

**PURDUE UNIVERSITY**  
**COLLEGE OF VETERINARY MEDICINE**

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Consultation

**CLINICAL PATHOLOGY LABORATORY - CLINICAL ENDOCRINOLOGY**

625 Harrison Street, Lynn Hall G351 West Lafayette, IN 47907-1249

**Laboratory Director:**

John Christian, DVM, PhD

**For Test Information or Results:**

Phone (765) 494-3972 Fax (765) 494-8640

Veterinarian: \_\_\_\_\_

Clinic Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email Address: \_\_\_\_\_

Date Collected: \_\_\_\_\_

**Interpretation of Results:**

Catharine Scott-Moncrieff, DMV, M.S., Diplomate ACVIM

scottmon@vet.purdue.edu

Small Animal Hospital 765-494-1107

Owner: \_\_\_\_\_

Chart #: \_\_\_\_\_

Animal: \_\_\_\_\_

Species: \_\_\_\_\_

Breed: \_\_\_\_\_

Sex: \_\_\_\_\_

DOB: \_\_\_\_\_

Clinical Signs / History: \_\_\_\_\_

Thyroid / Other Medications: \_\_\_\_\_

**CANINE THYROID EVALUATION**

- T4 Basal & TSH Basal
- T4 Basal
- TSH Basal
- T4 Pre Pill
- T4 Post Pill (4-6 Hr)

TRH Stimulation Test

- T4 Pre
- TSH Pre
- TSH Post (30 min)
- T4 Post (4 Hr)

TSH Stimulation Test

- T4 Pre
- T4 Post (6 Hr)

**CANINE ADRENOCORTICAL EVALUATION**

- Cortisol (Baseline Level)
- Post Cortisol (2 Hr)

ACTH Stimulation (Synthetic ACTH)

- Pre Cortisol
- Post Cortisol (1 Hr)

Low Dose Dex Suppression

- Pre Cortisol
- Post Cortisol (4 Hr)
- Post Cortisol (8 Hr)

High Dose Dex Suppression

- Pre Cortisol
- Post Cortisol (8 Hr)

**FELINE THYROID EVALUATION**

- T4 Basal
- T4 Pre Pill
- T4 Post Pill (4-6 Hr)

T3 Suppression Test

- T4 Pre
- T4 Post (7 doses)

TRH Stimulation Test

- T4 Pre
- T4 Post (4 Hr)

**FELINE ADRENOCORTICAL EVALUATION**

- Cortisol
- Post Cortisol (1 Hr)
- Post Cortisol (2 Hr)

ACTH Stimulation (Synthetic ACTH)

- Pre Cortisol
- Post Cortisol (30 Min)
- Post Cortisol (1 Hr)

Low Dose Dex Suppression

- Pre Cortisol
- Post Cortisol (8 Hr)

High Dose Dex Suppression

- Pre Cortisol
- Post Cortisol (8 Hr)

**MISCELLANEOUS TESTING**

- Endogenous ACTH \*see submission instructions
- Progesterone

## Collection and Shipping Information

**General Instructions:** Do not send whole or clotted blood for any test. Label all tubes with the owner's name, patient name, requested test, and time of collection, if part of a specific function test. Most of our tests require serum; please send a minimum of 0.5 ml of serum for each assay requested. Use plain glass clot tubes, allow clotting at room temperature, centrifuge as soon as possible, remove serum and refrigerate until shipment. Shipment of serum samples in plastic tubes is recommended. The use of Serum Separator Tubes is **not** recommended by the manufacturer due to a potential 30% positive bias for T4 and Cortisol results.

All samples for measurement of Endogenous ACTH should be frozen until shipment and shipped on dry ice in an insulated container using crumpled paper or other material for insulation and protection of the samples. Samples for measurement of cortisol should be sent on frozen ice packs during the summer months.

