



# Hyperthyroidism in Cats

## What is Hyperthyroidism?

Otherwise known as an overactive thyroid, Hyperthyroidism is the most common endocrine (hormonal) disease of cats. Hyperthyroidism results from an increase in production of thyroid hormones from the thyroid glands. These hormones regulate many body processes and when in excess they can cause serious illness. One role of the thyroid hormone is to help control the body's metabolic rate. This means that despite an increased appetite cats tend to use their energy too quickly and will lose weight.

## Causes

In 97-99% of cases hyperthyroidism is due to a benign tumour (an adenoma or hyperplasia) of one or both of the thyroid glands resulting in excess secretion of thyroid hormones. Very rarely the tumour may be malignant.



## Diagnosis

A blood test is taken to measure the amount of thyroid hormone to see whether it is in excess.

## Treatment

There are five choices available to you when deciding how to treat your cat. Each different option has its advantages and disadvantages. It is a case of looking at the information, discussing with the vet and deciding which option best suits both yourself and the cat involved.

### 1 Tablets/Liquid medication



1. Tableting or administering a liquid once or twice daily is a very effective treatment option.
2. If you struggle to tablet you can make an appointment with one of our nurses to help you. Knowing how, can make the whole process MUCH less stressful!
3. The medication contains a drug that suppresses the production of thyroid hormones bringing the level back into a normal range.

#### ADVANTAGES

- Low cost.
- Relatively simple and effective.
- No need for general anaesthetic/hospitalisation.
- Reversible.

#### DISADVANTAGES

- Some cats may be difficult to tablet, the liquid can be easier as an alternative.
- Can require dose changes due to fluctuations in thyroid hormone level.
- Possible side effects include skin irritation and lesions, liver damage, development of abnormalities in white blood cells, red blood cells or platelets (clotting cells).
- Increasing doses of the drug may be required with long term treatment.
- Does not turn the tumour; only blocks the effect of excess secreted hormone so the tumour will continue to grow.
- Long term requirement for daily/twice daily medication at home.
- Regular blood tests are required to monitor complications and thyroid levels.

### 2 A special diet



1. Hills YD is a veterinary diet with a low iodine content. Iodine is a key ingredient in producing thyroid hormones and therefore a reduced intake will suppress production.
2. This option will not be successful alone for all cases.
3. We recommend a gradual change from their old diet by initially only placing a few biscuits from the Hills YD into their bowl and slowly -accompaniot then you can increase the amount until 100% Hills YD. This may take days/weeks depending on the individual.

#### ADVANTAGES

- Easy, simple and low cost.
- Not known to be associated with adverse effects and appears to be well tolerated.
- Non - invasive treatment.
- Reversible treatment.
- No need for anaesthetic/hospitals.
- Most can be stabilised within 4 weeks.

#### DISADVANTAGES

- May not be suitable if the cat requires other specific dietary management e.g. diabetes.
- May be more difficult in a multi-cat household, if the cat is allowed to go outside and access the neighbour's food, hunts and eats prey or requires medication containing iodine.
- Long term requirement for special diet.
- Regular blood tests required for monitoring for complications.
- Does not cure the tumour, only decreases excess hormone so the tumour will continue to grow.

## Clinical signs

- Weight loss.
- Increased appetite.
- Vomiting/Diarrhoea.
- Hyperactivity.
- Vocalization.
- An unkempt coat.
- Increased drinking and urinating.
- Less commonly we can see an 'apathetic' form of the disease where they may have a reduced appetite, lethargy / fatigue.
- In 80% of cats you can feel an enlarged thyroid in the neck, but 20% of cats have ectopic tissue (thyroid tissue elsewhere in the body) causing the problem.





### 3 A transdermal gel

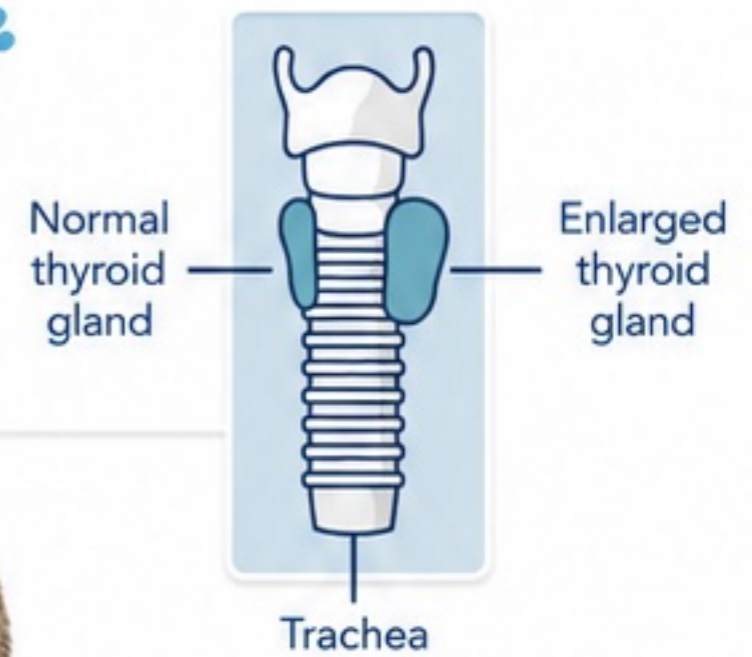
This treatment works almost exactly like the tablets described above. The gel includes the same ingredient given to the patient by way of absorption across the skin on the underside of their ear. The advantages and disadvantages are therefore similar to that of the tablet. Care must be taken not to allow the gel to come into contact with other animals/humans as it may affect their own thyroid hormone levels. Gloves are worn during application to avoid this happening.

