

Hyperthyroidism is the most common endocrine disorder affecting middle-aged to older cats with a 10% prevalence in cats over 10 years of age. Hyperthyroidism is caused by a "benign goiter" of one or both thyroid glands that leads to elevated thyroid hormone levels. Rarely, hyperthyroidism can be caused by a malignant tumor (carcinoma) in 1-3% of cats.

Cats suffering from feline hyperthyroidism may exhibit the following symptoms:

- eating, drinking and urinating more than normal
- weight loss
- restlessness or increased activity
- coat quality issues
- vomiting and/or diarrhea
- elevated heart rate and other clinical signs

Based on symptoms, examination findings, and the use of routine blood screening tests, your veterinarian can diagnose hyperthyroidism.

How is feline hyperthyroidism treated?

There are currently four treatment options available for feline hyperthyroidism. These include oral or topical medications, nutritional therapy (diet), radioiodine, and surgery. The best treatment option for your cat will depend on a variety of factors including but not limited to: age, presence of other illnesses, ability to medicate your cat, and costs. You should discuss with your veterinarian which option will be best for you and your cat.

What is Radioiodine therapy?

Radioiodine therapy, also referred to as I-131, involves giving a dose of radioactive iodine under the skin. This radioactive material gets taken up by the abnormal thyroid tissue. The iodine destroys the diseased tissue, while healthy thyroid tissues are not affected. Radioiodine is a curative, noninvasive, and highly effective treatment. It offers an alternative to owners who have difficulty medicating their cats, cats that cannot tolerate methimazole, or cats that fail to respond to methimazole or nutritional management. The disadvantages to radioiodine therapy include the risk of permanent hypothyroidism (low thyroid levels) and isolation period during and after treatment. Periodic monitoring for up to 6 months after treatment is recommended to evaluate for the resolution of hyperthyroidism, presence of hypothyroidism, and kidney function.

In order to qualify for radioiodine therapy, cats should be diagnosed by appropriate symptoms and elevated thyroid levels. Cats with illnesses that could be life-threatening if not treated or require supportive treatment during hospitalization will not qualify for radioiodine administration. This is because contact with cats after radioiodine administration must be limited. This is similar to the standard procedure at most institutions offering radioiodine treatment

What is required before radioiodine therapy?

Based on symptoms, examination findings, and the use of routine blood screening tests, your veterinarian can diagnose hyperthyroidism. You should discuss with your veterinarian if your cat is a candidate for radioiodine therapy.

We require patients be off methimazole or low-iodine diet at least 2 weeks prior to the appointment. This allows enough time for hyperthyroid state to return. This will limit the amount of radioactive iodine to be taken up by the normal thyroid tissue and lessen the risk of hypothyroidism (decreased thyroid function).

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Do cats need a methimazole trial performed prior to treatment?

Pre-existing kidney disease can be present in hyperthyroid cats. Diagnosis of kidney disease in cats with hyperthyroidism can be difficult. Increased thyroid levels make the kidneys appear as though they are functioning better than what they actually are. Currently, there are no blood tests available to predict which cats will have kidney disease unmasked after treatment. It is recommended, but not required, that cats be treated with thyroid medication prior to referral in order to evaluate the effect of treatment of hyperthyroidism on kidney function. This is performed by evaluating kidney function tests once your cat has had normal thyroid levels for at least 4 weeks.

Some facilities recommend or require a methimazole trial prior to permanent treatment of hyperthyroidism such as with radioiodine therapy. We do not require a methimazole trial before performing radioiodine therapy. Unless significant worsening of kidney disease or

severe symptoms of kidney failure occurs while your cat is on methimazole, treatment with radioiodine will likely be recommended. If kidney disease is unmasked, most cats will have mild to moderate stages of kidney disease and the presence of unmasked kidney disease after treatment is not associated with a shorter survival time. It is most important to perform methimazole trials in cats with evidence of kidney disease at time of diagnosis of hyperthyroidism to ensure their kidney disease does not significantly worsen or significant symptoms of kidney failure do not occur once the thyroid disease is controlled. Cats with kidney disease at time of diagnosis of hyperthyroidism may have reduced survival times. You can discuss with your veterinarian whether your cat can and should have a medication trial prior to radioiodine therapy.

What to expect when bringing your cat in for radioiodine therapy

You can expect your cat to stay at the veterinary teaching hospital for approximately 8 days. This will include pretreatment screening, thyroid scan, and radioactive iodine treatment.

We schedule cats to be evaluated for radioiodine therapy on Thursdays. On the first day of your cat's arrival at the VTH, we will start the pretreatment screening process. This includes having a physical examination, full blood work, measurement of thyroid levels, and blood pressure measurement. Once we have these results, we will discuss them with you and determine your cat's candidacy for radioiodine treatment. Other tests may be recommended based on your cat's blood work or physical examination findings. A thyroid scan will be performed the next morning to help determine the dose of radioiodine for your cat. On Monday, your cat will receive a dose of radioactive iodine under the skin and be hospitalized until the radioactive levels are safe for your cat's release. Your cat will likely go home that Friday afternoon (approximately 8 days total of hospitalization).

What at home care or precautions are necessary after treatment?

Because cats will still have a small amount of radioactivity at the time of release, your cat will have to be isolated within your home and remain inside for 2 weeks with minimal contact from you during this time. Litter will have to be collected for 2 weeks at home and either flushed or stored because of the small amount of radioactivity that will be released during this time period. Children or pregnant women should not handle the cat or litter during that period. Specific instructions will be discussed with you during the appointment and again when you come to pick up your cat from the hospital.

What monitoring is required or recommended after therapy?

The radioiodine will gradually destroy the abnormal thyroid tissue and should leave the normal thyroid tissue unaffected so that thyroid hormone levels become normal. Infrequently, hyperthyroidism can persist or hypothyroidism can occur after treatment. In order to determine the efficacy of the treatment, we recommend that your cat have a thyroid hormone level checked 1 month after treatment. In most cases, the thyroid level has returned to normal, but there is a more delayed effect in some cases. In addition, thyroid levels can be below normal temporarily, only to return to normal at a later date as the remaining normal thyroid tissue recovers. Therefore, we recommend measuring thyroid levels again 3 and 6 months after treatment. At the same time, your vet will evaluate for the presence of “unmasked” chronic kidney disease.

How to schedule an appointment?

Contact your veterinarian and let them know you are interested in radioiodine therapy at Virginia-Maryland College of Veterinary Medicine’s Veterinary Teaching Hospital. Your veterinarian will then give us a call to discuss your cat’s care and start the scheduling process.