



# FELINE HYPERTHYROIDISM

## FACT SHEET 47

### Introduction

Hyperthyroidism or over-activity of the thyroid gland is the most common disorder involving the endocrine system of glands (those glands which do not have ducts) seen in cats. It is also one of the most frequent conditions seen in geriatric cats. The condition, also sometimes referred to as thyrotoxicosis, was first reported in 1979. It affects middle-aged and older cats of any sex or breed. However, the problem appears to be much less common in Siamese. The cause of the condition is still uncertain.

### Anatomy & Physiology

The thyroid gland is a small gland composed of two individual lobes located in the neck, just below the throat. Normally it is not visible and not easy to feel. Although not essential to life it contributes to mental and physical well-being. It plays a part in growth and development, as well as in regulation of the metabolism and in the general level of activity. It does this by the secretion of two thyroid hormones, Triiodothyronine (T3) and Thyroxine (T4), the levels of which are regulated by another hormone called thyroid stimulating hormone (TSH). This is released from the pituitary gland situated at the base of the brain. Manufacture of both T3 & T4 require the uptake of iodine into the thyroid gland. Immediately adjacent to the thyroid gland lie the two smaller glands, the parathyroid glands, which regulate calcium metabolism.

### Signs & Symptoms

The signs associated with hyperthyroidism are due, in most cases, to excessive production of thyroid hormone, as a result of benign (non-cancerous) changes in the glands. This type of change is referred to as an adenoma and may affect both glands, although one gland may be more affected than the other. Affected glands become visibly enlarged and in some cases may be seen protruding under the skin in the neck region, just below the throat. In very rare cases, signs of hyperthyroidism are associated with a malignant tumour known as a thyroid carcinoma. This is a very serious condition, which, in contrast to the majority of cases of hyperthyroidism that usually respond well to treatment and carry a good prognosis, is difficult to treat.

There are a variety of symptoms linked with the condition including:

- Increased appetite (polyphagia) with marked weight loss or emaciation
- Increased thirst (polydipsia) and urination (polyuria)
- Restlessness, anxiety or hyperactivity
- Increased vocal activity, often wailing or crying
- Irritability, sometimes with an aggressive facial expression
- Heart problems, sometimes leading to cardiomyopathy

- Poor coat with reduced grooming activity, sometimes matted hair
- Alopecia (hair loss)
- Seborrhoea (greasy coat) or a dry harsh coat
- Increased rate of nail growth
- Diarrhoea and vomiting
- Heat intolerance
- Coughing and sneezing, increased respiratory (breathing) rate

Less common signs seen in a small percentage of cats include:

- Poor appetite
- General weakness
- Lethargy
- Signs of serious cardiac disease such as thromboembolism
- Ventral (downward) flexion of the neck

### **Additional Complications**

The abnormally high levels of thyroid hormones in the blood have far ranging effects on the body. In fact, almost all organ systems are affected often requiring additional investigation and treatment.

- Heart problems

The main problems seen with the heart and circulation are hypertrophic or less frequently dilated cardiomyopathy, hypertension (high blood pressure with subsequent damage to eyes, kidneys and brain), rapid heart rate (tachycardia), heart murmurs, arrhythmias (changes in rhythm) and congestive heart failure.

- Kidney disease

Many cats with hyperthyroidism will have concurrent chronic Kidney (renal) failure, which may well be masked by the thyroid condition. This is due to an increase in the blood flow to the kidneys appearing to make the parameters that determine kidney function, appear normal. In such cases patients need to have their renal function re-evaluated once the thyroid problem is stable.

### **Diagnosing Hyperthyroidism**

Clinical symptoms and palpation of the neck area are often enough to give a tentative diagnosis. However blood tests are routinely performed to confirm the diagnosis. The most reliable diagnostic test is the measurement of the level of T4 in the blood, which is elevated in most hyperthyroid cats. T3 is also sometimes measured, but is less reliable as an indicator of the disease. Other specialist blood tests are sometimes performed in the small number of cats where T3 & T4 measurements are not conclusive, but where the illness is suspected. Failing this, a few specialist centres are able to offer a technique called a technetium scan, which can be used both to diagnose the condition and to pinpoint exactly where the abnormal tissue is located.

It is not surprising that in a condition with far ranging effects, that you will see other blood parameters affected. It is not unusual to find:

- An elevation in the levels of liver enzymes
- Evidence of kidney disease (raised urea and creatinine levels)
- High levels of phosphorus
- A slight rise in blood glucose levels

- Low levels of potassium

## Treating hyperthyroidism

### Conventional treatment

A number of options are available involving medical treatment, surgery or treatment with radioactive iodine.

