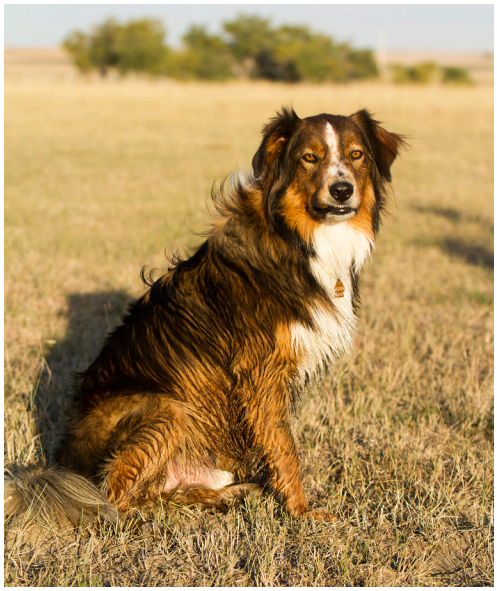
TVMDL Texas A&M Veterinary Medical Diagnostic Laboratory

Confirming Cushing's



Americans today spend an average of $500 a month* on household pets. Our dogs and cats are living well, and living longer. Middle-aged to senior dogs are most at risk to develop hyperadrenocorticism, also known as Cushing's disease, where the dog's adrenal glands produce excessive cortisol.

The Texas A&M Veterinary Medical Diagnostic Laboratory (TVMDL) offers multiple tests to confirm Cushing's disease and also to monitor the disease during treatment.

In the TVMDL College Station Endocrinology Section, between 10- and 15-percent of the daily caseload relates to Cushing's disease. Here is a breakdown of the testing options the Endocrinology Section offers:

• **Urine Cortisol/Creatinine Ratio** – This is a screening test for Cushing's disease. The test is performed by radioimmunoassay (RIA) on 1 ml of urine. This test benefits dog owners because of the ease with which owners can collect the dog's first urine in the morning. The test is run on Wednesdays; results are available the same day if the sample is at the laboratory by 5 p.m. on Tuesday. Per animal, the test costs $20.

• **Cortisol: High-Dose Dex Suppression Test, canine** - This test is primarily used for differentiating pituitary gland dependence from adrenal gland dependence. The test is performed by chemiluminescence (ChL) and requires .5 ml of serum or plasma. Five determinations are required—blood drawn before, and at 2, 4, 6 and 8 hours post dexamethasone. The test is run Monday through Friday with results available the same day. Per animal, the test costs $41.50.

• **Cortisol: Low-Dose Dex Suppression Test, canine** –This test is used to aid in confirmation of Cushing's disease. It is performed by ChL and requires .5 ml of serum or plasma. Three determinations are required—blood drawn before, and 4 and 8 hours post dexamethasone injection. This test is performed Monday through Friday, with results available the same day if the sample is received by 11 a.m. Per animal, the test costs $30.

• **Cortisol: Pre- and 1-hour-post ACTH** – This test is used to aid in the confirmation of Cushing's disease and is the preferred test for monitoring therapy. The test measures the response to the adrenal glands to stimulation by adrenocorticotrophic hormone (ACTH).It is performed by the ChL method and .5 ml of serum or plasma is required. Blood should be drawn prior to and one hour post administration of synthetic ACTH (cosyntropin). The test is run Monday through Friday and the results are posted the same day. Per animal, the cost is $26.

• **Cortisol: Pre- and 2-hour-post ACTH** – This test is used to aid in the confirmation of Cushing's disease and for monitoring therapy. The adrenocorticotropic hormone (ACTH) test is run by ChL on .5 ml of serum or plasma. Blood is drawn prior to and two hours post administration of synthetic ACTH (cosyntropin, aka cortosyn, gel). The test is run Monday through Friday and the results are posted the same day. Per animal, the cost is $26.

Which test is the best for confirmation?

"The low-dose dex suppression or the ACTH stimulation test appear to be very similar in confirming Cushing's disease," said Scott Jaques, MS, PhD, Endocrinology Section head. "In some cases, the cost of the ACTH (approximately $80 per vial) is the deciding factor. The low-dose dex suppression test is less expensive from a drug standpoint; however, it takes longer to perform the test. One has to weigh the expense of all day care vs a couple of hours to compare the two more completely."

Timely sample shipment is a priority for all specimens. For any Cushing's test, serum and plasma should be removed from the cells as soon as possible and refrigerated. If not shipped the day collected, the serum or plasma should be frozen until shipped on ice.

For more information on canine diagnostics performed at TVMDL, contact either the Amarillo laboratory at 888.646.5624, or the College Station laboratory at 888.646.5623. Test information is also available at tvmdl.tamu.edu.

**According to the 2011 Consumer Expenditure Survey*