

Radioactive Iodine Therapy

Information and Instructions for Referring Veterinarians

Required Diagnostic Tests

- Routine diagnostic testing is required prior to referral for two main reasons.
 - First, we require an accurate clinical assessment and T4 level to calculate the dose of I-131 required for each cat correctly. This calculation requires the severity of clinical signs, T4 level, and thyroid nodule size. Overdosing means a longer hospitalization and under-dosing may require repeat treatment later on, so accuracy is very important and depends largely on information collected by rDVM.
 - Secondly, since these cats tend to be seniors, we need to identify any other geriatric problems prior to treatment. Once admitted to the radio-iodine therapy room, cats cannot be removed until below the set radiation limits, thus making emergency care difficult to provide.

Reference Total T4 Requirements:

- **T4 level must be quantitative (referral lab such as AVC or IDEXX) and taken prior to treatment when the cat is off medications.**
 - ***This bloodwork must be sent out for proper testing. In clinic machines despite being supplied by Idexx do not offer the same quantitative measurement.***
- **Cats must not be on methimazole (Felimazole) when this test is performed.**
- **If the cat has been treated for longer than 3 months, discontinue medication for 14 days before T4 reference lab testing.**

Other suggested tests, based on individual cases:

- Cardiac ultrasound or chest radiographs, especially if severely hyperthyroid, clinically significant heart disease, or long-standing hyperthyroidism (>1 year since diagnosis)
- Electrocardiogram if severely hyperthyroid, marked tachycardia, arrhythmia, or other sign of heart disease
- Full body survey radiographs if any other disease is suspected based on examination or bloodwork results

Once the information has been collected, please send an email to our referral team
referrals@petworksvet.ca

If the cat is an acceptable candidate, we will set up a consultation appointment with the client. If we require additional information, we will contact you directly.

Concurrent Conditions That May Exclude Cats as Suitable Candidates for Radioactive Iodine Therapy

A cat must be stable prior to being admitted for radio-iodine therapy, as we cannot easily provide emergency care while they are radioactive. Cats with clinically significant cardiovascular, renal, gastrointestinal, or neurologic disease may not be good candidates for this treatment, considering the length of boarding required after the radioactive iodine treatment is administered.

Please discuss any concerns you may have about your patient with us prior to referral.

Release Criteria for Cats Treated with Radioactive Iodine Therapy

Cats are required to remain hospitalized for a minimum of 4 days after the radioactive iodine injection. In addition, cats must be below CNSC regulated radiation limits at the time of discharge. If they are still too radioactive after 4 days, they must be hospitalized for additional days. Cats will still be excreting a small amount of radioactive iodine at the time of discharge, mainly in urine and feces. Clients will receive instructions on proper handling of their cats for the first 2 weeks after release from the hospital, including avoiding prolonged close contact with the cat and special handling of the litter.

Follow-up After Treatment

We will send you an email within a few days of the patient's discharge, providing the date of treatment and release. We suggest you examine the cat and re-check T4 and renal levels 4-6 weeks after treatment.

- If T4 remains high at this point, please contact us to discuss additional treatment (at no cost to the client).
- Additional tests such as serum chemistry or urinalysis may be helpful to identify the development of other issues such as renal disease. We would appreciate you sending us follow-up lab work for our files to allow us to monitor the efficacy of treatment and adjust our treatment protocols as necessary.

Possible Complications After Radio-Iodine Treatment

- **Persistence of Hyperthyroidism** – Literature suggests < 3% of cats will remain hyperthyroid after treatment, and require re-treatment. If the cat is still hyperthyroid 3 months after treatment, we will re-treat at no cost to the client.
- **Development of Hypothyroidism** (< 3% of cats) – If thyroid levels are persistently low AND the cat shows clinical signs of hypothyroidism, thyroxine supplementation will be required.
- **Development of Renal Disease** – Borderline renal dysfunction may worsen after therapy, with the development of azotemia and overt renal disease. This is caused by a fall in renal blood flow and glomerular filtration rate when cats return to normal cardiovascular status. In some cats, untreated hyperthyroidism can mask pre-existing renal disease by increasing blood flow to kidneys. This can occur regardless of the treatment method; radio-iodine is no more likely to cause

this effect than treatment with methimazole or surgical thyroidectomy. If renal disease does not develop, it is not caused by the radio-iodine itself. If this is a concern for your patient, you can perform a methimazole “trial” prior to radio-iodine therapy. Treat the cat for 1-2 months with methimazole, then assess kidney function with bloodwork and urinalysis. If this goes well, it does not mean the cat will not develop renal disease, but it does decrease the risk.

- **Regrowth of Thyroid Tumour** – In rare cases, cats who have been treated and returned to normal thyroid status can become hyperthyroid again – these cats have actually regrown thyroid tumour tissue, which is not a treatment failure. These cats can be re-treated, but the cost is not covered under the original treatment price.

Please be assured we will take care of your patient and client, and we will ensure the clients receive daily updates on their cat. We will provide any care needed while cats are hospitalized, but will not provide any additional follow-up care without your consent. We will always refer clients back to their referring veterinarian after treatment.

Thank you for your consideration in referring your patient to us for radioactive iodine treatment.