

So Your Cat Has Hyperthyroidism: What You Should Know

What is Hyperthyroidism? Hyperthyroidism results from a benign tumor (in 97% or more of cases) of one or both thyroid glands that over-produces the thyroid hormones. Since thyroid hormones control the metabolic rate, excessive hormone causes a dramatically increased basal metabolic rate. This causes rapid aging and the inability to maintain body weight despite an increased appetite. Without treatment, hyperthyroidism will significantly shorten your time with your beloved kitty. To date, the cause for the benign tumor has not been definitively identified. Hyperthyroidism occurs almost exclusively in cats older than nine years of age.

What are the symptoms of Hyperthyroidism? The most common symptoms of hyperthyroidism are weight loss, increased appetite, and increased activity levels. Intermittent diarrhea or vomiting are also fairly common. Many cats will drink more and urinate larger volumes as well. Because the increased metabolic rate increases heart rate and work load, there are often heart consequences of long-standing hyperthyroidism which can be indistinguishable from other forms of heart disease.

Is Hyperthyroidism treatable? Absolutely! Hyperthyroidism is one of the most treatable diseases of older cats. There are currently four therapies available for the treatment of hyperthyroidism:

1. Medication: A drug called methimazole is the drug of choice for treating hyperthyroidism though other drugs are sometimes used. Its action is to prevent the release of the hormone from the diseased gland. It is generally quite effective in doing so provided the cat gets the proper dose at the proper intervals. It is important to note that these drugs do NOT cure the disease, only prevent the release of the hormone from the gland. The benign tumor is still present and will often continue to enlarge, requiring progressively higher doses of the drug and regular laboratory monitoring of the hormone levels. Most cats tolerate the drug well, but a few may develop reactions to it characterized by severe facial itching or changes in cell counts. Effective control of the disease usually requires twice daily administration which can be a challenge. Oral medications are preferred, but alternative forms may be helpful in cats that are difficult to medicate. Finally, since drugs are necessary for the remainder of the cat's life (which can be many years), expenses for this therapy can mount to significant levels.
2. Surgery: The surgery to remove the abnormal thyroid gland(s) is a relatively straight-forward one. With the affected gland gone, the excessive hormone levels can be reversed. Thus the challenges of twice daily medications can be avoided post-surgically. Several disadvantages exist, however. First, these are invariably older cats are at higher risk for anesthetic complications. Second, though very uncommon, there may be untoward complications with the surgery including damage to regional nerves or vessels, the trachea or the parathyroid glands which may require long-term management. Third, a relatively large percentage of cats

- (up to 70% of hyperthyroid cats) may have disease in both thyroid glands. Removal of both glands may result in hypothyroidism which may require long-term supplementation. Finally, surgery is a relatively expensive option.
3. **Y/D diet:** This is a very new prescription diet specifically formulated to be severely iodine restricted. Since iodine is an absolute requirement for the production of normal thyroid hormones, most cats on this diet will, after a few weeks or months, have reduced hormone levels. The diet, though does have some potential disadvantages: First, it is significantly more expensive than regular cat food. Second, it is best used in cats with only mild to moderate elevations of thyroid hormone. If the hormone is extremely high, there may not be adequate reduction to control all the consequences of disease. Third, the diet must be fed exclusively. You cannot give any other treats or any other food in any amounts. This can be challenging if you have more than one cat or if your cat is a picky eater. Fourth, the diet does not address the underlying disease, only reduces its effects on the body. The benign tumor is still there. Finally, as a new diet, the long-term effects of Y/D remain unclear. There may be unintended consequences identified.
 4. **Radioactive iodine:** A subcutaneously administered dose of radioactive iodine is administered to the cat. The iodine collects in the diseased tissue of the thyroid gland and the radioactivity kills the abnormal tissue. The normal tissue is largely spared. Side effects of this therapy are very rare. A single dose is curative in over 95% of cases. No further medications should be necessary. This therapy is widely recognized as the very best treatment for hyperthyroidism in the cat. Its disadvantages include: higher initial cost than medications or food (though these even out or are less in the long run); a few days of mandatory isolation following the treatment while the radioactivity subsides; limited availability of treatment locations.

What if I choose not to treat my cat? You certainly have that option. However, your cat will age significantly faster without treatment and your time with your kitty will be dramatically reduced. And his/her quality of life will be progressively worse as the systemic effects of the disease are expressed more and more. With effective therapies available, treatment is readily available, relatively inexpensive, and highly recommended.

Where can my cat get treated with radioactive iodine? The handling of radioactive materials requires a license from the state, specialized equipment, a restricted entry isolation ward with radiation safety protocols, and a skilled team of specially trained and authorized professionals. Because of this, few local hospitals are licensed to perform this treatment. Most licensed facilities are in major metropolitan centers at referral, emergency or university hospitals. This means that the costs are generally very high. But **Seven Bends Veterinary Hospital**, a general veterinary hospital in the Shenandoah Valley has recently obtained the necessary licensing. Because of a generous grant from **The Tracy Webb Memorial Fund** and because of its location, the fees at **Seven Bends Veterinary Hospital** for the same radioactive iodine therapy are about \$200 less than those at most referral hospitals.

What is involved with radioactive iodine treatment? The radioactive iodine is simply injected under the skin by the nuclear medicine team the same as getting a subcutaneous vaccine. Because the patient will emit unacceptable levels of radioactivity for a few days, the cat must be hospitalized in an approved and licensed facility until the levels fall below an upper limit set by the Nuclear Regulatory Commission (NRC) and the State of Virginia. It usually takes about five days for this limit to be reached. During hospitalization, the cat will receive food and water and will be assessed daily.

