



# INSTITUTE *of* VETERINARY SPECIALISTS

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5609 SW 64<sup>th</sup> Street • Gainesville, FL 32608  
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## Radioactive Iodine-131 Therapy for Feline Hyperthyroidism

### HYPERTHYROIDISM

Hyperthyroidism may be the single most commonly diagnosed hormonal disease in cats next to diabetes mellitus. It is generally a disease of older cats (most are greater than 9-10 years of age), but can be seen in cats as young as 5 years of age (uncommon). In most cases, the disease is caused by a growth of abnormal, non-cancerous cells in the thyroid gland which secrete thyroid hormones in excess of the normal levels. If left untreated, a hyperthyroid cat can exhibit many, if not all, of the following signs: extreme weight loss, excessive appetite, muscle weakness, heart disease (increase in the size of the heart, increased rate, changes in heart rhythm, cardiac arrest), intolerance to stress, and eventually death.

### TREATMENT WITH RADIOACTIVE IODINE-131

The thyroid gland is the only tissue in the body that actively concentrates iodine. However, the glands cannot differentiate between normal dietary iodine and radioactive iodine (131I). Therefore, the radioiodine is concentrated by the hyperactive, abnormal thyroid tissue. Because the normal thyroid tissue becomes atrophied (decreased in size and ability to function) in the hyperthyroid patient, the normal thyroid tissue itself should not concentrate the radioiodine.

### PROCEDURE

The protocol for administering radioactive iodine at the Institute of Veterinary Specialists is by the subcutaneous route (under the skin). The radioactive iodine is administered as a single injection under a small shaved portion of skin in the upper back between the scapulae (shoulders). In rare cases, we may sedate or anesthetize the patient. This is to ensure the safety of both the patient and the staff members involved in the injection procedure as well as to ensure the entire dose is administered to the patient.

Please provide the following items when bringing your pet for Radioactive Iodine-131 treatment:

- 7-10 days' supply of your pet's food.
- Medications your pet is currently taking (some may need to be stopped prior to treatment)
- Up-to-date blood work and urinalysis (within 30 days)
- Any patient history you have been given from your veterinarian
- Pet toys, personal items, or treats (optional as they will NOT be returned due to radiation protocol)

The hospitalization period varies from cat to cat, but is generally between 3-5 days. The effective half-life of the radioiodine (decay of radioactivity) can be quite variable depending upon each cat's ability to excrete via the kidneys and the amount of time the radioiodine is bound to the thyroid. Due to the removal of iodine through the kidneys, cats with preexisting kidney disease may have to stay longer because the radioiodine may not be removed from the body as quickly. The patient will be monitored at regular intervals to determine when they are able to be released. The patient can be released from the hospital once the exposure rate from the radioactivity in the body reaches a level that is deemed to be safe to the general public (i.e.: owners), based on the standards provided by the Florida Department of Health.

Your cat will receive attention multiple times daily from one of our radioiodine therapy technicians. During this time, your cat will receive routine care (feeding, watering, litter change, cage clean-up.) We do not encourage owners stopping by during the treatment week to view or interact with the patient as it may result in anxiety or other behavior issues.





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## DISCHARGE PROTOCOL

You MUST comply with the following instructions for the TWO WEEK PERIOD immediately following treatment:

- Store used litter for two weeks in double garbage bag and place litter waste in an unoccupied area. You can use flushable litter during the two week period as well.
- Use disposable gloves when changing the litter.
- If your pet vomits or defecates outside the litter box, use gloves to clean area and store soiled material in the double bagged garbage container with the litter waste.
- Pregnant women and children, under the age of 18, should not handle the litter during the two weeks.
- After two weeks, dispose using your normal household garbage protocol. No need to notate radioactivity
- You will need to limit contact with your pet during the two week period following discharge from the hospital. This will include restricting your pet from food preparation areas and not letting your pet sit on your lap.
- Do not let your cat outside for the first 2 weeks.
- Limited (15 minutes total per day) petting is acceptable.
- Wash your hands after any contact with your pet or your pet's excreta during the two weeks.

\*These protocols are set in place to prevent others from being exposed to the radiation (i.e.: sanitation workers.) This will help to prevent the spread of radiation to other regions of the house as well as to decrease the exposure to you from any possible contamination. Also, lack of compliance may result in fines from your garbage facility. Trash disposal facilities have radiation detectors and will return the garbage to you if radiation is detected.\*

## FOLLOW-UP PROTOCOL

Blood urea nitrogen (BUN) and creatinine (kidney values) should be measured at 1 month and 3 months after the radioiodine treatment. This helps monitor for kidney disease which can be unapparent while the patient has hyperthyroidism but can become clinically noticeable once the thyroid levels have returned to normal. The state of hyperthyroidism causes increased blood flow to the kidneys which can "mask" kidney disease that is already present in the older patient in which both of these conditions are most likely to occur. Radioiodine therapy itself is NOT associated with causing kidney disease in cats.

Thyroid hormone level is also monitored at 1 month and 3 months after the radioiodine therapy to assess response to therapy. During this time, it is possible for patients to experience a period of subclinical hypothyroidism (low thyroid levels where the patient shows no signs of illness) that is almost always asymptomatic and does not require therapy in the majority of patients. In most patients, the atrophied (decreased in size and functional ability) thyroid tissue becomes functional, and the patient's thyroid level returns to a more normal level. Cats that continue to have low thyroid levels may require thyroid supplementation.

Patients that continue to have high levels of thyroid hormones by 3 months after the radioiodine therapy probably will require re-treatment. This has only been noted in approximately 5% of cases.

