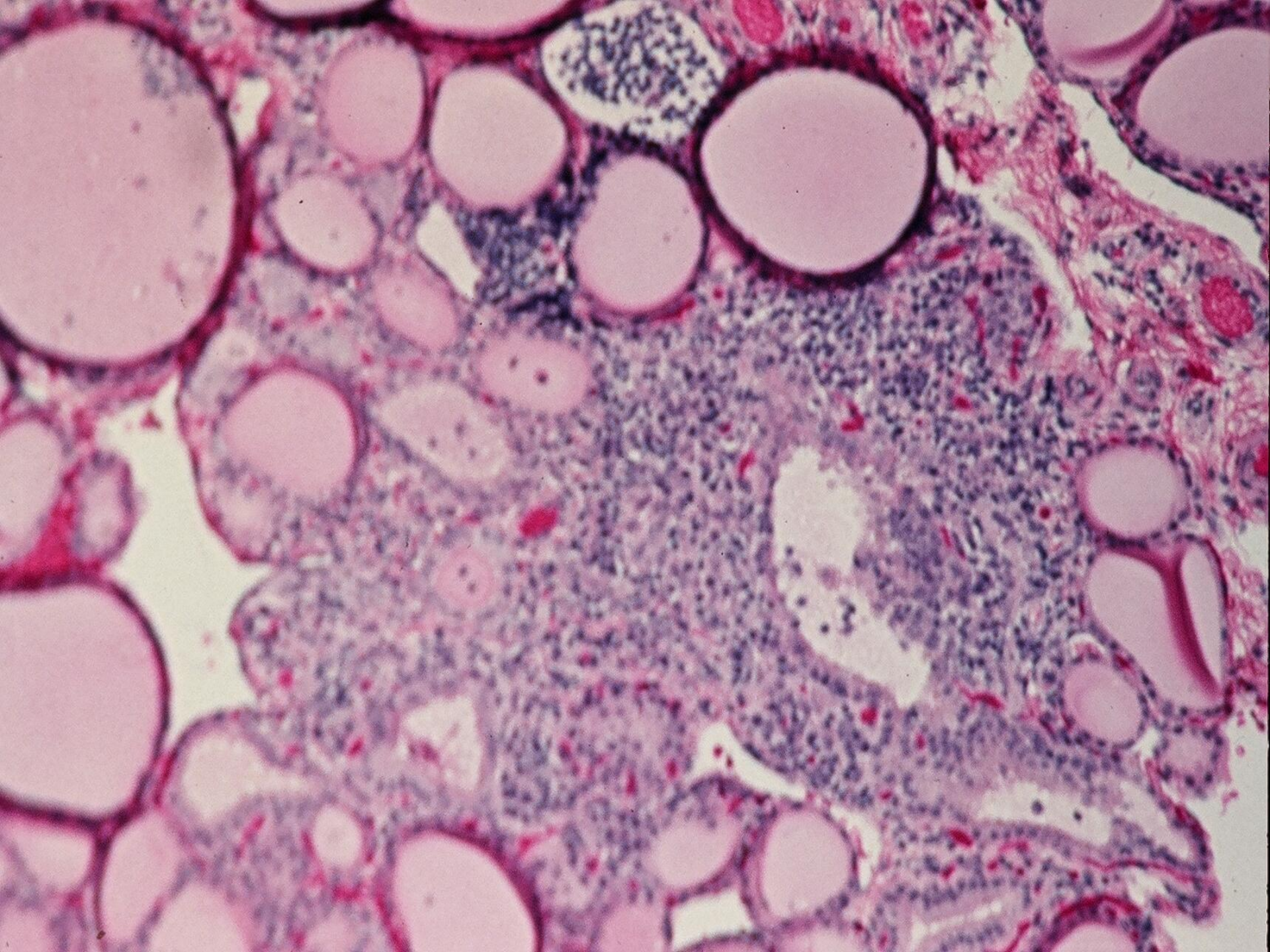