**Thyroid hormone protocols:** For evaluation of canine thyroid function, a T4 and TSH assay is recommended. For a canine TRH stimulation test 200µg of TRH should be given IV. Blood samples should be collected prior to TRH administration (for T4 and TSH) and 4 hours after TRH administration (for T4 only). An additional sample collected at 30 minutes for measurement of serum TSH may also give useful information. For a canine TSH stimulation test, TSH (very limited availability) should be given at a dose of 0.1 U/kg IV and samples collected prior to and 6 hours after administration for measurement of T4.

For evaluation of feline thyroid function a basal T4 assay is recommended. If necessary other provocative tests may be indicated. The protocol for a feline TRH stimulation test is similar to the dog except that the dose of TRH is 0.1 mg/kg.

**Thyroid Replacement:** For T4 therapy, use L-thyroxine at 0.022 mg/kg BID as a starting dose and then adjust the dose using therapeutic monitoring after at least one month of therapy. For therapeutic monitoring, samples should be taken pre and 4-6 hours after administration of thyroid hormone supplement (L-thyroxine). Please specify type of therapy, dose, and time post-pill. To reevaluate thyroid function after discontinuing therapy, the patient should be off medication for at least 6 weeks.

**Evaluation of the adrenal axis:** For a canine ACTH stimulation test, after collecting a resting sample, inject 5µg / kg (up to a maximum of 250 microgram total dose) synthetic ACTH (cosyntropin) IV and obtain a 1 hour (synthetic ACTH) post ACTH sample. For cats 2 samples should be collected at 30 minutes and 1 hour if using the synthetic ACTH (dose for cats 125 µg). For a Low Dose Dex Suppression, after collection of a pre test sample, inject 0.01 mg/kg IV (Azium) and collect samples at 4 and 8 hours after injection. For a high dose dex suppression, inject 0.1 mg/kg IV dexamethasone SP and collect a pre and 8 hour sample.

**Choice of cortisol test:** The ACTH stimulation test is less sensitive but more specific for the diagnosis of hyperadrenocorticism. It is also the only test which will allow detection of iatrogenic hyperadrenocorticism. This test is also used to monitor Lysodren therapy. The low dose dexamethasone suppression test is a more sensitive but less specific test for the diagnosis of hyperadrenocorticism. This test may also allow differentiation of pituitary from adrenal dependent hyperadrenocorticism. In many cases both tests may be necessary to confirm the diagnosis. The high dose dexamethasone suppression test is used to differentiate pituitary dependent from adrenal dependent hyperadrenocorticism.

**\*Endogenous ACTH:** Collect 3mL of whole blood into a plastic K2 EDTA tube. Centrifuge within 30 minutes of collection. Separate plasma into a plastic tube containing no additive. Freeze plasma. Plasma should arrive frozen on dry ice with next-day shipping to our lab.

**Lysodren (op'DDD):** We suggest starting with a dose of 50 mg/kg/day in 2 divided doses with food. Prednisone tablets should be available for use in an emergency. Treatment should be continued until water consumption decreases to 60 ml/kg or less, or until the dog develops clinical signs of anorexia, depression, vomiting, or diarrhea. Medication should be given for a maximum of 10 days at a time. If monitoring of water consumption is not possible, Lysodren should be given for a maximum of 7 days. After cessation of drug therapy, adrenal function should be monitored by an ACTH response test 2 to 4 days after the last Lysodren tablet. An ideal response would be a pre and post cortisol of < 6 but >2 µg/dl. If this response is observed, maintenance Lysodren should be initiated at a dose of 50 mg/kg q 7-10 days. Another ACTH stimulation test should be performed after 1 month of therapy and then every 3 months or when the clinical condition changes. If adequate control with the first induction regime of Lysodren does not occur then further induction therapy will be necessary. If overdosage occurs Lysodren maintenance should be delayed until adrenal gland function has recovered into the ideal range.

**Test interpretation:** Reference ranges are given on the reporting forms. For further interpretation of tests please feel free to use our consulting services.

### Delivery Address:

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West Lafayette, IN 47907-1249