Feline Hyperthyroidism: **Therapy**

Feline hyperthyroidism can be managed with one of four main treatment modalities. The choice of therapy depends on the cat's overall health, age, concurrent diseases, owner preference, and availability of resources. Regular monitoring is essential to assess therapeutic efficacy, identify complications, and detect emerging comorbidities, especially renal insufficiency.

1. Medical Therapy

Drug: **Methimazole** (available in **oral tablets**, **oral liquid**, and **transdermal gel***) or **Carbimazole** (**oral tablets**).

Mechanism: Inhibits thyroid peroxidase, which results in blocking of iodine incorporation and coupling of iodotyrosines, thereby preventing thyroid hormone synthesis.

Formulations:

- **Oral tablets:** Widely used and cost-effective.
- **Oral liquid:** Useful for precise dosing and for cats that do not tolerate pills.
- **Transdermal gel*:** Applied to the inner surface of the pinna (ear); preferred in cats with poor oral compliance.

**Transdermal preparations are non-licensed compounded medicines. Availability is subject to geography and local legislation. Prescription should be according to the rules of the cascade (EU Reg 2019/6 Art. 112-115).*

Dosage:

- **Oral Methimazole (tablet, liquid or transdermal):**
  - Initial dose**: **2.5 mg twice daily (BID)** orally. For mild hyperthyroidism or in cases where concomitant CKD stage IRIS ≥ 3 is present, initiate treatment with a lower dose.
  - Dose titrated based on total T4 concentration and clinical response.

***The datasheet for thiamazole / methimazole states a starting dose of 5 mg a day which should be divided wherever possible. Any starting dose aside from this is therefore off-label and reflects author opinion.*

- **Oral Carbimazole (sustained-release tablets):**
  - Initial dose: **15 mg once daily (SID)** orally. If the total T4 concentration is only mildly increased (e.g. up to 100 nmol/L (8 µg/dL)) consider to start with 10 mg SID.
  - Dose titrated based on total T4 concentration and clinical response.

Advantages:

- Non-invasive and rapidly effective.
- Reversible.
- Ideal for pre-treatment stabilization before definitive therapy (e.g. surgery, radioactive iodine therapy).

Limitations:

- Lifelong treatment required.
- Does not address the underlying thyroid lesion. Over time, some thyroid nodules may develop into a malignant form.
- Adverse effects (in ~20% of cats), most of them occur within the first 3 months of therapy***:
  - Vomiting and anorexia.
  - Facial pruritus/excoriation.
  - Hepatotoxicity.
  - Hematologic toxicity (neutropenia, thrombocytopenia).

****Report any suspected side effect / adverse event by contacting the marketing authorisation holder or relevant regulatory body.*

Monitoring:

- **2–3 weeks** after starting: total T4, CBC, liver enzymes, renal values.
- Once stable: **every 3–6 months**.†
- Adjust dose to keep total T4 in the **mid- to low-normal range**.

†Refer to product datasheet for subsequent monitoring guidelines.

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2. Surgical Thyroidectomy

Procedure: Surgical removal of one or both thyroid glands. It is recommended to perform scintigraphy prior to surgery to localize pathological thyroid tissue.

Advantages:
- Offers a potential cure.
- No need (usually) for ongoing medication after successful unilateral surgery. In case of bilateral thyroidectomy supplementation with l-thyroxine is usually needed.

Limitations:
- Requires general anesthesia.
- Risk of complications:
  - Hypoparathyroidism (in case of bilateral thyroidectomy).
  - Recurrent laryngeal nerve damage.
  - Horner's syndrome.
- Ectopic or residual tissue may lead to recurrence.
- Risk of iatrogenic hypothyroidism.

Monitoring:
- Total T4 and calcium within 48 hours post-surgery.
- Renal function and blood pressure monitoring when euthyroidism is restored.
- Long-term follow-up every 3-6 months.

3. Radioactive Iodine Therapy (I-131)

Mechanism: Iodine-131 selectively destroys hyperfunctioning thyroid tissue via beta radiation.

Advantages:
- Single treatment curative in >95% of cases.
- No anesthesia required.
- Effectively treats ectopic hyperfunctioning thyroid tissue.
- Minimal side effects.

Limitations:
- Limited availability (requires specialized, licensed centers).
- Temporary radiation isolation required post-treatment. The duration of isolation depends on local legislation.
- Costs may be prohibitive in some settings.
- Risk of iatrogenic hypothyroidism.

Monitoring:
- Total T4 and renal function at 1, 3 and 6 months post-treatment.
- TSH and free T4 if hypothyroidism suspected.

4. Dietary Therapy

Product: Commercial iodine-restricted diets (e.g., Hill's Prescription Diet y/d®).
Mechanism: Restriction of dietary iodine limits synthesis of thyroid hormones.

Advantages:
- Completely non-invasive.
- No drug-related side effects.
- Option for cats not suited for drugs or procedures.

Limitations:
- Must be fed **exclusively**—no treats, flavored meds, or alternative foods.
- May be difficult to implement in multi-cat households.
- Some cats may refuse to eat it.
- Not curative—thyroid function remains abnormal if diet is discontinued.
- Long-term effects on overall nutrition still under evaluation.
- Less effective than other treatments.

Monitoring:
- Total T4 every 4–6 weeks during initial adjustment.
- Then every 3–6 months.
- Monitor body weight, appetite and general condition.

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Therapeutic Monitoring

Regardless of the chosen treatment, routine monitoring is essential for:

- Assessing therapeutic response.
- Detecting iatrogenic hypothyroidism.
- Detecting renal insufficiency.
- Adjusting treatment to optimize quality of life.

Key parameters:

- **Total T4:** Main marker for efficacy.
- **T4** and **TSH**: For diagnosing hypothyroidism.
- **Creatinine, BUN, SDMA**: Evaluate kidney function.
- **Calcium**: After thyroidectomy.
- **Blood pressure**: Monitor for systemic arterial hypertension.

Recommended intervals:

- Every **2–3 weeks** after starting or changing therapy.
- Then every **3–6 months** once stable[+].

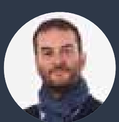
[+]For medical treatments please refer to product datasheet for exact monitoring guideline

Prognosis

The prognosis for feline hyperthyroidism is generally good with appropriate treatment. Survival time depends on the therapy chosen, the cat's age, and especially renal function.

- **Methimazole** typically results in a median survival of about 2 years, but requires lifelong treatment and regular monitoring.
- **Surgical thyroidectomy** offers a potential cure, with median survival times exceeding **2–3 years**, though surgical risks exist.
- **Radioactive iodine therapy (I-131)** is considered the gold standard, with >95% cure rates and median survival of **2–4 years**. Most cats experience excellent quality of life post-treatment.
- **Dietary iodine restriction** may stabilize the disease in selected cases, but long-term survival data are limited.

Prognosis worsens in cats with pre-existing **chronic kidney disease, low body weight, congestive heart failure** or **advanced age**. Regular monitoring of total T4 concentration and renal parameters is essential, as renal function may decline after returning to euthyroidism. With proper management, many hyperthyroid cats live several good-quality years.



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