Client information sheet

Hyperthyroidism (Overactive Thyroid)

What is hyperthyroidism?

Hyperthyroidism is a hormonal disorder in which the thyroid gland produces an excessive amount of thyroid hormone. It is the opposite of hypothyroidism, in which too little thyroid hormone is produced.

It is one of the most common hormonal disorders in cats, but is uncommon in dogs. For this reason, this sheet is aimed mainly at cats, although it can occasionally also affect dogs.

What causes hyperthyroidism?

The thyroid gland is made up of two parts, one on each side of the windpipe. In cats and dogs, hyperthyroidism is caused by tumours in the thyroid gland, which produce excessive amounts of thyroid hormone.

In the vast majority of cases, these tumours are benign and slow-growing, and many patients have them on both sides of the thyroid gland (that is, they are bilateral).

Some patients also have abnormal thyroid tissue in other areas, such as the chest. This does not mean that the tumour has spread; it is thyroid tissue located in a place different from the usual one.

In a small number of cases, the tumour may be a malignant adenocarcinoma and can spread.

What are the signs of hyperthyroidism?

Excess thyroid hormone speeds up the metabolism, which can affect many body systems. For this reason, signs can be very varied, but the most common are:

- Weight loss despite a ravenous appetite.
- Increased frequency of urination and thirst (known as polyuria and polydipsia, or PU/PD).
- Increased heart rate (tachycardia).
- Vomiting and/or diarrhoea.
- Irritability, aggression, nervousness or hyperactivity.
- Unkempt coat or excessive grooming.
- Muscle weakness, which in severe cases can cause difficulty holding the head up.

How is hyperthyroidism diagnosed?

Your vet will start by asking you about the changes you have noticed in your pet at home and will carry out a complete examination. If, after this, they suspect your pet may have hyperthyroidism, they may recommend:

- **Blood tests,** which may initially include:

  - Total thyroid hormone (total T4), which is high in around 90% of cats with hyperthyroidism.
- **Additional blood tests** that your vet may request, including:
  - Pro-BNP, an indicator of heart health, as excess thyroid hormone can damage the heart over time.
  - Free T4 and TSH, which may be tested when the total T4 level is at the upper limit of normal but clinical signs are still suspicious.
- **Urine tests,** to check kidney function and rule out other causes of the signs your pet is showing.
- **Blood pressure measurement,** to detect high blood pressure, as many cats with hyperthyroidism also have this condition.
- **Echocardiogram,** an ultrasound scan of the heart that can detect heart disease or changes in the heart, such as thickening of the heart muscle.

How is hyperthyroidism treated?

There are different treatment options and not all of them are suitable for every patient. Talk to your vet to carefully assess which option is the most suitable for your pet.

Curative treatments are those that remove the tumours. Non-curative treatments help control the excess thyroid hormone, but leave the tumour in place and do not prevent it from continuing to grow.

Things to bear in mind when choosing a treatment:

- Occasionally, benign tumours can transform over time into malignant adenocarcinomas, so curative treatments can be an interesting option in some cases.
- Curative treatments usually have a higher initial cost, but they normally work out more cost-effective in the long term compared with two or more years of continuous treatment. Your vet can explain the costs and benefits of each option to help you make the most suitable decision for you and your pet.
- Hyperthyroidism can mask kidney disease. In some cases, your vet may initially recommend a reversible, non-curative treatment to check how the kidneys respond before opting for an irreversible curative treatment.

Dietary Therapy

It is a non-curative treatment. It involves replacing your cat's usual diet with a specific diet. This diet contains a controlled amount of iodine, which limits the amount of thyroid hormone the body can produce.

Pros	Cons
• Very safe • Reversible • May be suitable for elderly cats • May be effective in mild cases • No anaesthetic or hospital stay	• Long-term cost of the specific diet • Not suitable for cats that hunt or eat away from home • Difficult to apply in multi-cat households • Less effective in moderate to severe cases • The tumour is not removed

Medical Therapy

It is a non-curative treatment. Medicines can be given as tablets, liquids or gel to reduce the production of thyroid hormones.

Pros	Cons
• Reversible • Effective in most cases • No anaesthetic or hospital stay	• Long-term cost of medication • Lifelong medication (once or twice a day, depending on the treatment) and need for regular check-ups • Side effects are relatively common and include decreased appetite, vomiting and skin changes • The dose may need to be increased as the tumour grows • There are risks associated with handling the medicine, especially for women of childbearing age

Radioiodine Therapy

It is a curative treatment used in the majority of cases. Before the treatment, a scintigraphy scan is carried out to assess the extent of the disease and calculate the dose of radioactive iodine needed.

For this treatment, your cat must stay at a specialist veterinary centre. The length of stay is usually between 2 and 21 days, depending on the case and the referral centre.

The treatment involves giving a dose of radioactive iodine, either by injection or, less commonly, in a capsule. The radioactive iodine destroys the abnormal thyroid tissue, but leaves the healthy thyroid tissue and the rest of the body's tissues intact.

Pros	Cons
• Curative in most cases • Very safe • No anaesthetic • Removes abnormal tissue even in hard-to-reach areas, such as the chest • Cost-effective in the long term • Recurrence of the disease is very rare	• High initial cost • Requires hospitalisation • Small risk of developing hypothyroidism (underactive thyroid) • Requires travel to a specialist centre • Hospitalisation may be longer if you cannot isolate your cat at home for a time

Surgery

It is a curative treatment in which the abnormal thyroid tissue is surgically removed under anaesthetic. However, this cannot always be done in every case.

In some cases, there may be thyroid tissue in other areas of the body that cannot be seen, or there may be a risk of removing or damaging the parathyroid glands, which are located next to the thyroid gland. If these glands are damaged or have to be removed, there is a risk of developing hypoparathyroidism.

Pros	Cons
• Cost-effective in the long term • Curative for most cats • May be recommended in cases of cancerous tumours	• High initial cost • Requires hospitalisation • Risks associated with surgery and anaesthesia • Risk of recurrence if the affected tissue is in a hard-to-reach area • Risk of hypothyroidism if both sides of the thyroid gland are removed • Risk of hypoparathyroidism if the parathyroid glands are damaged

Additional treatments

In addition to treating the thyroid tumour or controlling the excess thyroid hormone, your pet may need treatment for the complications associated with the disease. These may include:

- Heart medication, if your cat's heart is thickened or shows changes as a result of hyperthyroidism.
- Blood pressure medication, if your cat has high blood pressure.
- Thyroid hormone and vitamin D supplements, for example if the treatment causes hypothyroidism or affects the parathyroid glands.
- Sometimes hyperthyroidism can hide signs of chronic kidney disease, which may only become obvious once the hyperthyroidism is controlled. At that point, it will be important to start treating the kidney disease too.

What is the prognosis/outlook for hyperthyroidism?

Benign tumours treated with a curative treatment, such as radioiodine, have an excellent prognosis and most cats can lead a normal life after treatment.

With good control of the disease and a good quality of life, a good result is usually achieved with medication. However, there is a small risk that the tumour will transform in the future or that complications will appear if the hyperthyroidism is not kept well controlled, so regular veterinary check-ups are important.

The prognosis for malignant adenocarcinomas is more guarded, as these tumours can come back and spread to other parts of the body. However, they are uncommon and, in some cases, surgery or high-dose radioiodine treatment can be curative.

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Useful resources

- International Cat Care
  https://icatcare.org/articles/hyperthyroidism-in-cats
- The Hyperthyroid Cat Centre
  https://www.hyperthyroidcatcentre.co.uk/





