



Thyroid Diseases in Dogs and Cats (part 1)

The next couple of articles come in a 2-part series and discuss the most common thyroid diseases of dogs and cats.



The Thyroid Gland

The thyroid gland is composed of two identical lobes, located immediately to the left and right of the trachea (wind-pipe) in the neck. It is an endocrine gland, which means it releases hormones directly into the blood stream. It secretes three hormones - T3, T4 and calcitonin. Calcitonin controls calcium levels in the body (amongst other things), and is not relevant here. T3 and T4, however, control the body's metabolism; more specifically, they increase metabolic rate. The metabolic rate determines how quickly calories are burnt, which in turn, affects appetite and weight, temperature, energy levels and much more. Imbalances in levels of T3 and T4 also cause changes in heart rate, blood pressure, the coat, skin and nerves, and both are essential for normal growth and development.



As a general rule, cats get hyperthyroidism (too much production of T3 and T4), whilst dogs get hypothyroidism (too little production of T3 and T4). The rest of this article covers hyperthyroidism in cats.

Hyperthyroidism in Cats



Hyperthyroidism is the most common hormone disorder in cats and probably one of the two most common diseases of middle-aged to elderly cats. It is one reason we advise having your cat checked regularly as the disease often develops slowly and it can take months to years before clinical signs become apparent.

Pathology

In hyperthyroidism, the thyroid gland starts producing too much T3 and T4. Fortunately, in cats, this is usually due to a **benign** tumour of the thyroid gland ('benign' meaning it tends to grow slowly and there is no risk of spread to the rest of the body). This is not always the case, however, and cats can get malignant tumours of the thyroid gland (fast growing, and

with the ability to spread). Why hyperthyroidism is so common in cats is unclear, but there have been links to indoor living and consumption of canned cat food, particularly fish-flavoured ones.

Signs and Diagnosis

The main signs of hyperthyroidism are **weight loss despite an increased appetite** (although appetite is not always increased!), increased drinking and urinating, hyper-activity or restlessness, poor coat, vomiting and/or diarrhoea and an increased heart rate. Your cat may also develop a heart murmur and/or high blood pressure, and it may be possible to feel the enlarged thyroid gland in your cat's neck.



In most cases, hyperthyroidism can be diagnosed by a simple blood test done in-house, which measures the levels of T4. It is often recommended that a full blood test is done at the same time (testing liver and kidney function etc.) as this will tell us if there are any special measures we need to take during treatment and provides important prognostic information. For example, treating hyperthyroidism in cats who also have kidney disease can make the kidney disease worse. In some cases, when the T4 levels are in the 'grey zone', a special blood test needs to be performed and the blood sent away to an external lab for confirmation. **As treatment of hyperthyroidism is lifelong, it is important that the correct diagnosis is made.**

Treatment

There are 4 treatment options:

1) Dietary management

This involves feeding a low iodine diet (Hill's y/d). As the thyroid gland needs iodine to make T4, a low iodine diet should, in theory, reduce T4 production. Hill's y/d is now available in the UK but, despite its promise, is still not widely used. This is mainly because a) it needs to be fed absolutely exclusively with no mishaps; b) it takes weeks to work; and c) it does not treat the tumour, so the tumour will get bigger and bigger and eventually 'break through' the dietary suppression.



2) Medical management

This is the **most commonly used option** for managing hyperthyroidism in cats. It is the least expensive and most widely available, the medication is administered at home, and it can be used lifelong with great success. However, it does require **daily** administration of

medication and it can take some time to find the effective dose. It also requires close monitoring of the T4 levels, at least initially. Once the 'correct' dose is found and the cat is stable, however, T4 levels usually only need to be checked every 6 -12 months.



We have two medications available to us - carbimazole (Vidalta) and methimazole (Felimazole). Vidalta and Felimazole are both in tablet form, and both can cause **transient** anorexia and vomiting. Vidalta is usually the first line treatment as it only needs to be given once a day, whilst Felimazole requires twice daily dosing. However, methimazole is now available as a cream which you put on the cat's ear tips, so this is an option if your cat proves impossible to tablet!

3) Surgical management

Surgical management involves surgically removing one, or both, of the thyroid glands. This has the benefit of being a 'permanent' cure (in virtually all cases), but it is costly, requires a general anaesthetic, and can be difficult to perform. It also comes with the risk of some serious complications during and after the operation.

4) Radiotherapy



This is the **gold-standard treatment** for both human and feline hyperthyroidism. It involves using radioactive iodine to selectively destroy the abnormal thyroid tissue. It does not require a general anaesthetic, is simple to perform, has virtually no side effects, and is another 'permanent' cure. However, it requires referral to a specialist hospital and 4-6 weeks hospitalisation, so is extremely costly. Also, it is not suitable for cats receiving daily medication for other diseases, as the cats cannot be handled for short periods following injection of the radioactive iodine.

Which treatment option is best for your cat depends on a number of factors, including your cat's health status (ie. whether there are any concurrent illnesses), your cat's nature, the finances available, the ease with which your cat can be given oral medication, the ease with which you or your cat can travel, and so on. These are all aspects we can discuss further with you to make sure we choose the best option in every case.

If you have any questions about hyperthyroidism in cats, or are concerned your cat may be showing signs of it, please do get in touch. In part 2 of this series, we will talk about hypothyroidism in dogs.