

Angell Animal Medical Center i-131 Program Information for Clients

David Carabetta, DVM, DACVECC
Evan Mariotti, DVM, DACVIM (SAIM)

i-131 program direct email: i131@mspca.org

Feline Hyperthyroidism

- Feline hyperthyroidism is caused by a tumor of the thyroid gland (98% are benign). These tumors produce large amounts of thyroid hormone in the body. Excess thyroid hormone causes an increased metabolic rate and is responsible for many of the signs we see such as weight loss, increased appetites, elevated heart rate, heart murmurs and arrhythmias.

How Radioiodine (i-131) Therapy Works

- The goal in treating hyperthyroidism (from benign tumors) is to destroy only the tumor cells in the thyroid and spare the normal thyroid cells. Ideally this should result in normal thyroid hormone levels and correction of weight loss and other clinical signs. For most cats, there is no need for daily thyroid medication after i-131 treatment. The goal in treating the uncommon (malignant) thyroid adenocarcinoma is to destroy all the thyroid tissue. After treatment, these patients will need daily thyroid supplementation for life.
- Normally the thyroid glands take up iodine to be made into thyroid hormone. In hyperthyroid cats the high amount of thyroid hormone in the body causes normal thyroid cells to shut down (negative feedback). This spares these normal cells from the effects of the radiation. Tumor cells do not have this feedback so when given the radioactive iodine, the tumor cells pick that up as they would normal iodine. The radioactive iodine is taken into the tumor cells and while it is in the cells, it kills the tumor cells. Once the thyroid tumor cells are destroyed, the remainder of the thyroid tissue should perform normally again.
- The success rate of i-131 is approximately 95-98%. A few patients may require an additional treatment with i-131 if they do not return to normal thyroid function within 3-6 months. A small percentage of cats will become hypothyroid (not produce enough thyroid hormone) and if this occurs, may be a temporary problem, or in some cats (~5%) these cats may require thyroid supplementation.



Kindness and Care for Animals®

About Our Program

- Your cat will be carefully screened for other disease conditions before being admitted for radioiodine treatment. The screening will consist of bloodwork, radiographs (x-rays), and possibly additional tests such as an ultrasound of the heart or abdomen. This may be done by your veterinarian before your cat is referred for treatment but we also offer these services at Angell.

Cost of Treatment

- ~\$4,000–\$4,800 – A full estimate will be given at the first appointment or can be requested prior
- For cats boarding the full 17 days post treatment an additional \$625 boarding fee will be applied, which is included in the above estimate range
- Amounts will vary slightly depending upon diagnostic testing that needs to be done at Angell (i.e. echocardiogram, abdominal ultrasound, etc.)
- If your cat is on medication or supplements please be aware that there is a dispensing fee to administer these to your cat while at Angell. If you bring it to our attention prior to admit we will include this cost in your estimate.
- We may need to medicate your cat while they are hospitalized for a variety of reasons such as inappetence, GI upset or behavior. This may result in additional charges for your cat's stay.

Before the Treatment

- The veterinarian will examine your cat on or before the scheduled admission date. At that time it will be determined if your cat is a candidate for this treatment, and any necessary additional testing will be arranged. **Please call to schedule at (617) 541-5186 or email at i131@mspca.org.**
- For cats newly diagnosed with hyperthyroidism, we recommend a trial of methimazole (medication used to control hyperthyroidism) to evaluate kidney function in relation to thyroid level. We recommend this even if you wish to pursue i-131 therapy. Blood work is rechecked approximately 3 weeks after starting the methimazole to reassess kidney function and thyroid level. Results from this trial provide crucial information about the cat's kidney health and helps our veterinarians tailor a specific i-131 dose for the patient.
-
- If your cat is on an anti-thyroid medication, such as Methimazole, **this must be discontinued at least one week before your cat's scheduled admission date. Please consult your veterinarian about stopping the medication. Any thyroid controlling diets should also be stopped 2 weeks prior to admission.**

Nuclear Medicine Ward: Your Cat's Home Away From Home!

- During your appointment we will show you photos of the ward your cat will be staying in. The i-131 ward is a limited access ward staffed by personnel trained to work with radioactive materials. Your cat will be in a comfortable cage away from noise and dogs. We have ample toys and catnip is always available. We encourage you to bring a towel,



Kindness and Care for Animals®

shirt or some toys with the scent from home. Please don't bring any favorites as they cannot be returned to you.

