



Information for Pet Owners

Internal
Medicine
Service

Radioiodine Treatment of Hyperthyroidism in Cats

What is hyperthyroidism?

Hyperthyroidism is the most common hormonal (endocrine) disorder in cats. Enlargement (goitre) of one or usually both thyroid glands in the neck (or occasionally in the chest) results in overproduction of thyroid hormone. The enlargement is most often due to a benign tumour (adenoma) and in only 2% of cases due to a malignant tumour (carcinoma).

Signs develop gradually and are usually seen in older cats:

- Weight loss despite an increased appetite
- Increased thirst and urination
- Hyperactivity
- Increased heart rate
- Intermittent diarrhoea and vomiting
- Dry and harsh coat

Diagnosis

Diagnosis is by a blood test showing an increase in thyroid hormone.

Hyperthyroidism can cause other problems within the body and older cats often have other diseases so other investigations are usually performed at the same time:

- Haematology (looking at the blood cells for signs of anaemia, infection and inflammation)
- Biochemistry (looking for diseases of abdominal organs, particularly the liver and kidneys and for diabetes)
- Urine (looking for urine infections and kidney disease)
- Blood pressure
- Chest radiographs and ultrasound of the heart (if there is suspicion of heart disease)



Treatment options

1. Radioiodine Treatment

Radioactive iodine liquid is injected under your cat's skin and this is then selectively taken up by the thyroid gland tumour, which it destroys. The cat's other organs are not affected. The procedure provides a lifelong cure after a single injection in 94-97% of cases.

Disadvantages:

- Reduction of thyroid hormone levels can unmask previously hidden kidney disease and even cause hypothyroidism (a disease where thyroid hormone is too low). This can be reversed by changing the dose of medication or changing the diet but can't be altered once radioiodine treatment has been carried out. This is why cats are stabilised on tablets before treatment – if these problems develop they will not be allowed to have the treatment.
- After injection, your cat becomes temporarily radioactive and has to be isolated in a purpose-built radioiodine ward. This will usually be for a period of 2 weeks. For the first few weeks at home, your cat will need to be kept inside and contact with them will need to be controlled.
- Owing to health and safety, it is difficult for our staff to handle or medicate your cat while isolated after injection. So it is very important that we thoroughly check your cat beforehand to make sure the risk of them getting ill while hospitalised is very low.



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2. Oral Medication

Tablets are given once or twice a day for your cat's life. The medication prevents the thyroid glands from overproducing thyroid hormone, so it controls rather than cures the condition.

Disadvantages:

- Repeated blood tests are needed to begin with to establish the correct dose to control the condition.
- Some cats can be difficult to pill, causing poor control and stress.
- Some cats can experience side-effects from the medication, including skin irritation around the face and ears and suppression of the bone marrow causing low numbers of red and white blood cells

3. Diet

'Hills y/d' is a prescription diet which is restricted in iodine content – iodine is necessary for thyroid hormone production, so reducing iodine intake will reduce thyroid hormone levels in the blood. When fed as the sole diet it is very successful at normalising thyroid hormone levels.

Disadvantages:

- To be effective it must be fed as the sole diet. Hunting, treats and even some medications contain enough iodine to render it ineffective. This can be problematic for outdoor cats, multi-cat households (although unaffected cats can eat it without problems) and cats on medication.
- It is only available in a single flavour so some owners may have problems changing to the diet or maintaining the cat's interest in the diet.

4. Surgery

Your cat is stabilised for 3-4 weeks on tablets before having the thyroid glands surgically removed under general anaesthetic (thyroidectomy). If both glands are successfully removed, surgery provides a lifelong cure.

Disadvantages:

- The anaesthetic risk is greater in older cats, and can also be increased if the condition has caused heart disease or if there is another problem such as kidney disease.
- Reduction of thyroid hormone levels can unmask previously hidden kidney disease and even cause hypothyroidism (a disease where thyroid hormone is too low). This can be reversed by changing the dose of medication or changing the diet but can't be altered once surgery has been carried out. This is why cats are stabilised on tablets before surgery – if these problems develop they will not be allowed to have surgery.
- Rarely, there is 'ectopic' thyroid tissue in the chest which will not be removed by thyroidectomy. These cases can only be treated by medication or radioiodine.
- Sometimes during surgery, the parathyroid glands (two small glands attached to each thyroid) can be damaged. Your cat would then need medication to prevent blood calcium levels from falling. In many cases medication is only needed short-term, but some cats need it for the rest of their lives.



