

Addison's Disease (Hypoadrenocorticism)

Addison's disease is also known as hypoadrenocorticism. It is a disease that results from the reduction of corticosteroid secretion from the adrenal gland. The adrenal gland is a small gland located near the kidney that secretes several different substances to help regulate normal body function. Some of the most important products it secretes are glucocorticoids and mineralocorticoids. Addison's is difficult to recognize initially, but once diagnosed can be successfully treated.

Glucocorticoids and Mineralocorticoids

Glucocorticoids, such as cortisol, have an effect on sugar, fat, and protein metabolism. They are partially responsible for the flight or fight response during stressful periods. Mineralocorticoids, such as aldosterone, have an influence on the electrolytes sodium and potassium in the body. They help regulate these electrolytes, particularly in stressful situations. When the adrenal gland stops functioning, these hormones are not produced and the metabolism and electrolyte balance of the animal becomes unbalanced.

Who gets Addison's and what are the symptoms?

Addison's is primarily a disease of young to middle-aged female dogs, but can affect any dog of any age or sex. Some of the more common symptoms are lethargy, anorexia, vomiting, and muscle weakness. The other presentation for this disease is an episode called an "Addisonian crisis". In this scenario, the animal collapses in a state of shock due to an imbalance of electrolytes and metabolism during a period of stress. This episode may be the first time the owner suspects disease, and may be fatal if not treated promptly.

What causes the adrenal glands to stop producing corticoids?

The most common is destruction of the adrenal glands by the body, an 'immune mediated destruction'. Other causes can be infections in the gland from fungal diseases or through other means such as infarcts, tumors, or amyloidosis of the gland. Another cause of Addison's can be the failure of the pituitary gland to secrete adrenocorticotropic hormone (ACTH), a hormone that stimulates the adrenal gland to work. Failure of the pituitary gland or hypothalamus is usually a result of a tumor, inflammation, or injury.

How is hypoadrenocorticism diagnosed?

Diagnosis is confirmed by a blood test called ACTH stimulation test. To perform the test, the dog is given an injection of the adrenal stimulating hormone ACTH. A normal dog will respond by having an increase in blood cortisol. If a dog with Addison's disease is given ACTH, the dog will not have an increase in blood cortisol and the diagnosis of Addison's disease is confirmed. The test is not always accurate, however, and the veterinarian may recommend a secondary test called a Low Dose Dexamethasone Test (LDD), or refer for an ultrasound to try and evaluate the adrenal glands directly.

How is it treated?

Treatment involves replacing the missing glucocorticoids (steroids) or mineralocorticoids. The steroids are replaced with daily oral pills of Prednisone. The mineralocorticoids are usually replaced by injections of DOCP. The injections have to be given on a very regular schedule for the rest of the dog's life – depending on the dog, every 24-29 days. While the schedule is being

determined, the veterinarian will have to regularly check the Sodium/Potassium (NA/K) ratio to assure close control of this potentially fatal disease.