- We try to mimic feeding time at home. Please write a blurb with your cat's daily routine and give it to us at the time of admission. We also recommend you bring some of your own cat's food so we don't have to alter their diet while they are with us, hopefully minimizing the chance of an upset stomach. Please let us know of any dietary allergies and likes or dislikes when it comes to flavors/consistencies of food.
- If indicated we have a variety of prescription and non-prescription foods available to offer the cats while they are here.
- If your cat is not eating well we may offer them foods other than their normal food to try to stimulate their appetite. This may include other types and brands of cat food and also "people" food (chicken, turkey, and tuna).
- At night, the lights are dimmed to allow your cat to continue to have normal sleep cycles.
- The ward has a high flow ventilation system to avoid spread of upper respiratory infections, common when cats are hospitalized together. It is highly uncommon that we have an outbreak because of this.
- We strive to maintain a calming environment, however some cats may require some stress-reducing medication. These medications are used in conjunction with pheromone diffusers with the goal of keeping the cats at ease. Some cats may only need a couple of doses of anti-anxiety medications while they settle in, while others may require it for the duration of their stay.

Hospitalization During and Post i-131 Treatment

- Length of hospitalization varies from 4-5 days (home with restrictions) to 18-19 days (boarding post treatment for the duration of all restrictions).
- Cats come in 1-2 days before treatment to become acclimated and finish any diagnostics needed.
- Massachusetts law requires contact restrictions be followed until 17 days post-treatment. This is non-negotiable.
- Once the i-131 treatment is administered (by injection) your cat cannot be released any earlier than 3 days post-treatment **under any circumstances**.
- **No visitation is permitted** due to radiation safety concerns, but you will be contacted once a day with a progress report usually ~10am. If you have not received an update by the afternoon feel free to call our call center 617-522-7282 or e-mail us. You will be given all of our contact info at the time of admission.
- If your cat is not doing well in the hospital, i.e. they are quite stressed or inappetent and do not respond to intervention we may speak with you about taking your cat home earlier than anticipated once they are legally able to be discharged. This is for your cat's well-being.



Kindness and Care for Animals[®]

- Due to the risks it poses to our staff, we cannot perform CPR on your cat should they suffer cardiac or respiratory arrest while on radiation quarantine. In the unlikely event that your cat does expire during their quarantine, their remains will need to be stored on site at Angell until it is at a measurably safe radiation level.



Kindness and Care for Animals®

I-131 Treatment Daily Schedule Once Admitted

- **Monday** is for appointments or dropping off your cat. If needed repeat blood tests and x-rays are done. This is to be sure nothing has changed since your veterinarian did diagnostics. We are trying to make sure your cat is as healthy as possible before moving forward with treatment. We will talk about results of your cat's diagnostics before we move forward with i-131 treatment. We want you to feel comfortable that this is the best treatment option for your cat.
- **Tuesday** – A thyroid scan (also called a technicium-99 scan) is done to determine if one or both lobes of the thyroid gland are involved in your cat's hyperthyroidism. If your cat is too nervous or difficult to handle, a sedative may be given to make this less stressful and to let us get the best imaging possible. **Please be aware that the thyroid scan may reveal that your cat's condition does not warrant treatment with i-131. If this is the case, you need to be prepared to take your cat home the day following the thyroid scan (Wednesday).**
- **Wednesday** – After all the diagnostic information has been gathered, a dose of radioactive iodine (i-131) is determined by our veterinary team and administered as one intramuscular injection.
- **Thursday onward** – From this point on, your cat is boarding here as their amount of radiation decreases. All we expect is for your cat to relax and eat. We try to provide all the comforts of home and ensure their stay here is tolerable. You are welcome to provide a voice recording for us to play for them here. If your cat has any music preferences for our radio, let us know!
- During your cat's stay full physical exams are not done daily due to radiation exposure. All cats are observed at least twice daily and all appetites, bowel movements, etc. are recorded. If you have any questions about this please feel free to ask.
- The technicians will update you daily via email and send photos when able.

Restrictions and Release Options Post i-131 Treatment

AAMC offers the flexibility of variable release dates.

- **Early release** – 3 days post treatment (we administer treatment on Wednesday):
 - Cats can go home on the Saturday after treatment once they have been monitored with a Geiger counter to be sure their radiation levels are below the allowable limit. The nuclear medicine technician will call to confirm that your cat is ready to go home on Saturday morning. You must follow full contact and litter restrictions for the next two weeks.
- **Boarding until off litter restrictions**
 - While here, we will monitor the amount of radiation coming off of your cat. Once it is below allowable limits, litter does not need to be handled with special restrictions (see restriction sheet). This is most commonly around day 10-14 post treatment but can vary based on each cat's metabolism. We can keep you updated on this value daily if you are interested in taking your cat home when the litter restrictions are up.



Kindness and Care for Animals®

- **Boarding until NO restrictions**
 - After 17 days post treatment, all restrictions (contact and litter) are no longer necessary and you and your cat can resume your normal lifestyle.

All of these options are discussed at the appointment time with our veterinarian.

