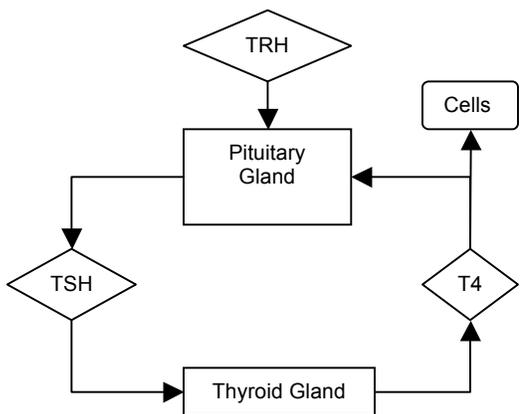


**All Pets Veterinary Hospital  
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### The Normal Thyroid Gland

The thyroid gland in the cat produces hormones commonly called T3 and T4. These hormones are responsible for regulating many biological functions of the body. They regulate such things as oxygen consumption, bone formation and resorption, metabolism of body fat, protein production and the production of red blood cells – just to name a few.

The amount of hormone released into the blood stream is regulated by what is called a negative feedback system. You can refer to the diagram below to understand this feedback system.



TRH (thyrotropin releasing hormone) is released by the part of the brain called the hypothalamus on a constant basis to stimulate the pituitary gland (tonic stimulation). The pituitary releases Thyroid Stimulating Hormone (TSH). TSH tells the thyroid gland to produce and release T3 and T4. When sufficient levels of T3/T4 are in the blood, the pituitary reduces the production of TSH and so the level of T3/T4 production is reduced. In this way, the body regulates how much of these hormones are available to be used by the cells.

### Hyperthyroid Disease

Hyperthyroid disease is recognized as the most common endocrine diseases of cats and one of the most common diseases overall in older cats. However, it can occur in cats as young as 4 years old. Some cats develop functional nodules in the thyroid gland called adenomatous hyperplasia or adenomas. These nodules are considered to be benign tumors that continuously produce thyroid hormone without the normal regulatory mechanisms. A very small percentage of cats develop hyperfunctioning carcinomas, which are cancerous tumors. In either case, the thyroid gland continuously produces and releases thyroid hormones so that the levels rise to a level that causes signs of disease.

## **Signs and Symptoms of Hyperthyroid Disease**

The signs of hyperthyroid disease are related to the overproduction of hormone. This leads to an increase in the overall body metabolism. Therefore, cats with the disease often have one or more of the following symptoms:

- Weight loss
- Increased Heart Rate
- Increased Appetite
- Increased Thirst
- Increased Urination Frequency and Volume
- Hyperactivity
- Increased Vocalization
- Vomiting and/or Diarrhea

## **Diagnosis**

If your cat has symptoms that may be consistent with hyperthyroid disease, a T4 blood test performed in the office is usually all that is needed to diagnose the disease. In rare instances, this test may be inconclusive and additional testing may be required.

There are many other diseases that have symptoms that are very similar to those of hyperthyroid disease. In fact, many occur along with this disease. In addition, the choice of treatment may depend in part on the overall health of your cat. Because of these factors, it is important that your cat have additional tests such as a complete blood count and a full chemistry panel to look for these other disease processes and evaluate your cat for the best potential treatment and outcome.

## **Treatment Options**

There are 3 common choices for treatment of hyperthyroid disease.

Medical Management: A daily medication can be prescribed to control the production of the thyroid hormone.

Surgery: The thyroid gland can be surgically removed.

Radioactive Iodine ( $I^{131}$ ): The thyroid tissue is selectively destroyed by the radioactive iodine.

## **Post-treatment Care**

Regardless as to how you choose to treat your pet, we will need to monitor the T4 levels on a regular basis.

If your pet receives medical management, there will be frequent T4 tests until the levels return to normal. After that, we will need to monitor your pet on a regular basis to ensure they remain there.

If you choose surgery or  $I^{131}$ , we will need to test the T4 level shortly after the procedure to ensure the treatment was successful, and then again on a regular basis to ensure that thyroid tissue does not re-grow. In fact, some of these patients will require a thyroid supplement, which will also require occasional monitoring.