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Radioiodine Treatment

We will see your cat for an **initial assessment** to check they are a suitable candidate for treatment. Your cat should be starved from the previous evening but allowed water and given the usual morning medication. We will keep them in for a day to carry out a clinical examination, blood tests, urinalysis and measure blood pressure. If we are worried about heart disease, we may wish to take radiographs of the chest and do a heart ultrasound. This is also a useful opportunity to see how your cat reacts to being in a ward.

We need to make sure that your cat's thyroid hormone level is stable – if it is too low we may reduce the dose and then recheck it so we can be sure that the radioiodine treatment will not cause hypothyroidism, if it is too high we may increase the dose to make sure there isn't any kidney disease that might become unmasked by the radioiodine treatment. If the urine sample is dilute we will ask your vet to recheck it a number of times as this could be an early sign of kidney disease.

If the results are satisfactory then we will **book an appointment** for treatment.

As there are limited places in the radioiodine ward, there is a waiting list. Once the radioactive iodine has been ordered, it cannot be cancelled after 14 days before the treatment date, so if you cancel later than this you will be charged the cost of the drug. Thyroid medication should be stopped 7 days before your cat's appointment.

Your cat will be admitted on Monday for **radioiodine injection** on a Tuesday. Following the injection, they will be hospitalised in the purpose-built Radioiodine Ward. Your cat and the urine and faeces they produce are now radioactive, so unfortunately health and safety regulations state you cannot visit them. During this time, they will be cared for by our specially trained nursing staff, who will ensure they have fresh food, water and a clean litter tray and bedding. We have a variety of foods available or you can provide your own.

You are welcome to bring a bed or toys from home, but as these will be contaminated they will have to be disposed of at the end of the stay. We are fortunate that our regulations state that your cat only has to be isolated for 14 days so they will not be away from you for long!

Discharge Instructions

When your cat is discharged, the radioactivity in their thyroid gland will have reduced (decayed) sufficiently that they are considered safe to be at home. However, there will still be some radioactivity in the thyroid and small amounts in their urine and faeces so there are guidelines that must be followed to reduce risk to people in contact. These should be followed fully for two weeks after discharge and are advisable for one week after this.



Pride Veterinary
Centre Radioiodine
Ward

Your cat must be kept inside.

1. You should restrict contact with your cat:

- A treated cat will still have low levels of radioactivity in their thyroid gland when they are discharged from the hospital but these will decrease over time.
- Avoid long periods (more than a few minutes) in close proximity to your cat. It is safe to pick them up for short periods but they should not sit on anyone's lap for extended periods or sleep next to them on a bed.
- Avoid "face-to-face" contact. Don't allow your cat to lick you.
- Don't allow your cat to jump onto kitchen surfaces or anywhere that food is stored or prepared. If this does happen, carefully clean the surface.
- Wash your hands carefully after handling your cat, their food and water dishes or litter tray.
- Children under the age of 18 years and pregnant women should not have any prolonged or close contact with your treated cat. Ideally they should be kept apart in separate rooms.
- Your cat should sleep in an area unoccupied by anyone else.

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2. You should handle and dispose of urine and faeces carefully:

- A treated cat will excrete low levels of radioactive iodine in its urine for several weeks so bodily waste should be handled carefully.
- A litter tray should be used. We sell flushable litter. Gloves should be worn when the tray is cleaned and dirty litter should simply be scooped into the toilet and flushed away. Alternatively the litter can be poured into a bin liner, tied off then placed in another bin liner and tied off, then put in a refuse bin.
- If your cat urinates or defecates in the house outside of the tray, it should be cleaned up with paper towel and disinfectant and flushed down the toilet. Gloves should be worn while doing this.

Outcome and Monitoring

Your cat should be seen at 1, 3 and 6 months after the treatment dates for examination, lab tests and blood pressure. These checks can be done at Pride Veterinary Centre or your own practice.

Most (94-97%) of cats are cured after a single injection. In a number of cats, there is a delayed response to the treatment and the thyroid hormone levels do not fully resolve until a few months after treatment – we would recommend monitoring blood results in these cats. Rarely, a cat may be resistant to the treatment and require a second injection (if there is a benign tumour) or a much higher dose (if there is a carcinoma). Investigation and treatment options will be discussed at this stage. A second treatment would incur further cost.

Most complications of treatment should have been prevented by the careful screening carried out before accepting your cat. The most common complication is hypothyroidism where the level of thyroid hormone is too low. Levels will often rise over a period of months following treatment so careful monitoring would be carried out first. In some cats, where low levels persist and signs of disease are seen then thyroid hormone supplementation may be considered.



Marketing/Pets-Collateral/Hospital-Handouts/InternalMedicine/Radioiodine Treatment

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