



# Feline Hyperthyroidism

*Thyroid is the major metabolic hormone in the body. Excess Thyroid Hormone, or Hyperthyroidism, causes increased metabolism, leading to a variety of health problems. Hyperthyroidism is caused by a tumor (almost always benign) of one or both thyroid glands. It is one of the most common illnesses diagnosed in aging cats.*

*Most cats with hyperthyroidism are middle-aged or older. While nutritional and environmental factors have been investigated, no specific cause of Hyperthyroidism has been clearly identified.*

**Clinical Signs and Complications:** Excess thyroid hormone affects multiple internal organs and leads to a variety of clinical signs and potential complications. These include:

- **Weight Loss despite increased appetite** due to the increased rate of metabolism. Much less commonly, cats with hyperthyroidism can have diminished appetite. Some cats **vomit** periodically or have diarrhea.
- **Increased Thirst and Urination** due to reduced ability to concentrate urine.
- **Increased activity** due to the increased rate of metabolism. Some cats meow more and wander around the house.
- **Kidney Disease:** Hyperthyroidism can aggravate kidney disease, a condition also quite common in aging cats. Monitoring kidney function before and during treatment for Hyperthyroidism is very important. Treating Hyperthyroidism does not harm the kidneys, but can reveal kidney disease that may have been “masked” by the increased blood flow due to hyperthyroidism.
- **Hypertension and Heart Disease:** Mild hypertension (elevated blood pressure) is common in cats with Hyperthyroidism, and usually responds to treatment to reduce thyroid hormone levels. Severe hypertension may require separate blood-pressure medication to prevent serious complications such as blindness (due to a detached retina) or stroke. Hyperthyroidism can also contribute to heart-muscle damage if not thoroughly treated.

**Diagnosis:** In most instances, diagnosis of this disease is relatively straightforward.

- An **enlarged thyroid gland(s)** can often be palpated (felt) in the throat area during the physical exam. This makes the disease very likely.
- A simple **blood test** to measure the level of one of the thyroid hormones, called thyroxine (or T4), confirms the diagnosis in most cases. More comprehensive blood tests are always included with the T4 test to check for other causes of weight loss, check kidney function, and check for other health problems. A urinalysis and blood-pressure check are usually needed before starting treatment.
- Occasionally, a cat suspected of having hyperthyroidism will have T4 levels within the upper range of normal. When this occurs, additional testing may be needed, or the T4 level can be tested again in a few weeks to months.

**Treatment Options:** There are two main choices for treatment. Many factors must come into consideration when choosing the best therapy for an individual cat.

1. **Radioactive iodine.** Radio-iodine treatment (also called I-131 treatment) must be performed by a specialist. It is very simple (just a single injection under the skin) and safe (the radioactive iodine is rapidly absorbed into the thyroid tumor and causes no harm to the rest of the body), but requires 2-7 days of hospitalization until it is safe for your animal to come home. Many specialists believe this is the best treatment to thoroughly control the excess thyroid hormone and the problems it can cause.
  - This treatment is offered at 2 locations in the Seattle area.
  - The initial expense for this treatment is higher than for the medical treatment (~\$1000-\$1200), but over the course of several years, it equals out.
  - One treatment is nearly always successful. A very small percentage of cats (< 5%) require a second treatment (usually done free of charge). A small percent of cats (<5%) will become permanently Hypothyroid and require life-long thyroid supplementation.
  - For many cats, especially relatively “young” ones, this is the best and most economic treatment option.
  
2. **Oral medication.**
  - a. The oral drug, Methimazole, is often successfully used to suppress thyroid hormone production from the overactive thyroid gland. It is not as thorough as Radio-iodine treatment, but controls clinical signs and side effects from Hyperthyroidism in most cats quite well. Methimazole does not destroy the abnormal thyroid tissue; therefore, the drug must be given twice a day for the remainder of the cat's life.
  - b. A relatively small percentage of cats (less than 20%) have reactions to the drug. The most common side effect is vomiting or loss of appetite – this can often be avoided by starting at a low dose and increasing over about 1 week. Much less common but potentially severe side effects including liver inflammation, anemia, and fever can occur, sometimes as late as 3-months after the beginning of treatment.
  - c. Blood tests must be repeated at 1 and 3-months after beginning treatment, then at least every 6-months to help ensure treatment is both effective and safe.
  - d. We have this drug in tablet or liquid form. For cats that simply refuse to take oral medication, or have gastrointestinal side effects, compounding pharmacies can make a transdermal form that is applied to the inside of the cat's ear twice daily.
  
3. **Surgery.** Surgical removal of the affected thyroid lobe(s) used to be a common treatment option (prior to radiation therapy becoming more accessible) but is not routinely recommended these days due to risk of anesthesia in usually already frail cats, and risk of complications to the surrounding parathyroid glands, which are important for calcium regulation in the body.

## **Maintenance**

- After radiation therapy or starting methimazole medication, blood tests (and blood pressure if elevated before treatment) are repeated in 1 month and 3-months to assess response to therapy and to evaluate kidney function.
- We aim for a T4 level between 1.25 and 2.5ug/dl. Dosage adjustment of oral medication and additional testing may be needed to fine-tune treatment.
- In many geriatric cats, kidney function has declined with age. When hyperthyroidism is present, the increased blood flow that it causes may “mask” kidney disease, making kidney values look better than they truly are. When the hyperthyroid state is treated, renal blood flow returns to normal, and the cat’s kidney disease may become more apparent on tests. If this occurs, we will talk to you about monitoring or treatment that might be needed.
- For cats on oral medication, blood tests are repeated every 6-months for monitoring and possible dosage adjustments.
- Sometimes cats that have received radiation therapy will have T4 levels too *low*, and therefore need thyroid supplementation for a period of time, often temporarily.

**Prognosis:** The outcome following both daily medication and radiation therapy is usually very positive, and most cats have a very good chance of returning to an excellent state of health for many years.