



## **Feline Hyperthyroidism**

Hyperthyroidism is a common disease of middle-aged to older cats. It is caused by overactivity of one or both of the thyroid glands in the neck, resulting in excessive amounts of thyroid hormone being released into the bloodstream.

### **Signs of hyperthyroidism**

Thyroid hormones have actions throughout the body so a variety of symptoms are seen in cats with hyperthyroidism. Most hyperthyroid cats will show some (but not all) of the following symptoms:

- Weight loss
- Increased appetite (*90% of hyperthyroid cats present with weight loss despite a normal or increased appetite. However, 10% of hyperthyroid cats will actually have a decreased appetite and may refuse to eat at all.*)
- Nervousness / restlessness / hyperactivity
- Vomiting and / or diarrhoea
- Excessive drinking and urination
- Poor hair coat
- High heart rate and subsequent heart disease
- High blood pressure (this can happen before or after treatment)

### **Diagnosis**

Your vet may suspect hyperthyroidism if your pet is suffering from any of the symptoms listed above. In some cats an enlarged thyroid gland can be palpated in the neck during examination. However, a blood test to check the levels of thyroid hormone in the bloodstream is essential to reach a definitive diagnosis of hyperthyroidism.

Because other diseases can show similar signs to hyperthyroidism, (for example diabetes, liver disease, and kidney problems), it is important to test blood samples for evidence of these diseases at the same time as checking for hyperthyroidism.

### **Treatment**

The treatment of hyperthyroidism is aimed at controlling the excessive secretion of thyroid hormones from the abnormally functioning gland. There are four

primary methods of treating cats with hyperthyroidism. Each has its advantages and disadvantages.

## 1. Medication

Medication is available which acts to inhibit thyroid hormone synthesis. Licensed medication is available as a tablet (Felimazole or Vidalta) or a liquid (Thyronorm).

These medications are generally best given every 12 hours and the dose will depend on the level of thyroid hormone present when starting treatment and then following this, adjustments may be made based on response to treatment. The response to treatment is based on clinical signs (appetite/vomiting/drinking), your pet's weight (weight gain indicates a positive response to treatment) and the level of thyroid hormone in the blood. It is also vital that kidney function is monitored closely during treatment. This is because sometimes the high level of thyroid hormone masks kidney problems and once this is under control a kidney problem then becomes evident. This will affect the dose of thyroid medication that can be safely administered. The bloods for thyroid and kidney function can all be run on the same sample. Once your cat is stable will advise a blood sample every 6 months to check the thyroid is still well controlled.

There is also medication available as a cream which is applied to the ear flap, this is licensed in other countries but not the UK. This can be considered if it is not possible to administer medication orally to your cat.

The advantages of medical management of hyperthyroidism are that it is relatively inexpensive and non-invasive, and should produce a fairly rapid improvement in the cat's condition. No anaesthetic is required and the cat does not need to stay in the veterinary surgery for any length of time.

The main disadvantage is that owners are required to give medication for the rest of the cat's life. Some cats are very difficult to medicate and some cats are not reliably at home twice daily to receive their medication. Occasionally cats develop side effects to their medication, such as vomiting and lack of appetite (it may be possible to solve this problem by altering the dose of medication, or trying a different type of thyroid medication). Finally, medical management does not cure hyperthyroidism, it simply controls it, and so affected cats will be on life-long treatment.

We tend to use medical management in older cats, particularly those with concurrent illnesses such as renal (kidney) and heart conditions.

## 2. Surgery

Hyperthyroidism can also be treated with surgery to remove the enlarged thyroid gland(s). The hyperthyroidism is stabilised initially using the medications described above. When blood tests and examination reveal the hyperthyroidism to be under control the cat is given a general anaesthetic and

surgery is carried out to remove the thyroid tissue from the neck. A unilateral (one sided) or bilateral thyroidectomy (both sides) can be carried out and your vet will discuss which is most appropriate for your cat.

Most cats return home 2-3 days after the operation and have their stitches removed a week later. If a unilateral thyroidectomy is carried out then at some point the other thyroid gland may need removing.

It is also worth noting that 10-20% of cats have ectopic thyroid tissue i.e. thyroid tissue in a different location, often in their chest. If this enlarges and also starts producing too much thyroid hormone then surgery may not successfully control the symptoms.

The advantages of surgery are that there is an immediate response to the removal of the thyroid glands, and in most cases the problem is cured rather than managed. The potential side effects and problems in administration of thyroid medications are avoided.

The disadvantages of surgery are that a general anaesthetic is required, and as in human medical care, no anaesthetic is completely without risk. Rare complications associated with thyroid surgery include damage to the parathyroid glands (located right next to the thyroid glands) resulting in improper calcium balance following surgery, and damage to the nerves and muscles of the throat. Finally, in cats with renal problems, hyperthyroidism can actually be an advantage to the kidneys because it improves renal blood flow – completely removing the thyroid tissue with surgery may allow a kidney problem that was under control to become serious. This is why we recommend stabilising a cat medically first – to ensure that the kidneys can manage.

As a general rule surgery is recommended in middle-aged, rather than elderly cats, and is only undertaken in cats which demonstrate no other signs of ill health on examination and blood testing. It is an extremely effective treatment for hyperthyroidism in these cases.

### 3. Radioactive iodine treatment

Treatment with radioactive iodine is simple, safe and effective, and is theoretically the ideal treatment for many hyperthyroid cats. The cat is given a single injection of radioactive iodine, which will be taken up by all of the thyroid tissue in the body. This results in gradual destruction of the thyroid tissue. It is extremely rare for a cat to need a second injection (<1%) and the majority of cats will have normal hormone levels within 1 or 2 weeks of radio-iodine treatment (although it can take up to 6 months to take full effect).

Advantages of radioactive iodine treatment are that it is non-invasive to the cat, and no anaesthetic is required. The treatment reaches all of the thyroid tissue in the body without damaging any adjacent structures such as the neck muscle or the glands, which control calcium metabolism.

The main disadvantage of radioactive iodine treatment is its cost and availability. The treatment can only be carried out at a specialist centre and the cost of treatment is approximately £1500. In addition, although the cat will receive only a single injection to cure the hyperthyroidism, it is a requirement of law that your cat remains at the treatment centre for at least 2 weeks following treatment to minimise radiation exposure to other humans and cats. For cats with kidney problems, the complete destruction of thyroid tissue may push the cat into overt kidney failure, as is the case for surgery to remove the thyroid glands.

Your vet will be happy to discuss the various treatment options with you, to help you decide on the treatment that is most suitable for you and your cat.

#### 4. Special diet

Hills have created a special diet called y/d which is iodine depleted. This results in a reduction in thyroid hormone levels. The advantage of this is that no medication is required and it is very safe. However any other food (including hunting) will render the diet ineffective. This is a more difficult option in a multi cat household or if your cat goes outside as you cant guarantee that they aren't eating anything else.

#### Complications

If hyperthyroidism is left untreated there are significant complications that may develop. Blindness can occur due to retinal detachment from high blood pressure. Long term kidney damage and severe weight loss are also possible consequences, along with heart failure and premature death. Prompt diagnosis and treatment of feline hyperthyroidism should minimise the incidence of these complications and result in a successful outcome for your cat.