

# Walker Valley Veterinary Hospital

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## CANINE CUSHING'S DISEASE

### *What is Cushing's Disease?*

Cushing's Disease is a disease in which the adrenal glands overproduce certain hormones. Another medical term for this disease is *hyperadrenocorticism*.

The adrenal glands produce several vital substances, which regulate a variety of body functions and are necessary to sustain life. The most widely known of these substances is cortisol, commonly known as cortisone. Either deficient production or excessive production of these substances may be life-threatening.

### *How does this disease occur?*

There are different mechanisms by which this disease can occur, including problems with the adrenal glands themselves or problems with the pituitary gland, which regulates the adrenal glands. Regardless of the cause, the clinical signs are essentially the same. It is important to identify the cause, however, because the various forms are treated differently and have different prognoses.

### *What are the clinical signs?*

The most common clinical signs associated with Cushing's Disease are a tremendous increase in appetite, water consumption, and urination. Lethargy, or lack of activity, and a poor hair coat are also common. Many of these dogs develop a bloated appearance to their abdomen due to an increase of fat within the abdominal organs and a stretching of the abdominal wall as the organs get heavier. The pot-bellied appearance also develops because the muscles of the abdominal wall become weaker. Panting is another common finding with this disease.

### *How is it diagnosed?*

A number of tests are necessary to diagnose and confirm Cushing's Disease. Routine screening bloodwork can raise suspicion (an elevated liver enzyme called alkaline phosphatase with no other liver abnormalities is common) but more specific tests are needed to confirm the diagnosis. The primary test is the ACTH Stimulation Test. If it does not confirm the diagnosis, the Low-Dose Dexamethasone Suppression Test is performed. Yet further tests are often needed to decide which form of the disease is present. An ultrasound examination can be a valuable part of the testing process. This permits us to visualize the adrenal glands and determine their size. Although some of these tests are somewhat expensive, they are necessary.

### ***What are the treatment options?***

Treatment of an adrenal tumor requires surgery to remove the tumor. Pituitary dependant cases are treated medically. There are few different drugs used, your veterinarian will explain which drug is right for your pet.

Pituitary Tumor: Treatment of the pituitary-induced form (the most common form) of Cushing's Disease is complicated. There are a few medications that can be used. One drug, Lysodren, is the primary drug used to destroy the abnormal adrenal tissue. Lysodren is also known as mitotane or o,p'-DDD. If not enough drug is used, the abnormal tissue persists and the disease continues. If too much is used, most or all of the adrenal cortex will be destroyed, which can be life-threatening. Therefore, careful monitoring of the dog is necessary in order to achieve good results. Because the pituitary is not being affected by the treatment, it continues to stimulate the adrenal gland. This means that continued treatment is necessary. Although a cure is not achieved, control is possible for many years if the tumor is small. If the tumor is large, local effects of the tumor invading surrounding tissues in the head can be the limiting factor in survival. Other drugs used include Anipryl (Selegeline) and less commonly ketoconazole.

### **INSTRUCTIONS FOR THE MEDICAL TREATMENT OF CUSHING'S DISEASE**

Treatment of this form involves an *initiating phase* and a *maintenance phase*. The *initiating phase* arrests the disease and restores the dog to a more normal state. Some of the clinical signs, especially increased food and water intake, should stop within the first 1-3 weeks. Other signs, such as a poor hair coat or a bloated abdomen, may take several weeks or months to correct. The *maintenance phase* represents the phase of long-term therapy. This phase lasts the rest of the dog's life.

You must continually monitor your dog's food and water intake. We expect both to return to a normal level. Water intake should be less than 1 oz per pound (66 cc per kilogram) of body weight per day, but don't limit the water if your dog needs to drink more. For your dog this amounts to \_\_\_\_\_.

The food amount should be measured each day. At least two feedings per day are preferred.

### **CUSHING'S TREATMENT PLAN**

#### **Initiating Phase**

1. Give \_\_\_\_\_ Lysodren tablet(s) one time per day beginning on \_\_\_\_\_ for 7 days or until one of the following occurs:

- a) Your dog's water intake drops to the 1 oz per pound (66 cc per kilogram) per day level or \_\_\_\_\_ per day.
- b) Your dog's appetite returns to normal or it takes 15-30 minutes to eat when it would normally eat in much less time.
- c) Your dog does not eat a regular meal.
- d) Your dog vomits.
- e) Your dog has diarrhea.
- e) Your dog becomes unusually listless.

2. Return in nine days or when one of the above occurs for another ACTH stimulation test. This test should be done early in the morning and will require your dog to be in the hospital for about 4-5 hours. If the test is abnormal, the initiating phase will continue. If the test is normal, the maintenance phase will begin.

3. If loss of appetite, vomiting, diarrhea, or listlessness occurs, give \_\_\_\_\_ tablet(s) (\_\_\_\_\_ mg) of hydrocortisone twice daily for two days. DISCONTINUE THE LYSODREN TABLETS. If vomiting prevents oral administration, your dog must be seen by a veterinarian for administration of proper medication by injection. When you begin this treatment, please call us for consultation and instructions.

Following the first two days of treatment with \_\_\_\_\_ tablet(s) twice daily, give \_\_\_\_\_ tablet(s) twice daily for two more days, then \_\_\_\_\_ tablet(s) twice daily for three days, then \_\_\_\_\_ tablet(s) once every other day for one week. At the end of that time, make an appointment so we can assess the situation and give you further instructions on Lysodren administration.

4. Report any other changes in your dog's behavior that are out of the ordinary. This disease and this treatment can result in several abnormal behaviors. However, your dog can also have other diseases that occur concurrently but independently of Cushing's Disease. It is important that we differentiate between the two situations so that proper treatment can be taken.

5. Stay cautiously optimistic. This is a serious disease, but many dogs with Cushing's Disease enjoy a greatly improved quality of life for many years.

### **Maintenance Phase**

When regulated, your dog will take Lysodren approximately once weekly. An ACTH stimulation test will be necessary about every 3-4 months to be sure that regulation is satisfactory. At the appropriate time, the specifics of the maintenance phase will be explained.

Give \_\_\_\_\_ tablet(s) every \_\_\_\_\_ days.