Feline Hyperthyroid Clinic, frequently asked questions for vets:

The following information will provide you with better understanding of the treatment details and will advise you on recommendations to follow prior to referral to the feline hyperthyroid clinic to ensure that the treatment is truly suitable for your patient and avoid unfortunate treatment delays.

What does radioactive iodine treatment involve?

The treatment involves the administration of a subcutaneous dose of a radioactive iodine isotope (131I). The injected iodine is uptaken by the hyperactive, hyperplastic or adenomatous thyroid tissue. Once uptaken the 131I releases beta radiation, which travels up to 2mm destroying all hyperactive tissue but sparing the nearby parathyroid glands. The atrophic normal tissue does not uptake the 131I and is also spared by beta radiation. The radioactive iodine that is not uptaken by the thyroid tissue is then rapidly eliminated via saliva, urine and sweat within a couple of days. The remainder is incorporated into thyroid hormone and is eliminated more slowly due to the hormone turnover and the radioisotope half-life (8 days for 131I).

Following the injection, cats are moved into an isolation ward where they are housed until it is safe for them to return home. The isolation time varies according to the dose of 131I, the rate of uptake by the thyroid tissue but it is typically 14 days long. All cats are checked for residual thyroid radioactivity to ensure that it is safe for them to be discharged.

During the isolation period, cats are monitored, fed and cleaned twice daily by qualified veterinary nurses and veterinary interns. Contact with the cats is avoided due to health and safety reasons and radiation exposure hazards.
Following discharge, cats will need to be housed strictly indoors and use a litter tray for two weeks. During this time contact with the owner is restricted to a maximum of 15 minutes lap-time once a day. Contact with children < 12 years of age, pregnant women and women trying to conceive should be avoided.

**Are all cats treated with the same dose of radioactive iodine?**

No. At AMVS feline hyperthyroid clinic all cases are individually assessed and doses are calculated based on a clinical scoring system that takes into consideration the severity of clinical signs, serum total T4 concentration and size of the goitre. This system ensures that the lowest required dose of radioactive iodine is used avoiding unnecessary exposure risks for owners and staff members and reducing the risks of iatrogenic hypothyroidism.

Who will assess the cats, calculate the clinical score and determine the dose of 131I?

All cases will be assessed and clinically scored prior to treatment by a team of RCVS, European and American recognised specialists in the Small Animal Internal medicine assisted by a team of capable veterinary specialists in training.

**What is the success rate of radioactive iodine treatment?**

Around 95% of cases are cured after a single 131I dose. A small group of hyperthyroid cats, typically those with large goitres or very high thyroid hormone concentrations, will require a second treatment six months after the first. Finally, an even smaller percentage of cases will fail to respond to two treatments because they suffer from undiagnosed thyroid carcinoma that typically requires much higher doses of 131I (ten times higher than that required in adenomatous hyperplasia and adenoma cases).
How much does the treatment cost?

The cost of radioactive iodine treatment is £1800 including VAT. This will include the pre-treatment consultation, serum biochemistry, serum total T4 concentration – which will need to be repeated in all cases prior to treatment – urinalysis and culture, non-invasive systolic blood pressure measurement, the dose of 131I and the hospitalisation. The cost does not include any unexpected diagnostic imaging, such as thoracic radiography or echocardiography that might be required in individual cases to rule out congestive heart failure. The cost does also not include any additional treatment required during the hospitalisation period. Please note that the cost of a second treatment is not included and discounts are not offered in the event of a second treatment.

Once the referral request is received our dedicated reception team will contact your client to confirm and finalise instructions. On this occasion the client will be required to pay a deposit of £500 which will be non-refundable unless a cancellation is made two or more weeks before the appointment. This will also apply to clients who wish us claim directly from their insurance company; the deposit being refunded on receipt of payment from the insurance company. The client will be expected to pay the balance at the time their cat is admitted to the hyperthyroid clinic.
How can I refer a case to AMVS feline hyperthyroid clinic?

If you wish to refer a case to our feline hyperthyroid clinic please forward a brief covering letter together with the full written clinical history and copy of laboratory tests at the time of and after diagnosis to fhc@andersonmoores.com. Our internal medicine specialists will review the case to ensure it is suitable for radioactive iodine treatment. Should they have any concerns regarding the case or its suitability they will contact you to discuss. Should the case be suitable, our reception team will contact the client to arrange the referral.

I am not sure if my patient is suitable for radioactive treatment can I contact your clinic to discuss?

Absolutely. Simply call our reception team on 01962 767920 and ask to speak to a member of the Internal Medicine Team or even better send an email attaching the clinical history and bloodwork results to fhc@andersonmoores.com and we will contact you as soon as possible to discuss. Furthermore, referral of all diagnosed hyperthyroid cats to our Internal Medicine Service for clinical staging should be considered to diagnose complications of hyperthyroidism (secondary cardiomyopathies, congestive heart failure) and co-morbidities (systemic hypertension, urinary tract infection, chronic kidney disease) that affect the case suitability for radioactive iodine treatment. Such clinical staging can be performed at your centre with our assistance as needed.
What will I need to do before referring a cat for radioactive treatment?