- Medical treatment

This is the most common way of treating this problem and is usually the first treatment of choice for most cats. It involves using anti-thyroid drugs, which work by reducing the production and release of thyroid hormone from the thyroid gland. Although the use of such drugs does not result in a cure, the condition can be managed long-term if the drugs are well tolerated. The most commonly used drug is methimazole (trade name Felimazole) or a closely related drug called carbimazole. Side effects are not common, but can include vomiting, lethargy and poor appetite. A few cats show more serious reactions such as a drop in the number of platelets or a drop in the number of white cells in the blood, haemolytic anaemia, disturbances in liver function and skin rashes. All of these problems are reversible if the drugs are withdrawn.

- Surgical treatment

Where there is intolerance to drug treatment, then surgical treatment provides an alternative route if the cat is not too old or too debilitated. The usual treatment is thyroidectomy to remove one or both thyroid glands (depending on the nature and extent of the problem) whilst being careful to preserve the parathyroid glands. The surgery is not difficult to perform, but does sometimes carry the risk of damage to the parathyroid glands and subsequent problems relating to the regulation of calcium levels in the blood. To reduce the risk of this happening, one lobe of the thyroid gland can be removed first followed by the other (if affected) at a later date.

- Radio-iodine treatment

This method involves using a radioactive isotope of iodine, I-131 and has a high success rate. Normally curative, this technique has the least risk of complications and is suitable for all cats (including those previously treated by other methods) other than those with other serious health problems such as epilepsy, diabetes or FIV. I-131 is administered by subcutaneous injection and is selectively taken up by the diseased thyroid tissue. The radiation emitted destroys the affected tissue, but does not damage any other body tissues or parathyroid glands. Disadvantages of radio-iodine treatment are cost, the limited numbers of licensed centres able to carry out the procedure and the fact that the cat has to be hospitalised for between 3 and 6 weeks until the levels of radiation drop.

### Complementary therapies - How Denes can help

- Herbal remedies & Supplements

Plant based medicines can be used on a symptomatic basis to help alleviate some of the signs of the illness. Denes **Tranquil+ Powder** can ease both the anxiety and hyperactivity symptoms seen in many cats with this illness. Where conventional drug treatment is used, we would recommend using Denes **Milk**

**Thistle+ Powder**, a supplement used to support the liver and protect it against the potentially toxic side effects of the drugs used to treat this condition. We would also suggest using this supplement where there is evidence of liver disease. Where there are also kidney problems we would add Denes **Kidney Tablets** and Denes **Greenleaf Tablets**, both licensed herbal medicines, which can be used to help the kidneys to work better.

- Flower Essences

You can use the **Highly Strung Flower Essence** drops to calm your cat, as an alternative to using our Tranquil+ Powder. The drops can be added to food and can be given on a long term basis to calm your cat and ease any anxiety.

- Homeopathic remedies

To help provide support for cats with this condition we recommend using our homeopathic **Phosphorus 30c** drops, which may help ease the signs of the hyperthyroidism. It is especially indicated where the blood level of phosphorus is elevated. To support the liver where there are additional problems, we would suggest using our **Nux vomica 30c** drops along with the **Phosphorus 30c** drops, adding **Sulphur 30c** where the coat and skin are in poor condition. As liquid remedies all of our homeopathic medicines are easy to administer, either directly by mouth or in food.

- Omega 3 Salmon Oil

Omega 3 fatty acids are useful in both preventing and in treating heart disease by improving the strength and health of heart muscle. Omega 3 fatty acids can help prevent arrhythmias, blood clots (by their anticoagulant effect) and can also lower blood pressure so are useful in managing cats with hyperthyroidism.

- Diet

Foods containing extra calories are ideal to try and slow the weight loss. The following Denes recipe may be suitable: **Kitten With Rabbit & Chicken**.

### **Important Note**

**Avoid** giving **Denes All In One+ Powder**, as this supplement may exacerbate this particular condition. All In One+ Powder contains Seaweed, a rich source of Iodine, which is known to aggravate the symptoms linked with hyperthyroidism.

Other useful Denes fact sheets to read

- Milk thistle
- Homeopathy

If you have any queries concerning your pet's health or feeding problems, you can contact us for free pet care advice by:

- Visiting our website [www.denes.com](http://www.denes.com)
- Emailing us at [info@denes.com](mailto:info@denes.com)
- Calling us on **01273 325364** Mon-Fri, 9am – 12Noon
- Writing to us at:  
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