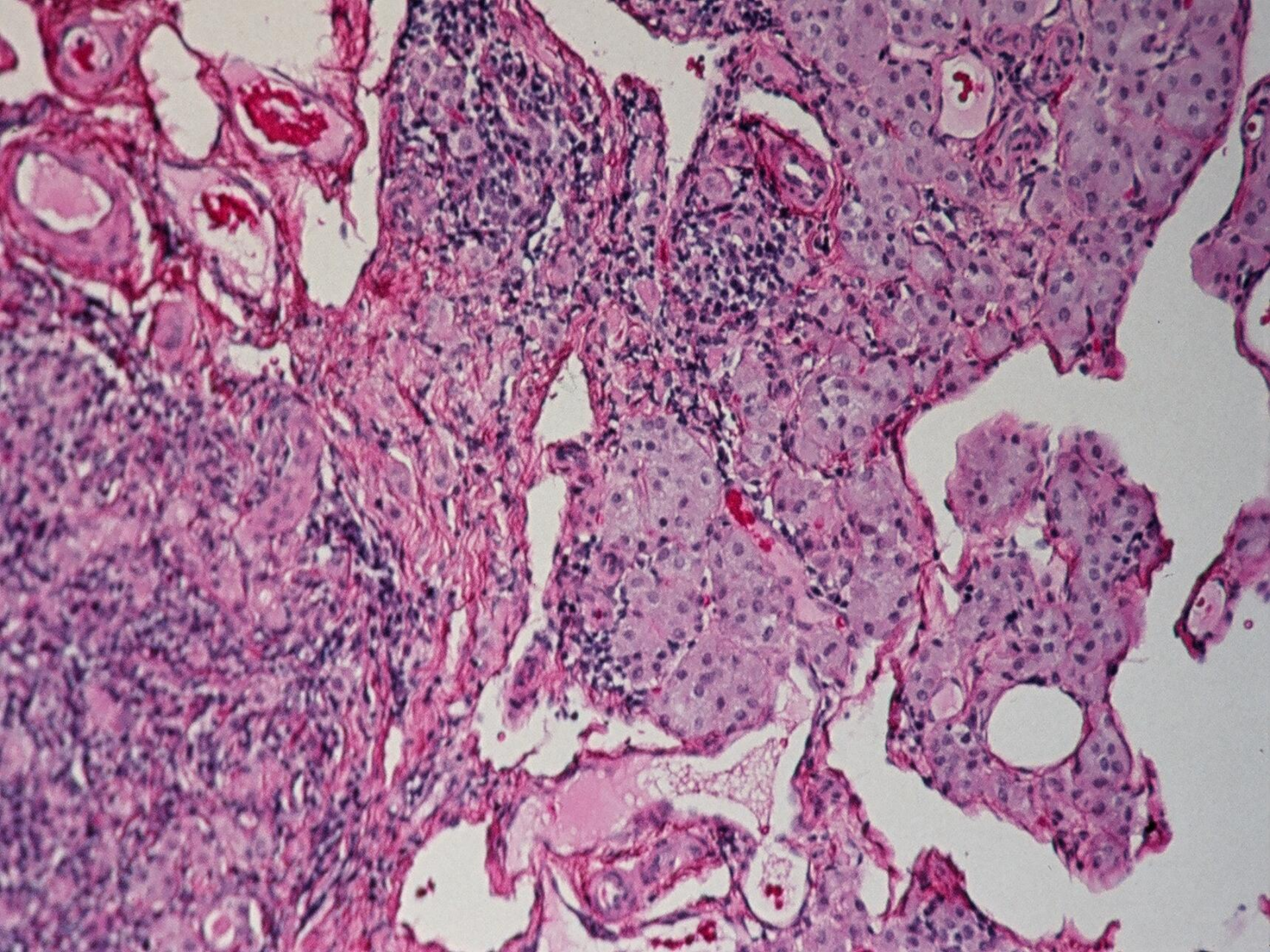
EXAMPLE CASES : CANINE THYROIDITIS

