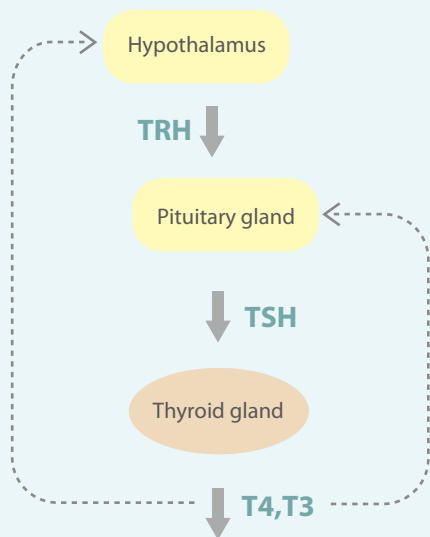




Thyroid Diseases in Pets

Most common hormonal diseases in dogs and cats

Thyroid hormone-regulatory mechanisms



Thyroid hormones maintain or promote the basal metabolism in cells throughout the body. Thyroid hormone deficiency or **Hypothyroidism** is common in **dogs**. While excess of thyroid hormones or **Hyperthyroidism** is common in **cats**.

The hypothalamus secretes thyrotropin-releasing hormone (TRH) to stimulate the pituitary gland. The amount of TRH depends on the amount of T3 and T4 secreted in the negative feedback. The pituitary gland secretes thyroid stimulating hormone (TSH) to stimulate the thyroid gland. The thyroid gland then secretes thyroid hormones T3 and T4.

Most of the **hypothyroidism** in dogs are caused by the malfunction of the thyroid gland itself. This can be by lymphocytic thyroiditis or episodic thyroid atrophy or tumor. In this case, T4 is low and the TSH is high.

Hyperthyroidism which commonly occurs in cats are caused by hyperplasia or enlargement of the thyroid gland. TSH is inhibited and levels drop due to the excessive T4 secreted.

Canine Hypothyroidism

- apathy
- hypoactivity
- tendency for obesity
- skin symptoms
- nonregenerative anemia
- hyperlipidemia



Feline Hyperthyroidism

- restlessness
- increased appetite
- weight loss
- excessive urine secretion
- excessive thirst
- increased ALP and GPT



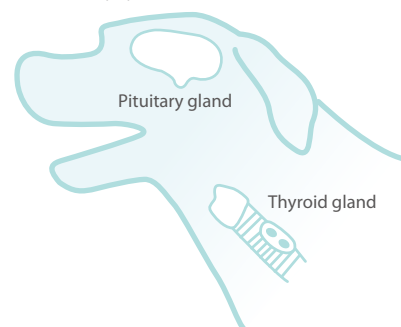


Not all low T4 are Hypothyroidism.

Despite normal thyroid function, thyroid hormones may decrease. This is caused by the decreased metabolism in response to serious or chronic systemic disease. This is called Euthyroid sick syndrome.

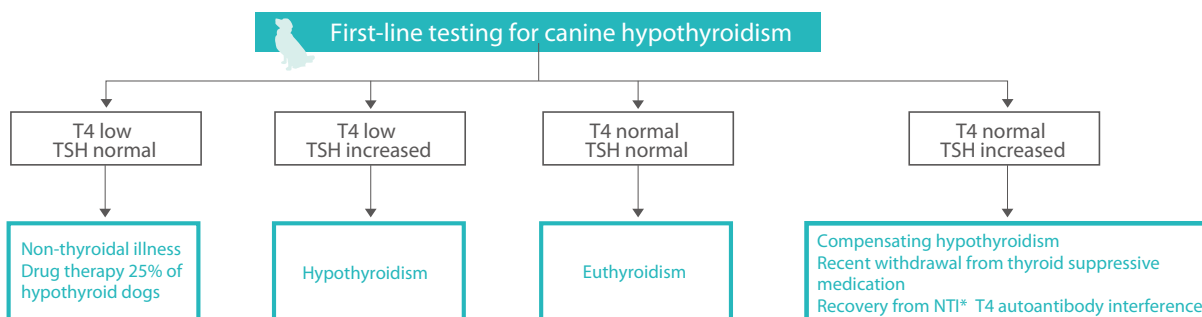
Euthyroid sick syndrome patients have low T4 despite normal thyroid function. It exhibits decreased or normal TSH levels. Sometimes, it is slightly elevated but not as high as hypothyroidism.

Thyroid is ok but thyroid hormone (T4) is low!



It is highly recommended to test TSH with T4 during screening for Hypothyroidism in dogs to prevent misdiagnosis of the above cases.

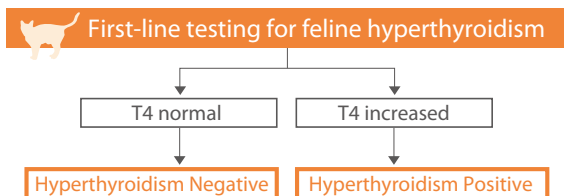
Examples of a diagnostic flow for hypothyroidism and hyperthyroidism are shown below. The British Small Animal Veterinary Association (BSAVA) recommends testing both T4 and TSH when there are symptoms of thyroid disease in dogs.



This flowchart is based on BSAVA Manual of Canine and Feline Endocrinology Fourth Edition.

* NTI : Non-Thyroidal Illness

Hyperthyroidism in cats is generally diagnosed by the T4 level and clinical symptoms.



FUJI DRI-CHEM AU10V, v-T4 and vc-TSH



v-T4



vc-TSH

DRI-CHEM
IMMUNO AU10V



Product Name	FUJIFILM article code
FUJI DRI-CHEM IMMUNO AU CARTRIDGE v-T4	16166545
FUJI DRI-CHEM IMMUNO AU CARTRIDGE vc-TSH	16166571

Measurement time	10 min
Types of sample	v-T4: Canine and Feline Plasma/Serum vc-TSH: Canine Plasma/Serum
Sample volume	100µL/test
Dynamic Range	v-T4: 0.50 - 8.00 µg/dL (6.4 - 103.0 nmol/L) v-TSH: 0.25 - 5.00 ng/mL
Reference Interval	v-T4 canine: 1.3-2.9 µg/dL (16.7 - 37.3 nmol/L) v-T4 feline: 0.9- 3.7 µg/dL (11.6 - 47.6 nmol/L) vc-TSH: <0.50 ng/mL
Reagent Storage	2-8°C

FUJIFILM

FUJIFILM Corporation

26-30, NISHIAZABU 2-CHOME, MINATO-KU, TOKYO 106-8620, JAPAN
<http://www.fujifilm.com/>