

## **Adrenal Gland Disease in Ferrets**

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Adrenal gland disease is, unfortunately, a common disease of pet ferrets in the United States. Most affected ferrets are greater than 2 years old. While the exact cause of this condition has not been determined, it is believed that spaying and neutering ferrets at a very early age may play a role. (This is a difficult situation as failure to spay or neuter can also result in life-threatening illness.) Early removal of the testes or ovaries removes hormonal influence that may affect the developing adrenal gland. In the absence of hormonal feedback, the adrenal glands may overproduce several sex hormones causing a variety of symptoms. The overactive gland can eventually become cancerous. Genetics may also play a role in the development of adrenal gland disease.

The most common signs associated with this condition are hair loss, particularly on the tail, hips and shoulders. Some ferrets may become extremely itchy, and some have an oily appearance to the fur. Female ferrets may develop swelling of the vulva, and occasionally a discharge may develop. Behavioral changes such as increased aggression are also sometimes observed. The prostate may become enlarged in male ferrets resulting in difficulty urinating. This is an emergency situation. If you have a male ferret that is straining to urinate, veterinary care is required immediately. Ferrets with any of the conditions listed above could have an adrenal gland problem and should be examined by a veterinarian.

Definitive diagnosis of adrenal gland disease can be achieved by measuring hormone levels in a sample of the ferret's blood. If the hormone levels are elevated above normal, adrenal gland disease is present. Another way to diagnose this problem is with an abdominal ultrasound. The ultrasound exam is a non-invasive way of visualizing the internal organs, and allows the veterinarian to determine which adrenal gland may be affected, as well as if there are obvious abnormalities in other abdominal organs. Exploratory surgery performed on the basis of the history, clinical symptoms, and physical examination is another means of identifying enlarged adrenal glands or masses.

Several options are available for treatment of adrenal gland disease. Surgical removal of the affected gland is the preferred treatment. Surgery allows direct inspection of both adrenal glands as well as the other internal organs. If abnormalities are noted in one or both adrenal glands, they can be removed, and any other abnormalities can be addressed at the same time. The left adrenal gland is typically easily removed without complication. The right adrenal gland lies very close to a major blood vessel called the caudal vena cava, making removal more difficult. In these cases, cryosurgery may be used to remove the gland without the risk of hemorrhage. While surgery is curative in the majority of ferrets, it is important to know that in some cases, recurrence or re-growth of an adrenal mass may occur.

Hormone therapy can also be employed in treating adrenal problems. The hormone leuprolide acetate (lupron) is used most commonly. Lupron mimics the effects of a hormone called GnRH (gonadotropin releasing hormone). This ultimately causes the body to stop producing GnRH, thus decreasing stimulation of the adrenal glands. Hormone injections are usually repeated once every 6-8 weeks. When lupron is used, the symptoms of adrenal gland disease will resolve. However, the enlarged gland is itself unaffected and may continue to increase in size, and in some cases, a malignant tumor may develop.

If your ferret has any of the signs listed above, or if you have questions about adrenal gland disease, please feel free to contact our hospital.