Total Number Cases: 465	Number with T4 Value > 2.0 ug/dl	48 (10%)
Number Positive T4AA & T3AA but Negative TgAA		16 (3.4%) (1 case also T4AA +)
Breeds Over-Represented	English Setters	59
	Golden Retrievers	5
Cases with Aberrant Behavior		10
Aggression (dog-to-human)		6
Seizure disorder		4









Dogs/Health/Behavior

$1X.95

Problems with your dog? It may be his thyroid!

If your dog is lethargic, losing his hair, gaining weight or suddenly becomes aggressive, perhaps the last thing you (or your vet!) would think about is his thyroid. Unfortunately, however, thyroid disorders can cause literally dozens of health and behavioral problems in dogs and frequently go undiagnosed or are misdiagnosed. And the real tragedy is that most thyroid problems are treatable with the right medical care and a well-informed owner can often minimize the chance of a thyroid disorder occurring in the first place.

Noted veterinarian Jean Dodds and co-author Diana Laverdure have done the dog owning public and their vets a great service by writing *The Canine Thyroid Epidemic*. The book is written in such a way to inform both the average dog owner and animal health care professionals about the ways in which thyroid disorders occur, can be prevented and treated.

You will learn about:

- The role of the thyroid and why it is essential to a dog's health.
- How to identify the clinical signs and symptoms of thyroid disorders.
- The types of lab tests needed to identify thyroid problems and how to administer the proper medicines.
- How an increasingly toxic environment can impact your dog's health.

What experts are saying about *The Canine Thyroid Epidemic*

There's probably no one in the dog world who garners as much respect from all quarters as Dr. Jean Dodds. Her latest work alarms and alerts us to an epidemic of thyroid disease of staggering proportions. It alarms us as we witness the early age at which the disorder now commonly appears, and alerts us to how commonly we aggravate the problem through breeding, vaccination and feeding practices. **Steve Marsden,** DVM

The Canine Thyroid Epidemic is an amazing, life-saving gift to countless dogs and the people who love them. This expertly crafted guide provides the tools, advice and information needed to help dog parents navigate this complex, often misdiagnosed and misunderstood disease. From recognizing the signs to finding the right veterinarian to long-term management, I can't imagine a better resource. Thanks to Dr. Dodds and Ms. Laverdure for shedding light on this epidemic in terms we can all understand. **Melanie Monteiro,** author of The Safe Dog Handbook

Dr. W. Jean Dodds has raised the awareness that canine hypothyroidism is not only about low thyroid hormone levels, but in fact, it's a continuum of disease that often begins with the immune destruction of the thyroid gland (autoimmune thyroiditis) and progresses over time to end-stage disease (hypothyroidism). Not only is this book a great "eye opener" for pet lovers but also should serve as a reference for veterinarians whether they are in veterinary school or have many years experience in private or university practice. **Rhett Nichols,** DVM, ACVIM (Internal Medicine)

Dr. W. Jean Dodds received the D.V.M. degree with honors in 1964 from the Ontario Veterinary College, University of Toronto. She is the owner of Hemopet, the first nonprofit national blood bank program for animals. She and her husband live in Santa Monica, California. **Diana R. Laverdure** received a bachelor of arts in English magna cum laude from Tufts University. A lifelong dog lover, and journalist for over twenty years, she is a frequent contributing writer on dog health and dog care topics to a variety of national dog magazines. She and her dog Chase live in Boynton Beach, Florida.

Dogwise Publishing
www.dogwise.com
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W. Jean Dodds, DVM
Diana R. Laverdure

The Canine Thyroid Epidemic

Answers You Need for Your Dog

THE CANINE THYROID EPIDEMIC Answers You Need for Your Dog W. Jean Dodds, DVM Diana R. Laverdure Dogwise Publishing

