



Total T₄ Testing Guide: Canine Hypothyroidism

Dynamic Range

0.5–10.0 µg/dL
(6.4–128.7 nmol/L)

Catalyst Total T₄ Results

Low	<1.0 µg/dL	(<13.0 nmol/L)
Low Normal	1.0–2.0 µg/dL	(13.0–26.0 nmol/L)
Normal	1.0–4.0 µg/dL	(13.0–51.0 nmol/L)
High	>4.0 µg/dL	(>51.0 nmol/L)
Therapeutic	2.1–5.4 µg/dL	(27.0–69.0 nmol/L)

Canine Screening

- Dogs with low total T₄ (T₄) and evidence of nonthyroidal illness (NTI) should have the NTI addressed.
- Dogs with T₄ results in the low normal range may be hypothyroid.

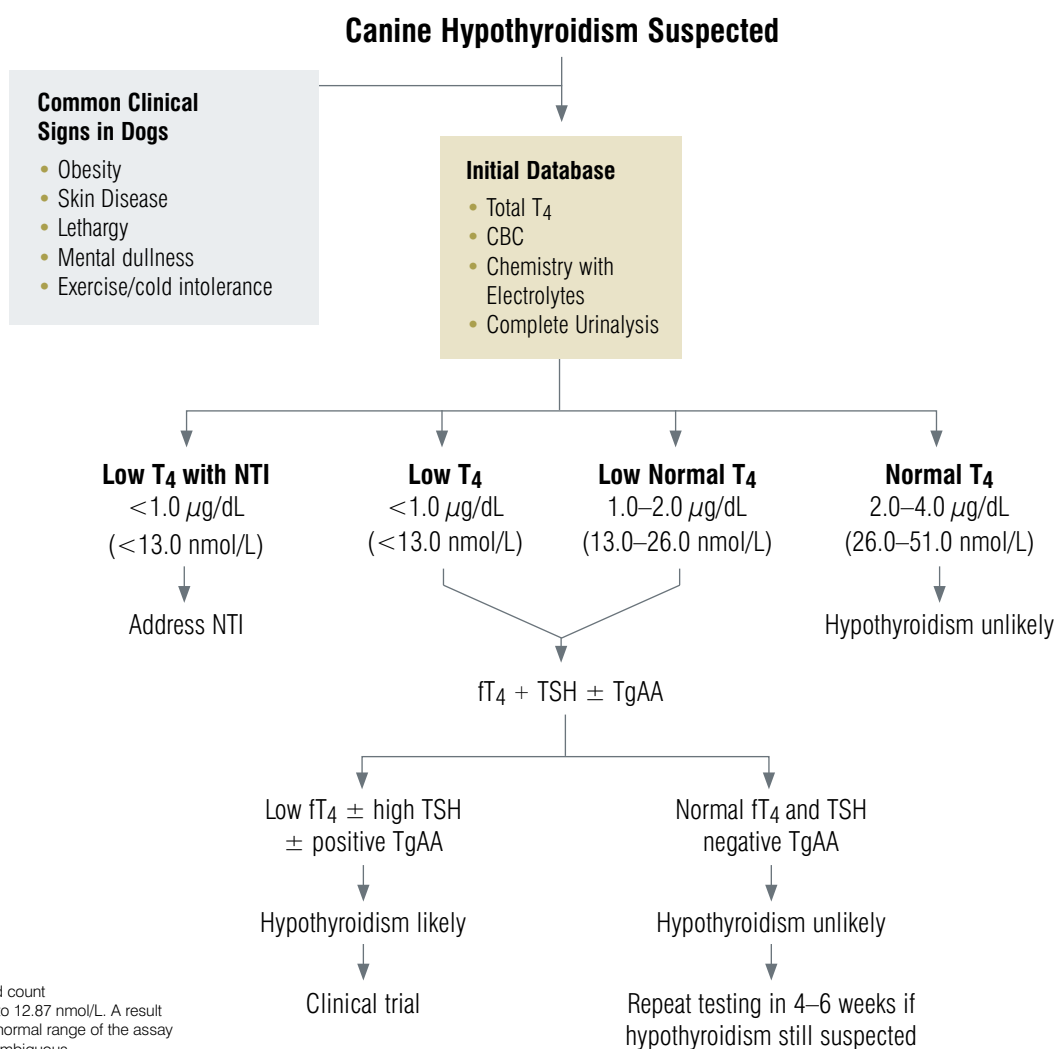
In dogs with low or low normal T₄ results and with consistent clinical signs, consider one or more of the following to aid in confirming hypothyroidism:

- Free T₄ (fT₄)
- Endogenous thyroid-stimulating hormone (TSH)
- Possible thyroglobulin autoantibodies (TgAA)

Hypothyroidism Therapeutic Monitoring

For dogs on thyroid supplement, acceptable 4–6-hour post-pill T₄ values will generally fall in the upper end of the reference interval or slightly above.

Algorithm



CBC = Complete blood count

Note: 1 µg/dL is equal to 12.87 nmol/L. A result that falls within the low normal range of the assay should be considered ambiguous.



Total T₄ Testing Guide: Feline Hyperthyroidism

Dynamic Range

0.5–20.0 µg/dL
(6.4–257.4 nmol/L)

Catalyst Total T₄ Results

Subnormal	<0.8 µg/dL	(<10.0 nmol/L)
Normal	0.8–4.7 µg/dL	(10.0–60.0 nmol/L)
Gray zone in old or symptomatic cats	2.3–4.7 µg/dL	(30.0–60.0 nmol/L)
Consistent with hyperthyroidism	>4.7 µg/dL	(>60.0 nmol/L)

Feline Screening

Cats with consistent clinical signs and total T₄ (T₄) values in the borderline high range (gray zone) may have early hyperthyroidism with a concurrent nonthyroidal illness (NTI).

In these cases, consider the following to aid in confirming the diagnosis:

- Free T₄ (fT₄)
- T₃ suppression test
- Radionuclide thyroid imaging

Hyperthyroidism Therapeutic Monitoring

Following treatment with methimazole (or similar), T₄ values will generally fall within the lower to midportion of the reference interval.

Algorithm

Feline Hyperthyroidism Suspected

Common Clinical Signs in Cats

- Weight loss
- Hyperactivity
- Polyphagia
- Palpable goiter
- Unkempt coat

Initial Database

- Total T₄
- CBC
- Chemistry with Electrolytes
- Complete Urinalysis

Low T₄

<0.8 µg/dL
(<10.0 nmol/L)

Euthyroid sick
or iatrogenic

Normal T₄

0.8–4.7 µg/dL
(10.0–30.0 nmol/L)

Normal T₄ (Gray Zone)

2.3–4.7 µg/dL
(30.0–60.0 nmol/L)

Low or
normal fT₄

Hyperthyroidism unlikely*

High fT₄

Hyperthyroidism likely

High T₄

>4.7 µg/dL
(>60.0 nmol/L)

*If strong suspicion of hyperthyroidism still exists, consider retesting in 4–6 weeks or a technetium scan.

CBC = Complete blood count

Note: 1 µg/dL is equal to 12.87 nmol/L. A result that falls within the gray zone of the assay should be considered ambiguous.