DePorre Veterinary Hospital

4066 W. Maple Road
Bloomfield Hills, Michigan 48301
www.deporrevet.com

248-646-1669 phone 248-646-6348 fax

Caring People Caring for Animals

Cushing's Disease

What is Cushing's Disease?

Cushing's Disease is the common name for hyperadrenocorticism. It is a condition characterized by the excessive production of a hormone called cortisol from the adrenal glands. The adrenal glands are paired structures located near the kidneys and they are responsible for production of several important hormones including cortisol. The pituitary gland, located at the base of the brain, is responsible for stimulating the adrenal glands to produce cortisol.

What causes Cushing's Disease?

There are 2 main types of Cushing's Disease.

1. Pituitary-dependent Cushing's Disease is more common (80%-85%) and is due the pituitary gland overstimulating the adrenal glands to produce cortisol. This is typically caused by a tumor of the pituitary gland.
2. Adrenal-dependent Cushing's Disease is less common (15%-20%) and is due to the adrenal glands overproducing cortisol without excessive influence from the pituitary gland. This is typically caused by either a benign or malignant tumor of the adrenal gland itself.

What are the clinical signs of Cushing's Disease?

Clinical signs of Cushing's Disease may include:

- Increased drinking and urinating
- Increased appetite
- Pot-bellied appearance
- Panting
- Lethargy
- Chronic skin infections/other skin changes
- Chronic urinary tract infections

How is Cushing's Disease Diagnosed?

Cushing's Disease is initially suspected based on characteristic clinical signs. A general blood panel will often show characteristic changes as well. A test called a low dose dexamethasone suppression test (LDDST) is most commonly used to diagnose Cushing's disease. When this test is performed, an initial blood sample is drawn to check cortisol levels and then an injection of dexamethasone is given. Additional blood samples are then drawn 4 hours and 8 hours after the injection to recheck cortisol levels. In a normal dog, the adrenal gland will decrease its production of cortisol in the post-injection blood samples due to the dexamethasone injection. In a dog with Cushing's Disease however, the cortisol production will fail to suppress. In some cases this test may also be able to differentiate between pituitary-dependent and adrenal-dependent forms of Cushing's Disease.

Other tests that may also be used for the diagnosis and treatment of Cushing's disease include a urine cortisol:creatinine ratio, ACTH stimulation test, urinalysis and urine culture, abdominal ultrasound and radiographs (x-rays).

How is Cushing's Disease Treated?

Treatment for Cushing's Disease is possible, though medication can be expensive and frequent monitoring is required. Treatment depends on the type of Cushing's Disease that is present.

- Pituitary-dependent Cushing's Disease is typically treated medically using either trilostane (Vetoryl) or mitotane (Lysodren). These medications reduce the amount of cortisol that is produced from the adrenal glands, but they do not directly treat the tumor of the pituitary gland. Medical treatment is often life-long and consistent monitoring is required.
- Adrenal-dependent Cushing's Disease is typically treated with abdominal surgery to remove the adrenal tumor causing the disease.

Frequent monitoring is required for pets that are receiving medical treatment for Cushing's disease because side effects of the medications are possible. Additionally, if cortisol levels are reduced by too much, other problems may result. An ACTH stimulation test is used for monitoring and is typically performed at 2 weeks and 4 weeks after starting medication or changing dosages, and then every 3 months. The ACTH stimulation test should be performed 4-6 hours after administration of the medication. It is important to give the medication with food, especially when doing this test.

What is the prognosis with Cushing's Disease?

- Pituitary-dependent Cushing's Disease – if the production of cortisol from the adrenal glands can be controlled with medication, most patients can live normal lives and the pituitary tumor does not cause any other adverse effects in most cases.
- Adrenal-dependent Cushing's Disease – If the adrenal tumor is benign, surgical treatment is typically curative. If the adrenal tumor is malignant the prognosis is guarded to poor.