Can I visit my cat during its hospitalization? Unfortunately not. State law and NRC guidelines forbid visitation by untrained and unmonitored people. But not to worry. Your cat will be in good hands.

What must I do to get my cat ready for radioactive iodine therapy?

Criteria for case selection have been determined and will be outlined by your veterinarian. He or she will guide you through the preparation process. The following steps will need to be followed:

1. The diagnosis of hyperthyroidism must be definitively confirmed. Labwork that your veterinarian will perform will confirm disease.
2. We recommend that a therapeutic trial of medication be done for a month with follow-up T4, BUN and creatinine levels done afterward. This is important since some cats with hyperthyroidism may have concurrent kidney disease that is invisible in the face of the thyroid disease. Kidney disease may not be apparent until the thyroid disease is addressed. Cats with both thyroid and kidney disease may not be ideal candidates for radioactive iodine therapy.
3. Heart health must be assessed. Since thyroid disease often has cardiac consequences, we need to know that the heart is healthy enough for radioactive iodine therapy. Chest x-rays and an EKG will be done within 45 days of treatment. If abnormalities are identified, we recommend referral to a cardiologist for echocardiogram and blood pressure measurement. Alternatively an echocardiogram can be done at your local veterinarian's office or at the offices of **Seven Bends Veterinary Hospital** if you decline referral to a specialist. But if abnormalities are detected on the EKG or chest x-rays, then this must be done prior to treatment with radioactive iodine.
4. Blood work needs to be done within 45 days of the radioactive iodine treatment. Your veterinarian will do a CBC, chemistry profile, and a urinalysis and forward the results to us.
5. If your cat has been on methimazole or other thyroid medication, it must be discontinued for at least two weeks prior to radioactive iodine therapy.
6. Cats must be flea-free. A topical flea medication approved by your veterinarian must be administered no longer than two weeks before radioactive iodine therapy.
7. Cats must be current on all core vaccines including panleukopenia, rhinotracheitis, calicivirus, and rabies at the time of treatment with radioactive iodine.
8. Your veterinarian must provide us with copies of pertinent records, laboratory values, EKG's, and chest x-rays. In order for us to determine that your cat is a suitable candidate, these must be received by our office no later than one week

before your cat is scheduled to be treated. This allows us to review the case information prior to the deadline for ordering the radioactive iodine to accommodate treatment on the scheduled Monday.

9. Your veterinarian will schedule the radioactive iodine treatment with us. Treatments **MUST** be scheduled ahead of time. Once your veterinarian has scheduled your appointment, please call us to confirm and provide the necessary contact information.

Should I expect side effects of radioactive iodine therapy? Side effects of the injection with radioactive iodine itself have not been reported. There should not be any nausea, hair loss, lethargy, or decreased appetite due to the procedure. Upon discharge, it may take a few weeks for your kitty to acclimate to the reduced thyroid hormones. During this time there may be minor changes in appetite or energy levels. Speak with your veterinarian if you are concerned about these.

When are drop off and pick up times? You will drop off your cat on Monday morning. You will see one of our staff veterinarians for a pre-treatment physical examination and consultation about the treatment. This will take about thirty minutes. The treatment is administered on Monday morning. Your cat may be discharged once the radiation levels have diminished below the discharge threshold. This usually takes 4 days; so we plan on discharging the cats on Friday afternoon. Our office closes at 4:30 on Friday, so you should make arrangements to pick up your cat between 3:00 and 4:30 PM.

Can I see where my cat will be hospitalized? Unfortunately, our nuclear medicine ward is a restricted area according to federal and state law. Only our trained and monitored personnel may enter.

Can I bring anything to leave with my kitty while it's here? Absolutely! You're welcome to bring your kitty's favorite foods (canned or dry), special treats, a T-shirt or towel from home that you're willing to part with (sorry, we won't be allowed to return these to you). Something that will make your cat feel at home may make the days pass more easily. It is **REQUIRED** that you bring your cat in a carrier and that it is discharged in a carrier.

What arrangements can be made for payment? **Seven Bends Veterinary Hospital** accepts cash, checks, and major credit cards (Visa, Mastercard, Discover and American Express). Payment is expected in full at the time of discharge. A credit card deposit to hold your treatment reservation will be taken at the time your appointment is made. This deposit will be applied toward your balance upon discharge. Deposits will be reimbursed in full upon cancellation provided cancellation is received prior to closing time on the Wednesday prior to your scheduled treatment. The total fees for radioactive iodine therapy at our facility is about \$200 less than at other facilities thanks to a generous grant from **The Tracy Webb Memorial Foundation**. You may call us at 540-459-8387 for our current fees for radioactive iodine.

What do we need to do with our cat after treatment? Because your cat will still be emitting low levels of radiation for a couple of weeks after discharge, you will need to follow some simple, commonsense guidelines to minimize any potential risk to you and your family. You will be given complete instructions about these guidelines at discharge. But a quick synopsis of them follows: careful handling of urine, stool and litter box; limited intimate snuggle time; no sleeping with you; good hygiene and hand washing after interacting with the cat; keeping the cat indoors only; keeping the cat away from food and food preparation areas. These precautions need to be followed for only two weeks. That's about it, though more details will be provided to you at the time of discharge from treatment.

So do I need to be afraid of radiation exposure to my family after treatment? Do not be overly concerned. The dose of radiation you might get from your cat after treatment will not be more than you would expect to get from a cross-country flight or a minor sunburn after a day in the sun. The guidelines are simply to keep you and your family as safe as is possible.

What follow-up care will be needed after radioactive iodine therapy? A thyroid hormone assay (T4 level) will be done by your veterinarian one month and three months after treatment. These will be done by your primary care veterinarian. He or she will report the results to us when they return from the laboratory.