The following are instructions to be followed in all cases prior to referral to the feline hyperthyroid clinic in order for treatment to take place. Please read this information carefully to avoid unfortunate delays:

1. Cats need to be confirmed as hyperthyroid on the basis of an external serum total thyroxine (tT4) concentration above the laboratory reference range. Occasionally we will see and treat cats with high-normal tT4 measurements where hyperthyroidism has been confirmed by other methods (i.e. increased free T4), but these cases need to be discussed with one of our specialists prior to referral.

2. To minimise the risks of cats developing iatrogenic hypothyroidism and azotaemia after 131I treatment, we recommend that all cats are treated with anti-thyroid medications (oral or transdermal methimazole or oral carbimazole) or an iodine-restricted diet (Hill’s prescription diet Y/D) up until 7-10 days prior to the treatment. Exceptions include cats with large goitres and severe disease that are at risk of thyroid storm after discontinuing treatment or cats that cannot tolerate medications (or cases where the owner is not able to pill the cat) or that will not eat the diet. Please discuss these exceptions with our internal medicine specialists.

3. Prior to referral, all cats should have assessment of renal function based on serum urea and creatinine concentrations (+/- SDMA), performed at times of euthyroidism (serum total T4 < 35 nmol/L or in the low end of the laboratory reference interval) no later than 4-6 weeks prior to radioactive iodine treatment.
Studies show that up to 50% of hyperthyroid cats will become azotaemic with treatment irrespective of which method (i.e. medical / surgical / radioiodine) is used. This occurs because the GFR is increased in the hyperthyroid state and the cat’s true renal function can only be evaluated once GFR reduces with normalisation of thyroid hormone.

- It is reassuring if the creatinine concentration remains in the reference range when the tT4 is reduced to <35 nmol/l and these cats are ideal candidates for radioactive iodine treatment.

- If cats are minimally azotaemic but clinically improved on medical treatment, we will still consider treating them, but please call us to discuss the case before referral.

- If the tT4 is still high, the dose may need to be increased and blood tests repeated - please contact us for further advice if this is happening.

- If moderate to severe azotaemia is noted once the tT4 is in the normal range, these cats would not be considered ideal candidates for radioactive iodine treatment (which will irreversibly normalise GFR) due to risk of clinical deterioration. These cases are better managed with anti-thyroid drugs or iodine restricted-diet. Please contact us to discuss.

4. The owners must be instructed to stop the anti-thyroid drugs or dietary therapy 7-10 days before their appointment at the feline hyperthyroid clinic.

5. Cats need to be vaccinated for ‘flu and enteritis’ within the last year.
Will cats need to be monitored after radioactive iodine treatment?

Yes. In order to confirm the success of treatment and identify the occurrence of iatrogenic hypothyroidism we recommend performing serum biochemistry, serum total T4, urinalysis and systolic blood pressure 30, 90 and 180 days after treatment and at least twice a year thereafter.

Most cats will be euthyroid or temporarily hypothyroid when they leave the hyperthyroid clinic after treatment. In a few cases it may take up to 90 days for the thyroid hormones to decline within normal limits. Should the total T4 be elevated at day 180 post radioactive iodine treatment, the cat will be considered a non-responder and a second treatment (with or without prior scintigraphy scan) will be required.

It is rare but possible that the normal (spared) thyroid tissue will develop spontaneous hormone production after time (new hyperthyroidism). These tests can be done at AMVS or can be performed at the referring veterinary centre. Please contact us to discuss any results at: fhc@andersonmoores.com.
How common is iatrogenic hypothyroidism after radioactive iodine treatment and does it need to be treated?

Iatrogenic hypothyroidism is the most common complication of radioactive iodine treatment. Its occurrence is low and depends on the accuracy of the clinical scoring and 131I dose calculation prior to treatment.

It is possible for cats to be temporarily hypothyroid (based on low serum tT4 and high serum cTSH) up to 90 days post radioactive iodine treatment. In the absence of azotaemia or clinical signs (lethargy and severe weight gain) treatment is not necessary. However, if low serum tT4 and high cTSH are present 180 days post treatment, the cat has likely developed persistent hypothyroidism. In this case, irrespective of the occurrence of azotaemia or clinical signs, supplemental therapy with levothyroxine (0.07 mg/kg BID) is required long-term. Should azotaemia be present in association with low tT4 and high cTSH even before day 180-post radioactive iodine treatment, levothyroxine supplementation is also recommended.

We hope you will find the above information useful and please do not hesitate to contact us should you wish to discuss the suitability of an individual case with our Internal Medicine Team.