Discharge and Restrictions at Home

- **First Saturday post treatment** – After cleaning their cages and feeding, we monitor the cats with a Geiger counter. Clients with cats going home on earliest release will be notified by the technician by mid-morning (10:00am).
 - If you would like your cat not to be fed the day of discharge (due to car sickness) let us know ahead of time and we will not offer breakfast and/or administer an anti-nausea medication a couple hours prior to their departure.
 - A discharge time will be set up for you to minimize your wait time when you arrive.
 - Clients with cats staying with us will get daily updates as normal.
- **Admission and Restrictions Sheet** – The last sheet in this packet is a copy of the restriction form every owner signs (even if your cat is staying the whole time) on admission. That is so we may document that you have been told there are restrictions if you take your cat home before the restriction period is finished.
- At the time of discharge this restriction sheet will be part of your discharge instructions. This is the same safety precaution instruction sheet as the one below.
- It is imperative that you follow the restrictions as indicated. This is for your own safety and to avoid being fined by your local trash processing facility. If you dispose of any contaminated litter or waste products in your trash during the two week restriction period, Geiger counters at the trash disposal facility will likely detect it. This has resulted in costly expenditures of labor for cities and towns necessitated by locating the source. Fines have been issued to those improperly disposing of radioactive cat litter.

I-131 Home Kit Information

1. **Flushable litter** – Check local pet supply stores for availability prior to release. Some brands include: *World's Best, Oko, Cat's Pride, Nature's Miracle, and Wheat Scoop*
 - If you are taking your cat home prior to 17 days post treatment, you may need flushable litter. We will discuss this and other options at the time of the appointment.
2. **Plastic/rubber disposable gloves. Disposable gloves are fine just make sure to store any gloves for 3 months before disposing in the trash.**
3. **Plastic bags** – If you cannot flush litter, you will need to store the litter for 3 months before it is able to be safely disposed of at trash facilities.
4. **Secure container** – If you are storing the litter instead of flushing it, you will need to have a secure container to place the bags/ litter for the 3 months.



Kindness and Care for Animals®

You may use your cat's normal feeding bowls and bedding once home but please make sure to hold any products for 3 months post restriction period in the event that you need to dispose of them.



Kindness and Care for Animals®

Safety Precautions Following i-131 Hyperthyroid Therapy

Your cat has been treated with radioactive iodine (i-131). After receiving i-131 therapy, your cat will contain residual radioactivity which is excreted primarily via urine and feces. To justify early release of your cat, you must agree to follow these safety precautions for **2 weeks** or as otherwise indicated.

1. Use a plastic liner in the litter box before adding litter, or use a box that will be dedicated to this 2-week period and then isolated for 3 months before disposal. Keep box out of occupied bedrooms, kitchen, and away from unsupervised animals and children. Wear dedicated rubber or plastic gloves when removing soiled litter from box (use gloves only for this purpose; segregate for future use; will need to store for 3 months before discarding).
2. Use **flushable litter only in box, unless storing litter for 3 months**. For the 2-week period, dispose of soiled litter into toilet and flush. **(Do NOT discard litter via normal trash for this 2-week period.)** If not flushing litter, store all litter trash in a low traffic area that cannot be accessed by children/other pets/wildlife for 90 days.
3. If your cat vomits or soils outside the litter box, wear designated gloves and use normal cleaning procedures with toilet paper or flushable tissue. **Flush all such waste in the toilet.** Any soiled blankets or items you wish to keep should be stored for 90 days and then can be laundered or washed as normal.
4. **Pregnant women or persons less than 18 years old** should not change the soiled litter or clean up such spills. These people should not hold the cat or allow the cat to sit in their lap for the 2 weeks. They should avoid prolonged contact (i.e. stroke the cat for 5 min., no longer than 20 minutes total per day). They should wash their hands anytime they touch the cat and especially before eating.
5. **All other persons should also avoid prolonged face-to-face** contact with the cat or hand contact with your cat's saliva and footpads. Keep your cat isolated at night, out of your bedroom. You may hold, pet and stroke your cat for short periods (e.g. pet and stroke for 5 minutes, no more than a total of 20 minutes per day; hold for no more than 1 minute, no more than 5 minutes per day). **Wash your hands after each time you handle your cat.** Wear gloves to administer medications, if needed.
6. **Keep your cat away from food preparation areas and your food.** If your cat can gain access to kitchen countertops, be sure to wash them thoroughly before food preparation and segregate materials used for cleaning.
7. **Do not let your cat outside.** This is to avoid spread of radioactive excreta outside.



Kindness and Care for Animals®

If medical attention is required during these 2 weeks, please reach out to us first and return to Angell Boston. If this is not possible, inform other veterinary hospital personnel of the radioactive iodine that your pet has received, show them this form, and have them notify our i-131 team.

After 2 weeks (17 days post treatment), your cat will have essentially lost all radioactivity and you may return to your normal routine. **Segregate any remaining soiled materials and your gloves in a secure area for 3 months, then discard in normal trash.**

If you encounter any problems or have any questions, please call **617-522-7282** or email **i131@mspca.org**.

I understand and agree to follow the safety precautions listed above if I take my cat home before contact and litter restrictions no longer need to be followed.

Pet Name: _____

Treatment Date: _____

Signature: _____

Date: _____