

## I'm Radioactive! I am a [Thyro-Cat!](#)

### An innovative treatment for Feline Hyperthyroidism

by Colleen M. McGrady, Finnishline Norwegian Forest Cats



#### **Naturskat Guinevere of Finnishline – 12 year old Norwegian Forest Cat spayed female**

On April 23, 2010 Guinevere had her routine annual veterinary wellness exam which included the following fasting blood work for senior kitties: super-chem profile; CBC; T4/Free T4 (equilibrium dialysis); urinalysis. Other than her slight weight loss of ¼ lb, elevated heart rate (which usually occurred at the vet's anyway), and slight increase in size of a thyroid nodule, Gwen's exam was otherwise normal for a 12-year old cat. I noticed no other significant changes since her last wellness exam in May 2009; however, my mom did tell me that Gwen was walking around during the day "talking" more than usual.

The lab results came back on the next day confirming hyperthyroidism. They are included below with a brief explanation so that you know what to look for as your cats age and how important it is to have wellness exams at least once a year with your veterinarian. I have fasting blood work on all of my cats once a year.

T4 results were elevated (5.8) – normal reference range is 0.8-4.0 ug/dL. Gwen's T4 in 2009 was 3.1.

Free T4 (equilibrium dialysis) - FT4(ED) was also elevated this time (72) – normal reference range is 10-50 pmol/L. The FT4(ED) is the most reliable means for confirming hyperthyroidism. An elevated FT4(ED) with total T4 concentration greater than 2.5 ug/dL is supportive of hyperthyroidism whereas an elevated FT4(ED) with total T4 concentration less than 2.5 ug/dL is supportive of non-thyroidal illness. Gwen's FT4(ED) in 2009 was 45.

Although the reason is unknown, with this condition there is an increase in a liver enzyme, alanine amino-transferase (ALT). Gwen's ALT level was now elevated (145) – normal reference range is 10-100 U/L. Gwen's ALT level in 2009 was 35.

Sometimes there is an increase in another liver enzyme - serum alkaline phosphatase (SAP), and Gwen's level was higher than last year, but still within the normal range (53) – normal reference range 6-102 U/L. Gwen's SAP level in 2009 was 29.

During her veterinary exam, it appeared that Gwen's nodule was on one side or unilateral. Some cats have bilateral nodules or on both sides. The nodules have a resemblance to toxic nodular goiters in humans. Thyroid nodules start as a small adenoma (non-malignant tumor). When it is small, the nodule is only slightly more active than the thyroid gland which surrounds it. As it grows over time, more hormones are released, and the thyroid stimulating hormone secretion from the thyroid gland decreases. Gwen has had a palpable nodule since 2006, but it was not until this year that her T4 and FT4(ED) levels were elevated.

As I mentioned earlier, Gwen had no symptoms other than vocalizing more than normal. It was the fasting blood work that revealed what was going on inside. Even with the most observant owners, cats have mastered the art of hiding changes in the way that they feel.

### ***Now that the tests support hyperthyroidism, what are the options?***

**Surgery:** Thyroidectomy which is removal of the thyroid glands. Not an option as far as I was concerned after considering the risk of anesthesia and the risk of damaging the parathyroid glands which regulate blood-calcium levels.

**Methimazole:** Given up to three times a day for the rest of her life. This drug is not without side effects, and thyroid levels can fluctuate. Constant monitoring of thyroid hormone levels is mandatory because up to 30% of cats develop chronic renal failure after treatment of hyperthyroidism.

**I-131 Radioactive-Iodine Therapy:** I needed to see if this was an option for Gwen. I also wanted to see if there had been long term studies conducted on this innovative treatment which actually claimed to cure hyperthyroidism in felines!

**Gwen's Trial Therapy of Methimazole:** Initial treatment with Methimazole is necessary to see if the drug is successful in inhibiting the synthesis of thyroid hormones. Once the thyroid levels are maintained within the normal range, further tests can assess the impact of anti-thyroid therapy on renal function. Renal function is influenced by thyroid status. Sometimes better renal function is maintained when a cat is in a slightly hyperactive state. Methimazole can reveal renal failure in some cats.