This option is prescribed under the cascade. The cascade system provides a framework from which the veterinary surgeon is allowed to prescribe. The gel described here is a human medicine used off licence for cats and therefore can only be used if the cat is not able to be treated with the licenced medication. It cannot, therefore, be used as a first line treatment unless there is good reason.



### 4 Surgery to remove one or both thyroid glands (Thyroidectomy)

1. This option can be curative as we remove the gland that is over-producing and therefore there is no need to feed a special diet or tablet daily.
2. There are different ways in which this operation may be performed and that is the individual surgical preference of your veterinary surgeon but each way intends to remove one/both thyroid glands whilst preserving normal local anatomy of other structures in that area.



#### **ADVANTAGES**

- Curative if all hyperactive tissue is accessible to surgeon (i.e. if there is no ectopic tissue often within the chest).
- Reduced hospitalisation period required.
- Rapidly effective if all hyperactive tissue can be removed.
- Technique available in first opinion practice.

#### **DISADVANTAGES**

- Requires a general anaesthetic. A hyperthyroid cat is an unwell cat so he/she must be stabilised prior to the surgery in order to decrease their surgical risk.
- It is possible that during the surgery there may be some damage to local anatomy. There are many vital structures in the neck. Most commonly the damage occurs to the parathyroid gland that controls calcium regulation. If such a problem occurs it may be necessary to supplement calcium post operatively, either temporarily whilst the parathyroid regenerates or permanently. This obviously replaces one problem with another but is not a common problem and the risk of this occurring must take into account the fact that if the surgery is successful which it most likely will be he/she will not need additional therapy and will be effectively cured, as the tumour will have been removed.
- Rarely there can be damage to nerves in the neck leading to Horner's syndrome +/- laryngeal dysfunction.
- Only suitable if all of the tissue is within the neck region (up to 20% of cats have additional tissue that is inaccessible).
- Disease involves both thyroid glands in 75% cats, hence if unilateral (one sided) surgery is initially performed (i.e. 1 gland is removed), cat may develop hyperthyroidism again at a later date (months-years) and require a second surgery.
- Irreversible treatment may unmask kidney disease if previously unstable, hence period of stabilisation with medicine pre-operatively is recommended.
- Rarely curative for thyroid carcinoma (malignant tumour type) due to infiltration of local tissue by the tumour.





## Radioactive iodine therapy

This final option can be described as the 'gold standard' but comes with a cost. This treatment can only be carried out at a specialist referral practice and therefore involves a longer journey to the vets and a period of staying away from home in hospital. The most local practice to perform this treatment is Langford Referrals in Bristol. You can go on their website to access lots of information regarding the treatment but below is a précis of the procedure.

Your cat will require a pre-assessment at the hospital approximately one month prior to the radioactive treatment. This is a full health assessment with special attention to your cat's kidney health. A second journey will be made for the radioactive treatment. He/she will be admitted 24 hours prior to treatment to allow time to settle in. The radioactive iodine injection is usually given under a light sedation. Following this your cat is hospitalised for approximately two weeks in a special radioiodine ward and looked after by the medicine team nurses. This is for health and safety reasons to limit your exposure to the radioactive substance. The ward is specially designed to be as accommodating and comfortable as possible with lots of enrichment including a cat TV! If you are interested in this option there is a lot more information available so please let us know. This document is only intended to provide basic information in order to guide you through informed consent.

The assessment, treatment and post-treatment evaluation could cost around £2500 for those with a benign tumour, this would account for the majority of cases. Rarely the patient will suffer from a thyroid carcinoma (malignant form) when treatment could increase to £2500.



### **ADVANTAGES**

- No anaesthetic required - treatment given as a single injection under the skin with light sedation.
- Treats all hyperactive tissue regardless of location.
- High success rate (95%).
- Very few side-effects.
- Suitable for carcinoma treatment (requires 10x higher dose).
- Can be repeated if recurrence at later date or partial drop in hormone level.
- No risk of damage to parathyroid glands.

### **DISADVANTAGES**

- Limited availability – a small number of centres in the UK.
- Requires period of hospitalisation (2weeks for standard treatment, 7 weeks for carcinoma treated cats).
- Effective usually within 2-6 weeks, in some cats full effect takes up to 6 months.
- A small proportion of cats require a second treatment.
- Irreversible treatment-may unmask kidney disease if previously unstable, some cats may need thyroid supplementation, if levels drop low post radioiodine, to support kidney function.

### **Concurrent problems/diseases**

1 in 5 cats that suffer from hyperthyroidism also suffer from kidney disease and this can greatly reduce their quality of life and life expectancy. For this reason it is a good idea to test their urine and blood periodically for kidney insufficiency. Please discuss the frequency of testing with your vet.

It is also common for hyperthyroid cats to have a high blood pressure. A high blood pressure is greatly debilitating and can make them feel very unwell. It also puts them at risk of end organ failure such as blindness and can put extra strain on their kidneys.



### **Monitoring**

Routine blood tests will be recommended at least 3 monthly if not more frequently. This is to measure the thyroid levels and these will be required with the food and tableting options and initially will also be required post radioactive iodine or surgery to assess whether we have successfully managed the thyroid level. Your vet will also recommend a full health screen periodically to assess general health and side effects.

### **Prognosis**

Most hyperthyroid cats can be treated very successfully and live a normal life with a normal life expectancy. If he/she has concurrent disease such as kidney disease the prognosis becomes more guarded as they can be very unstable and difficult to manage.