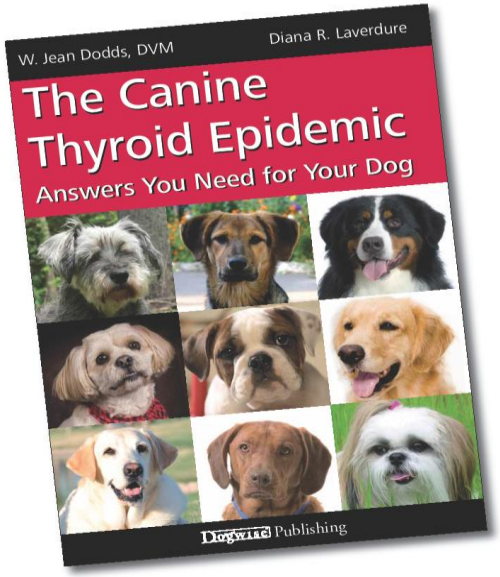
Dogwise Publishing

We are proud to announce that

Dr Jean Dodds

and co-author Diana Laverdure
received two prestigious awards
for their book

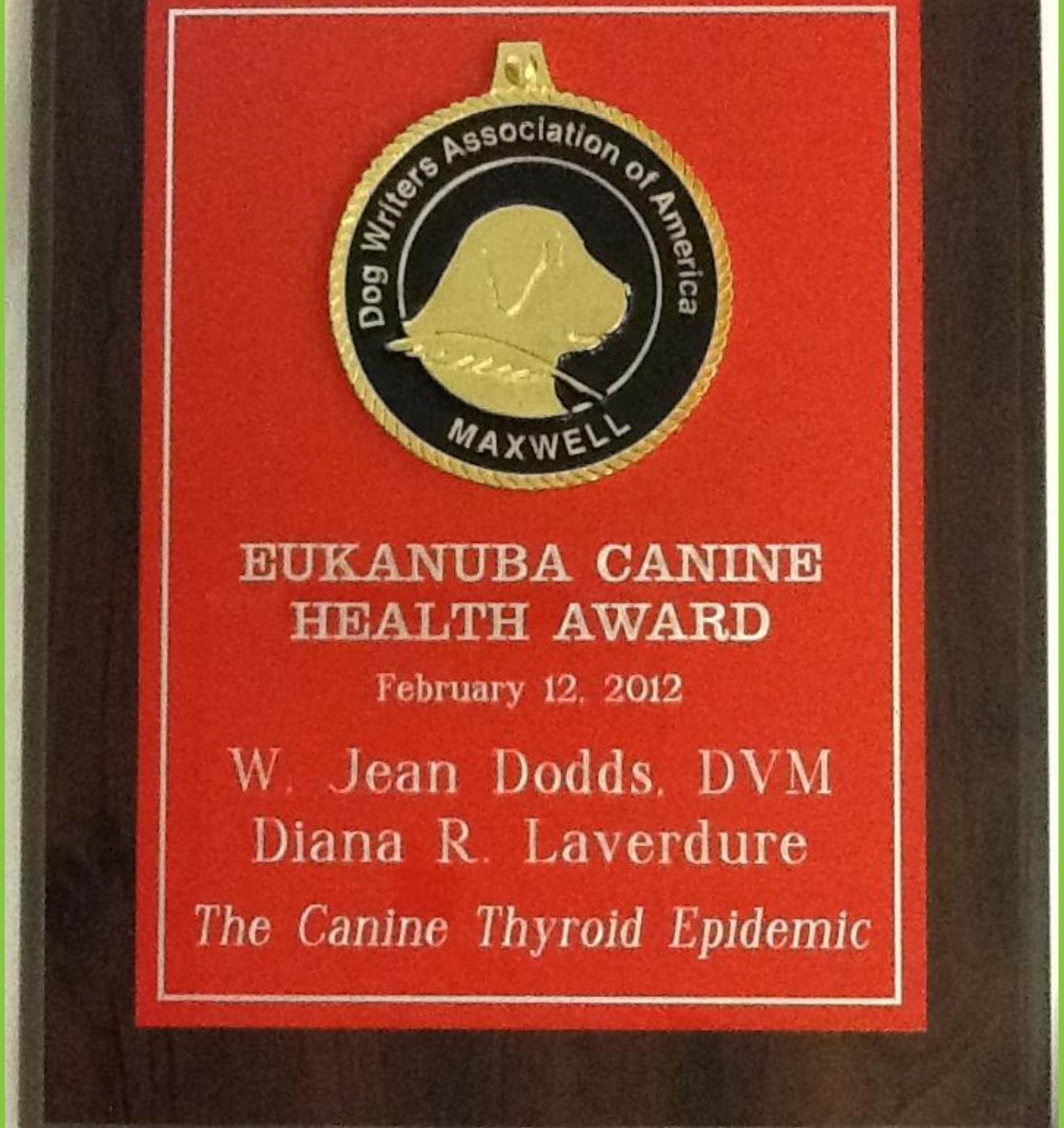
The Canine Thyroid Epidemic



DOG WRITERS ASSOCIATION OF AMERICA

- The best book in the category of Care and Health for 2011
- The Eukanuba Canine Health Award for 2011

Hemopet NutriScan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