We conducted a three week trial of Methimazole. Gwen's T4 level decreased from 5.8 to 0.8 – low end of normal, and her ALT level decreased from 145 to 39. SAP also decreased from 53 to 29. Kidney function was normal. Creatinine and Urea Nitrogen levels were normal. Still, I was concerned about the side effects of this treatment of choice.

My veterinarian mentioned that other clients in the office had been successfully treated with I-131. He contacted [Dr. Victor T. Rendano Jr](#), VMD, MSc, DACVR, DACVR-RO, co-founder [Thyro-Cat](#). I was hoping that Gwen would be a good candidate for the treatment!

I received considerable information from Thyro-Cat Patient Coordinator Dorothy "Dottie" Boerner, LVT. She set my mind at ease concerning Gwen's three-day stay at the facility in Brookfield CT – [The Complete Cat Veterinary Clinic](#). Dottie sent me a complete welcome package which included detailed instructions on what Dr. Rendano needed to review prior to treatment. The blood work had been completed. My veterinarian had taken a complete set of x-rays on May 21, 2010 which were needed to rule out any other underlying conditions. The veterinary radiation oncologist at Thyro-Cat needed all of the lab tests and x-rays in advance, and no later than one week prior to the scheduled treatment, in order to review the case and determine the dose of I-131 the cat would receive. Methimazole also needed to be discontinued one week prior to the treatment date. I elected to have my veterinarian draw one more blood sample just prior to the treatment scheduled for June 09, 2010 because I was curious to see what her T4 level was after discontinuing the Methimazole. T4 had risen from 0.8 to 7.1; ALT had risen from 30 to 70; SAP had risen from 29 to 34 – all values had risen in such a short period of time and now my inquisitive mind had the answers that I needed.

The night before Gwen's treatment was a sleepless night but the two-hour drive south to [The Complete Cat Veterinary Clinic](#) in Brookfield, Connecticut was an easy trip. You have a choice of bringing your cat in the night before the treatment but I elected to bring Gwen in on the day of the treatment. I had such a great feeling when I walked into the clinic. I was greeted by the wonderful staff and it set my mind at ease as I knew that Gwen would be getting such good care.

Dr. Rendano performed a complete ultrasound examination to evaluate the heart and abdominal organs. There were no significant findings, and Gwen was injected with 4.0 millicuries of I-131. The clinic called me early in the afternoon to let me know that Gwen was cooperative for the echocardiogram and abdominal ultrasound and was shy and scared, but she had a good appetite and was drinking water. The staff at the clinic gave her such wonderful care during her brief stay.

I picked Gwen up on Saturday morning, June 12, 2010; and this time when I walked into the clinic; I noticed cat show rosettes and a picture of a cat that I remembered. The cat was a lilac male British Shorthair called the "purple cat", aka "Bravo Bentley." Dr. Sharon Eisen is not only a veterinarian and owner of the Complete Cat Veterinary Clinic, but she is a breeder of Plaid Plus British Shorthairs!

What a small world. I met Dr. Eisen and we chatted for a short time about Bentley. If any of my older cats needed I-131 treatment, I would not hesitate to bring them to Dr. Eisen's facility in the future!

On August 27, 2010 my veterinarian drew blood for the follow-up thyroid panel to see if the radioactive-iodine treatment was successful. Waiting almost three months for the results of the treatment was driving me crazy but I knew that blood work taken too soon after the treatment might not be reliable. On August 28, 2010 the results of the thyroid panel, including urinalysis and culture, came back, and they were normal! On December 11, 2010, my veterinarian drew blood for a follow-up thyroid panel/urinalysis/culture, which continued to be normal!

It is now 14 months post treatment, and 13 ½-year-old Gwen's annual fasting blood work including the thyroid panel/urinalysis/culture was once again submitted. On August 16, 2011, we received the results, and those values continue to be normal!

Gwen remains another one of those [Thyro-Cat success stories!](#)