



## **FAQs: Feline Hyperthyroidism and Radioiodine Treatment**

### **What is hyperthyroidism?**

Hyperthyroidism is a clinical condition resulting from the excessive production of thyroid hormone by the thyroid gland. It is common in middle-aged to older cats (> 95% of the cases occur in cats over 8 years of age). It is usually due to a benign changes (hyperplasia or adenomas) in the thyroid gland. Cancer of the thyroid gland can occur but it is rare.

### **What are signs of hyperthyroidism?**

Thyroid hormone affects every organ system, so signs can be variable. The most common clinical signs include weight loss, increased appetite, vomiting, diarrhea, drinking and urinating more, and nervousness or hyperactivity. Thyroid hormone affects the heart, causing fast heart rate, heart murmurs, abnormal heart beats, and high blood pressure.

### **How can hyperthyroidism be treated?**

Three forms of therapy are available.

- 1) Anti-thyroid drugs such as methimazole (e.g., Tapazole®; Felimazole®) or ipodate.
- 2) Surgical removal of the thyroid glands.
- 3) Radioactive iodine (I-131)

### **How does radioactive iodine work?**

Iodine is normally taken up by the thyroid gland. One form of iodine, I-131, is radioactive. When I-131 enters the thyroid gland, it destroys the abnormally functioning cells. This reduces the size of the gland and its ability to produce thyroid hormone. I-131 is administered to hyperthyroid cats by a subcutaneous injection. Cats treated with I-131 need to be hospitalized for 2-7 days following the injection. This is when they are the most radioactive. Their level of radioactivity is checked daily with a Geiger counter and only when it reaches acceptable low levels can they go home.

### **How effective is radioiodine therapy for feline hyperthyroidism?**

In a study of 524 hyperthyroid cats treated with I-131,<sup>1</sup> the overall response to treatment was considered good in 94% of the cats. Eight of the 524 (1.5%) cats remained hyperthyroid 6 months following treatment, requiring additional therapy. Thirteen of the 154 (2.5%) of cats had a relapse of hyperthyroidism 1-6.5 years after the initial treatment.

### **Is radioiodine (I-131) treatment safe?**

Radioiodine treatment has been used in human medicine for over 50 years and is recognized as a safe and effective method of treating people with hyperthyroidism. Studies in humans have shown no increased risk of developing leukemia, thyroid cancer, or other cancers after treatment with I-131. In a study of 524 hyperthyroid cats treated with I-131, the only adverse sign was problems swallowing in 8/524 (1.5%). This problem resolved rapidly after treatment.

### **What are the risks of my cat becoming hypothyroid?**

Hypothyroidism, is a condition resulting from a deficiency of thyroid hormone. Clinical signs include lethargy, dullness, obesity, oily skin, and matted fur. In a study of 524 hyperthyroid cats treated with I-131, only 11/524 (2.1%) developed hypothyroidism and required thyroid hormone supplementation.

### **Is there any increased risk in treating my cat for hyperthyroidism if there are other health problems, like chronic kidney disease?**

Hyperthyroidism is a systemic disease seen in middle-age to older cats impacting many organ systems, it is not unusual for hyperthyroid cats to have concurrent health problems. Chronic kidney disease (CKD) and heart disease are important concerns in these patients. Therefore, a careful systemic evaluation of a hyperthyroid cat is recommended

prior to I-131 treatment to include diagnostics evaluating kidney and liver function, urinalysis, chest radiographs (or x-rays) to evaluate the heart and check for cancer, and blood pressure measurements. These tests help give a better understanding of each cat's specific needs.

**What are the risks of radiation exposure from my cat to people or other pets?**

The dose of I-131 used to treat hyperthyroid cats is very small and people and other animals are at very low risk from the radiation. Treated cats are hospitalized until they reach an acceptable low level of radioactivity. However, they will be radioactive to some degree for 82 days following treatment. Radioactivity does decrease rapidly over time and distance.

**Steps to minimize any unnecessary radiation exposure to others.**

At the time of I-131 treatment guidelines will be provided to minimize unnecessary radiation exposure to family members for the first 2 weeks following the cat's discharge from the hospital. Briefly, care and handling precautions recommended include:

- 1) Keep your cat indoors or under your direct supervision or on a leash if outside in order to minimize the possibility of radiation exposure to other people.
- 2) Do not allow children under the age of 18 or pregnant women to have contact with the cat, food dishes, toys, or litter box(es).
- 3) Please limit HANDS ON contact time with the cat to a maximum of 10 minutes per person per day. Avoid sleeping with the cat. Exposure to other pets is fine.
- 4) Wash hand carefully with soap and water after handling your cat, its food dishes, or litter box(es).
- 5) We recommend the use of clumping litter to facilitate daily scooping of the cat's litter box contents for routine disposal.
- 6) Wear disposable gloves when handling the litter and scoop the litter daily to avoid tracking litter away from the box

Reference

1. Peterson ME and Becker DV. Radioiodine treatment of 524 cats with hyperthyroidism. JAVMA 1995;207:1422-1428.